

HEALTHY PEOPLE
+
SAFE WORKPLACES
+
ENVIRONMENTAL COMMITMENT
+
SOCIAL RESPONSIBILITY
+
ECONOMIC CONTRIBUTION
+
SOUND GOVERNANCE
=

LICENCE TO
OPERATE

Message from the Chief Executive Officer

At BHP Billiton we recognise the intrinsic link between sound sustainability performance and long-term business viability. Our business [Strategic Framework](#) reflects this understanding, presenting Licence to Operate as a key Framework element.

In 2006 we achieved strong performance in a global market facing significant increases in commodity demand and sustainability performance expectations. On behalf of the Board and the management team, I extend my thanks to not only our employees and contractors but also their spouses, partners and families for helping our company to achieve these results. The nature of our business means it takes a strong team effort to achieve our goals, and we recognise and greatly value this support.



Chip Goodyear,
Chief Executive Officer

Broader macroeconomic trends affecting our organisation and sustainability priorities include the increasing prominence of developing economies such as China, India and Brazil. In these parts of the world there are several billion people who over the last four or five years have had a greater opportunity to participate in economic development. At their current stage of development, raw materials supply is critical. Through our own technology research, technology partnerships and participation in broader industry initiatives, such as the International Council on Mining and Metals and the World Business Council for Sustainable Development, we aim to support the sustainable growth of emerging markets.

While very good progress has been made in implementing our Fatal Risk Control Protocols, our efforts have not been as effective as they need to be. Our thoughts are with the families and friends of the three people who lost their lives while working at our sites over the past year. We will continue to work tirelessly to achieve our goal of Zero Harm.

With the acquisition of WMC Resources Ltd (WMC) in 2005 we are now a significant provider of uranium to the global energy market. We recognise the concerns of some of our stakeholders arising from involvement in this commodity, and we are taking a leadership position in demonstrating sound stewardship of this and, indeed, of all of our products.

During the year we received advice that BHP Billiton would be included in an Australian Inquiry into the UN Oil-For-Food Programme. Our involvement relates to the funding of a shipment of wheat from Australia to Iraq in the mid 1990s. We are conducting our own internal review and have committed to publicly reporting our findings, taking into account the results of the Inquiry.

The continued growth in demand for our products has assisted us in the delivery of a very strong financial performance. It has also, however, created significant stresses in our operations and the industry more broadly as operations expand to meet demand. Skill shortages are a clear manifestation of this, and we have initiated a number of programs to address the issue. The management team has also stressed that our commitment to sustainability must not be compromised in meeting that demand.

Our commitment to spending one per cent of pre-tax profits (on a rolling three-year average) on voluntary community programs remains, which ensures that our host communities continue to share in our success – both in the short and long term. Examples include our efforts to support the management of major infectious diseases, such as HIV/AIDs and malaria.

Climate change remains a key focus area for the Company. We have maintained our programs to reduce greenhouse gas emissions from our operations and continue to gain experience in carbon trading. We also continue to fund a variety of climate change mitigation initiatives, such as the US FutureGen project, the Australian Coal Association's COAL21 initiative and the Australian Cooperative Research Centre for Greenhouse Gas Technologies.

Our Full Report on our website has again been prepared in accordance with the Global Reporting Initiative 2002 Sustainability Reporting Guidelines, and we believe it represents a balanced and reasonable representation of our organisation's economic, environmental and social performance. We remain committed to the UN Global Compact, and this year we have expanded our reporting on UN initiatives in our Full Report to show how we are contributing to the achievement of the UN Millennium Development Goals.

I welcome any feedback you have in relation to this report and look forward to reporting our progress again next year as we continue to focus on creating value for all our stakeholders.

Chip Goodyear
Chief Executive Officer

BHP BILLITON CHARTER

WE ARE BHP BILLITON, A LEADING GLOBAL RESOURCES COMPANY.

Our purpose is to create long-term 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** – Including 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

October 2004



OUR APPROACH TO HEALTH, SAFETY, ENVIRONMENT AND THE COMMUNITY

BHP BILLITON'S SUSTAINABLE DEVELOPMENT POLICY

At BHP Billiton our objective is to be the company of choice – creating sustainable value for our shareholders, employees, contractors, suppliers, customers, business partners and host communities.

We aspire to Zero Harm to people, our host communities and the environment and strive to achieve leading industry practice. Sound principles to govern safety, business conduct, social, environmental and economic activities are integral to the way we do business.

Wherever we operate we will develop, implement and maintain management systems for sustainable development that drive continual improvement and ensure we:

- do not compromise our safety values, and seek ways to promote and improve the health of our workforce and the community
- identify, assess and manage risks to employees, contractors, the environment and our host communities
- uphold ethical business practices and meet or, where less stringent than our standards, exceed applicable legal and other requirements
- understand, promote and uphold fundamental human rights within our sphere of influence, respecting the traditional rights of Indigenous peoples and valuing cultural heritage
- encourage a diverse workforce and provide a work environment in which everyone is treated fairly, with respect and can realise their full potential
- set and achieve targets that promote efficient use of resources and include reducing and preventing pollution
- enhance biodiversity protection by assessing and considering ecological values and land-use aspects in investment, operational and closure activities
- engage regularly, openly and honestly with people affected by our operations, and take their views and concerns into account in our decision-making
- develop partnerships that foster the sustainable development of our host communities, enhance economic benefits from our operations and contribute to poverty alleviation
- work with those involved through the lifecycles of our products and by-products to promote their responsible use and management
- regularly review our performance and publicly report our progress.

In implementing this Policy, we will engage with and support our employees, contractors, suppliers, customers, business partners and host communities in sharing responsibility for meeting our requirements.

We will be successful when we achieve our targets towards Zero Harm, are valued by our host communities, and provide lasting social, environmental and economic benefits to society.



Chip Goodyear
Chief Executive Officer

September 2005



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Sustainability@BHP Billiton

For BHP Billiton our commitment to sustainable development is directly aligned with our corporate strategy — it is about ensuring our business remains viable and contributes lasting benefits to society through the consideration of social, environmental, ethical and economic aspects in all that we do.

This year we continued to broaden our understanding of sustainable development and the intrinsic link with long-term business viability.

We remain committed to disclosing our performance, and our Report continues to be prepared in accordance with the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines. This year we have further enhanced our disclosure by reporting against draft G3 GRI protocols.

We have also maintained our commitment to a number of externally developed voluntary initiatives, and this year we report for the first time our contribution to the United Nations Millennium Development Goals (MDGs). While ensuring and reporting progress on these goals is primarily the responsibility of governments, we feel that the MDGs provide a useful organising structure within which to report our contribution to addressing the environmental and social challenges facing developing countries.

As a global mining company we face a number of key sustainability challenges that we believe may have a material impact on our ability to maintain our license to operate and thus be a successful business. Preventing fatal risks, climate change, occupational and community health, access to and management of resources, community development, and site closure continue to focus our attention, as does access to water and skills.

Our stewardship approach continues to gain momentum as we expand activities across our commodity range and strengthen our supply chain partnerships. Our approach encompasses research and development in materials and process stewardship technology, marketing and advocacy throughout the supply chain. Our involvement in the Council for Responsible Jewellery Practices, the World Nuclear Association and the Responsible Mining Assurance Initiative are key examples of our commitment to work with others towards enhanced stewardship in our industry.

With the acquisition of the WMC business in 2005, including the Olympic Dam copper and uranium mine, we recognise that we need to respond to stakeholder concerns regarding uranium management. While we acknowledge that some of our stakeholders don't welcome the addition of this commodity to our business, we have made a commitment to work with others involved in the nuclear power life cycle to ensure the safe production and secure distribution of this resource. This Report details our approach to uranium stewardship.

Interaction with all our stakeholders is a critical element in our ability to learn and evolve our approach, and each year we conduct formal dialogue sessions with a broad range of stakeholders on topics of strong interest for a broad cross-section of stakeholders. In 2006 the sessions focused on biodiversity and uranium and provided not only useful feedback on our approach but an opportunity to tap into ideas and to test concepts. We also continue to engage with our Forum on Corporate Responsibility, with our discussions in 2006 including the Company's approach to uranium stewardship, climate change and energy efficiency and community programs in countries such as India and Colombia. The Forum also reviewed our approach to identifying and managing our key sustainability challenges.

Our Sustainability Committee of the Board continues to operate as the peak sustainability governance body for the Company, ensuring consideration of sustainability issues at the highest level in the Company.

BHP Billiton is committed to transparent disclosure of our sustainability performance, and this Report is our primary mechanism for doing so. We are committed to the continuous improvement of our efforts to report our performance and greatly appreciate feedback from our stakeholders.

Ian Wood

Vice President Sustainable Development and Community Relations



Ian Wood
Vice President Sustainable
Development and Community
Relations

About this Report

Our aim is to provide a balanced and reasonable representation of our Company's annual economic, environmental and social performance.

The Report has been developed in line with our Sustainable Development Policy commitments to regular performance review and transparency.

We recognise that our Report audience is diverse, and it remains an ongoing challenge for us to ensure we meet the needs of, and remain relevant to, such a broad range of stakeholder groups.

Our 2006 Report has been developed using the draft G3 update to the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines, providing an overview of our performance against the key health, safety, environment, community and socio-economic risks and opportunities of our business.

Performance data from the former WMC Resources Ltd (WMC) has been integrated into our 2006 Report. The timing of the acquisition (6 June 2005) and variations between the two companies' data collection and reporting systems precluded data from WMC assets being incorporated in the previous 2004/05 reporting year.

Our 'Licence to Operate'

The cover art for the BHP Billiton Annual Review 2006 and BHP Billiton 2006 Sustainability Summary Report 2006 reflects the BHP Billiton Strategic Framework.

This Framework comprises seven strategic drivers: People, Licence to Operate, World-Class Assets, the BHP Billiton Way, Financial Strength and Discipline, Project Pipeline and Growth Options. These drivers encompass the entire business and set the benchmarks by which the Company measures its performance.

Our 2006 Sustainability Report cover reflects our approach and performance against the 'Licence to Operate' strategic driver, recognising that sound principles governing safety, business conduct and social, environmental and economic activities are integral to the way we do business.



Left: BHP Billiton Annual Review 2006 Right: BHP Billiton Sustainability Summary Report 2006

Your comments on the content and usability of our Sustainability Report are appreciated as they are useful in preparing future Reports. Please use our [Feedback](#) mechanism if you have any suggestions for our future Sustainability Reports.

If you have any further queries, please do not hesitate to contact us:

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Our past Sustainability (previously Health, Safety, Environment and Community) Reports are available on our [website](#).

Refer to [Report Packs](#) for PDFs of this Report, or you can order a hard copy of our Summary Report from hsec@bhpbilliton.com

Report Parameters

Purpose of Reporting

Our Sustainable Development Policy states that we are committed to 'regularly review our performance and publicly report our progress'. We do this as:

- a demonstration of accountability and transparency
- a central element of effective stakeholder engagement
- a management tool, providing a collation of performance data and statement of key issues and related management approaches.

Our annual reporting approach is evolving in line with changing stakeholder and societal expectations, report feedback and our own learnings. Since 1997 when we began with environmental reporting, we have expanded the areas in which we report to reflect BHP Billiton's maturing approach to sustainable development through the improved integration of social, environmental, ethical and economic factors into all that we do.

Audience

Our Report audience is diverse, ranging from those with minimal knowledge of our operations to those who are familiar with our business and processes. Our stakeholders range from groups such as employees, local communities, shareholders and contractors to non-government organisations, unions, socially responsible investment analysts, governments and academia. Read more: [Our Stakeholders](#).

It remains an ongoing challenge for us to ensure our Report meets the needs of, and remains relevant to, such a broad range of stakeholder groups. In planning the 2006 Report we engaged with a various stakeholders to assess their reaction to both content and presentation. Read more: [Dialogue in 2006](#).

Given the size and nature of our organisation, we recognise that it is not possible for the Company's Sustainability Report to comprehensively meet the information needs of all our stakeholders, particularly at the local and regional level. Our operations produce annual public [site HSEC or sustainability reports](#) to provide a review of HSEC issues and performance specific to their site circumstances, regional context and stakeholder needs.

Indicator Selection

The decision as to which indicators are reported within our Sustainability Report is based on:

- consideration of the key health, safety, environment, community and socio-economic risks of our business
- consideration of stakeholder feedback and commentary with regards to issues of materiality
- our support of industry-based reporting initiatives such as the [Global Reporting Initiative](#) (GRI) Industry Sector Supplement for Mining and Metals
- a desire to continually improve our 'in accordance' reporting with the GRI and progressively meet the new requirements of the draft G3 update to the GRI
- meeting our public commitments.

Read more:

- [Dialogue in 2006](#) for details on our stakeholder consultation processes
- [Our Sustainability Challenges](#) for details on how we have determined the material non-financial matters for our business.

Data Collection and Basis

The statistics in this Report cover the facilities owned and operated by BHP Billiton during the 12-month period to 30 June 2006. Data is reported on a 100 per cent basis for facilities operated by BHP Billiton irrespective of our equity share, unless otherwise stated. Joint venture projects that are not operated by us are excluded unless expressly stated. All dollar figures in the Report are US unless otherwise stated.

As reported previously, BHP Billiton took control of WMC Resources Ltd (WMC) in June 2005. The timing of the transaction and variations between the two companies' data collection and reporting systems precluded data from WMC assets being incorporated in the previous 2004/05 reporting year. Historic WMC sustainability data can be viewed [online](#).

For this reporting year, data from former WMC assets has been included where it can be directly aggregated with BHP Billiton data. Data from former WMC assets has been excluded from the Group's [intensity indices](#) as they were not part of BHP Billiton's business when the baselines were set. The Group's [intensity indices](#) have also been modified to exclude data from the Chrome business in all years, including the base year, as this business was divested in 2005.

The closure of the Boodarie Iron facility (Australia) was announced in August 2005, and detailed decommissioning plans are being developed. HSEC data, however, will continue to be collected with respect to this facility.

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 is derived from our many operations around the world and, in some cases, grouped data is not strictly comparable. In addition, as we seek to improve our data collection processes, data may not be strictly comparable year on year. 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.

Acquisitions and divestments

Effective 1 June 2006, we sold our Peruvian Tintaya copper mine to Xstrata plc. The sale also included the nearby undeveloped deposits of Antapaccay and Corrocohuayco.

On 9 May 2006 we entered into an agreement for the sale of Southern Cross Fertilisers Pty Ltd (SCF) to Incitec Pivot Limited. SCF produces high-analysis phosphate fertilisers from its facilities in northern Queensland and was originally acquired by BHP Billiton as part of the acquisition of WMC. The WMC fertilisers business was identified as a non-core asset at the time of the acquisition, and its sale follows the earlier sale of SCF's one third interest in Hi-Fert Pty Ltd in December 2005. The sale of SCF was completed on 1 August 2006.

On 21 June 2006 BHP Billiton announced that it had agreed to sell its Australian coal bed methane (CBM) interests to The Australian Gas Light Company (AGL). The sale, which is effective 1 January 2006, was completed on 21 August 2006.

For the purposes of this Report, performance data for these interests is included to the point of divestment.

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.

The headquarters of BHP Billiton Limited and the global headquarters of the combined BHP Billiton Group are located in Melbourne, Australia. BHP Billiton Plc is located in London, UK. Both companies have identical Boards of Directors and are run by a unified management team. Throughout this Report, the Boards are referred to collectively as the Board. 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.

For further explanation of the terms used throughout this Report, refer to our [Glossary](#).

BHP Billiton Limited. ABN 49 004 028 077.

Registered in Australia.

Registered Office:

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 1BH, United Kingdom.

UN Global Compact Navigator

This progress assessment represents our judgement of how the principles of the UN Global Compact have been progressed through our policy and actions during the year. Refer to the items highlighted below for the particular document or a more detailed description of our performance in relation to the related UN Global Compact principle. Please contact the Company if you would like further information in relation to this assessment.

Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights

BHP Billiton Policies, Systems and Commitments	BHP Billiton actions and performance as referenced in 2006 Sustainability Report	GRI Indicator Reference
<p>Sustainable Development Policy</p> <p>Guide to Business Conduct</p> <p>HSEC Management Standards (PDF 284KB)</p> <p>HSEC Management Standard 8</p> <p>UN Universal Declaration of Human Rights</p> <p>US-UK Voluntary Principles on Security and Human Rights</p> <p>World Bank Operational Directive on Involuntary Resettlement</p>	<p>HSEC Targets Scorecard No transgressions within the Group's activities of the principles embodied within the UN Universal Declaration of Human Rights were identified.</p> <p>Governance>Our Performance>Management Systems Review We rolled out our revised Sustainable Development Policy and HSEC Management Standards and updated our supporting guidelines and procedures.</p> <p>Governance>Our Performance>Audit and Self-Assessment Fifteen HSEC audits were conducted against the revised HSEC Management Standards during the reporting period.</p> <p>Community>Our Performance>Human Rights Human Rights Self-Assessment - implementation, 35 sites completed the self-assessment this year.</p> <p>Governance>Our Performance> Business Conduct The Guide to Business Conduct provides employees and contractors with direction and advice on carrying out business and interacting with governments, communities and business partners.</p> <p>Case Studies The selection of case studies illustrates how we have progressed with regards to upholding fundamental human rights across the areas of health, safety, environment, community and socio-economics.</p>	<p>HR1</p> <p>HR2</p> <p>HR3</p> <p>HR4</p>

Principle 2: Businesses should make sure their own corporations are not complicit in human rights abuses

BHP Billiton Policies, Systems and Commitments	BHP Billiton actions and performance as referenced in 2006 Sustainability Report	GRI Indicator Reference
<p>Sustainable Development Policy</p> <p>Guide to Business Conduct</p> <p>HSEC Management Standards (PDF 284KB)</p> <p>HSEC Management Standard 8</p> <p>Human Rights Self-Assessment Toolkit</p> <p>UN Universal Declaration of Human Rights</p> <p>US-UK Voluntary Principles on Security and Human Rights</p> <p>World Bank Operational Directive on Involuntary Resettlement</p>	<p>HSEC Targets Scorecard No transgressions within the Group's activities of the principles embodied within the UN Universal Declaration of Human Rights were identified.</p> <p>Governance>Our Performance>Management Systems Review We rolled out our revised Sustainable Development Policy and HSEC Management Standards and updated our supporting guidelines and procedures.</p> <p>Governance>Our Performance>Audit and Self-Assessment Fifteen HSEC audits were conducted against the revised HSEC Management Standards during the reporting period.</p> <p>Community>Our Performance>Human Rights Human Rights Self-Assessment - implementation, 35 sites completed the self-assessment this year.</p> <p>Governance>Our Performance> Business Conduct The Guide to Business Conduct provides employees and contractors with direction and advice on carrying out business and interacting with governments, communities and business partners.</p> <p>Case Studies The selection of case studies illustrates how we have progressed with regards to upholding fundamental human rights across the areas of health, safety, environment, community and socio-economics.</p>	<p>HR2</p> <p>HR3</p>

Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining

BHP Billiton Policies, Systems and Commitments	BHP Billiton actions and performance as referenced in 2006 Sustainability Report	GRI Indicator Reference
<p>Sustainable Development Policy</p> <p>Employment Principles</p> <p>Guide to Business Conduct</p> <p>Letter to UN Secretary General from Chip Goodyear (December 2003)</p>	<p>Socio-Economic>Our Performance>Employee Relations Employee relations arrangements at individual workplaces are required to respect local legislative requirements and other local standards and circumstances.</p> <p>All employees are free to join trade unions.</p> <p>Socio-Economic>Our Performance>Freedom of Association 49 per cent of the workforce was covered by collective bargaining agreements at operated sites and offices.</p> <p>Socio-Economic>Our Performance>Remuneration All Company employees earned greater than the stipulated minimum wage in the countries in which they worked.</p>	<p>HR5</p> <p>LA3</p> <p>LA4</p>

Principle 4: Businesses should uphold the elimination of all forms of forced and compulsory labour

BHP Billiton Policies, Systems and Commitments	BHP Billiton actions and performance as referenced in 2006 Sustainability Report	GRI Indicator Reference
<p>Sustainable Development Policy</p> <p>Guide to Business Conduct</p> <p>UN Universal Declaration of Human Rights</p>	<p>Socio-Economic>Our Performance>Child and Forced Labour</p> <p>We exclude the use of child labour and prohibit forced labour at our operations.</p> <p>Socio-Economic>Our Performance>Remuneration</p> <p>All Company employees earned greater than the stipulated minimum wage in the countries in which they worked.</p>	<p>HR7</p>

Principle 5: Businesses should uphold the effective abolition of child labour

BHP Billiton Policies, Systems and Commitments	BHP Billiton actions and performance as referenced in 2006 Sustainability Report	GRI Indicator Reference
<p>Sustainable Development Policy</p> <p>Guide to Business Conduct</p> <p>UN Universal Declaration of Human Rights</p>	<p>Socio-Economic>Our Performance>Child and Forced Labour</p> <p>We exclude the use of child and forced labour at our operations. The youngest employees were 16.5 years of age, working as apprentices/administrative trainees in our Australian operations.</p>	<p>HR6</p>

Principle 6: Businesses should uphold the elimination of discrimination in respect of employment and occupation

BHP Billiton Policies, Systems and Commitments	BHP Billiton actions and performance as referenced in 2006 Sustainability Report	GRI Indicator Reference
<p>Sustainable Development Policy</p> <p>Employment Principles</p> <p>Guide to Business Conduct</p> <p>UN Universal Declaration of Human Rights</p>	<p>Socio-Economic>Our Performance>Employee Profile</p> <p>Refer to our chart on Employee Numbers by Region.</p> <p>Socio-Economic>Our Performance- Diversity</p> <p>Approximately 12 per cent of full-time employees at operated sites and offices were women.</p> <p>Socio-Economic>Our Performance>Diversity>Employment Equity in South Africa</p> <p>To address historical issues in South Africa, which resulted in the majority of South Africans being excluded from participating in the mainstream economy, BHP Billiton South Africa adopted an empowerment strategy of change.</p> <p>Socio-Economic>Our Performance>Diversity>Indigenous Employment and Training</p> <p>We recognise indigenous employment and training as an important issue and, as has been reported in previous years, undertake a number of initiatives in this regard.</p> <p>Socio-Economic Case Studies>Indigenous Skills Development and Employment</p> <p>Socio-Economic Case Studies>Supporting Local Suppliers</p>	<p>HR4</p> <p>LA10</p> <p>LA11</p>

Principle 7: Businesses should support a precautionary approach to environmental challenges

BHP Billiton Policies, Systems and Commitments	BHP Billiton actions and performance as referenced in 2006 Sustainability Report	GRI Indicator Reference
<p>Sustainable Development Policy</p> <p>HSEC Management Standards (PDF 284KB)</p> <p>HSEC Management Standard 3</p> <p>Enterprise-Wide Risk Management Policy</p>	<p>HSEC Targets Scorecard</p> <p>Risk registers are in place at 99% of required sites, businesses and Corporate offices.</p> <p>Governance>Our Performance>Risk Management</p> <p>An HSEC risk assessment project was established, which will continue over the coming year.</p> <p>Environment>Our Approach</p> <p>Governance>Our Approach>Key Management Processes</p>	<p>3.13</p>

Principle 8: Businesses should undertake initiatives to promote greater environmental responsibility

BHP Billiton Policies, Systems and Commitments	BHP Billiton actions and performance as referenced in 2006 Sustainability Report	GRI Indicator Reference
<p>Sustainable Development Policy</p> <p>HSEC Management Standards (PDF 284KB)</p> <p>HSEC Management Standard 5</p> <p>HSEC Management Standard 12</p>	<p>HSEC Targets Scorecard</p> <ul style="list-style-type: none"> • Three Level 3 environmental incidents. • 94 per cent of required self-assessments were completed at operating sites. • 98 per cent of sites requiring ISO 14001 are certified or have been recommended for certification by their ISO auditor. • Energy conservation plans in place at 98 per cent of required sites and at 8 sites that were below the emissions threshold. • Greenhouse gas management programs in place at 98 per cent of required sites and at 7 sites that were below the emissions threshold. • Water management plans in place at 99 per cent of required sites and at 27 sites that were below the usage threshold. • Waste minimisation programs in place at 97 per cent of required sites and at 7 sites that were not required to meet this target. • Land management plans in place at 97 per cent of required sites and at 17 sites that were not required to meet this target. • Life cycle assessments (ISO14043 compliant) have been completed for all our major commodities. <p>Environment>Our Performance>Environmental Management Systems</p> <p>During the reporting period we continued to strengthen environmental management systems across our operations</p> <p>Environment>Our Performance>Closure</p> <p>We progressed implementation of the Company-wide Closure Standard.</p> <p>Environment>Our Approach>Climate Change</p> <p>We are working on activities related to climate change risks and opportunities in a number of ways.</p> <p>Environment>Our Performance>Biodiversity</p> <p>Over the reporting period we progressed a number of aspects ranging from biodiversity plans at some sites through to biodiversity-related research and development.</p> <p>Environment Case Studies</p>	<p>EN1</p> <p>EN2</p> <p>EN3</p> <p>EN4</p> <p>EN5</p> <p>EN6</p> <p>EN7</p> <p>EN8</p> <p>EN9</p> <p>EN10</p> <p>EN11</p> <p>EN12</p> <p>EN13</p> <p>EN14</p> <p>EN15</p> <p>EN16</p> <p>1.1</p>

Principle 9: Businesses should encourage the development and diffusion of environmentally friendly technologies

BHP Billiton Policies, Systems and Commitments	BHP Billiton actions and performance as referenced in 2006 Sustainability Report	GRI Indicator Reference
<p>Sustainable Development Policy</p> <p>HSEC Management Standards (PDF 284KB)</p> <p>HSEC Management Standard 9</p> <p>HSEC Management Standard 12</p>	<p>HSEC Targets Scorecard</p> <ul style="list-style-type: none"> • Three Level 3 environmental incidents. • 94 per cent of required self-assessments were completed at operating sites. • 98 per cent of sites requiring ISO 14001 are certified or have been recommended for certification by their ISO auditor. • Energy conservation plans in place at 98 per cent of required sites and at 8 sites that were below the emissions threshold. • Greenhouse gas management programs in place at 98 per cent of required sites and at 7 sites that were below the emissions threshold. • Water management plans in place at 99 per cent of required sites and at 27 sites that were below the usage threshold. • Waste minimisation programs in place at 97 per cent of required sites and at 7 sites that were not required to meet this target. • Land management plans in place at 97 per cent of required sites and at 17 sites that were not required to meet this target. • Life cycle assessments (ISO14043 compliant) have been completed for all our major commodities. <p>Sustainability At BHP Billiton>Stewardship</p> <p>Over the past year we have been working to refine our stewardship approach for all of our commodities.</p> <p>Environment>Our Performance>Environmental Spending</p> <p>Over the reporting period environmental expenditure for the Group totalled US\$309 million.</p> <p>Environment>Our Performance>Biodiversity</p> <p>Over the reporting period we progressed a number of aspects ranging from biodiversity plans at some sites through to biodiversity-related research and development.</p> <p>Environment Case Studies</p>	<p>EN 17</p>

Principle 10: Businesses should work against all forms of corruption, including extortion and bribery

BHP Billiton Policies, Systems and Commitments	BHP Billiton actions and performance as referenced in 2006 Sustainability Report	GRI Indicator Reference
<p>Sustainable Development Policy</p> <p>Guide to Business Conduct</p> <p>HSEC Management Standards (PDF 284KB)</p> <p>HSEC Management Standard 8</p>	<p>Governance>Our Performance>Business Conduct</p> <p>The Guide to Business Conduct provides employees and contractors with direction and advice on carrying out business and interacting with governments, communities and business partners.</p> <p>Socio-Economic>Our Performance>Economic Contributions</p> <p>Our economic contribution to society includes the value that flows from the broader contributions of our operations, such as payments to our employees and suppliers and disbursements to governments, including taxes and royalties.</p> <p>Socio-Economic>Our Performance>Value Add</p> <p>Refer to our table on Expenditure by Region for disclosure of regional tax payments.</p>	<p>SO2</p>

UN Millennium Development Goals Navigator

As part of our commitment to the [United Nations \(UN\) Global Compact](#), we know that some of the developing countries in which we operate face critical sustainability issues.

This year we commenced mapping our [Community Contributions](#) spend against the [UN Millennium Development Goals](#) (MDGs) recognising that the intent of the MDGs align with our sustainability values and present a consistent global framework for measuring tangible progress.

This year our assets identified a small number of [Community Contributions](#) projects that directly support the MDGs. As we are continuing to develop our approach to correlating our spend with the MDGs, we aim to further enhance our approach to reporting against the MDGs in the next reporting period.

Goal 1: Eradicate Extreme Poverty and Hunger

Project	Benefits (US\$)
Small/medium business development projects	1,511,000
Skills development projects - general community	926,000
Support for NGOs addressing key causes of poverty	142,000

Related Links:

- [Employee Payments](#)
- [Employee Benefits](#)
- [Taxes Paid by Region](#)
- [Net Employment Creation](#)
- [Equal Opportunity Employment Policy](#)
- [Human Rights](#)
- [Financial Contributions to Community](#)

Goal 2: Achieve Universal Primary Education

Project	Benefits (US\$)
Primary education projects e.g. school infrastructure or programs	5,758,000
Teacher training and development	195,000

Related Links:

- [Human Rights](#)
- [Prevention of Child and Forced Labour](#)
- [Taxes Paid by Region](#)
- [Net Employment Creation](#)
- [Business Conduct](#)

Goal 3: Promote Gender Equality and Empower Women

Project	Benefits (US\$)
Support for women's capacity building projects or for NGOs to address gender issues (non-health related)	596,000
Support for women in leadership	4,000

Related Links:

- [Company Standards](#)
- [Business Conduct](#)
- [Employment Equity in South Africa](#)
- [Diversity](#)
- [Net Employment Creation](#)
- [Prevention of Child and Forced Labour](#)
- [Black Empowerment Policy](#)
- [Indigenous Culture and Heritage](#)
- [Stakeholder Engagement](#)

Goal 4: Reduce Child Mortality

Project	Benefits (US\$)
Sanitation/hygiene projects	113,000
Nutrition projects	130,000
Other general community health projects, e.g. immunisation programs	323,000

Related Links:

- [Employee Benefits](#)
- [Stewardship](#)
- [HIV/AIDs Policies and Programs](#)

Goal 5: Improve Maternal Health

Project	Benefits (US\$)
Women's health projects	190,000

Related Links:

- [Employee Benefits](#)
- [Stewardship](#)
- [Community and Employee Health](#)
- [Occupational Safety](#)

Goal 6: Combat HIV/AIDs, Malaria and Other Diseases

Project	Benefits (US\$)
HIV/AIDs programs, e.g. awareness, treatment, orphanages	462,000
Malaria programs	402,000
Other medical research projects	1,284,000

Related Links:

- [HIV/AIDs Policies and Programs](#)
- [Employee Benefits](#)
- [Sustainability Committee of the Board](#)

Goal 7: Ensure Environmental Sustainability

Project	Benefits (US\$)
Support for international environmental NGOs	585,000
Community-based rehabilitation/conservation programs	1,829,000
Education-based environmental/sustainable development programs	587,000
Support for environmental/sustainable development award/recognition	7,000
Support for environmental research	69,000

Related Links:

- [Energy Use](#)
- [Water Use](#)
- [Biodiversity Protection](#)
- [Greenhouse Emissions](#)
- [Stewardship](#)
- [Waste Management](#)
- [Land Management](#)

Goal 8: Develop a Global Partnership for Development

Project	Benefits (US\$)
Support for global initiatives	80,000
Emergency relief support	493,000

Related Links:

- [Business Conduct](#)
- [Anti-trust Protocols](#)
- [Employee Relations](#)
- [Economic Contributions](#)

Glossary of Terms

Term	Definition
Assurance	An evaluation method that uses a specified set of principles and standards to assess the quality of a Report and the underlying systems, processes and competencies that underpin performance as specified in the Report. Assurance includes the communication of the results of this evaluation to provide credibility to the subject matter for its users.
bcms	billion bank cubic metres
BHP Billiton	The Dual Listed Company comprising BHP Billiton Limited and BHP Billiton Plc and their subsidiary companies.
BHP Billiton Group	The whole BHP Billiton organisation.
Biodiversity	The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.
Bioindicator	Changes in organisms that can be reliably used to indicate a change in the environment. These changes may be physiological, chemical, or behavioural.
Business Excellence	Business Excellence means achieving predictable continuous improvement across BHP Billiton.
The Company	BHP Billiton
CO₂-e	Carbon dioxide equivalent (CO ₂ -e) is the basis of comparing the warming effect of greenhouse gases such as carbon dioxide, methane and perfluorocarbons.
Charter	The set of clearly defined Company values applicable to each employee of the BHP Billiton Group.
CIFR	Classified Injury Frequency Rate - the number of classified injuries per million work hours (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).
Controlled Activities	These are work-related activities where BHP Billiton can set HSEC standards and directly supervise and enforce their application. Incidents arising from controlled activities are reported, investigated and included in HSEC performance measures in accordance with BHP Billiton requirements.
Controlled Site	A site owned and operated wholly by BHP Billiton or managed by BHP Billiton in a joint venture operation.

Term	Definition
Contractor	An individual, company or other legal entity that carries out work or performs services pursuant to a contract for service. This includes sub-contractors.
CEMP	Crisis and Emergency Management Program
CSIRO	Australian Commonwealth Scientific and Industrial Research Organisation
Customer Sector Group (CSG)	A primary operating division of the Company that groups together commodities for a common customer sector.
DLC	Dual Listed Companies
DWT	Dead weight tonnage, total tonnage that a ship can carry, including crew, cargo, water and fuel.
Earthmoving equipment (EME)	Excavators, trucks, dozers and support equipment used in our operations to move earth.
Environmental Impact Statement	A report on the anticipated effect of a development on the local environment.
EWRM	Enterprise-Wide Risk Management - a structured and consistent approach that aligns strategy, processes, people, technology and knowledge with the purpose of evaluating and managing the uncertainties the Company faces to create shareholder value.
Extractive Industries Transparency Initiative	A multi-stakeholder initiative launched at the World Summit on Sustainable Development in Johannesburg, September 2002. Its aim is to increase transparency about payments and revenues to governments by companies in the extractive industries.
Fatal Risk Control Protocols	A set of protocols, mandatory at all our operated sites and operations, which prescribe requirements applicable to identified key risk areas with a view to eliminating fatalities from our operations.
FPSO	Floating production, storage and offloading facility
Footprint	The area affected or covered by BHP Billiton operations.
Forum on Corporate Responsibility (FCR)	A forum that 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.
Goethite	A red or yellow or brown mineral; an oxide of iron that is a common constituent of rust.

Term	Definition
Greenhouse gases (GHG)	Gaseous emissions to the atmosphere that may contribute to global warming.
Global Reporting Initiative (GRI)	A multi-stakeholder process developing and disseminating globally applicable sustainability reporting guidelines for organisations to report on the economic, environmental and social dimensions of their activities, products and services.
Gross Domestic Product (GDP)	Total market value of the goods and services produced by a nation's economy during a specific period of time .
Guide to Business Conduct	The set of guidelines, published in eight languages, that provides all BHP Billiton employees and contractors with direction and advice on carrying out business and interacting with governments, communities and business partners.
Global Ethics Panel	A panel of internal representatives from BHP Billiton Corporate functions and businesses and external representatives that reviews all business conduct cases raised throughout the Company.
Hierarchy of control	<p>A series of hazard controls that should be applied in the following order (a number of these options may be considered and applied individually or in combination):</p> <ul style="list-style-type: none"> ● Eliminate: completely eliminating the hazard ● Substitute: replacing the material or process with a less hazardous one ● Redesign: redesigning the equipment or work processes ● Separate: isolating the hazard by guarding or enclosing it ● Administrative: providing controls such as training, procedures, etc. ● Personal protective equipment (PPE)/pollution control: using properly fitted PPE and/or pollution control equipment where other controls are not practical. PPE and pollution control devices include impact minimisation equipment such as spill clean up material or dust suppression measures.
HIV/AIDS	AIDS is a disease, caused by the human immunodeficiency virus (HIV), that destroys the body's white cells, causing illness and, ultimately, death.
HSE Committee	Health, Safety and Environment Committee - a subcommittee of the Board and the Company's peak HSE governance body.
HSEC	Health, Safety, Environment and Community
HSEC Management Standards	A set of 15 management standards, mandatory at all our operated sites and operations, that form the basis for the development and application of HSEC management systems at all levels of the Company.
HSEC targets	A set of goals and requirements which have been specified for our sites and operations to achieve and which cover management systems, health, safety, environment and community performance measures. A scorecard on performance against the targets is included in our Sustainability Report.
Human rights	Basic standards of treatment to which all people are entitled, regardless of nationality, gender, race, economic status or religion.

Term	Definition
ICAM	The Incident Cause Analysis Methodology (ICAM) is a tool used for incident investigation. Organisational factors that lead to incidents and near misses are identified, and the lessons learned assist in developing prevention strategies and improving our safety systems.
Indigenous peoples	Those people who are the descendants of the original inhabitants of a country or a region, with a distinct social or cultural identity that may be vulnerable or disadvantaged in the current social and economic context.
ISO 9000	International standard for quality management. It is intended to help an organisation to enhance customer satisfaction by meeting customer and applicable regulatory requirements and to improve its performance in this regard.
ISO 14001	International standard for environmental management. It is intended to help an organisation to minimise harmful effects on the environment caused by its activities and to improve its environmental performance.
IUCN protected area categories	The World Conservation Union (IUCN) defines a protected area as 'an area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means'. IUCN categorises protected areas by management objective and has identified six distinct categories of protected areas (see www.iucn.org).
Kilolitre (kL)	One kilolitre is equal to one thousand litres.
KPI	Key performance indicator
Licence to operate	Securing and maintaining the trust and confidence of a community and regulators in order to set up and conduct business.
Life cycle Assessment/Analysis	A detailed examination of the full life cycle of a product, process, system or function.
Megalitre (ML)	One megalitre is equal to one million litres.
Monitored activities	These are activities where BHP Billiton can influence but cannot set HSEC standards and cannot directly supervise and enforce their application. Monitored activities include all situations where BHP Billiton is involved, excluding controlled activities. Incidents arising from monitored activities are, where possible, reported and investigated in accordance with Company requirements but are not included in BHP Billiton HSEC performance measures.
MMSD	Mining, Minerals and Sustainable Development study (1998) of the global mining industry's current and potential contribution to sustainable development.
MSDS	Material safety data sheet - prepared for each of our products and which identifies potential health, safety and environmental aspects associated with their use.

Term	Definition
NHMRC	The National Health and Medical Research Council (NHMRC) is responsible for raising the standard of individual and public health. It does this by fostering health and medical research and training and by monitoring ethical issues relating to health throughout Australia.
NGO	Non-government organisation
OHSAS 18001	An international occupational health and safety management system specification. It is intended to help an organisation to control occupational health and safety risks.
Operating Discipline	Effective and consistent implementation of our HSEC Management Standards and associated systems across the Company.
Perfluorocarbons	Group of chemicals composed of carbon and fluorine produced by process disturbances during the aluminium smelting process.
Petajoule (PJ)	One petajoule is equal to 10^{15} joules.
PIP	Performance improvement plans
PPE	Personal protective equipment
Precautionary approach	The precautionary approach emerged from Article 15 of the Rio Principles, which states, 'In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation'. (See www.unep.org/unep/rio.htm)
R&D	Research and development
REACH	New EU regulatory framework on chemicals - Registration, Evaluation and Authorisation of Chemicals.
Risk	Exposure to the consequences of uncertainty. It has two dimensions, the likelihood of something happening and the consequences if it were to happen.
SA8000	A system of international labor standards and mechanisms for compliance and certification overseen by the nonprofit Social Accountability International with participation by corporations, unions, and NGOs.

Term	Definition
Sievert (Sv)	The Sievert (Sv) is the Standards Internationale unit for radiation dose and is a measure of the risk from radiation taking into account all pathways. The mSv is one thousandth of a Sv and is more commonly used for low exposures. The mSv/y is the dose that an employee may receive in a year.
Significant incident	An environmental incident classified as level 3 or above, or a safety incident classified as 4 or above in the BHP Billiton Consequence Severity Table .
Sites	The site of an individual operating asset of BHP Billiton. An asset may operate from a number of sites.
Sphere of Influence	<p>The term used to describe the role BHP Billiton can take to manage human rights across its various relationships. In broad terms there are two levels of influence as they apply to BHP Billiton sites:</p> <ul style="list-style-type: none"> • Direct control and responsibility for human rights, such as for employees and contractors • Influencing and contributing to the realisation of human rights in conjunction with others, such as suppliers. <p>It is recognised, however, that in certain circumstances it may also be appropriate to contribute to the promotion of human rights, with, for example, host governments.</p>
SRI	Socially responsible investment - a sector of the financial community that takes an organisation's environmental and social performance into account when judging its investment rating.
Stakeholders	Any person, group or interested party that may be affected by the financial or safety, health, environment and community performance of BHP Billiton or its operations.
Stewardship	A life cycle approach to identify, manage and reduce HSEC impacts relating to BHP Billiton resources, processes, materials and products, including the involvement and sharing of responsibility with suppliers and customers where appropriate.
Sustainable development	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs - as defined by the World Commission on Environment and Development (Brundtland Commission) 1987.
Sustainable Development Policy	The Company's primary statement of principles applicable to health, safety, environment and community matters. The Policy is implemented via the HSEC Management Standards and Protocols.
Toxicant	Any substance that is potentially toxic.
TRIFR	Total Recordable Injury Frequency Rate - the total number of fatalities and injuries resulting in lost time, restricted work duties or medical treatment.
Tollgate	A review system or procedure that must be satisfied before proceeding to the next stage of a project or process.

Term	Definition
UN	United Nations
UNDHR	The General Assembly of the United Nations adopted and proclaimed the Universal Declaration of Human Rights (UNDHR) on 10 December 1948, as a common standard of achievement for all peoples and all nations, to the end that every individual and every organ of society, keeping this Declaration constantly in mind, shall strive by teaching and education to promote respect for these rights and freedoms and by progressive measures, national and international, to secure their universal and effective recognition and observance, both among the peoples of Member States themselves and among the peoples of territories under their jurisdiction.
UNEP	United Nations Environment Programme aims to provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations (see http://www.unep.org).
Value Add	As defined by GRI Mining and Metals Sector Supplement: total revenues less total cost of procurement.
Zero Harm	Our aspirational goal, expressed in our Sustainable Development Policy, that reflects our continual drive to minimise harm to people, our host communities and the environment from our activities.

Assurance

In 2006, BHP Billiton commissioned [URS Australia Pty Ltd](#) (URS) to provide an independent review of the 2006 Sustainability Report. The intent of the review was to provide an opinion on:

- data accuracy, capture processes and controls
- the corporate processes and mechanisms in place for the preparation and delivery of the Report
- adequacy and relevance of information contained in the Report
- 'In accordance' claim with regards to the Global Reporting Initiative 2002 Sustainability Reporting Guidelines and draft 2006 Guidelines update.

URS was requested to undertake the assurance in line with the requirements of the [Accountability AA1000 Assurance Standard](#), seeking demonstration of materiality, completeness and responsiveness of the Report.

For further details see:

- [URS Assurance principles](#) (PDF 91 Kb)
- [URS Assurance statement](#) (PDF 116 Kb)

Read more: [Audit and Self-Assessment](#) for details on our internal assurance processes.



Assurance Principles

Public Report Verification/Assurance – Asia Pacific

These principles have been adopted to achieve the following objectives:

- ◆ A consistent approach to public report verification/assurance projects throughout the region
- ◆ Maintenance of the independence and integrity of the verification/assurance process.

The following activities will be regarded as a conflict to the verification/assurance process:

- ◆ Participation in the design, development or implementation of the client reporting and monitoring systems
- ◆ Review of work and/or data that has been substantially prepared by URS or is fundamentally based on URS data or design
- ◆ Participation in an active creative manner in the development of the client public report including:
 - Participating in the decision making process regarding its production/preparation
 - Giving specific advice towards its development and implementation that does not directly relate to the verification/assurance or clarification resulting from the verification/assurance process , e.g. advice on layout and content
 - Preparing text (other than the verification/assurance statement or GRI content reviews) for inclusion in it
- ◆ Promotion of other URS services or activities.

All verification/assurance projects will:

- ◆ Prior to commencement have review carried out through the standard URS Conflict of Interest procedure to ensure an appropriate level of impartiality
- ◆ Define a scope of the verification/assurance (including limitations and qualifications) with the client at the start of the project
- ◆ Document all data reviews and site visit interviews through a project specific protocol
- ◆ Provide a supporting document to the client as back-up to the verification/assurance statement; this may take the form of a Verification/Assurance Report, potentially made available by the client to the public.

The URS verification/assurance team will:

- ◆ Comprise individuals who are experienced in the verification/assurance of public reports and accredited by the Asia Pacific Peer Review Panel*
- ◆ Be led by an experienced professional approved by the Asia Pacific Peer Review Panel*
- ◆ Comprise URS employees who have completed the standard URS Conflict of Interest training and contractors who have been counselled on URS Conflict of Interest principles; as such the URS team will be able to demonstrate a level of impartiality with respect to the organisation being reviewed
- ◆ Be able to add value during assessments by identifying opportunities for improvement to future reports
- ◆ Explain the verification/assurance findings without giving prescriptive advice or consultancy
- ◆ Keep the client informed throughout the verification/assurance process, in particular through introduction and close-out meetings during site inspections.

The verification/assurance statement will:

- ◆ Only be finalised after review of the final draft of the public report
- ◆ Be peer reviewed by an independent member of the Asia Pacific Peer Review Panel* prior to release
- ◆ Include a description of the scope of the verification/assurance process including areas or subjects that have been excluded
- ◆ Include a description of the independence from the data being verified
- ◆ Confirm that URS has no conflict of interest in carrying out the verification/assurance work, including a declaration of the extent of other work carried out for the client including the financial value of that work for the previous 3 years
- ◆ Verifier's/assurance provider's findings including an opinion on the accuracy, completeness, reliability and balance of the report as required by the URS brief
- ◆ Verification/assurance standards referenced
- ◆ Date of the verification/assurance, which should be post the reporting period.

Assurance Statement

URS Australia Pty Ltd (URS) was commissioned by BHP Billiton to provide an independent review of their 2006 Sustainability Report (the "Report"). The Report covers the global operations of BHP Billiton for sites which the company has operational control. The Report covers the 12 month period to 30 June 2006. Lead URS reviewers were Mr. Geoff Byrne (Senior Principal) and Mr. Terence Jeyaretnam (Principal, Lead CSAP).

OBJECTIVES

The objectives of the independent review were to provide an opinion, based on the AA1000 Assurance Standard, on:

- a) data accuracy via data trails, back to original records where possible
- b) the corporate processes and mechanisms in place for the preparation and delivery of the Report
- c) adequacy and relevance of information contained in the Report
- d) compliance of the Report against the Global Reporting Initiative (GRI) Sustainability Reporting Guidelines 2002.

SCOPE OF WORK

The URS review of BHP Billiton sites' health, safety, environmental, community and socio-economic performance was addressed through the following scope of work:

- ◆ visits to 12 sites located in North America (San Juan Coal Company and Trinidad/Tobago Asset Team), South America (BMS Mine, Spence and Cerro Matoso), Australia (Appin Colliery, Kalgoorlie Smelter and Yandi/Marillana Creek Mine), Southern Africa (Hillside Aluminium, Hotazel and Douglas Colliery) and Europe/UK (Liverpool Bay Asset Team)
- ◆ review of the understanding by operations' of BHP Billiton's sustainability challenges
- ◆ interviews with relevant BHP Billiton and contractor personnel.

URS reviewed the corporate processes and mechanisms in place for the preparation and delivery of the 2006 Sustainability Report, in accordance with the AA1000 Assurance Standard, through:

- ◆ reviewing data collation, transcription and reporting processes at corporate headquarters in Melbourne
- ◆ cross-checking of a selection of reported data from site questionnaires for selected of sites
- ◆ reviewing of data trails from site retrieval to final report for selected material parameters

- ◆ reviewing of report drafts and the final Report for significant anomalies.

The data and information were assessed on the basis of the three AA1000 Assurance Standard principles of completeness, materiality and responsiveness.

URS assessed the Report against the GRI Sustainability Reporting Guidelines 2002 to confirm that the Report has been prepared in accordance with these Guidelines.

Whilst the URS scope of work did not allow detailed review of all data sets contained in the Report, the review was designed to provide a representative sample. However, the scope specifically excluded verification of data relating to commodity production and group-wide financial information.

URS INDEPENDENCE AND IMPARTIALITY

Report data and information reviewed by URS does not include any work with which URS has had substantial involvement. URS has not been involved in the design or compilation of the Report or decisions regarding its content (except by way of this review).

URS, its parent companies and related companies have previously been engaged by BHP Billiton and its subsidiary companies, and anticipates further engagements in relation to the provision of consultancy advice to BHP Billiton. The average annual value of work carried out by URS Corporation globally on behalf of BHP Billiton over the 3 year period to December 2005 represents less than 0.1 percent of URS Corporation's gross revenue over that same period.

URS Corporation does not make any direct investment in any member of the BHP Billiton Group or their business interests and has no commercial interests other than as a service provider to BHP Billiton.

All team members were deemed competent in accordance with the URS Assurance Principles and their expertise and qualifications have been communicated to BHP Billiton.

FINDINGS – OVERALL

URS is of the opinion that the Report fairly represents the health, safety, environment, community and socio-economic performance of BHP Billiton within the context of its review. URS is of the opinion that the Report has been prepared in accordance with the GRI Sustainability Reporting Guidelines 2002 and the Mining and Metals Sector Supplement.

In conjunction with this Statement, URS will be providing a supporting report to BHP Billiton that provides findings of the corporate data review and the site reviews.

URS noted that the data management systems and collection processes had improved significantly in the past year. Notwithstanding, in reviewing information prepared for the Report, URS has identified a number of areas that BHP Billiton should consider as improvements to its reporting and performance monitoring systems. These include the following:

- ◆ inconsistencies could be avoided during the report development process by increased internal verification checks when drafting the report
- ◆ a framework outlining the source and responsibility for each data item would improve the reporting process
- ◆ increasing the level of understanding on site with respect to HSEC questionnaire interpretation.

During this review we did not identify any inconsistencies that would have a material impact on data and statements included in the Report.

FINDINGS – MATERIALITY

During our corporate data review some minor inconsistencies were noted in data, which were amended in the final report.

Inconsistencies noted during this review were conveyed to, and corrected by, BHP Billiton prior to finalisation of the Report. Additionally, inconsistencies noted during the site reviews, were conveyed to the BHP Billiton Reporting team, and data and information were amended accordingly.

URS observed during this review that BHP Billiton identifies material issues through a number of fora capturing a range of stakeholders at the corporate level.

FINDINGS – COMPLETENESS

Based on our review URS considers that the Report appropriately describes the process BHP Billiton has for identifying issues, impacts and stakeholder views considering the size and complexity of the organisation.

DISCLAIMER

It should be noted that the veracity of the information summarised in the Report is dependent upon the uniformity, consistency and thoroughness of site/operational staff reporting all relevant matters. Whilst URS identified a good appreciation of BHP Billiton's Sustainability Challenges and site specific initiatives at site level, URS did not and can not determine precisely the uniformity, consistency and thoroughness of reporting. URS has prepared this Statement for the use of BHP Billiton in accordance with the usual care and thoroughness of the consulting profession. The opinions provided are based on generally accepted practices and standards at the time they were prepared. No other warranty, expressed or implied, is made as to the professional advice included in this Statement. To the extent permitted by law, URS excludes all liability that may arise from the professional advice contained in this Statement. This Statement must be read in conjunction with the supporting document prepared by URS. No responsibility is accepted for use of any part or all of this Statement in any other context or for any other purpose or by third parties. No third party is entitled to rely on any matter contained in this Statement without URS's prior consent in writing. Neither URS's name nor the material submitted in this Statement may be included in any prospectus or use in offering or representations in connection with the sale of securities or participation interest to the public without URS's prior consent in writing. URS owes no duty of performance to any party other than our contracted client.

URS notes that some sites where BHP Billiton has no operational control, but where BHP Billiton has ownership, are not included in the report, and believe this is appropriate, but suggest that report boundaries are more clearly enunciated.

It was evident during our review that BHP Billiton has continued its efforts towards the company-wide implementation and integration of systems and standards to enhance consistency across the company.

URS conducted an independent review of the Global Reporting Initiative (GRI) Navigator prepared by BHP Billiton against the GRI Sustainability Reporting Guidelines 2002 and the Mining and Metals Sector Supplement. The Navigator is comprehensive and user-friendly, incorporating all core and additional GRI indicators, as well as relevant indicators from the Sector Supplement.

FINDINGS – RESPONSIVENESS

URS notes that at the corporate level BHP Billiton has in place stakeholder engagement mechanisms to help determine material environmental, health and safety and community issues to the organisation.

Based on the scope of work undertaken, we conclude that the Report reliably describes the mechanisms BHP Billiton uses to respond to significant health, safety, environmental, community and socio-economic issues, as well as effectively engaging its relevant stakeholders.

6 September 2006
Melbourne



URS Australia Pty Ltd

Links

The following provides additional information relevant to this Report.

Initiatives, Activities and Organisations

<p><u>Advanced Lead Acid Battery Consortium</u></p> <p>The Advanced Lead Acid Battery Consortium is a research consortium originally formed in 1992 to advance the capabilities of the valve-regulated lead acid battery in order to help electric vehicles become a reality.</p>	<p>http://www.alabc.org/about.html</p>
<p><u>Australian Aluminium Council</u></p> <p>The Australian Aluminium Council is the peak body representing the Australian aluminium industry.</p>	<p>http://www.aluminium.org.au/Page.php</p>
<p><u>Australian Coal Association</u></p> <p>The Australian Coal Association (ACA) is an industry body representing the interests of the black coal producers in New South Wales and Queensland, the states that produce 98 per cent of Australia's black coal.</p>	<p>http://www.australiancoal.com.au/about.htm</p>
<p><u>Australian Coal Association Research Program</u></p> <p>Australian black coal producers contribute to a program of collaborative research that is conducted for the benefit of the coal mining industry.</p>	<p>http://www.acarp.com.au/About.htm</p>
<p><u>Australian Gas Association</u></p> <p>The Australian Gas Association provides high-quality competitive certification services to industry and regulatory authorities and contributes to the safety, reliability and energy efficiency of gas and related products sold to Australian and international consumers.</p>	<p>http://www.aga.asn.au/</p>
<p><u>Australian Petroleum Production and Exploration Association (APPEA)</u></p> <p>APPEA's mission is to achieve a legislative, administrative, economic and social framework that efficiently and effectively facilitates safe, environmentally responsible, socially responsible and profitable oil and gas exploration, development and production.</p>	<p>http://www.appea.com.au/</p>

Initiatives, Activities and Organisations

<p><u>Australian Uranium Industry Framework Steering Group</u></p> <p>In 2005 the Australian Government, through its Department of Industry, Tourism and Resources, established the Uranium Industry Framework (UIF) Steering Group to propose a uranium strategy.</p>	<p>http://www.industry.gov.au/content/itrinternet/cmscontent.cfm?objectId=9D8CB957-65BF-4956-B689FE67052B7D23&indexPages=/content/sitemap.cfm?objectId=F0E1EFA6-65BF-4956-BBD491F3BA78093A</p>
<p><u>Basel Convention for Hazardous Waste</u></p> <p>During its first decade (1989-1999), the Convention was principally devoted to setting up a framework for controlling the “transboundary” movements of hazardous wastes, that is, the movement of hazardous wastes across international frontiers. It also developed the criteria for “environmentally sound management”. A Control System, based on prior written notification, was also put into place.</p>	<p>http://www.basel.int</p>
<p><u>Business in the Community</u></p> <p>Business in the Community is a unique movement in the UK of 700 member companies, with a further 1600 participating in its programs and campaigns. It operates through a network of 98 local business-led partnerships, as well as working with 45 global partners. Its purpose is to inspire, challenge, engage and support business in continually improving its positive impact on society.</p>	<p>http://www.bitc.org.uk</p>
<p><u>Carbon Disclosure Project</u></p> <p>The Carbon Disclosure Project (CDP) provides a secretariat for the world’s largest institutional investor collaboration on the business implications of climate change. CDP represents an efficient process whereby many institutional investors collectively sign a single global request for disclosure of information on greenhouse gas emissions. CDP then sends this request to the FT500 largest companies in the world, and 300 of the 500 largest corporations in the world currently report their emissions through this website.</p>	<p>http://www.cdproject.net/about.asp</p>

Initiatives, Activities and Organisations

<p>COAL21</p> <p>Initiated by the Australian Coal Industry, COAL21 is a program aimed at fully realising the potential of advanced technologies to reduce or eliminate greenhouse gas emissions associated with the use of coal. The program will also explore coal's role as a primary source of hydrogen to power the hydrogen-based economy of the future. The program is a collaborative partnership between Federal and State governments, the coal and electricity generation industries and the research community.</p>	<p>http://www.coal21.com.au</p>
<p>Coal Institute Advisory Board</p> <p>The Coal Industry Advisory Board (CIAB) is a group of high level executives from coal-related industrial enterprises, established by the International Energy Agency (IEA) in July 1979 to provide advice to the IEA on a wide range of issues relating to coal.</p>	<p>http://www.iea.org/ciab/</p>
<p>Cobalt Development Institute</p> <p>The Cobalt Development Institute is an international organisation of a wholly non-profit making character. It is an association of producers, users and traders of cobalt with the objectives of promoting the responsible use of cobalt in all forms; consulting organisations, agencies and governments for research or investigations on all matters concerning cobalt; providing members with topical information on all cobalt matters including health & safety and environmental legislation plus regulatory affairs possibly affecting their interests; promoting co-operation between members; and providing a forum for the exchange of information concerning the resources, production and uses of cobalt.</p>	<p>http://www.thecdi.com</p>
<p>Cooperative Research Centre for Greenhouse Gas Technologies</p> <p>The Cooperative Research Centre for Greenhouse Gas Technologies (CO2CRC) researches the logistic, technical, financial and environmental issues of storing industrial carbon dioxide emissions in deep geological formations. The CRC also researches the capture and separation of carbon dioxide from industrial systems.</p>	<p>http://www.co2crc.com.au</p>

Initiatives, Activities and Organisations

<p><u>Cooperative Research Centre for Coal in Sustainable Development</u></p> <p>The Cooperative Research Centre for Coal in Sustainable Development (CCSD) brings together the majority of Australia's coal research skill base as well as experts in sustainability. The vision of CCSD is to optimise the contribution of coal to a sustainable future, and its research is underpinned by a focus on the three dimensions of sustainability - economic, social and environmental.</p>	<p>http://www.ccsd.biz</p>
<p><u>Copper Development Centre</u></p> <p>The Copper Development Centre is the peak body for the copper industry in Australia, representing some of the country's most influential companies in mining, manufacturing, production and recycling.</p>	<p>http://www.copper.com.au</p>
<p><u>Council for Responsible Jewellery Practices</u></p> <p>The Council for Responsible Jewellery Practices (CRJP) was founded in May 2005 with 14 members from a cross-section of the diamond and gold jewellery supply chain, from mine to retail. Council members believe that a coordinated worldwide approach to addressing ethical, social and environmental challenges will drive continuous improvement throughout the jewellery industry to the benefit of stakeholders.</p>	<p>http://www.responsiblejewellery.com</p>
<p><u>Dow Jones Sustainability World Indexes</u></p> <p>The Dow Jones Sustainability World Indexes (DJSI) consist of more than 300 companies that represent the top 10 per cent of the leading sustainability companies in 60 industry groups in the 34 countries covered by the biggest 2500 companies in the Dow Jones Global Indexes.</p>	<p>http://www.sustainability-index.com</p>
<p><u>European Copper Institute</u></p> <p>The European Copper Institute (ECI) and its members are committed to strengthening and expanding copper usage in Europe. On behalf of its members, ECI aims to strengthen public awareness of copper's value to society and its role in the environment, based on scientific research.</p>	<p>http://www.eurocopper.org/eci/jsp/index.jsp?lng=2</p>

Initiatives, Activities and Organisations

<p><u>Extractive Industries Transparency Initiative</u></p> <p>The UK Prime Minister Tony Blair announced the Extractive Industries Transparency Initiative at the World Summit on Sustainable Development in Johannesburg, September 2002. It aims to increase transparency in transactions between governments and companies within extractive industries.</p>	<p><u>http://www.eitransparency.org</u></p>
<p><u>FTSE4Good Index</u></p> <p>Launched in 2001, the FTSE4Good Index series has been designed to measure the performance of companies that meet globally recognised corporate responsibility standards and to facilitate investment in those companies. The series covers four markets: US, Global, UK and Europe. Each market consists of both a benchmark and tradeable index.</p>	<p><u>http://www.ftse4good.com/./ftse4good/index.jsp</u></p>
<p><u>FutureGen</u></p> <p>FutureGen is an initiative to build the world's first integrated sequestration and hydrogen production research power plant. The US\$1 billion project is intended to create the first zero-emissions fossil fuel plant. When operational, the prototype will be the cleanest fossil fuel fired power plant in the world.</p>	<p><u>http://www.kansasenergy.org/futuregen/info.html</u></p>
<p><u>Global Reporting Initiative</u></p> <p>The Global Reporting Initiative (GRI) is a multi-stakeholder process and independent institution whose mission is to develop and disseminate globally applicable Sustainability Reporting Guidelines.</p>	<p><u>http://www.globalreporting.org</u></p>
<p><u>Green LeadTM Project</u></p> <p>Green LeadTM is the use of best practices in all aspects of mining, transport, manufacture, use and reuse of lead in order to minimise people and planet exposure to lead. The concept is based on taking a "whole of life cycle" approach to lead and its impacts on people and the environment and to analyse all of them.</p>	<p><u>http://www.greenlead.com</u></p>

Initiatives, Activities and Organisations

<p><u>International Aluminium Institute</u></p> <p>The International Aluminium Institute (IAI) is the global forum of aluminium producers dedicated to the development and wider use of aluminium as a competitive and uniquely valuable material. The IAI in all its activities supports the concept that aluminium is a material that lends itself to improving world living standards and developing a better and sustainable world environment.</p>	<p>http://www.world-aluminium.org</p>
<p><u>International Copper Association</u></p> <p>The International Copper Association, Ltd. (ICA) is the leading organisation for promoting the use of copper worldwide. The Association's 37 member companies represent about 80 per cent of the world's refined copper output and are among the largest copper producers, copper alloy fabricators, and wire and cable companies in the world.</p>	<p>http://www.copperinfo.com/index1.html</p>
<p><u>International Copper Study Group</u></p> <p>The International Copper Study Group (ICSG) is an intergovernmental organisation that serves to increase copper market transparency and promote international discussions and cooperation on issues related to copper.</p>	<p>http://www.icsg.org</p>
<p><u>International Council on Mining and Metals</u></p> <p>The International Council on Mining and Metals (ICMM) members offer strategic industry leadership towards achieving continuous improvements in sustainable development performance in the mining, minerals and metals industry. ICMM provides a common platform for the industry to share challenges and responsibilities as well as to engage key constituencies on issues of common concern at the international level, based on science and principles of sustainable development.</p>	<p>http://www.icmm.com</p>

Initiatives, Activities and Organisations

International Lead and Zinc Research Organisation

The International Lead and Zinc Research Organisation, Inc. (ILZRO) was formed in 1958 as a non-profit research foundation. Silver was added to its core group of research metals in 2002 with the launching of the Silver Research Consortium. ILZRO's sponsors include most of the major producers of lead, zinc and silver and significant numbers of end-users of these metals from among the steel, automotive, die casting, battery, galvanizing and other industries.

<http://www.ilzro.org/home.htm>

International Lead and Zinc Study Group

The International Lead and Zinc Study Group (ILZSG) is an intergovernmental organisation that regularly brings together 28 member countries in an international forum to exchange information on lead and zinc.

<http://www.ilzsg.org/ilzsgframe.htm>

International Lead Management Centre

The International Lead Management Centre (ILMC) was founded by the lead-producing industry and works cooperatively with the lead products applications sectors. Its expertise and advice is available across lead production, applications, recycling and disposal. It is also responsible for working with governments, industries and the international community to manage the risk of lead exposure.

<http://www.ilmc.org/about.html>

International Nickel Study Group

The International Nickel Study Group is an autonomous, intergovernmental organisation with membership comprising nickel producing, consuming and trading countries. The objectives of the Group are:

- to collect and publish improved statistics on nickel markets (including production, consumption, trade, stocks, prices and other statistics such as recycling)
- to publish other information on nickel, such as data on industry facilities and environmental regulations
- to provide a forum for discussions on nickel issues of interest to nickel producing and consuming countries and their industries, including environmental issues.

<http://www.insg.org>

Initiatives, Activities and Organisations

<p><u>International Petroleum Industry Environmental Conservation</u></p> <p>The International Petroleum Industry Environmental Conservation (IPIECA) is a voluntary non-profit organisation whose membership includes petroleum companies and associations at the national, regional or international levels. Separate working groups within IPIECA address global environmental and social issues related to the petroleum industry. IPIECA also helps members identify new global issues and assesses their potential impact on the oil industry.</p>	<p>http://www.ipieca.org</p>
<p><u>ISO 14001 - Environmental Management Systems</u></p> <p>The ISO 14000 family consists of standards relating to environmental management systems and others that are specific tools for realising environmental policy and achieving objectives and targets.</p>	<p>http://www.iso.org</p>
<p><u>Johannesburg Stock Exchange Socially Responsible Investment Index</u></p> <p>The JSE Socially Responsible Investment Index was launched in 2004. This was the culmination of an extensive consultation and development process, which the JSE has guided over the past year as a means of helping to focus the debate on triple bottom-line practices in South Africa.</p>	<p>http://ftse.jse.co.za</p>
<p><u>Lead Development Association International</u></p> <p>The Lead Development Association International is dedicated to encouraging the responsible use of lead and its compounds.</p>	<p>http://www.ldaint.org/default.htm</p>
<p><u>Millennium Ecosystem Assessment</u></p> <p>The Millennium Ecosystem Assessment (MEA) is an international work program designed to meet the needs of decision makers and the public for scientific information concerning the consequences of ecosystem change for human wellbeing and options for responding to those changes.</p>	<p>http://www.millenniumassessment.org</p>

Initiatives, Activities and Organisations

<p><u>Minerals Council of Australia</u></p> <p>The Minerals Council of Australia (MCA) represents Australia's exploration, mining and minerals processing industry, nationally and internationally, in its contribution to sustainable development and society.</p>	<p>http://www.minerals.org.au</p>
<p><u>Mining, Minerals and Sustainable Development</u></p> <p>Mining, Minerals and Sustainable Development (MMSD) was an independent two-year process of consultation and research with the objective of understanding how to maximise the contribution of the mining and minerals sector to sustainable development at the global, national, regional and local levels. The Project began in April 2000 and was designed to produce a Final Report, a series of Working Papers, and to create a dialogue process capable of being carried forward into the future. MMSD was managed by the <u>International Institute for Environment and Development</u> in London, UK, under contract to the <u>World Business Council for Sustainable Development</u> (WBCSD). The project was initiated by WBCSD and supported by the <u>Global Mining Initiative</u> (GMI).</p>	<p>http://www.iied.org/mmsd</p>
<p><u>Nickel Producers Environmental Research Association</u></p> <p>The Nickel Producers Environmental Research Association provides information on the use and properties of nickel and the safe use of nickel in the workplace.</p>	<p>http://www.nipera.org/</p>
<p><u>OHSAS 18001 - Occupational Health and Safety Management Systems</u></p> <p>OHSAS 18001 was developed to be compatible with the ISO 9001 (Quality) and ISO 14001 (Environmental) management systems standards, in order to facilitate the integration of quality, environmental and occupational health and safety management systems by organisations. The specification gives requirements for an occupational health and safety (OH&S) management system, to enable an organisation to control its OH&S risks and improve its performance. It does not state specific OH&S performance criteria, nor does it give detailed specifications for the design of a management system.</p>	<p>http://www.osha-bs8800-ohsas-18001-health-and-safety.com/ohsas-18001.htm</p>

Initiatives, Activities and Organisations

<p><u>SA 8000 - Social Accountability Standard</u></p> <p>Social Accountability International (SAI) is a US-based, non-profit organisation dedicated to the development, implementation and oversight of voluntary verifiable social accountability standards. SAI's first social accountability system, SA8000, is a way for retailers, brand companies, suppliers and other organisations to maintain just and decent working conditions throughout the supply chain.</p>	<p>http://www.cepaa.org</p>
<p><u>Silver Research Consortium</u></p> <p>The Silver Research Consortium (SRC) is a program of the International Lead Zinc Research Organisation, Inc. Formed in 2002, its mandate is to carry out research aimed at improving existing products, exploring new uses of silver, and ensuring that this venerable metal is used in accordance with sound sustainability principles.</p>	<p>http://www.ilzro.org/src/about.htm</p>
<p><u>South African Chamber of Mines</u></p> <p>The South African Chamber of Mines is a prominent industry employers' organisation that exists to serve its members and promote their interests in the South African mining industry.</p>	<p>http://www.bullion.org.za/welcome.htm</p>
<p><u>UK Offshore Operators Association</u></p> <p>UK Offshore Operators Association (UKOOA) is the representative organisation for the UK offshore oil and gas industry. Its members are companies licensed by the Government to explore for and produce oil and gas in UK waters.</p>	<p>http://www.ukooa.co.uk/ukooa/</p>
<p><u>United Nations Environment Program</u></p> <p>The UNEP World Conservation Monitoring Centre provides information for policy and action to conserve the living world. Programs concentrate on species, forests, protected areas, marine, mountains and fresh waters, plus habitats affected by climate change such as polar regions. The relationship between trade and the environment and the wider aspects of biodiversity assessment are also addressed.</p>	<p>http://www.unep-wcmc.org</p>

Initiatives, Activities and Organisations

<p><u>United Nations Global Compact</u></p> <p>The United Nations Global Compact is an international initiative that brings together companies with UN agencies, labour organisations and civil society to support ten principles covering human rights, labour, environment and anti-corruption.</p>	<p>http://www.unglobalcompact.org</p>
<p><u>United Nations Universal Declaration of Human Rights</u></p> <p>On December 10, 1948 the General Assembly of the United Nations adopted and proclaimed the Universal Declaration of Human Rights as a common standard of achievement for all peoples and all nations, to the end that every individual and every organ of society, keeping this Declaration constantly in mind, shall strive by teaching and education to promote respect for these rights and freedoms and by progressive measures, national and international, to secure their universal and effective recognition and observance, both among the peoples of Member States themselves and among the peoples of territories under their jurisdiction.</p>	<p>http://www.un.org/rights</p>
<p><u>US-UK Voluntary Principles on Security and Human Rights</u></p> <p>Throughout 2000, representatives from the US Department of State and the UK Foreign and Commonwealth Office met with oil, mining and energy companies, together with human rights, labour and corporate responsibility groups, to develop a set of Voluntary Principles on Security and Human Rights. These principles are designed to provide practical guidance that will strengthen human rights safeguards in company security arrangements in the extractive sector. They are the basis of a global standard for the extractive sector. The principles are the first set of guidelines of their sort for this sector.</p>	<p>http://www.state.gov/g/drl/rls/2931.htm</p>
<p><u>World Bank Operational Directive on Involuntary Resettlement</u></p> <p>The World Bank Operational Directive on Involuntary Resettlement states that project planning must avoid and minimise involuntary resettlement and that, if people lose their homes or livelihoods as a result of Bank-financed projects, they should have their standard of living improved or at least restored.</p>	<p>http://www.ifc.org/ifcext/enviro.nsf/Content/ESRP/\$FILE/OD430_InvoluntaryResettlement.pdf</p>

Initiatives, Activities and Organisations

<p><u>World Business Council for Sustainable Development</u></p> <p>The World Business Council for Sustainable Development (WBCSD) is a coalition of 180 international companies united by a shared commitment to sustainable development. Its mission is to provide business leadership as a catalyst for change towards sustainable development and to promote the role of eco-efficiency, innovation and corporate social responsibility.</p>	<p>http://www.wbcsd.ch</p>
<p><u>World Coal Institute</u></p> <p>The World Coal Institute (WCI) is a non-profit, non-governmental association of coal enterprises and associations, the only international body working on a worldwide basis on behalf of the coal industry.</p>	<p>http://www.worldcoal.org/</p>
<p><u>World Conservation Union (IUCN)</u></p> <p>The World Conservation Union (ICUN) is the world's largest conservation network bringing together government agencies, non-government organisations, scientists and experts from 181 countries in a worldwide partnership. The Union's mission is to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.</p>	<p>http://www.iucn.org</p>
<p><u>World Health Organization</u></p> <p>The World Health Organization is the United Nations' specialised agency for health. Established in 1948, its objective is the attainment by all peoples of the highest possible level of health. Health is defined in WHO's Constitution as a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.</p>	<p>http://www.who.int</p>
<p><u>World Nuclear Association</u></p> <p>The World Nuclear Association (WNA) is the global organisation that seeks to promote the peaceful worldwide use of nuclear power as a sustainable energy resource for the coming centuries. Specifically, the WNA is concerned with nuclear power generation and all aspects of the nuclear fuel cycle, including mining, conversion, enrichment, fuel fabrication, plant manufacture, transport, and the safe disposition of spent fuel.</p>	<p>http://www.world-nuclear.org</p>

About Us

BHP Billiton is the world's largest diversified resources company. The Company aims to be diversified in terms of our markets and countries of operation, and this enhances the stability of our cash flows and capacity to invest and grow throughout the business and commodity price 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.

Our Profile

We have around 38,000 employees working in more than 100 operations and offices in some 25 countries. Read more: [BHP Billiton Locations Map](#) (PDF 88 Kb)

The central tenet of the BHP Billiton business model is that its diversified portfolio of high-quality assets provides more stable cash flows and greater capacity to drive growth than the traditional resource cyclicals. In 2006, we generated revenue of US\$39.1 billion, underlying earnings before interest and tax (underlying EBIT) of US\$15.3 billion, attributable profit excluding exceptional items of US\$10.2 billion and available cash flow after interest and tax of US\$10.5 billion. As at 30 June 2006 our market capitalisation was US\$123 billion.

Our shareholder base is widely diversified, with approximately 58 per cent of shares held in Australia and Asia, 33 per cent in the UK and Europe, and 9 per cent in Africa.

Our key markets downstream are refiners and processors of raw material, for example, steelworks, smelters, petroleum refiners, thermal power stations and diamond cutters. For a summary of the various uses for our products, read [Our Resources at Work](#) (PDF 116 Kb).

During the year we sold our Tintaya copper mine in Peru and entered into an agreement for the sale of Southern Cross Fertilisers Pty Ltd (SCF). On 21 June we also announced the agreement to sell our Australian coal bed methane (CBM) interests; the sale was completed on 21 August 2006 and is effective 1 January 2006.

Our Structure

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

BHP Billiton was created through the DLC merger of BHP Limited (now BHP Billiton Limited) and Billiton Plc (now BHP Billiton Plc), which was concluded on 29 June 2001.

The headquarters of BHP Billiton Limited, and the global headquarters of the combined BHP Billiton Group, are located in Melbourne, Australia. BHP Billiton Plc is located in London, United Kingdom. Both companies have identical [boards of directors](#) and are run by a unified [management team](#). Shareholders in each company have equivalent economic and voting rights in the BHP Billiton Group as a whole.

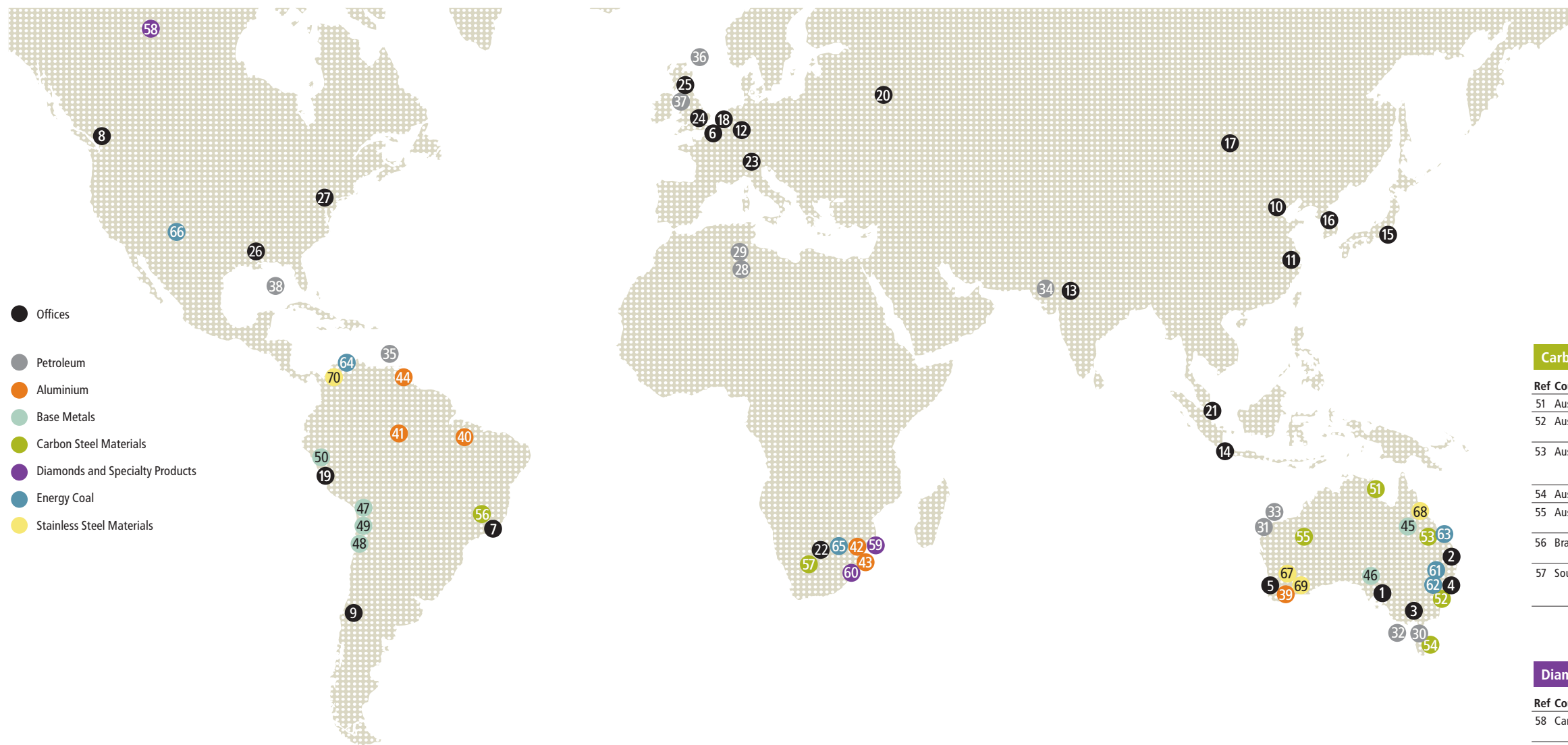
The DLC structure maintains pre-existing primary listings on the Australian Stock Exchange (through BHP Billiton Limited) and London Stock Exchange (through BHP Billiton Plc), along with a secondary listing on the Johannesburg Stock Exchange (through BHP Billiton Plc) and American Depositary Receipts listings on the New York Stock Exchange.

In addition to our headquarters in Melbourne and our presence in London, BHP Billiton also has corporate centres in Johannesburg, South Africa, and Houston, USA.

Our organisation is designed around Customer Sector Groups (CSGs), which are focused on customers, rather than operations. These CSGs are supported by finance, development, legal and marketing (including transport and logistics) functions. 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.

Customer Sector Groups

CSG	Business Activity	Annual attributable volumes of production for significant commodities	Sustainability Performance 2005/06
Aluminium	mining of bauxite, refining to alumina and smelting to produce aluminium	1.4 million tonnes of aluminium 4.2 million tonnes of alumina	Read more: Our Performance>Customer Sector Group Overview>Aluminium
Base Metals	mining of copper, lead, zinc, gold, silver and uranium, processing of copper and uranium oxide	1.3 million tonnes of copper	Read more: Our Performance>Customer Sector Group Overview>Base Metals
Carbon Steel Materials	mining and processing of iron ore, mining of metallurgical coal and mining and smelting of manganese	97.1 million tonnes of iron ore 35.6 million tonnes of metallurgical coal 5.3 million tonnes of manganese ore 0.7 million tonnes of manganese alloy	Read more: Our Performance>Customer Sector Group Overview>Carbon Steel Materials
Diamonds and Specialty Products	mining and processing of diamonds and titanium minerals, exploration and technology, production of high-analysis fertiliser	2.6 million carats of diamonds	Read more: Our Performance>Customer Sector Group Overview>Diamonds and Specialty Products
Energy Coal	mining of thermal coal	85.8 million tonnes of thermal coal	Read more: Our Performance>Customer Sector Group Overview>Energy Coal
Petroleum	onshore and offshore processing of oil, gas, liquefied natural gas, liquefied petroleum gas	45.9 million barrels of crude oil and condensate 360.4 billion cubic feet of natural gas	Read more: Our Performance>Customer Sector Group Overview>Petroleum
Stainless Steel Materials	mining and processing of nickel and cobalt	0.2 million tonnes of nickel.	Read more: Our Performance>Customer Sector Group Overview>Stainless Steel Materials



- Offices
- Petroleum
- Aluminium
- Base Metals
- Carbon Steel Materials
- Diamonds and Specialty Products
- Energy Coal
- Stainless Steel Materials

BHP Billiton locations

Offices

Ref	Country	Location
1	Australia	Adelaide ●◆
2	Australia	Brisbane ●▲
3	Australia	Melbourne (Global Headquarters) ◆●▲
4	Australia	Newcastle ■
5	Australia	Perth ◆●▲■
6	Belgium	Antwerp ●
7	Brazil	Rio de Janeiro ●▲
8	Canada	Vancouver ▲
9	Chile	Santiago ◆●▲
10	China	Beijing ●▲
11	China	Shanghai ●
12	Germany	Essen ●
13	India	New Delhi ●▲
14	Indonesia	Jakarta ●
15	Japan	Tokyo ●
16	Korea	Seoul ●
17	Mongolia	Ulaanbaatar ▲
18	Netherlands	The Hague ●
19	Peru	Lima ▲
20	Russia	Moscow ●▲
21	Singapore	Singapore ●
22	South Africa	Johannesburg ◆●▲■
23	Switzerland	Baar ●
24	UK	London ◆
25	UK	Sheffield ●
26	US	Houston ◆●
27	US	Pittsburgh ●

◆ Corporate Centres
● Marketing Offices
▲ Minerals Exploration Offices
■ Technology Centres

Petroleum

Ref	Country	Site/Asset	Description	Ownership
28	Algeria	Ohanet	Joint operator with Sonatrach of wet gas development	45%
29	Algeria	ROD Integrated Development	Onshore oil development	36.04%
30	Australia	Bass Strait	The Bass Strait operations produce oil, condensate, LPG, natural gas and ethane	50%
31	Australia	Griffin	Operator of oil and gas project offshore WA	45%
32	Australia	Minerva	Operator of Minerva gas field development in the Otway Basin	90%
33	Australia	North West Shelf	One of Australia's largest resource projects, producing liquids, LNG and domestic gas	8.33–16.67%
34	Pakistan	Zamzama	Operator of onshore gas development	38.5%
35	Trinidad and Tobago	Angostura	Operator of oil field	45%
36	UK	Bruce/Keith	Oil and gas production in the UK North Sea (sold in August 2006)	16–31.83%
37	UK	Liverpool Bay	Operator of oil and gas development in the Irish Sea	46.1%
38	US	Gulf of Mexico	Interests in several producing assets, the Atlantis, Neptune and Shenzi developments, and a significant exploration acreage position	4.95–100%
–	Various	Exploration	Exploration interests in Algeria, Australia, Brunei, Maritime Canada, Colombia, Namibia, Pakistan, South Africa, Trinidad and Tobago, UK, US	–

Aluminium

Ref	Country	Site/Asset	Description	Ownership
39	Australia	Worsley	Integrated alumina refinery/ bauxite mine	86%
40	Brazil	Alumar	Alumina refinery and aluminium smelter	36–40%
41	Brazil	MRN	Bauxite mine	14.8%
42	Mozambique	Mozal	Aluminium smelter	47.1%
43	South Africa	Hillside/Bayside	Two aluminium smelters	100%
44	Suriname	Paranam	Alumina refinery and bauxite mines	45%

Base Metals

Ref	Country	Site/Asset	Description	Ownership
45	Australia	Cannington	Silver, lead and zinc mine in north-west Queensland	100%
46	Australia	Olympic Dam	Large underground copper/uranium mine in South Australia	100%
47	Chile	Cerro Colorado	Copper mine in northern Chile, producing cathode copper through a SX-EW leach operation	100%
48	Chile	Escondida	The world's largest copper mine, located in northern Chile	57.5%
49	Chile	Spence	Open cut copper mine under development	100%
50	Peru	Antamina	Large copper-zinc mine	33.75%

Carbon Steel Materials

Ref	Country	Site/Asset	Description	Ownership
51	Australia	GEMCO	Producer of manganese ore	60%
52	Australia	Illawarra Coal	Three underground coal mines	100%
53	Australia	Queensland Coal	World's largest supplier of high-quality metallurgical coal for steel production	50–80%
54	Australia	TEMCO	Producer of manganese alloys ●	60%
55	Australia	WA Iron Ore	Pilbara iron ore mine, rail and port operations	85–100%
56	Brazil	Samarco	An efficient low-cost producer of iron ore pellets	50%
57	South Africa	Samancor Manganese	Integrated producer of manganese ore (Hotazel Manganese Mines) and alloys (Metalloys)	60%

Diamonds and Specialty Products

Ref	Country	Site/Asset	Description	Ownership
58	Canada	Yellowknife	EKATI Diamond Mine in the Northwest Territories of Canada	80%
59	Mozambique	Corridor Sands	Titanium minerals project	90%
60	South Africa	Richards Bay Minerals	World's largest producer of titanium slag	50%

Energy Coal

Ref	Country	Site/Asset	Description	Ownership
61	Australia	Hunter Valley Energy Coal	Mt Arthur Coal	100%
62	Australia	Illawarra Coal	Marketing agent for energy coal output	–
63	Australia	Queensland Coal	Marketing agent for energy coal output	–
64	Colombia	Cerrejon	Largest coal producer in Colombia	33.3%
65	South Africa	Ingwe	Largest coal producer in South Africa	100%
66	US	New Mexico Coal	Mine-mouth operations	100%

Stainless Steel Materials

Ref	Country	Site/Asset	Description	Ownership
67	Australia	Nickel West	Nickel assets including Mt Keith and Leinster operations, Kalgoorlie nickel smelter and concentrator and Kwinana nickel refinery	100%
68	Australia	QNI Yabulu Refinery	The Yabulu refinery is one of the world's major laterite nickel-cobalt processing plants	100%
69	Australia	Ravensthorpe Nickel Project	Ravensthorpe nickel mine and processing facility (currently in development)	100%
70	Colombia	Cerro Matoso	Integrated ferronickel mining and smelting complex in north Colombia	99.8%

Our Resources at Work

Customer Sector Group	Petroleum	Aluminium	Base Metals						Carbon Steel Materials			Diamonds and Specialty Products		Energy Coal	Stainless Steel Materials	
Commodity	OIL AND NATURAL GAS	ALUMINIUM	COPPER	GOLD	LEAD	SILVER	URANIUM*	ZINC	MANGANESE	IRON ORE	COKING COAL	DIAMONDS	TITANIUM	THERMAL COAL	NICKEL	COBALT
 Energy	Fuel, heating, electricity generation	High-tension power lines, wires and cables	Wire and cables, electrical wiring in buildings, electrical generators and motors		Lead-acid storage batteries (car batteries), remote area power storage		Electricity generation	Zinc carbon batteries	Dry cell batteries					Electricity generation, heating	Electricity generation turbines, batteries	Rechargeable lithium batteries for mobile telephones and laptop computers, jet engine turbines
 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, plumbing, soundproofing, stained glass windows	Solder		Roofing, fences, doors, handles, paints, plumbing, nuts and bolts		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		Street furniture, building cladding, stainless steel	Tyre adhesives, magnets, carbide cutting tools
 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	Lead foil, radiation shields, toxic waste storage containers, dyes, solder	Photographic paper and film, medicines, super conductors	Electricity generation	Galvanising and corrosion protection, car bodies, carburettors, tyres	Steel alloys	Steelmaking, transport equipment, motor vehicles, farm machinery	Steelmaking	Polishing compounds for fine optical surfaces, jewel bearings, wire drawing dies	Titanium metal for aerospace equipment, engines, abrasives, ceramics, robotics	Electricity generation, heating, cement	Computer hard disks, surgical implements and implants, jet engines, food and beverage equipment, pharmaceutical equipment, vehicles, metal hardening	Paints, enamels, glazes
 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	Electronic and electrical appliances such as radios and TV sets (soldered connections)			Door handles and other household components, brass fittings		Refrigerators, washing machines, ovens		Knife 'sharpeners'	Paper products, computer and TV screens		Colour TV tubes, kitchen sinks, white goods	Videotape coatings, heating elements on electric stoves
 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, bicycles, vehicles	Ornaments, telephones, cooking utensils, home heating systems, decorative applications, coins	Jewellery, watches, currency, dentistry, decoration for dinnerware and ornaments	Computers, leadlight windows, glass in TV and computer screens for radiation protection	Jewellery, watches, dinnerware and ornaments, mirrors, cutlery, currency, medallions	Electricity	Medications, zinc cream, TV sets, computer parts, toys	Glass, ceramics, dry cell batteries	Food cans, vehicles, tools, cutlery, jewellery, watches		Jewellery	Cosmetics and sunscreens, fabric, clothing, jewellery, heart pacemakers, hip replacements, food colouring	Electricity, fuel for cooking and heating	Kitchen utensils, coins, mobile telephones, bathroom and kitchen fittings and fixtures	

* Safeguards are in place to ensure that uranium produced by our Olympic Dam operation is used only for power generation in countries that are signatories to the Nuclear Non-Proliferation Treaty and have bilateral agreements with the Australian Government.

The Business Case For Sustainable Development

Our bottom-line performance is dependent on ensuring access to resources and securing and maintaining our licence to operate and grow. Maximising the bottom-line is, however, about recognising the value protection and value add that can be achieved through enhanced performance in HSEC aspects. Delivery of this enhanced performance is a core expectation of our management teams. This is termed our sustainability value add and the value it can bring to our business is recognised through the following.

Reduced business risk and enhanced business opportunities

Understanding and managing risk provides greater certainty for shareholders, employees, customers and suppliers, and the communities in which we operate. By managing our business risk we can be better informed, more decisive and can pursue growth opportunities with increased confidence.

The aim is to embed risk management in all critical business systems and processes so that risks can be identified and managed in a consistent and holistic manner.

Gaining and maintaining our licence to operate and grow

Access to resources is crucial to the sustainability of our business. Fundamental to achieving access to resources is effectively addressing heightened political and societal expectations related to the environmental and social aspects of our business.

Improved operational performance and efficiency

Many key operational performance indicators are inextricably linked to sustainability performance. For example, improving energy efficiencies reduces both costs and greenhouse gases; increasing plant life reduces maintenance cycles, which then reduces requirements for consumables and replacement items. Reducing wastes immediately eliminates operational costs. The application of innovation and business improvement processes can not only improve operational efficiency and performance but also deliver sustainability gains.

Improved attraction and retention of our workforce

Our workforce is an essential element of our business, and being able to attract and retain a quality workforce is fundamental to our success.

Maintaining a healthy and safe workplace is a universal value of all employees. Effective employee development and training programs, attractive remuneration packages, addressing work/life balance, and providing a fair and non-discriminatory work environment all contribute to employee attraction and retention.

Maintained security of operations

Asset security is a critical element that can be significantly impacted by the nature of relationships with host communities. Trusting and supportive relationships can lead to reduced security risks, whereas distrustful relationships can lead to heightened security risks. This is particularly critical for our operations in parts of the world with politically unstable environments.

Enhanced brand recognition and reputation

The benefits of enhanced brand recognition and reputation are many but often difficult to quantify. Understanding what our stakeholders perceive as responsible behaviour, meeting these expectations and achieving recognition from financial institutions, investors and customers can deliver value.

For example, enhanced reputation may foster an increased belief that the Company has the credibility and capabilities to deliver on its commitments. This can promote shareholders' faith in proposed investments, communities' faith in community development plans, governments' faith in successful delivery of projects, and business partners' faith that we are reliable and competent in all that we do.

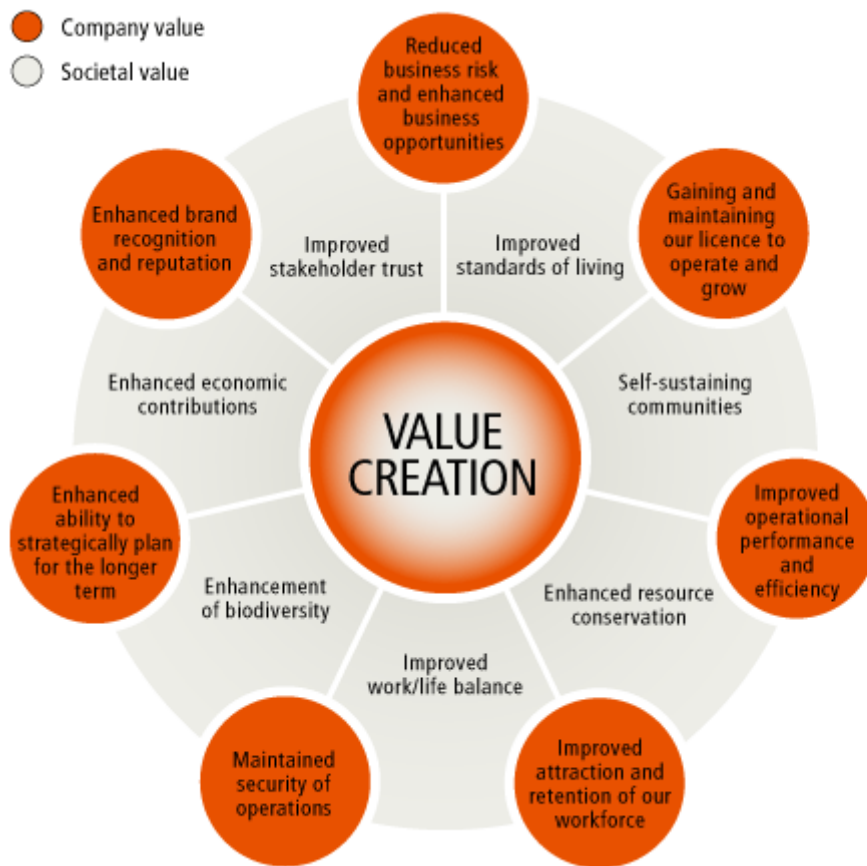
Enhanced ability to strategically plan for the longer term

By anticipating and understanding trends in society — new regulations, heightened societal expectations and improved scientific knowledge — and assessing these against our business models, our ability to proactively plan for the longer term is improved. This includes entering emerging markets, revising product mixes or changing operational technologies.

Beyond the Business Case

Beyond the business case described above, there are also many clear societal benefits that flow from our ability to integrate aspects of sustainability into our business. These benefits include, but are not limited to, contributing to improved standards of living and self-sustaining communities.

The diagram below illustrates the many facets of value creation at BHP Billiton.



Our Approach To Sustainable Development

The Company's commitment to sustainable development has evolved over our long history of operational experience and through lessons learned along the way.

The most commonly stated definition of sustainable development is 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (source: World Commission on Environment and Development [Brundtland Commission], 1987).

For BHP Billiton, sustainable development is about ensuring our business remains viable and contributes lasting benefits to society through the consideration of social, environmental, ethical and economic aspects in all that we do.

Working through complex operational issues associated with our operations has highlighted environmental and social performance as a critical success factor for the Company. We are well aware of the costs of getting it wrong but, more importantly, we recognise the value that can be created by getting it right. Consequently, we adopt a holistic approach to business strategy, seeking to realise value for all our stakeholders through a sustainable business philosophy.

Line managers have ultimate accountability for ensuring our businesses contribute to sustainable development and move towards our aspirational goal of Zero Harm. This is implemented through a number of processes, such as our HSEC Management Standards and our Guide to Business Conduct.

Read more:

- [Our Vision](#) of what sustainable development means to BHP Billiton
- [Our Strategy](#) for working towards sustainable development
- [Measuring Progress](#) of our journey towards sustainable development
- [The Business Case](#) for sustainable development
- [Governance](#) for processes we have in place to implement our commitment to sustainable development.

Our Vision

Our vision for sustainable development is to be the company of choice — creating sustainable value for shareholders, employees, contractors, suppliers, customers, business partners and host communities. Central to our vision is our aspirational goal of Zero Harm to people, our host communities and the environment.

In simple terms,

Zero Harm means:

- we aspire to create a workplace that is injury, illness and incident free. We seek to minimise and, where possible, eliminate our environmental impacts over time.

Company of choice means:

- being selected by shareholders as a valued investment, based on strong financial performance and sound governance processes.
- being preferred by employees for providing a safe, healthy and equitable workplace and caring about the communities in which we live.
- being preferred by the communities in which we operate for our contribution to sustainable community wellbeing.
- being preferred by our business partners — customers, suppliers, contractors, governments and joint venture partners — as a committed and reliable partner in delivering sustainable value.

This emphasis on sustainable value means we have the willingness to invest for the future while ensuring we deliver value in the shorter term.

Our Strategy

Our sustainable development strategy comprises two dimensions – the business dimension and the sustainability dimension – that together contribute to bottom-line performance.

The business dimension represents traditional contributors to a financially successful and competitive business, as without a profitable business we are unable to contribute to the broader goals of sustainability. Our bottom-line performance is, however, dependent upon ensuring access to resources and gaining and maintaining a licence to operate and grow. This highlights the criticality of the value protection and value add that can be achieved through enhanced performance in non-financial dimensions – or sustainability dimensions.

BHP Billiton business dimensions

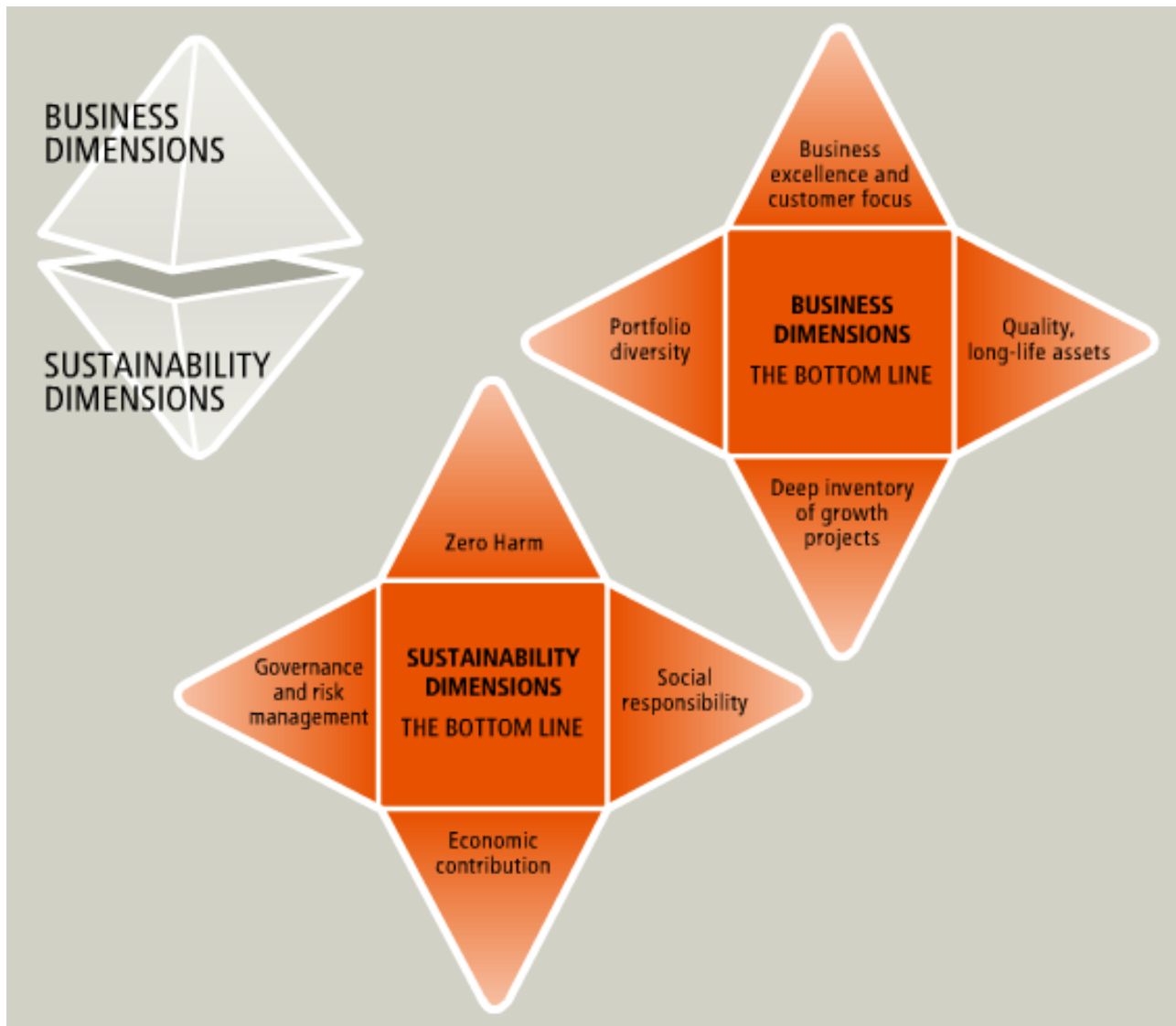
- business excellence and customer focus
- portfolio diversity
- deep inventory of growth projects across all CSGs, including greenfield and brownfield projects, as well as appropriate merger and acquisition activities
- quality, long-life assets.

BHP Billiton sustainability dimensions

- aspiring towards Zero Harm to people, our host communities and the environment
- ensuring effective governance and risk management processes are in place
- recognising the need to be socially responsible and contribute to sustainable community development
- ensuring the broader economic contributions of our operations are effectively injected into the regions where we operate.

Maximising bottom-line performance is about recognising the value protection and value add to be achieved through performance in non-financial dimensions.

A useful metaphor we apply to our sustainable development strategy is illustrated below. Together, our strategic dimensions combine to form a structure similar to that of a natural diamond. An inherently stable structure, with the strength in each dimension contributing equally to an even stronger, stable and more valuable whole, and a robust bottom-line, the diamond is symbolic of our approach to sustainable development.



Measuring Progress

Our Sustainable Development Road Map is a strategy map that provides a contextual framework for how we measure our progress on our journey towards sustainable development.

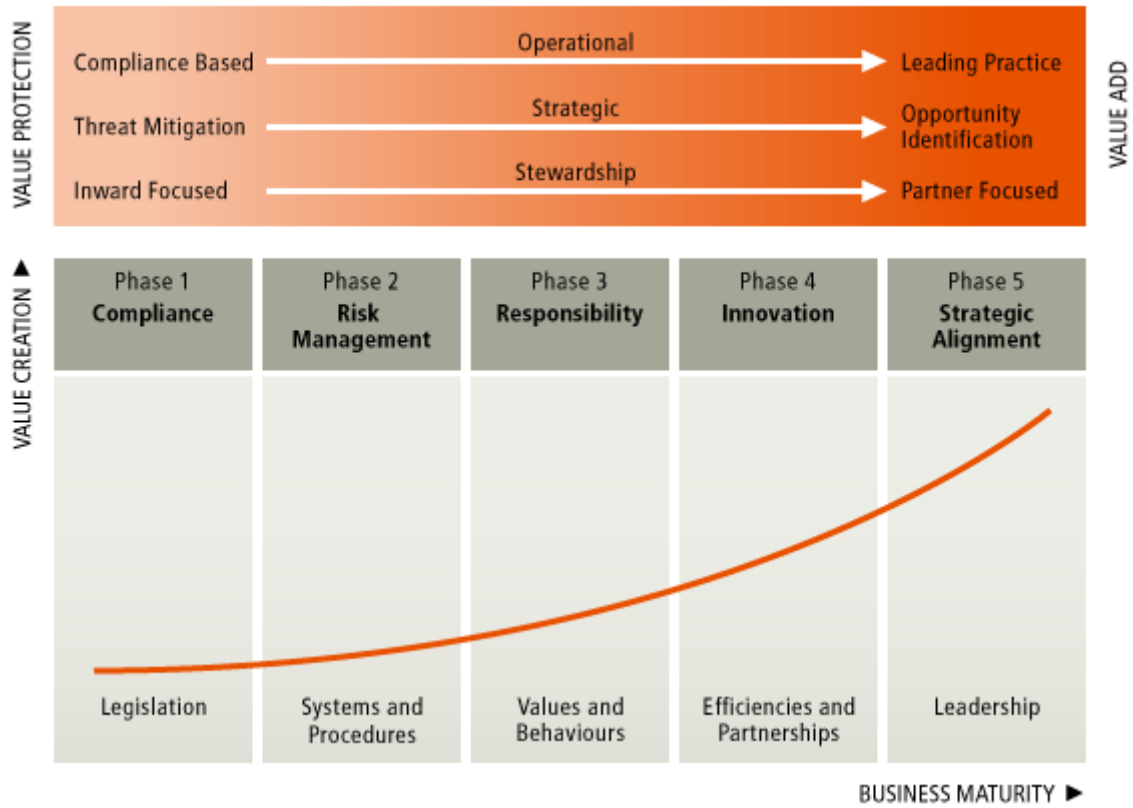
We encourage our managers to place their decisions in the context of this Road Map and question how they can better improve the sustainability performance of their operations.

The Road Map seeks to illustrate that there are three contexts to consider when making decisions that influence our ability to contribute to sustainable development:

- at the operational level, we encourage our managers to increasingly seek out leading practices across the HSEC dimensions.
- on a strategic level, we encourage management teams to identify opportunities that drive sustainable value creation.
- at the commodity level, we encourage our businesses to demonstrate stewardship by building partnerships across the life cycles of our products to deliver broader business and societal returns.

We encourage our operations to strive for excellence in areas where they perceive the greatest relevance to their stakeholders and business. This approach recognises that there may not always be a need for operations to excel in all aspects of sustainability. While each stage in maturity is distinct, the requirements of the previous stage must be maintained and built upon to progress in maturity.

A mature approach to sustainable development lead us to the strategic alignment of opportunities – for example, developing new ways to reuse coal dust and thus reducing waste disposal areas. Read more: [Environment Case Studies: Waste Recycling and Reuse.](#)



BHP Billiton Sustainable Development Road Map

	Maturity phases	Indicative milestones
1.	<p>Compliance What are our mandatory obligations? Are we meeting them?</p>	<ul style="list-style-type: none"> ● Compliance system in place for health, safety, environmental, social, ethical and economic performance ● Demonstrated compliance with relevant laws
2.	<p>Risk Management Where are our exposures? How can they be managed and minimised? We establish systems; measure, benchmark and review our performance; and develop strategies to continually improve performance.</p>	<ul style="list-style-type: none"> ● Risks identified, assessed, prioritised and managed ● Risk-based management systems are in place ● Strategies to improve performance identified and implementation plans developed ● Stakeholder engagement process implemented ● Non-financial performance measurement and reporting systems implemented
3.	<p>Responsibility Is sustainability part of the way our business lives and breathes? We develop a culture where strategic thinking and continuous improvement are internalised so that quality, efficiency and innovation become business as usual.</p>	<ul style="list-style-type: none"> ● Health, safety , environmental, social, economic and ethical aspects integral to business planning and employee remuneration ● Sustainability reports verified by a third party ● We advocate the benefits of sustainability to our industry and supply chain ● We advocate responsible business practice
4.	<p>Innovation What are the strategic business opportunities arising from our achievements? We benefit from actions taken to reduce our environmental and social impact by leveraging strategic, innovation or market advantages.</p>	<ul style="list-style-type: none"> ● Socially responsible investment attracted ● Spin-off technology or other business opportunity implemented ● Market access or penetration increased ● Business or products repositioned in marketplace
5.	<p>Strategic alignment How can we integrate aspects of sustainability into our business? We are positioned to adapt to the rapidly changing marketplace and are ready to exploit new opportunities or to set future market realities.</p>	<ul style="list-style-type: none"> ● Production systems are closed loop ● Productivity gains made ● Proactively identifying opportunities ● Business renowned as a leader, partner of choice

Our Sustainability Challenges

Our sustainability challenges are those issues that we believe may have a material impact on our ability to be a successful business. We recognise that these impacts can directly affect our shareholders, our employees, the communities in which we operate and, more generally, the broader society and the natural environment.

Our sustainable development activities are continually evolving as we learn from experience and interaction with all our stakeholders. They are, and will remain, deeply rooted in our corporate strategy, as evidenced by our Sustainable Development Policy and our public commitment to various corporate responsibility initiatives and internationally agreed standards, including the [United Nation's Universal Declaration of Human Rights](#) and [United Nations Global Compact](#).

In 2004, we identified five broad issues that we believe will have a material impact on our ability to be a successful business.

These issues were presented to our [Forum on Corporate Responsibility](#) for debate and consideration, resulting in a consolidated list of the top five sustainability challenges having relevance and material impact across all our operations and locations:

- [Eliminating Fatal Risks](#)
- [Occupational and Community Health](#)
- [Greenhouse Gas Emissions](#)
- [Access to and Management of Resources](#)
- [Sustainable Community Development and Closure of Operations](#).

The challenges are not in order of importance and require parallel action.

In 2006 the challenges were reviewed through stakeholder dialogues and discussions with our employees and the Forum on Corporate Responsibility. While their continued relevance was confirmed, their scope was expanded to more accurately reflect the nature of the issues we face.

Eliminating Fatal Risks

Refer to the following sections for details on our key sustainability challenge of eliminating fatal risks:

- [Our Challenge](#)
- [Our Drivers](#)
- [Our Approach](#)
- [Our 2006 Priorities](#)
- [Our 2006 Performance](#)
- [Our Goals](#).

Our Challenge

To fully implement and optimise the safety management standards we have developed, we need to ensure that all our employees and contractors understand, rigorously apply, and fully comply with these standards.

Our Drivers

Employees and contractors have a right to a safe work environment. Families and dependants also face having their lives devastated through the death or severe injury of a loved one.

To secure and maintain a licence to operate, BHP Billiton must be seen by host communities as a company that protects and cares for its people and one able to continue operating within increasingly stringent regulatory frameworks.

Our Approach

Across the organisation safety risks are managed through the risk-based [HSEC Management Standards](#) and other dedicated safety systems.

Our safety strategy is based on three principles:

- leadership effectiveness
- behaviours and awareness
- rigorous standards and systems for managing risks and ensuring full compliance.

These focus on our people and systems, with two key objectives:

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

Read more: [Safety>Our Approach](#).

Our 2006 Priorities







In 2006, the scope of this sustainability challenge was broadened to place greater emphasis on learning from significant incidents and contractor safety. As a result the priorities for the 2005/06 reporting year were:

- sharing and embedding the learnings from significant and near miss incidents
- ensuring that standards and procedures adopted by contractors are consistent with those of the Company
- fully implementing the Fatal Risk Control Protocols





- commencing reporting of the Total Recordable Injury Frequency Rate (TIFR) - this reflects the belief that, as we become stronger in reducing fatalities and serious injuries, we are able to look at less serious injuries that still affect our impact and not just those requiring time away from the workplace or a change in duties.

Read more: [Safety>Our Performance](#) for a full description of safety performance in 2006.




Our 2006 Performance

Targets		2005/06 Performance Against Target
Zero fatalities		Three fatalities in controlled activities ¹ (FY05:3)
Legal Compliance Zero fines and prosecutions ²		Seven fines greater than US\$1,000. Total fines paid US\$479,809 (FY05: US\$20,836) ³
Risk Management All sites to undertake annual self-assessments against the BHP Billiton HSEC Management Standards ⁴ and have plans to achieve conformance with the Standards by 30 June 2008		94 per cent of required self-assessments were completed at operating sites (FY05: 100 per cent)
		An overall conformance of 3.9 out of 5 has been achieved, compared to our conformance target of greater than 4 (FY05: 3.9 out of 5)
Risk registers to be in place and maintained at all sites ⁵ and within BHP Billiton businesses and Corporate offices		Risk registers are in place at 99 per cent of required sites, businesses and Corporate offices (FY05: 100%)
Safety 50% reduction in Classified Injury Frequency Rate ⁶ (excluding first aid treatments) at sites by 30 June 2007		During the year our Classified Injury Frequency Rate (CIFR) increased from 3.9 to 4.8, resulting in an overall reduction to date of 28% against the 2001/02 baseline CIFR of 6.7 (FY05: 42% reduction)

Performance change since last reporting period:

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

Overall performance against target:

-  Performance tracking steadily
-  Performance has improved
-  Performance has declined

1. Controlled activities are work related activities where BHP Billiton directly supervises and enforces HSEC standards.
2. Fines reported may relate to incidents that occurred in previous years.
3. Prosecutions included are those that have been determined during the year and resulted in fines. They may relate to incidents that occurred in previous years. The only exception is a safety fine, which was received in the 2005 reporting period but was not reported last year as it was being held in trust pending appeal. The fine became payable in the 2006 reporting period.
4. Issue 3 of the BHP Billiton HSEC Management Standards was introduced in September 2005.

5. Includes 59 sites in total, excludes exploration and development projects, sites being divested, closed sites, and offices. Also excludes recent acquisitions e.g. WMC, which have two years to achieve compliance with target.
6. 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.

Read more: [Targets Scorecard](#) for a review of performance against all Company sustainability targets.

Our Goals

- Continued focus on contractor engagement - specifically ensuring that all contractors and suppliers are treated equally, have access to company information and adopt standards and procedures that are consistent with our standards
- Assist operations and business groups to achieve a high level of consistency in the application of the Company's risk management policy, standards and techniques
- Reduce our Total Recordable Injury Frequency Rate, which aims to improve the visibility of all workplace incidents by including the total number of medical cases, not just those requiring time away from the workplace or a change in duties
- Continued tracking and review of the implementation progress of the Fatal Risk Control Protocols
- Continued tracking and monitoring of near miss reports as a source of information enabling identification of issues requiring safety interventions
- Supporting sites in introducing site-based behavioural-based safety programs as a mechanism for achieving sustainable behavioural change in working safely
- Integration and rollout of the recently developed BHP Billiton leadership model across the organisation
- Maximise benefit, use and value from the recently established BHP Billiton Global Safety Network.

Occupational and Community Health

Refer to the following sections for details on our key sustainability challenge of occupational and community health:

- [Our Challenge](#)
- [Our Drivers](#)
- [Our Approach](#)
- [Our 2006 Priorities](#)
- [Our 2006 Performance](#)
- [Our Goals](#)

Our Challenge

To ensure that our health programs are supporting our endeavours towards our goal of Zero Harm by recognising and influencing those factors that impact our employees, their families and our host communities.

Our Drivers

The effective management of the health of our employees, contractors and communities is integral to:

- maintaining operational performance and efficiency by having a workforce that is able to work productively
- continuing to attract and retain a workforce by establishing a reputation for a healthy workplace where the broader health needs of employees are also considered
- continuing to gain access to resources through improved capacity to work in areas where there are health risks, and demonstrating that this capacity contributes more broadly to the improved health of the communities where we operate.

Our Approach

The Company seeks to address the challenge of occupational and community health by applying a holistic approach to the management of health, targeting health impacts at work, at home and in the broader community.

Our health program is based on:

- continuing to develop, and refine standardised procedures for managing and reducing occupational exposure levels, and for measuring and reporting exposures
- Promoting an environment that contributes to our employees being both fit for work and fit for life, in recognition that many health issues overlap with the community and impact our ability to contribute to sustainable development
- Focusing our community health endeavours towards the prevention and treatment of three major communicable diseases that may impact many of our operations; namely HIV/AIDs, tuberculosis and malaria
- Supporting activities that extend health benefits beyond the communities in which we operate, including funding various medical research programs.

Read more: [Health>Our Approach](#).









Our 2006 Priorities

In 2006, the scope of this sustainability challenge was broadened to place greater emphasis on fatigue management. Other key areas of focus were:





- consolidating health significant incident data into the Company-wide Significant Incident Reporting System to improve the analysis of, and learnings from, significant incidents

- appointing a Global Practice Leader for the Fit for Work/Fit for Life Program, supported by an active Community of Practice and associated regional and site-based workshops
- initiating a Medical Assessment Project to facilitate the development of a set of Company-wide guidelines
- rolling out the Diesel Particulate initiative to all current underground mining operations, and initiating projects to reduce acid mist and nickel exposure
- establishing a Noise Community of Practice
- developing documentation (by our Pandemic Working Group) to assist our businesses in crisis and emergency response procedures
- taking a lead role in the development of a new HIV / AIDs immune therapy to be trialled in South Africa.




Our 2006 Performance

Targets	2005/06 Performance Against Target	
Legal Compliance Zero fines and prosecutions ¹		Seven fines greater than US\$1,000. Total fines paid US\$479,809 (FY05: US\$20,836) ²
Risk Management All sites to undertake annual self-assessments against the BHP Billiton HSEC Management Standards ³ and have plans to achieve conformance with the Standards by 30 June 2008		94 per cent of required self-assessments were completed at operating sites (FY05: 100 per cent)
		An overall conformance of 3.9 out of 5 has been achieved, compared to our conformance target of greater than 4 (FY05: 3.9 out of 5)
Risk registers to be in place and maintained at all sites ⁴ and within BHP Billiton businesses and Corporate offices		Risk registers are in place at 99 per cent of required sites, businesses and Corporate offices (FY05: 100%)
Health All sites ⁴ to implement a baseline survey on occupational exposure hazards and establish occupational hygiene monitoring and health surveillance programs		100 per cent of required sites have implemented baseline surveys (FY05: 100%)
Annual reduction in exposures above occupational exposure limits, expressed as a percentage of people of the workforce		Potential occupational exposure to Noise, if not for the use of personal protective equipment (PPE), reduced by 6 per cent from 2004/05, and reduced by 4 per cent compared to the baseline year of 2002/03 (FY05: 2% increase)
		During the year Other exposures, if not for the use of PPE, reduced by 10 per cent, and reduced by 5 per cent compared to the baseline year 2003/04 (FY05: 5% increase)
20 per cent reduction in incidence of occupational disease by 30 June 2007		During the year the incidence of occupational illness reduced by 10 per cent, resulting in an overall reduction of 46 per cent against the baseline 2002/03 (FY05: 36% reduction)

Performance change since last reporting period:

-  *Target exceeded or ahead of schedule*
-  *Target achieved (≥ 95%) or on track*
-  *Target behind schedule*
-  *Target not achieved*

Overall performance against target:

-  *Performance tracking steadily*
-  *Performance has improved*
-  *Performance has declined*

1. Fines reported may relate to incidents that occurred in previous years.
2. Prosecutions included are those that have been determined during the year and resulted in fines. They may relate to incidents that occurred in previous years. The only exception is a safety fine, which was received in the 2005 reporting period but was not reported last year as it was being held in trust pending appeal. The fine became payable in the 2006 reporting period.
3. Issue 3 of the BHP Billiton HSEC Management Standards was introduced in September 2005.
4. Includes 59 sites in total, excludes exploration and development projects, sites being divested, closed sites, and offices. Also excludes recent acquisitions e.g. WMC, which have two years to achieve compliance with target.

Read more:

- [Health>Our Performance](#) for a full description of health performance in 2005/06
- [Targets Scorecard](#) for a review of performance against Company-wide targets.

Our Goals

- Continue to implement our stringent Exposure Standards,
- Increase our focus on fatigue management, use of personal protective equipment and monitoring occupational illness,
- Work with other organisations to conduct a HIV/AIDS immunotherapy trial
- Further develop our preparedness to respond in the event that avian flu affects our communities.

Greenhouse Gas Emissions

Refer to the following sections for details on our key sustainability challenge of greenhouse gas emissions:

- [Our Challenge](#)
- [Our Drivers](#)
- [Our Approach](#)
- [Our 2006 Priorities](#)
- [Our 2006 Performance](#)
- [Our Goals](#).

Our Challenge

Our challenge as a member of global society is to help meet the world's minerals and energy needs while mitigating the potential impact of greenhouse gas emissions on the climate.

BHP Billiton is both a user and producer of fossil fuel energy products that create greenhouse gas emissions. Scientific evidence suggests that greenhouse gas emissions associated with fossil fuel consumption and other human activity are contributing to global warming. Global warming may be associated with an increasing frequency of extreme weather conditions that could have a significant impact on the environment and the quality of human life.

Looking forward over the next two decades, global demand for minerals and energy is anticipated to continue to grow, with the strongest growth in developing countries. Access to affordable energy, minerals and metals is a critical component of poverty alleviation and social and economic development and, therefore, will remain central to society.

Our Drivers

Our approach to addressing the challenge of climate change is driven by a desire to:

- respond to customer needs. Many of our customers, particularly in Europe, have their greenhouse gas emissions regulated. We can create value by continuing to explore ways to assist customers to reduce their emissions footprint.
- respond to community expectations and government regulations. The communities in which we operate and where we sell our products are concerned about the impacts of climate change within their national borders and globally. To earn their respect and attract and retain employees, we must take a stewardship approach and be recognised as a responsible company.
- protect long-term growth in shareholder value. As a result of climate change, we expect that customers will seek to diversify their fuel supplies. The range of possible changes to energy markets is wide, and analysis and actions to take account of these is one driver of our strategy. Failure to respond to customer needs and to anticipate regulatory change will ultimately impact on the demand for our products and the costs of doing business.
- Protect the value of our assets. We must assess risk and prepare appropriately for climate change-related events that could affect our operations.

Our Approach

Our approach to this sustainability challenge is focused on:

- controlling the emissions that we produce at our sites
- seeking ways to reduce the emissions produced by our customers when they consume our products, both now and in the future.

Read more: [Environment>Our Approach>Climate Change](#).

Our 2006 Priorities

In 2005/06, our focus was directed towards:





- continuing to improve energy efficiency at our sites, and managing knowledge in this area
- improving the preparedness of our operations for climate change-related events
- product stewardship – the impacts on climate change of sourcing, producing, supplying and using products.

Read more: [Environment>Our Performance>Emissions](#) for a full description of emissions performance in 2005/06.




Our 2006 Performance

Targets	2005/06 Performance Against Target
Legal Compliance Zero fines and prosecutions ¹	 Seven fines greater than US\$1,000. Total fines paid US\$479,809 (FY05: US\$20,836) ²
All sites to undertake annual self-assessments against the BHP Billiton HSEC Management Standards ³ and have plans to achieve conformance with the Standards by 30 June 2008	 94 per cent of required self-assessments were completed at operating sites (FY05: 100 per cent)
	 An overall conformance of 3.9 out of 5 has been achieved, compared to our conformance target of greater than 4 (FY05: 3.9 out of 5)
All sites ⁴ to maintain ISO 14001 Certification	 98 per cent of sites requiring ISO 14001 are certified or have been recommended for certification by their ISO auditor (FY05: 100%)
Risk Management Risk registers to be in place and maintained at all sites ⁴ and within BHP Billiton businesses and Corporate offices	 Risk registers are in place at 99 per cent of required sites, businesses and Corporate offices (FY05: 100%)
Energy and Greenhouse All sites with emissions greater than 100,000 tonnes per year of carbon dioxide equivalent ⁵ are required to have and maintain energy conservation plans with specific targets	 Energy conservation plans in place at 98 per cent of required sites and at eight sites that were below the emissions threshold (FY05: 100%, 11 sites)
All sites with emissions greater than 100,000 tonnes per year of carbon dioxide equivalent ⁵ are required to have and maintain greenhouse gas management programs	 Greenhouse gas management programs in place at 98 per cent of required sites and at seven sites that were below the emissions threshold (FY05: 100%, 12 sites)
Aggregate Group target for reduction in greenhouse gas emissions per unit of production of 5% by 30 June 2007	 During the year our greenhouse gas intensity index increased by 3 per cent, resulting in an overall reduction to date of 8 per cent against the baseline ⁶

Performance change since last reporting period:

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

Overall performance against target:

-  Performance tracking steadily
-  Performance has improved
-  Performance has declined

1. Fines reported may relate to incidents that occurred in previous years.
2. Prosecutions included are those that have been determined during the year and resulted in fines. They may relate to incidents that occurred in previous years. The only exception is a safety fine, which was received in the 2005 reporting period but was not reported last year as it was being held in trust pending appeal. The fine became payable in the 2006 reporting period.
3. Issue 3 of the BHP Billiton HSEC Management Standards was introduced in September 2005.
4. Includes 59 sites in total, excludes exploration and development projects, sites being divested, closed sites, and offices. Also excludes recent acquisitions e.g. WMC, which have two years to achieve compliance with target.
5. Forty-eight sites have emissions greater than 100,000 tonnes per year of carbon dioxide equivalent and, combined, account for 98 per cent of the Group's greenhouse gas emissions.
6. The Group's intensity indices have been modified to exclude data from the Chrome business in all years, including the base year, as it was divested. Ex-WMC sites data have not been included in intensity indices as they were not part of the business when the baselines were set.

Read more: [Targets Scorecard](#) for a review of performance against all Company sustainability targets.

Our Goals

- Establish a process for Australian operations to meet Energy Efficiency Opportunity legislation, effective 1 July 2006.
- Undertake further energy efficiency reviews at all BHP Billiton sites to continuously improve our performance
- Participate in sector initiatives to define and share leading energy efficiency practice.

Access to and Management of Resources

Refer to the following sections for details on our key sustainability challenge of access to and management of resources:

- [Our Challenge](#)
- [Our Drivers](#)
- [Our Approach](#)
- [Our 2006 Priorities](#)
- [Our 2006 Performance](#)
- [Our Goals.](#)

Our Challenge

Access to resources is fundamental to the sustainability of our business. Our challenge is to achieve access to the resources relevant to our scope of operations while addressing heightened political and societal expectations related to obtaining and maintaining a 'licence to operate'.

Our Drivers

Appropriately identifying and effectively managing issues about access to resources is essential if we are to:

- obtain and maintain a 'licence to operate'
- improve access to new business opportunities
- keep ahead of regulations and reduce business uncertainty
- enhance and protect our reputation
- differentiate ourselves from our competitors.

These are key to our sustainability as a business and our ability to deliver long-term share growth and shareholder value.

Our Approach

Our approach to addressing the challenge of access to and the management of resources is based on:

- having systems and processes — Sustainable Development Policy and HSEC Management Standards — to manage risks and issues, including those relating to our relationships with our internal and external stakeholders, human rights and the environment, including biodiversity.
- requiring sites to assess their exposure to potential human rights issues and develop management plans to address key exposures through our human rights self-assessment process.
- all operations developing and implementing a community relations plan to ensure important stakeholder issues are identified and managed.
- Requiring environmental and social impact assessments for all development projects.
- sites having and maintaining land management plans to identify, protect and enhance agreed beneficial land uses, including the consideration of biodiversity values. Furthermore, sites that operate in sensitive areas continue to implement biodiversity management programs.
- utilising internal tollgating and assessment tools, including formal risk and impact assessments, to identify environmental and social risks and issues associated with accessing resources and to ensure they are appropriately managed.
- proactively engaging our stakeholders and working with them to identify and manage their issues and concerns.

- publicly committing to a number of policy positions in conjunction with our key stakeholders; for example:
 - In conjunction with the [International Council on Mining and Metals](#) and the [World Conservation Union](#), we undertake not to explore or mine in World Heritage properties and commit to take all possible steps to ensure that the effects of operations adjacent to these areas are not incompatible with the outstanding universal values of World Heritage properties.
 - Our position on riverine tailings developed in conjunction with our [Forum on Corporate Responsibility](#) states we will not commit to a new mining project that disposes of waste rock or tailings into a river.
 - Our position on deep sea tailings placement, developed in conjunction with our [Forum on Corporate Responsibility](#), states 'BHP Billiton has decided not to pursue Deep Sea Tailings Placement (DSTP) as a potential tailing disposal option for any of its current prospects. The Company also believes that given the very specific circumstances where DSTP could be considered appropriate, it is unlikely that the technology will be pursued in any of our future developments.'
 - Our [Black Economic Empowerment and Employment Equity](#) policies underpin our commitment to accelerating development and fostering entrepreneurship of historically disadvantaged groups in South Africa.

Read more:

- [Community>Our Approach](#)
- [Environment>Our Approach>Closure Planning](#)
- [Our Stakeholders.](#)

Our 2006 Priorities

In 2006, the scope of this sustainability challenge was broadened to place greater focus on social and environmental impact assessment to support operational licences and approvals and on integrating closure planning with mine planning and budgeting. The priorities for the 2005/06 reporting year were:

- Access to Land
 - Completing environmental and social impact assessments for all development projects, in accordance with our HSEC Management Standards, and completing environmental management plans to manage identified issues
 - Managing Australian pastoral land holdings in accordance with relevant management plans.
- Access to Water
 - Establishing an internal Community of Practice to share knowledge and leading practice on water management
 - Continuing to identify business risks and opportunities for access, efficient use and disposal
 - Developing alternative water supply solutions at Olympic Dam (Australia) and Escondida (Chile) to relieve supply issues and reduce environmental impacts of historic water extraction methods
 - Improving water efficiency and recovery at all operations in accordance with BHP Billiton efficiency targets.

- Biodiversity
 - Continuing to implement biodiversity management plans at sites operating in sensitive areas
 - Surveying flora and fauna as part of exploration programs in sensitive areas
 - Identifying and assessing biodiversity risks at all sites and, where relevant, incorporating these in site closure plans
 - Establishing an internal Community of Practice to share knowledge and leading practice on biodiversity management.





- Access to Skills
 - Improving the effectiveness of our recruitment strategies and processes to effectively target the skill-sets required
 - Having a strong focus on the recruitment and development of graduates from around the world
 - Developing key relationships with industry and educational and institutional bodies to develop a pool of candidates for the mining industry
 - Providing scholarships and direct university sponsorship to ensure the continued sustainability of the education infrastructure supporting the supply of professional mining resources
 - Increasing our support of and intake into apprenticeships programs with a view to increasing the pool of trade-qualified personnel
 - Developing our internal talent to best meet the future needs of the business.

Our 2006 Performance




Targets	2005/06 Performance Against Target	
Zero significant environmental incidents (i.e. rated 3 and above on the BHP Billiton Consequence Severity Table)		Three Level 3 environmental incidents (FY05: 3)
Legal Compliance Zero fines and prosecutions ¹		Seven fines greater than US\$1,000. Total fines paid US\$479,809 (FY05: US\$20,836) ²
Risk Management All sites to undertake annual self-assessments against the BHP Billiton HSEC Management Standards ³ and have plans to achieve conformance with the Standards by 30 June 2008		94 per cent of required self-assessments were completed at operating sites (FY05: 100%)
		An overall conformance of 3.9 out of 5 has been achieved, compared to our conformance target of greater than 4 (FY05: 3.9 out of 5)
All sites ⁴ to maintain ISO 14001 Certification		98 per cent of sites requiring ISO 14001 are certified or have been recommended for certification by their ISO auditor (FY05: 100%)
Risk registers to be in place and maintained at all sites ⁴ and within BHP Billiton businesses and Corporate offices		Risk registers are in place at 99 per cent of required sites, businesses and Corporate offices (FY05: 100%)

<p>Water</p> <p>Aggregate Group target of 10 per cent reduction in fresh water consumption per unit of production by 30 June 2007</p>		<p>During the year our water intensity reduced by 6 per cent, resulting in an overall increase to date of 1 per cent against the baseline⁵</p>
<p>All sites with fresh water consumption greater than 500 ML per year⁶ to have and maintain water management plans</p>		<p>Water management plans in place at 99 per cent of required sites and at 27 sites that were below the usage threshold (FY05: 97%; 26 sites)</p>
<p>Waste</p> <p>All sites⁴ to have and maintain waste minimisation programs</p>		<p>Waste minimisation programs in place at 97 per cent of required sites and at 7 sites that were not required to meet this target (FY05: 98%; 14 sites)</p>
<p>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</p>		<p>During the year our general waste intensity index reduced by 14 per cent, resulting in an overall reduction to date of 24 per cent against the baseline⁵</p>
		<p>During the year our hazardous waste intensity index increased by 22 per cent, resulting in an overall reduction to date of 38 per cent against the baseline⁵</p>
<p>Land management</p> <p>All sites⁷ to have and maintain land management plans to protect and enhance agreed beneficial uses</p>		<p>Land management plans in place at 97 per cent of required sites and at 17 sites that were not required to meet this target (FY05: 98%; 21 sites)</p>
<p>Product stewardship</p> <p>Life cycle assessments prepared for all major BHP Billiton minerals products⁸ (incorporating participation in industry programs as appropriate)</p>		<p>Life cycle assessments (ISO14043 compliant) have been completed for all major commodities.</p>

Performance change since last reporting period:

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

Overall performance against target:

-  Performance tracking steadily
-  Performance has improved
-  Performance has declined

1. Fines reported may relate to incidents that occurred in previous years.
2. Prosecutions included are those that have been determined during the year and resulted in fines. They may relate to incidents that occurred in previous years. The only exception is a safety fine, which was received in the 2005 reporting period but was not reported last year as it was being held in trust pending appeal. The fine became payable in the 2006 reporting period.
3. Issue 3 of the BHP Billiton HSEC Management Standards was introduced in September 2005.
4. Includes 59 sites in total, excludes exploration and development projects, sites being divested, closed sites, and offices. Also excludes recent acquisitions e.g. WMC, which have two years to achieve compliance with target.

5. The Group's intensity indices have been modified to exclude data from the Chrome business in all years, including the base year, as it was divested. Ex-WMC sites data have not been included in intensity indices as they were not part of the business when the baselines were set.
6. Forty-six sites have fresh water consumption greater than 500 ML per year and, combined, account for more than 98 per cent of the Group's consumption.
7. Excludes petroleum platforms, exploration and development projects, closed sites, and offices with no significant community or land management issues. Also excludes recent acquisitions, e.g. WMC, which have a year to achieve compliance with the target.
8. Excludes petroleum and diamonds.

Read more: [Targets Scorecard](#) for a review of performance against all Company sustainability targets.

Our Goals

- Expand our biodiversity focus from being site-specific to regional (2007)
- Examine our approach to biodiversity offsets and continue to develop opportunities (2007)
- Develop metrics to better understand biodiversity values and improve the identification and management of biodiversity-related issues (mid term)
- Develop Company-wide Environmental and Social Impact Assessment Guidelines to ensure consistency in the study and evaluation of the impacts of new developments (2007)
- Improve our approach to the assessment and management of human rights risks within our sphere of influence (2007)
- Fully integrate environmental and social assessment processes and findings into business management systems (mid term)
- Improve our access to and retention of skills through the implementation of a multi-dimensional human resource strategy (mid term)
- Continue to improve our approach to ensuring that water is recognised and managed as a critical resource in exploration and development activities (ongoing)
- Further investigate mining and processing technologies to reduce our high-quality water requirements (mid term)
- Establish a new BHP Billiton water efficiency target (2007).

Sustainable Community Development and Closure of Operations

Refer to the following sections for details on our key sustainability challenge of sustainable community development and closure:

- [Our Challenge](#)
- [Our Drivers](#)
- [Our Approach](#)
- [Our 2006 Priorities](#)
- [Our 2006 Performance](#)
- [Our Goals](#).

Our Challenge

To maximise the benefits to communities during the operational phase of a site so that a positive lasting legacy exists after closure.

Our Drivers

As stated in the BHP Billiton Charter, one of the indicators of success is that 'the communities in which we operate value our citizenship'. Sustainable community development ensures communities benefit throughout all phases of the life of an operation – through development, operation and closure.

A stable, healthy and supportive society enables businesses to operate effectively. By contributing to the social development of the communities where we operate, we are also creating an environment in which the Company can grow.

With many new projects located in developing countries, it is increasingly important for us to be able to demonstrate to key stakeholders, including governments, that we have a good track record in making a sustainable contribution to the environment and community, as well as providing economic benefits.

An increasingly important aspect for consideration by prospective employees is the social responsibility credentials of a company. To attract and retain the best employees, we need to be able to engage employees in our community efforts and provide opportunities for them to be proud of their Company.

Our Approach

Our approach to addressing the challenge of sustainable community development and closure is based on:

- sharing the Company's financial success with the communities in which it operates. Since 2002, the Company has met its target to spend one per cent of pre-tax profits (on a rolling three-year average) on voluntary community programs.
- sustainability. Initiatives that will be sustainable beyond the life of the project are preferred, and we are careful to avoid creating dependency on our support.
- community participation and engagement. It is critical that the selection and delivery of community programs is a participative process as the people best placed to respond to local needs and concerns, and hence manage community development, are those living in the host communities.
- long-term relationships. Any good working relationship takes time, so rather than becoming involved in one-off commitments the Company generally looks to develop longer-term relationships with not-for-profit organisations. This enables a rapport to be established between the organisations and provides an opportunity to explore creative opportunities for the organisations to assist each other, such as through the sharing of skills and knowledge.

- employee involvement. Wherever possible, Company employees are involved in the delivery of community programs as it enables them to gain a better understanding of the contribution the Company is making to the community, giving them a sense of pride. A Company initiative which supports our employees who actively contribute to their communities is the BHP Billiton Matched Giving Program. This program matches an employee's donation, volunteering activity or fundraising efforts with a cash contribution and, in doing so, directs some of the Company's community funding towards organisations that are personally supported by employees.
- A consistent approach to community development. While the Company operates its community development programs at a regional and local level, it facilitates a consistent approach to community development via Company-wide guidelines.
- Mandated compliance with the Company's Closure Standard, which was officially adopted in July 2005. This standard applies to all investment opportunities and controlled operations and strives to leave a legacy that outlasts the operation itself and to ensure a positive future for host communities. Closure planning is required throughout the life cycle of the operation, starting with exploration and development and continuing as long as necessary.

Read more:

- [Community>Our Approach>Community Programs](#)
- [Environment>Our Approach>Closure Planning](#).

Our 2006 Priorities

In 2006, the scope of this sustainability challenge was broadened to place greater focus on social and environmental impact assessment to support licences and approvals and on integrating closure planning with mine planning and budgeting. The priorities for the 2005/06 reporting year were:

- continuing to share the Company's financial success with the communities in which it operates by spending one per cent of pre-tax profits (on a rolling three-year average) on voluntary community programs
- all sites preparing and maintaining a community relations plan
- increasing the extent to which community development and closure knowledge is shared throughout the Company
- trialling different methods of evaluating community development programs
- all sites conducting a review of their closure plans to ensure alignment with the Company's Closure Standard
- integrating closure planning into all business planning processes throughout the organisation, including financial planning, mine planning and community consultation to better understand expectations for final land use.





Read more:

- [Community>Our Performance](#) for a full description of Community performance in 2005/06
- [Environment>Our Performance>Remediation, Rehabilitation and Closure](#) for a full description of Closure Planning performance in 2005/06.




Our 2006 Performance

Targets	2005/06 Performance Against Target	
No transgressions within the Group's activities of the principles embodied within the UN Universal Declaration of Human Rights		None identified (FY05: none)
Legal Compliance Zero fines and prosecutions ¹		Seven fines greater than US\$1,000. Total fines paid US\$479,809 (FY05: US\$20,836) ²
Risk Management All sites to undertake annual self-assessments against the BHP Billiton HSEC Management Standards ³ and have plans to achieve conformance with the Standards by 30 June 2008		94 per cent of required self-assessments were completed at operating sites (FY05: 100%)
		An overall conformance of 3.9 out of 5 has been achieved, compared to our conformance target of greater than 4 (FY05: 3.9 out of 5)
Risk registers to be in place and maintained at all sites ⁴ and within BHP Billiton businesses and Corporate offices		Risk registers are in place at 99 per cent of required sites, businesses and Corporate offices (FY05: 100%)
Land Management All sites ⁵ to have and maintain land management plans to protect and enhance agreed beneficial uses		Land management plans in place at 97 per cent of required sites and at 17 sites that were not required to meet this target (FY05: 98%; 21 sites)
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 reports were prepared by 95 per cent of required sites or businesses (FY05: 100%)
All sites ⁵ to have and maintain a community relations plan		Community relations plans in place at 98 per cent of required sites and at 11 sites that were not required to meet this target (FY05: 98%; 22 sites)
Aggregate contribution to community programs, including in-kind support, of a target of 1 per cent of pre-tax profits, calculated on a three-year rolling average		Expenditure totalled US\$81.3 million, equivalent to 1.45 per cent of pre-tax profits on a three-year rolling average (FY05: US\$57.4 million; 1.59%)

Performance change since last reporting period:

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

Overall performance against target:

-  Performance tracking steadily
-  Performance has improved
-  Performance has declined

1. Fines reported may relate to incidents that occurred in previous years.

2. Prosecutions included are those that have been determined during the year and resulted in fines. They may relate to incidents that occurred in previous years. The only exception is a safety fine, which was received in the 2005 reporting period but was not reported last year as it was being held in trust pending appeal. The fine became payable in the 2006 reporting period.

3. Issue 3 of the BHP Billiton HSEC Management Standards was introduced in September 2005.

4. Includes 59 sites in total, excludes exploration and development projects, sites being divested, closed sites, and offices. Also excludes recent acquisitions e.g. WMC, which have two years to achieve compliance with target.

5. Excludes petroleum platforms, exploration and development projects, closed sites, and offices with no significant community or land management issues. Also excludes recent acquisitions, e.g. WMC, which have a year to achieve compliance with the target.

Read more: [Targets Scorecard](#) for a review of performance against all Company sustainability targets.

Our Goals

- All controlled sites (i.e. those that are owned and operated by BHP Billiton or managed by the Company in a joint venture) to fully comply with the BHP Billiton Closure Standard by June 2007
- Continue our active network of closure and rehabilitation practitioners to share knowledge and leading practice (2007)
- Further improve the integration of closure requirements into business systems these are embedded into the resource development and mine planning process
- All sites to undertake a human rights self-assessment and implement a risk-based human rights management plan by 30 June 2007
- All sites to have a formal community engagement program in place by 30 June 2007.

Engaging Stakeholders

Every day we interact with numerous people from varied backgrounds. We are committed to maintaining and promoting dialogue with our stakeholders and remaining responsive to the global community's concerns and aspirations.

We recognise the importance of trust to relationship building. Being accountable is paramount as is transparency with our communications and documentation. Our Charter, Sustainable Development Policy, HSEC Management Standards and Guide to Business Conduct all promote a commitment to acting with honesty, integrity and fairness in all our activities.

In line with our Sustainable Development Policy and commitment to continual improvement, we constantly aim for a greater level of engagement and interaction with stakeholders, particularly with the communities in which we operate.

Read more:

- [Our Approach to Dialogue](#) – how we identify our stakeholders, our processes for undertaking dialogue and addressing stakeholder grievances
- [Our Stakeholders](#) – who are our stakeholders, what are their interests and concerns, and what are our dialogue mechanisms
- [Building Global Links](#) – international initiatives and commitments we participate in
- [Dialogue in 2006](#) – how we seek specific feedback on this report and key sustainability issues.

Also see our [Community](#) section for details of our performance and case studies relating to engagement with stakeholders over the reporting period.

Our Stakeholders

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.

Our [HSEC Management Standard 7](#) requires that 'Effective, transparent and open communication and consultation is maintained with stakeholders associated with Company activities. Stakeholders are encouraged to participate in and contribute to sustainable development through HSEC performance improvement initiatives.'

We require the identification and consideration of stakeholders, their expectations and their concerns for all operational activities, across the life cycle of operations. Importantly, we also require sites to specifically consider any minority groups (such as indigenous groups), and any social and cultural differences that may be critical to stakeholder engagement.

A regular review process is also a central requirement of stakeholder identification, to ensure that all appropriate groups and individuals are effectively identified and suitably engaged.

Our key stakeholders are many and varied and include:

- some 38,000 employees and 66,000 contractors
- local and Indigenous communities, most of which are located in rural and remote areas neighbouring our operations
- a diverse shareholder base
- customers, typically other large organisations
- the global investment community, both mainstream financial analysts and Socially Responsible Investment (SRI) analysts
- business partners, including those organisations with which we have joint ventures
- community organisations that represent local and indigenous communities near our operations
- unions who are concerned about upholding workers' rights and interests
- non-government organisations
- suppliers that range from businesses local to our operations to large international companies
- governments – local, national and international
- members of the media
- industry associations, including commodity-specific and sector-specific associations at national and international levels.

For each of the above groups, we have endeavoured to present who they are, their interests and concerns, and the key mechanisms we use to engage them in dialogue.

Employees and Contractors

Who are They?

BHP Billiton has some 38,000 employees and some 66,000 contractors in more than 25 countries. Each, in their own way, acts as an ambassador for the Company. In supporting them to be effective in this role, as stated in our Charter and our Sustainable Development Policy, we aim to be 'forthright in our communications' and 'engage with and support our employees, contractors ...in sharing responsibility for meeting our requirements'.

Interests and Concerns

Employees and contractors have a broad range of interests and concerns, from the health and safety of themselves and their fellow workers, to more general working conditions. Career opportunities and aspirations as well as learning and training opportunities are also central to maintaining satisfied employees and contractors.

As many of our workforce live in towns near to our operations, many of their broader concerns are directly aligned with those of neighbouring communities. These include local employment, business creation and social infrastructure, and education and health care programs. Additionally, in many remote communities, quality of housing is a key aspect of employee attraction and retention.

Dialogue

Specifically, our approach to internal communication aims to:

- inform employees of, and share with them, the Company's business strategy, objectives, policies, cultures and values
- enhance the sharing of information across the business
- provide consistency and avoid duplication
- provide a framework for all Company communication to protect and strengthen the BHP Billiton brand with all stakeholders.

The challenges to achieving effective communication can be significant: our large global footprint, a diversity of businesses, various time zones, different cultures, languages and needs.

To meet our aims and address the challenges, we employ a two-pronged approach to our internal communications strategy:

- Keep everyone informed by targeted information through mass channels, including email, intranet, corporate newsletters and general communications, HSEC or Sustainability Reports and presentations, and communication guidelines and toolkits.
- Achieve alignment through face-to-face channels, including regular performance reviews, employee surveys, direct communication with immediate supervision and management, knowledge-sharing networks, Communities of Practice, conferences and workshops and general training.

A centralised communications resource (Investor Relations & Communications) provides global communication on areas of Company-wide importance and significance. It also develops appropriate resources and tools for other communication areas that can be used and tailored at the discretion of each Customer Sector Group, operation or office's communication and management team. The function is also responsible for facilitating the cross-sharing of information between CSGs and offices.

Each CSG and operation is responsible for communications at a localised level. This results in messages targeted to the relevant audiences, reduced email through cascading of information, rather than an 'everyone gets everything' approach, and cost savings as the onus moves to the operations/offices to implement communication strategies in the most suitable manner available.

At the site level, in line with [HSEC Management Standard 7](#), sites are required to ensure processes are in place to enable stakeholders, including employees and contractors, to participate in and commit to HSEC performance improvement initiatives. This may include such processes as committees representing both worker and management interests in HSEC matters.

Details of all significant incidents and their investigation findings are collated and circulated to relevant line managers and HSEC personnel on a weekly basis. The incidents are then stored on our Significant Incident intranet site for reference.

Company-wide Communities of Practice (CoPs) also exist to address specific HSEC concerns or deepen knowledge about specific HSEC topics. CoPs play an important role in helping employees to effectively share and steward their knowledge, and our people are encouraged to join them.

We are committed to effective performance management, through regular formal and informal feedback and review, and open communication. Performance management involves:

- recognising and acknowledging excellent performance to motivate employees and encourage further achievement
- identifying the cause of poor performance and taking appropriate corrective action
- eliminating inappropriate behaviours from the workplace.

Each employee should receive a formal performance appraisal from their manager at least annually. Incentive rewards paid by the Company are aligned to the relative performance of the business, assets and individuals.

As we look ahead, the challenges to employee and contractor communications include improving mechanisms to share learnings across the business and adopting better mechanisms for seeking feedback and measuring the effectiveness of communication strategies.

Local and Indigenous Communities

Who are They?

Most of our operations are located in rural and remote areas of the countries in which we operate; hence, we have a broad spectrum of local and Indigenous community interests and concerns of which we need to be mindful.

Interests and Concerns

The impact our business has on local communities varies considerably depending on the location, size and nature of the operation. For example, our offshore petroleum platforms have minimal direct impact on people, whereas the existence of larger land-based minerals operations can result in changes to economies, culture, population, employment opportunities, infrastructure, and noise, dust and traffic levels. All of these have the potential to change people's lives in some way.

Results from stakeholder perception surveys regularly conducted by our operations rate local employment and business creation, support for social infrastructure and programs, a desire for improved community engagement mechanisms and improved environmental performance as the most important interests and concerns of local communities.

Dialogue

Our strategy is to engage our communities in our business where possible and establish an open communication channel where all parties feel they have the right to participate in discussions.

Our [HSEC Management Standard 7](#) requires all operations to have systems in place to identify and work with stakeholders and to develop strategies to address their concerns and expectations. Sites are also required to record, register and address any complaints or concerns lodged by stakeholders.

Each of our operations is required to have a community relations plan, a component of which must be a formal mechanism to engage with people in their local communities. Examples of engagement methods include community consultation and engagement groups, newsletters and targeted communications, including site-based and corporate HSEC Reports.

We are continually trying to improve the processes we use to engage people to ensure that we are fully aware of their concerns and enhance our communities' understanding of the way we do business. For example:

- Our former Tintaya operation addresses its neighbours' concerns about possible environmental damage by involving community members in its environmental monitoring. Through training, they are gaining a better understanding of the mining operation and our environmental procedures, and they are assisting the operation to ensure the mine maintains its environmental integrity. Read more: [Community Case Studies>Community Consultation and Engagement](#)
- Our Trinidad petroleum operation engages the residents of Toco, the closest community to our offshore facilities, in shoreline response basic training to equip them with the necessary skills to help safeguard their environment in the event of an oil spill. Read more: [Community Case Studies>Disaster Relief](#)

Stakeholder perception surveys are tools that provide us with a valuable insight into how key stakeholders view us. The surveys are conducted by some of our operations and provide a greater understanding of community priorities and concerns and a means to track performance against one of our Charter success measures – that 'communities in which we operate value our citizenship'.

As with society in general, we are sensitive to loss of culture and heritage and work with local communities in preserving traditional culture in areas around the world where we operate.

Examples of the types of projects underway include:

- The Petroleum Pilbara LNG project is undertaking an extensive heritage study of the region in which the gas plant is likely to be built, providing local indigenous people with archaeological field skills and recording valuable information for a Western Australian heritage database. Read more: [Community Case Studies>Cultural Heritage](#)
- The Naonayaoitit Traditional Knowledge Project at EKATI Diamond Mine in Canada has developed a geographic information system (GIS) database that contains the ecological knowledge of the local Inuit from an area encompassing some 720,000 square kilometres of Arctic tundra. Read more: [Environment Case Studies>Environmental Management](#).

Read more:

- [Community>Our Approach](#)
- [Community>Our Performance](#).

Shareholders

Who are They?

Our shareholder base is diverse. The majority of shares in the Company are held in Australia, Europe and North America, with other significant holdings in South Africa.

Interests and Concerns

Shareholders are broadly interested in ensuring good financial returns occur as a result of responsible Company performance and governance. Increasingly, non-financial performance is becoming a focus, hence a greater desire to better understand governance mechanisms and the non-financial risks and mitigation measures of the organisation.

Dialogue

Shareholders are invited to attend the Annual General Meetings where they can question directors on matters relating to the Company's performance. Shareholders can also elect to receive regular printed and electronic communications. Presentations given at appropriate intervals to representatives of the investment community are also available to all shareholders and supported by internet broadcast or open conference call.

Read more: [Investors and Media](#) section on our Company website.

Customers

Who are They?

Our customers are typically other large organisations.

Interests and Concerns

Product quality, cost and delivery are the major concerns of customers. Increasingly, customers throughout the supply chain are recognising the full life cycle impacts of our products and the downstream products made using BHP Billiton materials. A greater focus is emerging on materials and resource efficiency and the management of final waste materials.

Read more:

- [Our Resources at Work](#) for an overview of downstream products made from BHP Billiton materials
- [Stewardship](#)
- [Environmental Case Studies>Stewardship](#).

Dialogue

Our business model is based on customer-oriented groupings (Customer Sector Groups), which are supported by marketing offices located in The Hague and Singapore. Our Marketing Group is in regular contact with customers, providing technical support on occasion to assist with product utilisation, either in terms of process efficiency or product handling; providing product information, including material safety data sheets; and facilitating visits to our operating sites and technology exchanges with our operating sites.

Investment Community

Who are They?

These stakeholders include both mainstream financial analysts and [Socially Responsible Investment \(SRI\)](#) analysts who advise existing and potential shareholders on our performance. These analysts are located globally.

Interests and Concerns

The interests of the investment community are closely aligned to those of shareholders, both being broadly interested in good financial returns and strong Company performance and governance. Increasingly, non-financial performance is becoming more of a focus, with a greater desire to better understand governance mechanisms and the non-financial risks and mitigation measures of the organisation.

Dialogue

BHP Billiton Investor Relations & Communications is responsible for communicating with mainstream investment organisations. Typically, this involves briefing the market on key issues.

BHP Billiton Sustainable Development and Community Relations is responsible for communicating with SRI analysts. The publication of the Company's Sustainability Report is a cornerstone of this activity. In addition an annual briefing is held for SRI analysts with a particular interest in the environmental and social performance of the Company.

Socially Responsible Investors

During the year, the Company continued to participate in key external benchmarking initiatives by the SRI sector that seek to measure the Company's sustainable development performance against others in our sector.

Participating in such programs has a number of benefits, including:

- Enabling fund managers to screen funds on the basis of Company systems and performance that support sustainability
- Providing an external opinion on the Company's sustainability performance in relation to others in the resource sector
- Providing a useful tool internally to demonstrate both good performance and identify where improvement is required
- Assisting with supporting the business case for sustainability. The premise is that companies that manage their non-financial risks well also perform better in the long term.

The following sections outline our performance over the period in some of the key benchmarking programs:

- [FTSE4Good Index](#)
- [Dow Jones Sustainability World Index](#)
- [Australian Sustainability Asset Management Sustainability Index \(AuSSI\)](#)
- [Business in the Community – Corporate Responsibility Index](#)
- [Johannesburg Stock Exchange SRI Index](#)
- [Carbon Disclosure Project](#)

FTSE4Good Index



FTSE4Good Index Series

Launched in 2001, the [FTSE4Good Index series](#) has been designed to measure the performance of companies that meet globally recognised corporate responsibility standards and to facilitate investment in those companies. The series covers four markets: US, Global, UK and Europe. Each market consists of both a benchmark and a tradable index.

Over the period, we maintained our inclusion in the UK FTSE4Good Index.

Dow Jones Sustainability World Indexes



The [Dow Jones Sustainability World Indexes](#) (DJSI) consist of more than 300 companies that represent the top 10 per cent of the leading sustainability companies in 60 industry groups in the 34 countries covered by the biggest 2500 companies in the Dow Jones Global Indexes.

Following the recent results of the 2006 assessment, we have maintained inclusion within the DJSI and ranked as Sustainability Leader for Mining in both the DJSI World and DJSI STOXX. For further information, see our [2006 assessment](#).

Australian Sustainable Asset Management Sustainability Index (AuSSI)

The AuSSI was launched in February 2005 as Australia's first index to measure the financial performance of the country's sustainability leaders. It comprises the top 40 per cent in terms of sustainability, out of 184 companies listed on the Australian Stock Exchange. Based on the methodology of Sustainable Asset Management (SAM), it applies the same research criteria as the Dow Jones Sustainability Indexes for which SAM selects sustainability leaders on a worldwide scale. BHP Billiton is listed as an [industry leader for the Mining and Metals sector](#).

Business in the Community - Corporate Responsibility Index



Originally established in 2002 in the UK by [Business in the Community](#), the Corporate Responsibility Index was developed to ensure a systematic approach to managing, measuring and reporting upon the various impacts that companies have upon society and their environment. The index works as a management tool for companies to see how their corporate responsibility activities are integrated into their mainstream business operations.

In 2005, we ranked 24th overall, and maintained our position as Mining Sector leader. In the Australian release of the index, utilising the same questionnaire and scoring system, we ranked 4th overall.

View our [2005 Corporate Responsibility Index Feedback Report](#) (PDF 68 Kb) for further information.

Johannesburg Stock Exchange SRI Index

Launched in 2004, the JSE has developed criteria to measure the triple bottom-line performance of South African companies in the FTSE/JSE All Share Index who choose to participate. The aim is to compile an Index comprising those companies that pass the criteria requirements.

In 2006, we maintained inclusion in the Index and participated in dialogue on the future direction of the Index.

Carbon Disclosure Project

The [Carbon Disclosure Project](#) (CDP) is an institutional investors' survey of FT500 Global Index companies regarding risks and opportunities presented by climate change. The CDP represents the most comprehensive survey sponsored by international institutional investors. This group of investors sign a single global request for disclosure of information on greenhouse gas emissions, which is facilitated by a UK-based investment institution with strong sustainable development credentials. Historically, the request has been limited to the FT500 largest companies in the world but in 2006 the scope has been expanded to reach over 1,900 companies. Currently, the CDP is signed by 211 institutional investors with assets of more than \$31 trillion.

Our [2005 survey response](#) was assessed, and we were included in the 2005 Climate Leadership Index, comprising the 60 'best in-class' responses.

Business Partners

Who are They?

Our business partners include those organisations with which we have joint ventures.

Interests and Concerns

Business partners are generally interested in being assured that suitable governance mechanisms are in place to ensure financial returns are delivered while mitigating non-financial risks sufficiently.

We seek to ensure that the conduct of our business partners reflects our own commitment to the Universal Declaration of Human Rights. Our Human Rights Self-Assessment toolkit allows us to better identify and assess potential risks and initiate proactive engagement with business partners and other stakeholders.

Read more:

- [Community>Our Approach>Human Rights](#)
- [Socio-Economic Case Studies>Human Rights](#) .

Dialogue

We communicate regularly with our business partners and share knowledge and programs through our participation on joint venture boards and operating committees as well as reports and presentations, including annual financial and HSEC reports. Joint venture partners have also participated in our HSEC audit programs.

Community Organisations

Who are They?

Community organisations are generally established to represent the local and indigenous communities near our operations.

Interests and Concerns

Community organisations are concerned with ensuring that any potential environmental and social impacts associated with our operations are mitigated and that opportunities presented by our operations are optimised; for example, ensuring sustainable community development opportunities can be maintained after mine closure.

Dialogue

In conjunction with developing community relations plans, sites are required to develop suitable engagement mechanisms with their host communities. Generally this results in community engagement forums and community consultation groups.

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.

Examples of our current community partnerships and projects are:

- Port Hedland Community Patrol – partnership with Port Hedland Sobering Up Centre Group Inc to promote community service ([read more](#)).
- Illawarra Coal Community Partnerships Program – community helps to determine allocation of funding ([read more](#)).
- Villa Esperanza – social project developed by employees of Escondida, Chile ([read more](#)).

Read more:

- [Community> Our Approach](#)
- [Community>Our Performance](#).

Unions

Who are They?

Unions represent employees at a number of our sites at local, national and international levels.

Interests and Concerns

The primary purpose of unions is to uphold workers' rights and interests. Collective bargaining, health and safety, remuneration, work hours and fly-in/fly-out arrangements are issues that have been raised in relation to our operations.

Read more: [Socio-Economic>Our Approach>Employee Relations](#).

Dialogue

The right of employees at all our operations to freely choose to join labor unions is recognised. Prospective employees are made aware of employment arrangements prior to joining the Company.

We communicate with unions as required on topical and general issues, such as changes to Company policies.

Non-Government Organisations

Who are They?

Non-government organisations (NGOs) with which we typically engage include environmental, social and human rights organisations at local, national and international levels.

Interests and Concerns

NGOs have a broad-ranging interest in our operations and their performance. This may include the social and environmental performance of existing, proposed or closed operations. Additionally there is increasing interest in our broader policy positions on such issues as climate change and human rights.

Dialogue

Each of our operations is required to identify its relevant local NGOs and include mechanisms for engagement with them within the site's community relations plan.

At the Corporate level, we regularly engage with relevant national and international organisations. A number of major international NGOs are represented on our [Forum on Corporate Responsibility](#).

Dialogue on Sustainability Challenges

We conduct an annual dialogue session on key sustainability issues relevant to our Company. In 2006 we discussed our approach to uranium stewardship and biodiversity. NGOs played a key role in this process, alongside representatives from the investment community, academia, government and employees.

Read more:

- [Dialogue in 2006](#) for further details on the stakeholder engagement process
- [Biodiversity>Our Approach](#) and [Product Stewardship>Uranium](#) for our response to the dialogue messages.

Forum on Corporate Responsibility

The BHP Billiton Forum on Corporate Responsibility brings together representatives of our senior management team, the leaders of several key NGOs, and community opinion leaders to discuss and debate social and environmental matters relevant to the Company.

Forum members have an opportunity to provide advice and to challenge the views of our senior management on broad sustainable development issues of mutual interest. The Company is not bound by the advice of the Forum, and the Forum does not necessarily endorse the Company's decisions. The Forum provides a means for direct and open dialogue about issues of interest to the wider community.

The Forum meets twice a year. Mike Salamon, Executive President, BHP Billiton, is Chairman; and Holly Lindsay, BHP Billiton's Vice President Public Policy and Business Conduct, is Secretary.

During the year the Forum discussed a range of diverse topics, including the Company's approach to uranium stewardship, climate change and energy efficiency, and community programs in countries such as India and Colombia. The Forum also reviewed our approach to identifying and managing our [Key Sustainability Challenges](#). The Forum's comments included the suggestions to:

- strengthen Company policy on climate change, water and biodiversity management
- better define the global context when describing the BHP Billiton Sustainability challenges.

Forum members were briefed on the Company's approach to the management of its involvement in the Australian Government's Commission of Inquiry into the UN Oil-for-Food Programme. Views of the external members on this issue were sought in formal feedback sessions in May and July 2006.

Over the course of the year, the Forum benefited from a number of distinguished guest speakers including Tim Flannery, the author of 'The Weather Makers' and a well-known scientist, explorer and conservationist, as well as Kevin Ball, BP's Director of Energy Efficiency, responsible for the design and implementation of BP's Energy Efficiency program.

There were a number of changes in both the external and internal membership of the Forum during the year. Sir Ninian Stephen and Michael Rae resigned after years of highly active membership. New external members include Malini Mehra, founder and Director of the Centre for Social Markets, and Andrew Rouse, Program Manager - Resource Conservation, WWF-Australia. Tony Lennox took up interests outside the Company while Nick Allen joined the group in his acting capacity as VP Health, Safety and Environment. Also joining from BHP Billiton were Marius Kloppers, Group President Non Ferrous Materials and Executive Director; Chris Lynch, Group President, Carbon Steel Materials and Executive Director; and Karen Wood, Head of Group Secretariat and Special Advisor to the CEO. Our Chairman, Don Argus, also attended part of each meeting.

See our [Forum on Corporate Responsibility Member Profiles](#).

Forum on Corporate Responsibility Member Profiles

External members

Dr Marcelo de Andrade, *Doctor of Medicine*

Chairman, Pró-Natura

Marcelo founded Pró-Natura, the first international environmental organisation based in the Southern Hemisphere that manages sustainable development and conservation projects funded by international organisations, governments and the private sector in South and Central America, Africa and Asia.

Pró-Natura was founded in Brazil and is active in 36 countries. Marcelo also founded the Pioneer Society, a communications group dedicated to innovative promotion of the successes of sustainable development, and the Social Capital Group, a consulting company dedicated to managing social and environmental issues and impacts brought about by large oil/gas, mining, forestry and infrastructure projects. He co-founded Terra Capital Fund, the first venture capital fund dedicated to investing exclusively in private sector biodiversity businesses; Axial Bank/Azial Par, the first financial institution in South America dedicated to invest and promote investments in the sustainable development sector; and Eco Carbon, the first company to specialise in engineering aspects of forestry and agricultural carbon sinks. Marcelo is also involved with International Sustainable Finance and Sustainable Development Holdings and remains active in rowing, mountaineering and running following his eight-year membership of Brazil's Olympic rowing team and his leadership of the first expedition to the top of Mount Aconcagua in the Andes in 1985.



Greg Bourne *BSc (Hons)*

Chief Executive Officer, WWF-Australia

WWF-Australia is part of the WWF International Network and is a not-for-profit organisation committed to find solutions to challenges facing the natural environment in Australia and the Asia-Pacific. Before taking up his current position as CEO WWF-Australia in October 2004, Greg had a distinguished international business career at BP. His roles at BP included Regional President - Australasia, Regional Director - Latin America, Director - Scotland as well as earlier positions at BP with a petroleum exploration focus. In 1988 he was seconded to the UK Prime Minister's Policy Unit at 10 Downing Street as the Special Advisor on Energy and Transport. Greg has been Chair of the Sustainable Energy Authority of Victoria, is a member of the Victorian Sustainability Advisory Council and until recently was Chair of the Environment and Natural Resource Management Sector Advisory Council for CSIRO. He was awarded the Australian Centenary Medal for services to the environment.



David Butcher *BVSc, MRCVS*

Chief Executive Officer, Greening Australia, NSW

David was appointed to his current position with Greening Australia in 2004. He is a practicing 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, a position he held for the 10 years period to 2004. Through an innovative blend of practical experience, science, community engagement and commitment Greening Australia addresses issues like salinity, declining water quality, soil degradation, climate change and biodiversity loss.



James Ensor *BEC, BAppSc, GradDipJournalism*

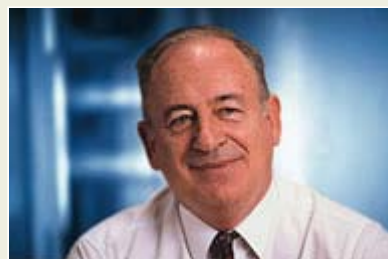
Director of Public Policy & Outreach, Oxfam Community Aid Abroad

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 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.



Graham Evans *AO, MA, MIPP (John Hopkins), DipEd*

Graham is currently Chairman of the Victorian Competition and Efficiency Commission. He retired from his role as Vice President, Government and Community Relations of BHP Billiton in 2003. From 1996 to 2002, he was Group General Manager, later Vice President, External Affairs, BHP Billiton. Prior to joining the Company 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 Foster's Brewing Group, Australia Post, Telecom and AIDC. He was awarded the Order of Australia in 1995.



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 and Sri Lanka.



Mokhethi Moshoeshe *BA (Law)*

Director, African Institute of Corporate Citizenship

Mokhethi 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 the Southern African Development Community and of the International Learning Forum on the United Nations Global Compact.



Sheena Boughen MA (Anthropology), PhD Candidate

External Facilitator

Sheena has been the external facilitator of the Forum on Corporate Responsibility for the last five years. She is a Director of Diapason Pty Ltd and her focus is in the area of social sustainability, working with the corporate and community sectors globally. With a background in education and anthropology, Sheena has worked with a range of companies locally and globally including ANZ bank, DuPont, Rio Tinto and Interface Floor coverings. She is an active member of *Women leading Sustainability*, an initiative of the Society for Organisational Learning (SOL).



Malini Mehra

Founder and Director - Centre for Social Markets

Malini is the founder and director of the India and UK-based Centre for Social Markets (CSM), an independent think-tank that has pioneered triple bottom-line entrepreneurship focused on diaspora communities and developing countries. She is currently at the UK Department of Environment, Food and Rural Affairs where is leading the UK's emerging high-level dialogues on sustainable development with key emerging markets and on international sustainable development partnerships. Malini has worked with the United Nations and other multilateral agencies, as well as charities including Oxfam to Friends of the Earth International (FOEI) and People's Decade for Human Rights Education (PDHRE).

At FOEI she managed the Sustainable Societies program, coordinated international campaigns and oversaw representation at key forums, including the World Trade Organisation (WTO), the OECD, the United Nations Conference on Trade and Development, the UN Commission on Sustainable Development and the Kyoto Climate Change Conference. As Director of PDHRE, she spearheaded the first internal NGO campaign on trade and human rights at the WTO Seattle conference in 1999. In 2003 she was appointed one of 12 eminent persons by United Nations Secretary-General, Kofi Annan, to his High Level Panel on UN-Civil Society Relations, under the chairmanship of President Cardoso of Brazil to provide guidance on the UN's relation with civil society.



Andrew Rouse BSc (Hons)

Program Manager - Resource Conservation, WWF - Australia

In his role as Program Manager - Resource Conservation, Andrew works with governments, industry sectors and individual companies seeking the adoption of policies, programs and innovative approaches to improve natural resource management, including government and industry policy commitments, the development of implementation of market-based instruments such as certification schemes, adoption of best management practices, and promoting credible sustainability reporting. Andrew has served on a number of government and industry advisory bodies, most recently the Australian Government's Environmental Management Systems Working Group, the Advisory Committee for the Murray Darling Basic Commission's Environmental Stewardship Project, and the Steering Committee for the Cotton industry's Environmental Management System pilot project. Prior to joining WWF, Andrew worked for a multi-national chemical company.



BHP Billiton members

Philip Aiken *BE (Chemical), Harvard Business School Advanced Management Program*

Senior Representative, London Office, BHP Billiton

Since December 2005 Philip has served as the Company's senior representative in the London office. Prior to this he lead BHP Billiton's energy team for nine years. Before joining the Company in 1997, he was the Managing Director of BTR Nylex and prior to that held a number of senior positions with the BOC Group. Philip is a member of the BHP Billiton Office of the Chief Executive and the Executive Committee.



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 the 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.



Robert (Bob) Kirkby *BE Civil (Hons)*

Executive President

Bob joined the Company in 1978 and since 2001 he has been Group President Carbon Steel Materials, as well as having oversight of a number of corporate functions and regions. In early 2006, he announced his decision to retire from BHP Billiton on 31 December 2006. Until his retirement, he is serving as Executive President and Chairman of the Executive Committee, as well as continuing as a member of the Office of the Chief Executive. He also retains responsibility for Global Supply, Project Development Services and our country offices in Brazil, India and Mongolia. Bob is Chairman of Samarco, a BHP Billiton/CVRD Brazilian-based Company; a Director of Samancor, a BHP Billiton/Anglo American South African-based Company; Chairman of BHP Mitsui Coal; and alternating Chairman of the BHP Billiton Mitsubishi Alliance. He joined Utah Development Corporation's Bowen Basin Coal operations as a Mining Engineer in 1978 and has worked extensively in the iron ore, coal and steel industries.



Marius Kloppers *BE (Chem), MBA, PhD (Materials Science)*

Group President Non-Ferrous Materials and Executive Director, BHP Billiton

Marius was appointed to his role as Group President Non-Ferrous Materials in January 2006. Prior to this, he held various senior positions including Chief Commercial Officer, Chief Marketing Officer, Group Executive of Billiton Plc, Chief Executive of Samancor Manganese, as well as various positions at Billiton Aluminium, amongst them Chief Operating Officer and General Manager of Hillside Aluminium. Before joining BHP Billiton in 1993, Marius was as a consultant with McKinsey Inc.



Chris Lynch *BComm, MBA, FCPA*

Group President Carbon Steel Materials and Executive Director, BHP Billiton

Chris joined the Group in 2000 as Chief Financial Officer of the then Minerals Group and appointed Chief Financial Officer in September 2001, Executive Director in January 2006 and Group President Carbon Steel Materials in April 2006. He was Vice President and Chief Information Officer for Alcoa Inc based in Pittsburgh, US, and Chief Financial Officer, Alcoa Europe located in Lausanne, Switzerland. He was also Managing Director KAAL Australia Ltd, a joint venture company formed by Alcoa Inc and Kobe Steel, Manager Financial Risk and Treasury Operations for Alcoa Inc in Pittsburgh, US, and Corporate Accounting Manager at Alcoa of Australia Ltd.



Miklos (Mike) Salamon *BSc (Mining Eng), MBA*

**Chair of the FCR
Executive President, BHP Billiton**

Mike was appointed Executive President, BHP Billiton in December 2005. Prior to this he was Group President, Non-Ferrous Metals (consisting of Aluminium, Base Metals and Stainless Steel Materials), BHP Billiton Group. He has been an executive Director of BHP Billiton Limited and BHP Billiton Plc since February 2003. He is also a member of the Office of the Chief Executive. From July 2001 to March 2004, Mike was Chief Minerals Executive and President and CEO, Aluminium. 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 and Community Relations, BHP Billiton

In his current role, Ian manages BHP Billiton's department responsible for developing the Company'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. Ian is the Chair of Community Contributions Panel and is a member of the HSEC Forum Leadership team. He represents BHP Billiton on the Executive Working Group of the International Council on Mining and Metals. Prior to his work on sustainable development and community relations in the corporate area, he was responsible for the provision of technical support to the Company'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 Billiton, Ian had extensive site-based experience in the minerals industry.



Karen Wood *BEd, LLB (Hons), FCIS*

Special Advisor & Head of Group Secretariat, BHP Billiton

Karen was appointed Company Secretary of BHP Billiton Limited and BHP Billiton Plc in June 2001 and appointed Special Advisor & Head of Group Secretariat in December 2005. Karen Wood is a member of the Takeovers Panel (Australia), the Business Regulatory Advisory Group (Australia) and the JD (Juris Doctor) Advisory Board of the University of Melbourne. She is a Fellow of the Institute of Chartered Secretaries and a member of the Law Council of Australia and the Law Institute of Victoria. She chairs the Disclosure Committee of BHP Billiton. Before joining BHP Billiton, she was General Counsel and Company Secretary for Bonlac Foods Limited.



Holly Lindsay, BA (Hons Economics)

Vice President, Public Policy and Business Conduct, Secretary Forum on Corporate Responsibility

Experience: Holly joined the Group in 1996 and was appointed to her current role in 2002. Holly is currently secretary to the Forum on Corporate Responsibility and is responsible for the day-to-day management of the Global Ethics system as well as secretary to the Global Ethics Panel. She has responsibilities for Corporate climate change policy and other sustainable development related topics. Holly previously held roles with the economics department of the Company. Prior to joining BHP Billiton, she held roles at the Reserve Bank of Australia, the Canadian Federal Government Department of Finance and the Canadian Imperial Bank of Commerce.



Qualification Abbreviations

AO Officer of the Order of Australia
BA Bachelor of Arts
BAppSc Bachelor of Applied Science
BE Bachelor of Engineering
BEc Bachelor of Economics
BSc Bachelor of Science
BVSc Bachelor of Veterinary Science
DipEd Diploma of Education
FCIS Fellow Chartered Institute of Secretaries
FCPA Fellow Australian Society of Certified Practising Accountants
GradDipJournalism Graduate Diploma of Journalism
LLB Bachelor of Laws
MA Master of Arts
MBA Master of Business Administration
MIPP Master in International Public Policy
MRCVS Member Royal College of Veterinary Surgeons
MSc Master of Science
PhD Doctor (doctor of philosophy)

Suppliers

Who are they?

Our suppliers include businesses local to our operations, as well as large international suppliers in specialised equipment.

Interests and Concerns

Our suppliers are interested in our supply requirements and payment processes, as well as the standards we require of our suppliers.

We seek to ensure that the conduct of our suppliers reflect our own commitment to the Universal Declaration of Human Rights. Our human rights self-assessment toolkit allows us to better identify and assess potential risks and initiate proactive engagement with suppliers and other stakeholders.

Read more:

- [Human Rights>Our Approach](#)
- [Socio-Economic Case Study>Human Rights](#)

Dialogue

All supply contracts within our organisation are assigned to a BHP Billiton manager or supervisor as the single point of contact. This ensures that a consistent approach to regular reporting and communications is maintained between the Company and our suppliers.

In accordance with our [HSEC Management Standards](#), suppliers must identify potential HSEC risks associated with their operations and minimise any adverse consequences of these risks.

We seek to utilise local suppliers and support these suppliers in enhancing community development opportunities.

Read more:

- [Supply>Our Approach](#)
- [Socio-Economic Case Study>Safety in the Supply Chain](#)

Download a summary of all [BHP Billiton Stakeholder Relationships](#).

Governments

Who are They?

We engage with governments (including regulators) across local, national and international levels.

Interests and Concerns

Governments at national, regional and local levels establish the legislative and regulatory policy frameworks for the operations of all companies involved in the resources sector. This engagement extends through all stages of project life cycles from initial entry to new countries, the allocation of exploration acreage and the issuance of production and other licences, to the approval and monitoring of closure plans. Governments also have critical roles to play in activities related to market access, product stewardship, environmental performance, social policy and fiscal regimes applicable to the resources sector.

The United Nations and its agencies, such as the World Bank, are also important stakeholders for BHP Billiton. These organisations are important agents for the promotion of good governance structures and practices in the developing world and often provide finance for resource-based projects. World Bank funding most often contains performance standards that need to be met, particularly in relation to environmental and social aspects of resources projects.

We work with host governments that participate in the Extractive Industries Transparency Initiative regarding disclosure of payments of taxes and policies. Policy formulation often intersects with aspects of our operations. Governments have mechanisms of regulation that cover a range of aspects within our operations, particularly environmental and social aspects.

BHP Billiton respects the authority of host governments. Our operations are required to work within relevant legislative frameworks at the international, national and local 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 Governments and BHP Billiton.

No Contributions to Political Parties

The Company maintains a position of impartiality with respect to party politics. Accordingly, we do not contribute funds to any political party, politician or candidate for public office in any country. We do, however, attend selected events such as political party conventions for the purpose of better understanding the implications of public policy development on business operations. Employees are free to participate in political activities as individuals and, if there is any doubt, they are asked to ensure that it is clear they are representing their personal views and not those of the Company.

Public Policy Development

The Company participates in public debate of policy issues that affect us in the countries in which we operate. Relevant issues are discussed with government ministers and officials, and we often provide written submissions to public inquiries and other investigations about the likely impact of proposed policies on the Company or suggest initiatives we believe would provide win-win solutions for stakeholders.

A summary of government relations issues of interest to the Company over the reporting period is provided in the following table.

Examples of Current Government Relations Issues

Global	Extractive Industries Transparency Initiative regarding disclosure of payments of taxes and policies; investment performance standards; global energy policy including resource access and climate change; fiscal regimes applicable to the resources sector; the application of stewardship models to scarce water resources; harmonisation of competition policy; trade policy liberalisation including improvements in market access through multilateral and bilateral free trade agreements (including the Doha Round and Free Trade Agreement negotiations; support for the development of best practice mining and petroleum legal and fiscal regimes in new provinces of interest; and general security matters
Australia	Uranium mining, stewardship and export policy; infrastructure access and regulation; energy and environmental policies; national industrial relations and occupational health and safety policies; fiscal and general taxation regimes; submissions on Corporations Act and Corporate Social Responsibility
Chile	Application of the amended fiscal regime to Company operations; security of access to critical inputs such as energy and water
European Union	New EU regulatory framework for chemicals (REACH) proposals; competition policy; energy and climate change policy including proposals for carbon emissions trading regimes
South Africa	Implementation of the Mineral and Petroleum Resources Development Act; compliance with the Black Economic Empowerment Scorecard; infrastructure development and access
United States	Harmonisation of competition policy; the development of national energy policy including the supply of liquified natural gas to the west coast
United Kingdom	Takeover Code Article 11; energy and climate change policy

In addition, BHP Billiton is a member of numerous industry and business associations that are actively engaged in public policy debate on issues relevant to the resources sector. Examples of these organisations include the International Council on Mining and Metals, commodity specific organisations such as the Nickel and Copper Development Institutes, and national mining and petroleum councils. The Company provides advice on public policy issues to these organisations to assist them in their own representations to governments and other stakeholders. Read more: [Industry Associations](#).

Media

Who are They?

The media include representatives of print, radio and visual media.

Interests and Concerns

Members of the media are generally interested in newsworthy items associated with our financial or non-financial performance.

Dialogue

Our Investor Relations and Communications group oversees communication with the media. Communication methods include media releases, presentations, briefings and interviews.

Industry Associations

Who are They?

Industry associations include commodity-specific associations (for example, International Aluminium Institute) as well as sector-specific associations at national and international levels (such as the International Council on Mining and Metals).

Interests and Concerns

Industry associations are generally interested in a broad range of issues relating to a sector or specific commodity. For example, they may be advocates on key policy aspects relevant to the sector, which may be as diverse as environmental legislation, establishing common safety standards, through to promotion of leading practice such as community relations.

Dialogue

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

Some of the principal industry associations we are involved in at the commodity level include:

Commodity	Industry Associations
Aluminium	International Aluminium Institute Australian Aluminium Council
Nickel	Nickel Development Institute International Nickel Study Group Nickel Producers Environmental Research Association Cobalt Development Institute
Petroleum	International Petroleum Industry Environmental Conservation Australian Petroleum Production and Exploration Association Australian Gas Association UK Offshore Operators Association
Coal	World Coal Institute Coal Institute Advisory Board Australian Coal Association
Zinc	International Lead and Zinc Study Group International Lead and Zinc Research Organisation International Lead Management Centre Lead Development Association International Silver Research Consortium Advanced Lead Acid Battery Consortium

Commodity Industry Associations

Copper	European Copper Institute Copper Development Centre International Copper Association International Copper Study Group
Uranium	Uranium Industry Framework Steering Group World Nuclear Association

Read more on our activities with:

- [International Council on Mining and Metals](#)
- [World Business Council for Sustainable Development](#)

International Council on Mining & Metals

We have continued to be active in the work program of the [International Council on Mining and Metals](#) (ICMM).

The ICMM was established in 2001 as a global leadership body on sustainable development. ICMM members believe that the mining, minerals and metals industry acting collectively can best ensure continued access to land, capital and markets as well as build trust and respect by demonstrating the ability to contribute successfully to sustainable development. ICMM members offer strategic industry leadership towards achieving continuous improvements in sustainable development performance in the industry. ICMM provides a common platform for the industry to share challenges and responsibilities as well as to engage key constituencies on issues of common concern at the international level, based on the science and principles of sustainable development. ICMM's mission is underpinned by a commitment to good governance and transparent decision-making processes within the organisation.

The ICMM has made substantial progress during the year on a range of projects. Their commitment to report on the Ten Principles of the Sustainable Development Framework demonstrated sound leadership for the sector. This commitment has been supported by research work on the development of an independent assurance process. Their *Draft Good Practice Guidance on Mining and Biodiversity* and the *Community Development Toolkit* have been used by our sites in refining their approach to sustainability performance in 2006. In particular, as part of ICMM's Resource Endowment Initiative, we participated in a major study to understand how large-scale mining activity can enhance the socio-economic development of host countries. View our [Case Study](#) on ICMM's Report. View a summary of ICMM's work program and achievements during 2005 [here](#).

World Business Council for Sustainable Development

We have maintained our membership of the [World Business Council for Sustainable Development](#) (WBCSD).

The WBCSD is a coalition of 180 international companies united by a shared commitment to sustainable development. The WBCSD has a global network of more than 50 national and regional business councils and partner organisations located in more than 35 countries. Its mission is to provide business leadership as a catalyst for change towards sustainable development and to promote the role of eco-efficiency, innovation and corporate social responsibility.

For the fourth year running, we have been a participant in the WBCSD Young Managers Team. The Young Managers Team is a program designed to provide a learning experience and networking opportunity for approximately 20 young high-potential employees, interested in sustainable development and drawn from across a range of job functions, businesses and sectors.

The Young Managers Team 2006 includes participants from Japan, North and South Africa, South America, Australia and Europe and from a wide range of commercial sectors and functions. The focus of the program is to help move sustainability out of its specialist box into the mainstream by communicating beyond traditional boundaries.

We also participate in WBCSD projects relevant to our operations and sustainability challenges; for example, the Sustaining Ecosystems Initiative, a multi-sector leadership network of member companies collaborating on cross-cutting ecosystems issues and challenges outlined in the [Millennium Ecosystem Assessment](#). The Initiative operates across the areas of ecosystems and ecosystem service stewardship, sustainable management and use, and impact mitigation.

Our Approach to Dialogue

Maintaining constructive stakeholder relationships is a critical part of our journey towards sustainable development.

Our approach to stakeholder engagement is directed by the requirements of our [HSEC Management Standard 7](#), with the intent being 'Effective, transparent and open communication and consultation is maintained with stakeholders associated with Company activities. Stakeholders are encouraged to participate in and contribute to sustainable development through HSEC performance improvement initiatives.'

Specifically, HSEC Management Standard 7 requires:

- systems to identify stakeholders
- consideration of local, social and cultural contexts in engagement mechanisms
- regular communication on HSEC matters, risks, plans and performance
- employee and contractor participation in the development, implementation and review of HSEC initiatives and programs
- regular management of the effectiveness of communication, consultation and participation processes.

Stakeholder Identification

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.

All sites are required to identify their key stakeholders and consider their expectations and concerns for all operational activities, across the life cycle of operations. Sites are also required to specifically consider any minority groups (such as indigenous groups), and any social and cultural factors that may be critical to stakeholder engagement.

A regular review process is also a central requirement of stakeholder identification, to ensure that all appropriate groups and individuals are effectively identified and suitably engaged.

Stakeholder Engagement

We engage regularly with employees and contractors, local and indigenous communities, shareholders and customers. As members of our workforce, our communities, supporters of our business and users of our products, we recognise that these stakeholders are core to our business.

We also recognise those who are important influencers of our business. These include the investment community, business partners, community organisations, unions, non-government organisations, suppliers, governments, media and industry associations.

Where stakeholder queries relate to a particular operation – for example, potential impact on the local community, employees and contractors, or local suppliers – engagement is facilitated by the relevant operation.

Where stakeholder queries relate to the broader sustainability challenges of BHP Billiton - for example, our ability to demonstrate progress against our public commitments to environmental and social performance - engagement is facilitated by the Corporate function.

Stakeholder Grievances and Concerns

Mechanisms to address grievances and concerns have also been established. Operating sites are required to maintain a register of concerns, complaints and relevant external communications. Concerns and complaints are to be investigated as official incidents, using our standard investigation processes, and outcomes and actions are reported back to relevant stakeholders. The confidential Business Conduct Helpline and email address provide a further means for raising issues of actual or potential concern such as harassment, conflict of interest, fraud or bribery.

Read more:

- [Grievance Mechanisms](#)
- [Guide to Business Conduct](#).

The information we receive from stakeholders helps refine the management of our activities and mitigate their potential impacts, in line with the goals set out in our Charter. Lessons from individual relationships are also shared with others, in effect strengthening our relationship with all stakeholders.

Read more: [Our Stakeholders](#), for a detailed discussion on our stakeholders and how we engage with them.

Dialogue in 2006

In 2006 our focus remained on fostering constructive stakeholder relationships and seeking feedback.

Each year, our sites seek feedback on a range of topics relevant to their stakeholders and the Company (read more: [Local and Indigenous Communities](#) and [Case Studies](#)).

At the Corporate level, a diverse group of non-government organisations, academics, investment analysts, government and industry representatives, and employees are invited to participate in annual interactive workshops that seek specific feedback on this Report and key sustainability topics.

The topics are selected according to the level of stakeholder interest and enquiries received. The range of views and depth of understanding by participants of the topics make for a challenging and engaging workshop, and the ideas expressed become a critical consideration for our decision-making on these topics.

In 2006 some 40 external participants attended the workshop that sought comment on:

- Key sustainability topics – biodiversity and uranium
- Our approach to reporting – its relevance and effectiveness, and opportunities for improvement.

Biodiversity was selected as a topic of discussion in recognition of the Company's ability to impact the biodiversity values of the areas in which it operates. Our public commitment to the ICMM Sustainable Development Framework Principles and the UN Global Compact includes the commitment to improve our biodiversity performance.

Uranium was raised in recognition of stakeholder concerns regarding the Company's newest commodity acquisition. In 2005, ownership of the Olympic Dam copper and uranium mine in South Australia was transferred to BHP Billiton as part of its acquisition of WMC Resources Ltd.

During the discussion a number of key themes emerged, though it is recognised that consensus was not achieved between all participants. A summary of comments follows.

Biodiversity

Discussion themes:

- Consider the Company's role at a local – that is, individual operation – and regional basis, including investment in natural and social capital
- Offsets – defined as improving the biodiversity value of a separate area of land to account for the environmental impact of the mining operation – are a generally acceptable practice, if done in conjunction with a sound approach to mine site rehabilitation and having clear measures for the 'offset' protection
- Biodiversity needs to be clearly linked to BHP Billiton's business case for sustainable development.

Quotes from the Dialogue session:

"BHP Billiton needs a stronger regional context for thinking about biodiversity planning and management on its sites; it's about the conservation of genes, species and ecosystems in regions and global 'biodiversity hotspots'. It's much more than the environmental management of particular species of plants and animals on sites."

Allen Kearns, Deputy Chief of Business Integration, CSIRO Sustainable Ecosystems

"There are huge gains to be harnessed from looking at offsets, not just direct site rehabilitation."

George Littlewood, Adjunct Professor, Deakin University

Uranium

Discussion themes:

- Develop a comprehensive uranium stewardship model that considers product safety, waste management, non-proliferation and business risk
- Be transparent and provide information to a wide range of stakeholders
- Work actively with the uranium supply chain to identify and mitigate risks.

Quotes from the Dialogue session:

"Industry has to take responsibility for the security of its sector (alongside existing government responsibility)"

Francis Grey, Research Manager – Australia/New Zealand, Sustainable Asset Management

"Clarify accountability throughout the full life cycle and how you will influence in each area."

Gavin Murray, Head of Sustainability, ANZ Institutional

Our Approach to Reporting

During the discussion participants ranked the value of various sections of our 2005 Sustainability Report. A number of key themes emerged, though it is recognised that consensus was not achieved between all participants.

The 2005 Sustainability Report was acknowledged as a comprehensive document, with particular support given for the Company performance summaries and the case studies. In the previous reporting period our performance summaries received the lowest average score so it was pleasing to see our efforts to improve acknowledged. The global sustainability issues rated by all stakeholders as being important enough to warrant consideration in BHP Billiton's sustainability reporting are:

- [Water](#)
- [Biodiversity](#)
- [Climate Change/Energy](#)
- [Stewardship](#)
- [Indigenous Issues](#)
- [Pollution.](#)

Going forward, it was recommended that BHP Billiton continue its current focus on:

- [Sustainability risks and liabilities](#)
- [Performance](#) and [governance reporting](#).

Areas identified as requiring greater focus were:

- [Uranium stewardship](#)
- Providing more detail on the Company's [biodiversity](#) activities
- Sustainable [technology research and development](#)
- The Company's position on the [Extractive Industries Transparency Initiative](#) (EITI)
- Providing greater detail on the [severity of injuries](#) sustained in our workplaces.

Queries were also raised regarding our timeliness of reporting on some fatalities and revised data since the integration of the WMC business.

Out of respect for the affected families and legal constraints, learning from fatalities and serious accidents may be delayed until after legal proceedings are finalised. With regards to the integration of WMC data, the timing of the WMC acquisition in the financial year (June 2005) and variations between the two companies' data collection and reporting systems meant we were unable to commence full reporting of data from former WMC sites until this reporting year (read more: [Report Parameters](#)).

Building Global Links

BHP Billiton progressively implemented or was involved in the following major externally developed voluntary initiatives (the date in brackets indicates the year we commenced our involvement):

<p>Australian Minerals Industry Code for Environmental Management (1996), now 'Enduring Value'</p>	<p>The Minerals Council of Australia (MCA) represents Australia's exploration, mining and minerals processing industry, nationally and internationally, in its contribution to sustainable development and society. MCA member companies produce more than 85 per cent of Australia's annual mineral output. Enduring Value - the Australian Minerals Industry Framework for Sustainable Development (formerly the Code), provides a framework for an ongoing program of continual improvement in environmental management. Read more.</p>
<p>International Council on Mining and Metals Sustainable Development Framework (2003)</p>	<p>ICMM's industry and association membership has a vision to create "A viable mining, minerals and metals industry that is widely recognised as essential for modern living and a key contributor to sustainable development." In May 2003, the ICMM Council of CEOs committed corporate members to implement and measure their performance against 10 sustainable development Principles.</p> <p>The 10 Principles were developed by benchmarking against other leading global standards including the 1992 Rio Declaration, the Global Reporting Initiative, the OECD Guidelines for Multinational Enterprises, the World Bank Operational Policies, the OECD Convention on Combating Bribery, ILO Conventions 98, 169, and 176, and the Voluntary Principles on Human Rights and Security. Read more.</p>
<p>ISO 14001 Environmental Management Systems (2004)</p>	<p>ISO 14001 is an international standard on environmental management. It provides a framework for the development of both the system and the supporting audit program. It applies to those environmental aspects over which the organisation has control and over which it can be expected to have an influence. Read more.</p>
<p>Mining Certification Evaluation Project – Australian Regional Initiative (2002)</p>	<p>The Mining Certification Evaluation Project (MCEP) was a three-year research project to investigate the feasibility of third-party certification of environmental and social performance of mine sites. As a research activity, it has not attempted to create a working certification scheme, but to establish a knowledge platform for broader international debate and future effort. These efforts have contributed to the development of the Responsible Mining Assurance Initiative. Read more.</p>
<p>UN Universal Declaration of Human Rights (2001)</p>	<p>On 10 December 1948, the General Assembly of the United Nations adopted and proclaimed the Universal Declaration of Human Rights. The Declaration provides a common standard for all peoples and all nations to promote the respect for human rights and freedoms and by progressive measures, national and international, to secure their universal and effective recognition and observance. Read more.</p>
<p>US-UK Voluntary Principles on Security and Human Rights (2003)</p>	<p>Governments of the United States, the United Kingdom, the Netherlands and Norway, companies in the extractive and energy sectors (Companies), and non-governmental organisations (NGOs), all with an interest in human rights and corporate social responsibility, have engaged in a dialogue on security and human rights. The Voluntary Principles regarding security and human rights in the extractive sector fall into three categories; risk assessment, relations with public security, and relations with private security. Read more.</p>

World Bank Operational Directive on Involuntary Resettlement (2003)	The World Bank is a vital source of financial and technical assistance to developing countries around the world. The Bank consists of two development institutions owned by 184 member countries – the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA) . The Operational Directive on Involuntary Resettlement provides guidance in identifying, planning, implementing, and monitoring involuntary resettlement to minimise displacement and restore incomes. Read more .
United Nations Millennium Development Goals (2000)	<p>The United Nations Millennium Development Goals (MDGs) are eight goals to be achieved by 2015 that respond to the world's main development challenges. The MDGs are drawn from the actions and targets contained in the Millennium Declaration that was adopted by 189 nations and signed by 147 heads of state and governments during the UN Millennium Summit in September 2000.</p> <p>Goal 1: Eradicate extreme poverty and hunger</p> <p>Goal 2: Achieve universal primary education</p> <p>Goal 3: Promote gender equality and empower women</p> <p>Goal 4: Reduce child mortality</p> <p>Goal 5: Improve maternal health</p> <p>Goal 6: Combat HIV/AIDS, malaria and other diseases</p> <p>Goal 7: Ensure environmental sustainability</p> <p>Goal 8: Develop a Global Partnership for Development</p> <p>Read more: About this Report>Millennium Development Goals Navigator</p>

We also collaborate with governments, NGOs and academic institutions worldwide to undertake and support research on improving sustainability performance. See below for further details on our activities with the following organisations:

- [Responsible Mining Assurance Initiative](#)
- [Global Reporting Initiative](#)
- [UN Global Compact](#)
- [Council for Responsible Jewellery Practices](#)
- [Uranium Industry Framework Steering Group](#)
- [World Nuclear Association](#).

Responsible Mining Assurance Initiative

The Responsible Mining Assurance Initiative was established in 2006 by a group of mining companies, retailers, non-government organisations, and trade associations to further develop options for independent third-party assurance in the mining sector.

The Initiative builds on the outcomes of the Mining Certification Evaluation Project (MCEP) Report, released in January 2006. BHP Billiton was actively involved in the MCEP process to develop criteria and audit protocols for site-based social and environmental performance. The research and development exercise was led by the World Wide Fund for Nature with participation from a working group comprising representatives of mining companies, NGOs, trade unions, government agencies, financial and accounting organisations and research institutions.

The Initiative also follows in the spirit of a number of other mining-related initiatives including the Framework for Responsible Mining, the World Bank's Extractive Industries Review, the Mining, Minerals and Sustainable Development Report, the Global Mining Initiative, the International Council on Mining and Metals (ICMM) and the ICMM Sustainable Development Principles, and the Council for Responsible Jewellery Practices.

The Initiative will facilitate a process for the identification of responsible mining standards and a governance model for the assurance system. It is hoped that the initial standards and a system for governance will be established by July 2007.

Global Reporting Initiative

The Global Reporting Initiative (GRI) is a multi-stakeholder process developing and disseminating globally applicable sustainability reporting guidelines. GRI is an official collaborating centre of the United Nations Environment Programme (UNEP) and works in collaboration with the UN Global Compact.

BHP Billiton is an organisational stakeholder of the GRI and provides some limited funding to assist in the promotion of the organisation's objectives.

This year our Sustainability Report has been produced using the 2002 guidelines and elements of the draft 2006 update to the GRI Guidelines. We have also adopted the Mining and Metals Sector Supplement, which assists mining and metals companies to report effectively to key stakeholders by providing additional indicators of particular relevance to industry.

Reporting in accordance with the core GRI Guidelines and Mining and Minerals Sector Supplement is an evolving process, as our reporting systems continue to enhance the information reported. Due to the size and complexity of our business, judgments have had to be made regarding the extent of the information that can be presented in relation to each GRI indicator.

Read more: [About this Report>GRI Navigator](#) to see how and where the GRI Indicators have been addressed.

UN Global Compact

The [UN Global Compact](#) is an international initiative that brings together companies with UN agencies, labour organisations and civil society to support ten principles covering human rights, labour, environment and anti-corruption.

Through the power of collective action, the Global Compact seeks to advance responsible corporate citizenship so that business can be part of the solution to the challenges of globalisation. In this way, the private sector can help realise the vision of UN Secretary General Kofi Annan of a more sustainable and inclusive global economy.

Read more:

- [About this Report>Global Compact Navigator](#) for progress during 2006 against the Global Compact's ten principles
- [Engaging Our Stakeholder>Our Stakeholders>Industry Associations](#) for further details on our initiatives with the International Council on Mining and Metals and the World Business Council for Sustainable Development.

Council for Responsible Jewellery Practices

The [Council for Responsible Jewellery Practices](#) (CRJP) was founded in May 2005 with Members from a cross section of the diamond and gold jewellery supply chain, from mine to retail.

Council members are committed to promoting responsible business practices in a transparent and accountable manner throughout the industry from mine to retail. Their commitment aims to maintain consumer confidence in diamond and gold jewellery products and the trust of all interested stakeholders in their industry.

BHP Billiton was an original signatory to the Early Adopters Program initiated by stakeholders in the gold and diamond life cycle.

Read more: [Environmental Case Study>Stewardship](#)

Uranium Industry Framework Steering Group

The [Uranium Industry Framework](#) (UIF) is an Australian Government initiative to identify opportunities for and impediments to the sustainable development of the Australian uranium mining industry over the short, medium and longer term. The Framework is being developed in partnership with relevant State and Territory Governments, industry and other stakeholders.

The Framework will also contribute to raising public awareness of the location and extent of Australia's uranium resources, how Australian uranium is used overseas, and what measures are in place to ensure uranium mining does not adversely impact on human health or the environment.

A high-level Steering Group oversees the development of the Framework and consists of an independent Chair and senior representatives from government, industry and other stakeholder organisations appointed by the Minister. As a member of the Steering Group, BHP Billiton encouraged the establishment of a Uranium Stewardship Working Group to support the work of the steering group.

Read more: [Sustainability at BHP Billiton>Stewardship>Product Stewardship](#)

World Nuclear Association

The [World Nuclear Association](#) (WNA) is the global organisation that seeks to promote the peaceful worldwide use of nuclear power as a sustainable energy resource for the coming centuries. Specifically, the WNA is concerned with nuclear power generation and all aspects of the nuclear fuel cycle, including mining, conversion, enrichment, fuel fabrication, plant manufacture, transport, and the safe disposition of spent fuel.

In April 2006, BHP Billiton presented the Australian UIF Stewardship Working Group Report to the WNA Sustainable Development and Climate Change Working Group Meeting. As a result of this presentation and BHP Billiton's strong position that there was an opportunity for the WNA to take a lead role in developing a global Uranium Stewardship program that involved key stakeholders in each sector of the nuclear fuel cycle, the WNA Board agreed to establish a Uranium Stewardship Working Group within the WNA structure. BHP Billiton accepted the position of chairing this working group.

Stewardship

Stewardship is a principle that calls on all those involved in the product life cycle to share responsibility for minimising the environmental and human impacts that result from the production, use and disposal of the product.

BHP Billiton has embraced the concept of stewardship as an integral part of its commitment to sustainable development. Our approach is directed by [HSEC Management Standard 12](#), the intent of which is that HSEC impacts associated with resources, materials, processes and products are minimised and managed.

Key Stakeholders

In the life cycle of the commodities produced by BHP Billiton, key stakeholders include:

- extractors (our principal area of responsibility for our commodities)
- processors
- manufacturers
- users and end-users (recyclers/reusers/disposers)
- suppliers
- transport chains that link the different sectors.

Types of Stewardship

In the life cycle of our products there are four types of stewardship:

- Material stewardship – refers to the different materials utilised to produce the product as the product moves through its life cycle. These include consumables ranging from tyres and fuel to water and energy. Material stewardship is about understanding and managing these materials (or inputs) in order to minimise harm to people and/or the environment.
- Product stewardship – understanding and managing our specific products or commodities in order to minimise harm to people and/or the environment, as a result of exposure to the particular product/commodity. This is a shared responsibility with others in the life cycle of our product/commodity.
- Resource stewardship – ensuring we maximise the value of the resource (e.g. an ore deposit) for both current and future generations.
- Process stewardship – refers to the different processes applied to the product (e.g. extraction, smelting) as the product moves through its life cycle and that have the potential to generate outputs (other than just the product). These could include greenhouse gases, waste and other emissions. Process stewardship is about understanding and managing these processes (or outputs) in order to minimise harm to people and/or the environment.

The life cycle of our products varies depending on the nature of the product. For the majority of our products the life cycle comprises:

- resource extractors – a BHP Billiton mine or oil field
- processors – note that for some products, such as nickel and aluminium, we are both the extractor and processor
- manufacturers
- users.

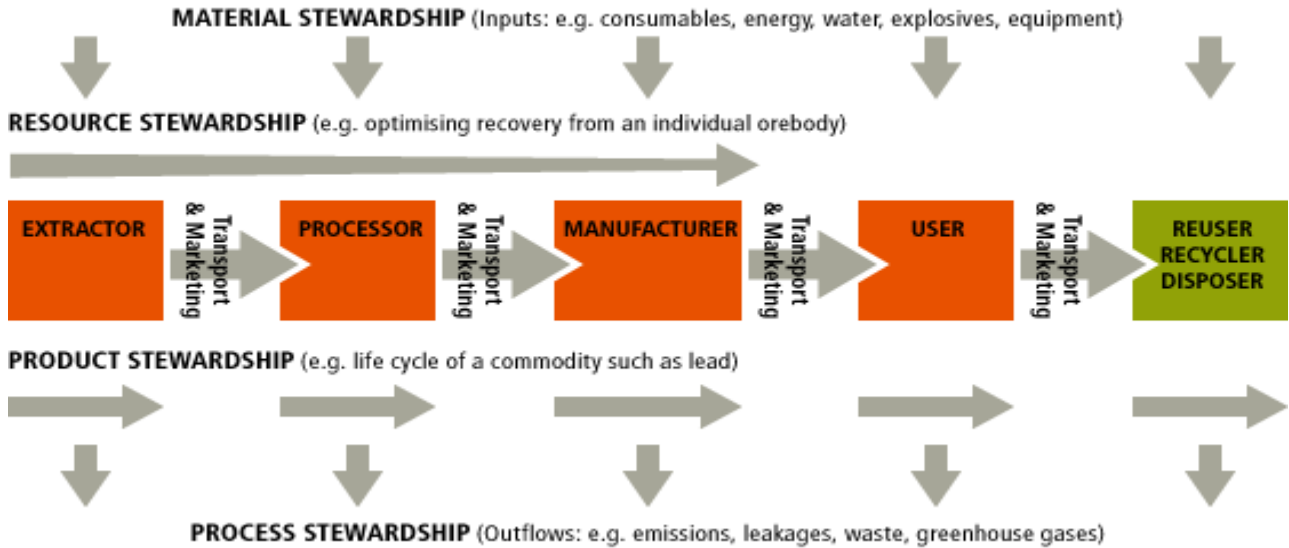
At the end of the life cycle the product is reused, recycled or disposed of. Read more: [Overview of current recycling rates by commodity](#).

The four types of stewardship are illustrated below, using a generic product life cycle.

While material, process and product stewardship apply across the life cycle, resource stewardship is most prominent in the early stages of the life cycle. Common to all parts of the life cycle are the transport and marketing functions, as both play a critical role in stewardship.

The Different Stewardship Types in the Product Life cycle

STEWARDSHIP TYPES – GENERIC PRODUCT LIFE CYCLE

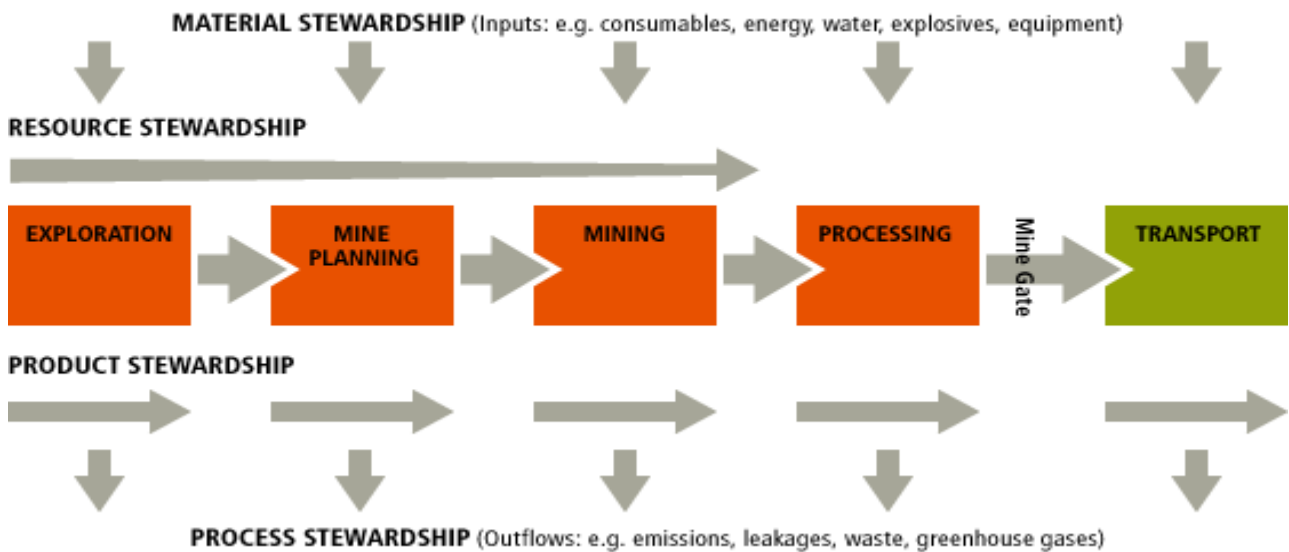


The same model can be expanded upon for each individual stage within the overall product life cycle.

The following diagram illustrates the product life cycle for a company in the extractive stage of the overall life cycle. The diagram highlights how the same principles of stewardship apply within the extractive stage, as activities move from exploration through to mining, then ore processing and, ultimately, transportation from the mine gate to the processing stage.

The Different Stewardship Types in the Extractive Stage of a Life cycle

STEWARDSHIP TYPES – EXTRACTIVE STAGE OF A LIFE CYCLE



Read more:

- [Material Stewardship](#)
- [Product Stewardship](#)
- [Process Stewardship](#)
- [Resource Stewardship](#).

Working with others

Most mining and mineral processing companies do not traditionally integrate product manufacture into their businesses, focusing on extraction and processing only. With the majority of the life cycle of our products occurring after the point of processing, we recognise there is strong business merit for implementing stewardship principles in collaboration with our key stakeholders, through improving product differentiation in the marketplace, maintaining market access and maximising opportunities for recycling and reuse.

Marketing

Our stewardship approach, and increasingly our approach to product marketing, is designed to improve health and safety and to reduce environmental impact across the life cycle of our products.

During the year, four stewardship workshops were conducted for our specialist marketing personnel across the globe. With representatives from each of our Customer Sector Groups, the workshops were designed to develop a clearer understanding of the role of marketing in the implementation of stewardship principles 'beyond the mine gate', and how we can work collaboratively with our customers to reduce the negative impacts of minerals productions on the community and the environment. As a result, a network of product stewardship marketing contacts for each of our commodities has been established.

We generally sell to industrial customers who are knowledgeable in the handling and care of our products. We enhance this safety focus by providing material safety data sheets (MSDSs) with all of our products.

Our customer-centric marketing model means we generally engage directly with customers rather than through brokers and agents. For our key relationships, our ability to provide face-to-face contact between the marketer and the customer aims to improve the result for both parties.

All public comment is vetted, and approval processes are in place to ensure our adherence to laws, standards and voluntary codes related to marketing communications, such as advertising, promotion and sponsorship. With the exception of diamonds, our advertising is limited to industrial users.

Intellectual property, corporate and customer data is protected by our information technology infrastructure. Controls are in place to limit access to customer data and prevent unauthorised alterations.

In 2006 there were no substantiated complaints regarding breaches of consumer privacy or instances of non-compliance with marketing communications, information/labelling or product health and safety regulations.

One example of appropriate stewardship beyond the mine gate is RightShip Pty Ltd, a ship vetting specialist promoting safety and efficiency in the global maritime industry. RightShip is a 50:50 joint venture between BHP Billiton and Rio Tinto that came into being in 2001 after both companies identified the need to effectively manage their own risks around shipping and see sub-standard ships and operators out of the industry.

Using an online system, RightShip vets every ship that the two companies use to move their cargoes. In 2005 this represented 9162 ships online, some 827 million dead weight tonnage(dwt) of cargo, the inspection and assessment of 431 ships and the exclusion of 165 high-risk ships from clients' supply chains.

Material Stewardship

Our Supply Operations seek to ensure that 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.

Read more: [Our Approach>Supply](#).

We are also, wherever possible, collaborating with our suppliers to optimise the use of consumables. BHP Billiton and Caterpillar formed a Strategic Alliance in 2003. From its inception, the alliance has enabled the two companies to align their interests and work towards common sustainability goals. In particular, the alliance is investing in opportunities to better understand technologies that could address the long-term needs of our Company and other users of Caterpillar machinery through an increasingly integrated research and development program.

Read more: [Safety Case Studies>Safety in the Supply Chain](#).

Australian Government's Leading Practice Sustainable Development Program

In 2005/06, BHP Billiton supported the Australian Government's Leading Practice Sustainable Development Program through representation on the Steering Committee for the revision of the Sustainable Minerals series booklets. First produced in 1995 to provide guidance on environmentally sound management in the mining industry, the booklets are now being reviewed and the scope broadened to provide a sustainable development focus, without losing sight of the environmental objectives of the original booklets. The series will include an overview of 14 publications including topics such as mine rehabilitation, water management, community engagement and stewardship.

The process is being facilitated in conjunction with the Minerals Council of Australia, industry representatives and non-government organisations. The first draft of the Stewardship handbook in leading sustainability practices in the Mining Industry series has been finalised, and final draft was released for stakeholder comment in May 2006.

Product Stewardship

Product Sampling

The inaugural Company-wide sampling program, BHP Billiton Sample05, was completed in 2005/06, with the majority of BHP Billiton products sampled. This sampling is in accordance with the European Union (EU) regulatory framework for Registration, Evaluation and Authorisation of Chemicals (REACH) adopted 29 October 2003. REACH aims to improve the protection of human health and the environment while maintaining the competitiveness and enhancing the innovative capability of the EU chemicals industry.

Under REACH, enterprises that manufacture or import more than one tonne of a chemical substance per year would be required to register it in a central database. REACH furthermore gives greater responsibility to industry to manage the risks from chemicals and to provide users in the supply chain with safety information on the substances.

We have also initiated a comprehensive review of the minor elements in our products, with an initial focus on data gathering. There are a range of minor elements originating in minerals deposits that can accumulate in the biosphere, if not appropriately managed.

Industry Initiatives

Applying our stewardship principles, we are actively involved in several product stewardship initiatives, including:

- [nickel](#)
- [copper](#)
- [lead](#)
- [silver](#)
- [diamonds and gold](#)
- [uranium](#).

Nickel

We are working with the [Nickel Development Institute](#) to implement practical product stewardship guidelines, including the proposed EU Chemical Policy, which will require industry to demonstrate that 'chemicals' (which include metals in this context) are safely produced and managed through their life cycles.

Copper

We are actively supporting the [International Copper Association](#) in developing definitions, principles and projects under the Copper Stewardship program.

Lead

We are continuing to play an active role in the [Green Lead™ project](#), an initiative originally conceived by our Cannington silver/lead/zinc operation and adopted in recent years by the lead industry. 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.

The GreenLead™ Consortium has been developing a series of protocols and guidelines that if followed, will minimise the risk of lead exposure to people and the environment. By the end of 2005, a GreenLead™ Assessment Tool was developed to help assess facilities anywhere in the lead acid battery value chain against the Green Lead™ protocols.

The assessment tool has been tested at battery manufacturing and recycling facilities in El Salvador; our Cannington Mine in Queensland, Australia; a lead smelter; a battery recycling plant and the Toyota car plant in Victoria, Australia. The assessment tool has also been tested within Australia at the transport links that join the sectors, including Mitchell logistics (road), Queensland Rail (rail) and RightShip (shipping).

Queensland Rail transports a number of our products to market as well as consumables to our operations, and is a significant link in the life cycle of several of our products. Discussions between our companies has led to Queensland Rail implementing stewardship programs within its business that complement the product stewardship activities being conducted 'behind the mine gate' at our Queensland (Australia) assets.

In the forthcoming year we are expecting to obtain the support of a significant global retail partner in removing lead acid batteries from its product inventory.

Once the testing of the assessment tool has been completed, a Green Lead™ certification scheme and a Green Lead™ governance organisation will be established to facilitate third party verification of performance.

Silver

BHP Billiton was the foundation Chairman of the [Silver Research Consortium](#).

Diamonds and Gold

BHP Billiton was an original signatory to the Early Adopters Program initiated by stakeholders in the gold and diamond life cycle. During 2005/06 the program developed into the Council for Responsible Jewellery Practices, which is aimed at reinforcing confidence in the gold and diamond supply chain. In addition, our Diamonds business is a member of the Kimberley Process Certification Scheme, an international diamond certification scheme aimed at halting the trade in 'conflict diamonds'.

Read more: [Environment Case Study>Stewardship>Council for Responsible JewelleryPractices](#).

Uranium

BHP Billiton's uranium strategy is based on the recognition that to be a world-leading supplier of uranium concentrate requires a foundation based on uranium stewardship.

BHP BILLITON URANIUM STRATEGY'S ANALYSIS FRAMEWORK



Australian Uranium Industry Framework Steering Group

In 2005 the Australian Government, through its Department of Industry, Tourism and Resources, established the Uranium Industry Framework (UIF) Steering Group to propose a uranium strategy. As a member of the Steering Group, BHP Billiton encouraged the establishment of a Uranium Stewardship Working Group to support the work of the steering group.

Acknowledging that the stewardship working group is limited in its capacity to provide a full life cycle stewardship program, as Australia is currently only active in the uranium mining sector of the life cycle, the working group reported that any uranium strategy should:

- demonstrate the effectiveness of industry environmental management performance and provide assurance that existing regulatory controls are adequate and commensurate with the levels of actual risk involved
- support continuous improvement in the economic, social and environmental performance of the Australian uranium industry
- improve stakeholder awareness and engagement and build public trust
- engender an attitude of shared responsibility between the various players in the value chain
- improve market access
- realise potential benefits in terms of competitive differentiation, value adding and consistency with zero harm principles.

Specifically it was proposed that the UIF Stewardship Program should:

- focus on the role and responsibilities of the Australian uranium industry within the broader context of the global nuclear fuel cycle
- clearly differentiate the direct responsibility of Australian industry from areas of interest, obligation and care under a shared responsibility framework
- take a global life cycle view
- be driven from an Australian industry perspective but recognise the experience and strengths of others in the uranium value chain.

World Nuclear Association

The [World Nuclear Association](#) (WNA) represents approximately 90 per cent of the global life cycle of uranium from mining to disposal.

In April 2006, BHP Billiton presented the Australian Uranium Stewardship Working Group Report to the WNA Sustainable Development and Climate Change Working Group Meeting. As a result of this presentation, the WNA Board agreed to establish a Uranium Stewardship Working Group within the WNA structure. BHP Billiton accepted the position of chairing this working group.

The first meeting of the working group was held June 2006. Attending were representatives of each sector of the uranium life cycle from geographically diverse locations that included the USA, Canada, Australia, Russia, France, the UK and Spain.

Prior to the meeting, BHP Billiton personnel visited all aspects of the nuclear fuel cycle in the UK, Sweden, France and Finland as part of an ongoing familiarisation program to provide understanding of the movement of uranium through the nuclear fuel cycle.

Outcomes of the meeting included:

- acknowledging the usefulness of having the entire life cycle of uranium around the same table and being united in a desire to ensure no HSEC impacts in the uranium life cycle
- recognising that achieving uranium stewardship is a long-term strategy
- defining uranium stewardship as 'a program of action to demonstrate that uranium is produced, used and disposed of in a safe and acceptable manner. The program takes a life cycle approach and encourages the use of leading practices for health, safety, environment, and social aspects along the value chain and emphasises waste minimisation and encourages recycling.'

- recognising the importance of identifying leading practice examples in the life cycle as a means of determining both the 'uranium stewardship current state' and 'uranium stewardship future state'
- agreeing to engage in dialogue with a wide variety of stakeholders, including NGOs, so as to describe what is meant by the 'uranium stewardship future state'
- recognising that uranium stewardship involves the entire life cycle.

BHP Billiton uranium dialogue

In April 2006 BHP Billiton held a stakeholder dialogue at which over 30 participants from NGOs, SRIs, and academics, as well as company personnel, discussed a series of issues related to uranium.

The forum expressed a strong expectation that BHP Billiton will take a responsible approach to our role in the uranium supply chain. Various views regarding the merit of uranium mining and BHP Billiton's role in the nuclear life cycle were expressed, such as our role in:

- advocating for stricter international safeguards and social acceptance of uranium
- waste management and disposal
- developing other energy alternatives
- taking a consortium approach to managing surplus uranium
- international uranium agreements and policy discussion
- the environmental management of the Olympic Dam copper and uranium mine.

We will continue to engage on this topic as we develop our strategy to responsible uranium stewardship and embed our role in the supply chain.

Read more: [Engaging Stakeholders>Dialogue in 2006](#) for further details.

During the year, the [BHP Billiton Forum on Corporate Responsibility](#) devoted much time to discussing uranium. At the meeting held in May 2006, 'It was agreed that BHP Billiton could make a positive contribution by improving the quality of public debate on the uranium industry. By working with key stakeholders, including customers and regulators, to raise the quality of the debate BHP Billiton could help strengthen and improve the regulatory frameworks. This could be an important contribution, particularly in countries where governance and regulatory structures are not strong.'

The Company is also presently investigating a major expansion of its Olympic Dam mine in South Australia. To secure the required Australian and South Australian government approvals for the expansion, an Environmental Impact Statement (EIS) is being prepared that will address key environmental and social issues including ground disturbance, dust and air emissions, radiation protection, water and energy supply to the operation and impacts on local and regional communities including Indigenous groups.

Read more: [Environmental Case Studies>Environmental Management](#).

Uranium stewardship at Olympic Dam Mine

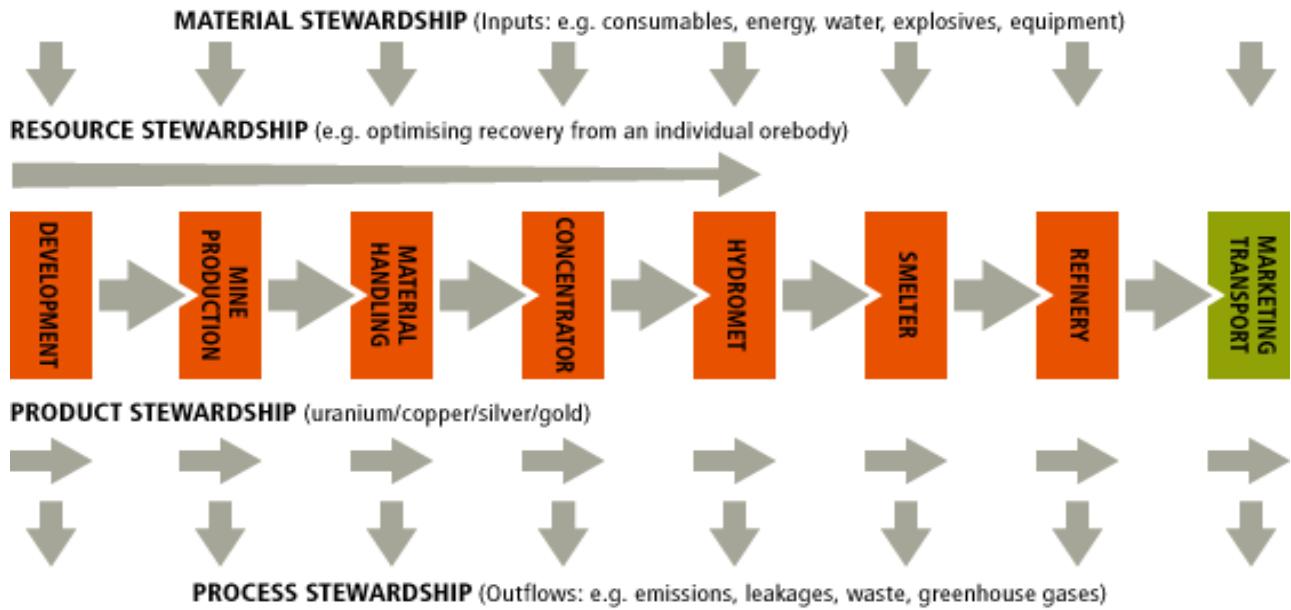
As part of our overall uranium stewardship approach we recognise the importance of our specific stewardship responsibilities on site at Olympic Dam. In some cases, we are already required by customers to provide data that enables them to complete an environmental product declaration.

An Olympic Dam uranium stewardship program has been developed that:

- considers all activities at Olympic Dam
- identifies what potential sustainability impacts may occur
- identifies what systems are in place to eliminate or minimise that impact and assesses the effectiveness of those systems.

The figure below reflects the value chain components at Olympic Dam.

STEWARDSHIP TYPES AT OLYMPIC DAM – OUR RESPONSIBILITY



Radiation safety at Olympic Dam Mine

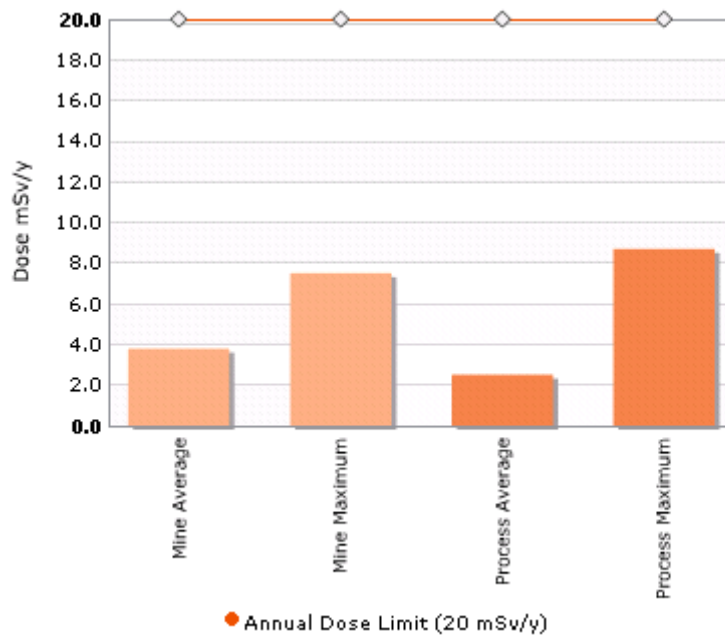
The presence of uranium in the mining and processing at Olympic Dam introduces specific challenges associated with radiation safety. Radiation protection is an integral part of all stages of work and includes consideration during exploration, mining, processing, marketing, transport, long term closure plans and disposal of wastes. Personnel are monitored to ensure compliance with international and national guidance levels and State regulations. The doses to employees and the public are subject to stringent scrutiny by the regulatory authorities, and results are present in quarterly and annual reports.

Radiation exposure limits are set by international, Australian and state bodies, following the recommendations of the International Commission on Radiological Protection (ICRP) and the International Atomic Energy Agency (IAEA) Basic Safety Standards. Throughout the history of Olympic Dam, no employees or contractors have received a radiation dose above the regulatory limit for mine workers of 20 [mSv/y](#).

At the time of reporting, 2005/06 financial year dose results are still being analysed, but the most recent quarterly report indicates that the average dose is approximately 4 mSv/y and the individual maximum around 10 mSv/y, half of the regulatory limit. Our dose control performance is due to a number of major initiatives at Olympic Dam, such as a major upgrade to the ventilation in the smelter. Public doses to radiation at Olympic Dam are a small fraction of that received from natural sources and are over fifty times under the public dose limit of 1 mSv/y.

Average and Maximum Moving Annual Doses for Mine & Process Workers

Preliminary results for April 2005 to March 2006 - Final annual doses still being analysed for financial year 2005/06



We continuously strive to improve our radiation safety performance. Initiatives underway include expanding our real time exposure monitoring program to enable quicker response and better feedback to our employees and contractors. Radiation protection is an essential component of operations at Olympic Dam and performance in this area is a key indicator of our commitment to the health and safety of our employees, contractors and the environment.

Uranium transport and export

Uranium production and transport to customers are performed in a safe and appropriate manner. All transport of uranium product is conducted under Transport Plans approved and audited by the Australian Safeguards Non Proliferation Office (ASNO), and the South Australian and Northern Territory governments. Road, rail and ocean freight is approved by ASNO; and an integrated exports approval process involves a variety of national and international agencies. Our emergency response programs have been developed in accordance with international, state and territory objectives. In accordance with normal practice, all transport of uranium product in 2006 was conducted safely and without incident.

All the countries to which our uranium product has been sold have been approved and monitored under bilateral agreements with the Australian government and are signatories to the international Nuclear Non-Proliferation Treaty.

Process Stewardship

Our standard operating approach is to reduce by-products where possible and improve the production rate of quality product. A number of our operations implement programs to reuse and recycle by-products where applicable to their processes.

For example, at our Alumar aluminium operation (Brazil, 40% BHP Billiton ownership), coal fines from the refinery boilers are being reused as a substitute for the coke burned in the cement kilns at a nearby cement plant. This replacement of traditional fossil fuels in cement production has eliminated fugitive emissions generated during ash handling and removed the need to construct new storage areas for coal fines.

Read more: [Environmental Case Studies>Waste Recycling and Reuse](#).

A R34-million environmental project at our Metalloys site near Meyerton (South Africa) has developed a process to convert hazardous manganese sludges and dusts into manganese alloy pellets, providing a unique alternative to the traditional industry method of storing sludges in lined dams, which is environmentally unacceptable and expensive.

With no precedent anywhere in the world, the team's development of the recycling process for the sludge broke new ground. The solution had to accommodate several waste streams that had accumulated over time, while being flexible enough to cater for future changes in the composition of contaminants. It also had to be environmentally responsible and acceptable to the local communities, the authorities and the Company.

After abandoning several options suggested by external consultants and suppliers, the team set about developing their own process, utilising a mothballed plant on the site for pilot studies. After three years of testing, all the hurdles were overcome, and a revolutionary new process was developed to recycle hazardous manganese sludge into manganese ore pellets, with significant advantages environmentally and economically.

Not only was the new process acceptable to all the stakeholders, but it offered significant economic benefits in that the pellets produced by the conversion process could be made into high-value manganese alloys, which are sold into the market. In addition, no further land would be required for storage dams, and the old dams could be reclaimed and recycled into valuable real estate on site to be used for other projects. This will also lead to further savings by minimising clean-up costs at the time of site closure.

Resource Stewardship

We constantly explore new ways to maximise the value of our resources. For example, a new process at our BMA Peak Downs Mine (Australia) is not only reducing coal loss by approximately nine per cent but also improving the mine's sustainability performance through reducing the area disturbed, waste production and fuel consumption, the latter assisting to meet greenhouse gas emissions targets.

Read more: [Environment Case Studies>Stewardship>BMA Last Drop Coal Removal Program](#).

Mt Arthur Coal (Australia) has implemented a comprehensive water management system founded upon recycling initiatives developed in partnership with the local community, Council and neighbouring mines. The system aims to maximise capture and reuse of mine water and grey water from the local sewerage treatment works to reduce the need to draw from clean water sources, including the Hunter River. The reuse system is enhanced by artificial wetlands constructed from coarse reject, a waste product from coal processing, which filters the treated effluent prior to reuse on site. Each year approximately 800ML (some 90 per cent of total effluent) produced from local sewerage treatment works is reused.

Read more: [Employee HSEC Awards>Environmental Awards](#).

Utilising Secondary Materials and Wastes

While we support the utilisation of secondary materials and wastes from sources external to the organisation, the amount we use at our operations is low due to our primary business activities being related to resource extraction and not downstream processing. We do, however, continue to collect information related to the use of secondary materials and wastes from external sources and seek to maximise these opportunities where they exist. The following demonstrate our use of external secondary materials and wastes.

Waste Water

Approximately 0.3 per cent of BHP Billiton's water demand is provided by waste water from external sources:

- Mt Arthur Coal (Australia) used 1,030 ML of town effluent for coal processing in 2006.
- Kambalda Nickel Concentrator (Australia) used 204 ML from waste water from municipal treatment plant in 2006.
- Crinum underground coking coal mine (Australia) provides waste water to a neighbouring mine for use in coal processing.

Waste Oil

Approximately 0.13 per cent of BHP Billiton's energy demand is supplied by waste oil from external sources:

- Kalgoorlie Nickel Smelter (Australia) uses reprocessed waste oil for furnace fuel instead of diesel and natural gas.
- EKATI Diamonds (Canada) uses waste oil from neighbouring mines for heating (read more: [Environment Case Studies>Energy Efficiency](#)).

Scrap Steel

- Approximately 17,000 tonnes of scrap metal was used in the melting process at DMS Powders (South Africa) in 2006.

We also report on the internal and external use of waste materials generated at our operations. Read more:

- [Environment>Our Approach>Resource Conservation](#)
- [Environment>Our Performance>Resource Use](#)
- Environment Case studies on [coal fine reuse](#) and [waste water reuse](#).

Research and Technology

Our Approach

BHP Billiton aims to create long-term value through the discovery, development and conversion of natural resources and the provision of innovative customer and market focused solutions.

BHP Billiton Technology aims to enhance the realisation of this purpose.

Value and growth can come from the development of new deposits, through extension of current deposits, from significant improvements in current operations and through ensuring our products and our markets are well matched. The scope of technology development activities covers the full resources value chain, from exploration and mining through to downstream minerals processing and product utilisation.

All work is undertaken in accordance with our Charter and Sustainable Development Policy. Such an approach also accords with our stewardship activities (read more: [Stewardship](#)).

The timeframes for technology development vary greatly, depending on the magnitude of the technology change being sought and the opportunities and difficulties encountered during the journey. Typically, when targeting new or step-change technologies that may have an impact in greenfield or brownfield applications, the development profile spans three to ten years. By contrast, continuous improvement activities pertaining to operating sites are often carried out on site and range from a period of months to a year or two. The development of the skills and the knowledge base, necessary for the optimum matching of our products to our customers' processes, is ongoing. To be effective in this area, deep understanding is often needed and a sustained commitment over a long timeframe is required.

Current Activities

Enhancing discovery

Ore bodies are becoming more difficult to discover, and the ability to detect deposits occurring at depth requires new technologies.

The FALCON™ exploration system is a geophysical technology that has been developed by BHP Billiton over several years and is now in deployment phase. It is an airborne gravity gradiometer (AGG) system that measures minute changes in the Earth's gravity field where mineral deposits occur.

The GEOFERRET™ exploration tool is a rapid, deep-penetrating ground electromagnetic system that is specially designed for the detection of conductive, deep, mineral deposits. It is particularly useful for understanding extensions of existing deposits.

The FALCON™ and GEOFERRET™ systems are two technologies that we have developed to enhance our potential for discovery of ore bodies.

Mining smarter

Ore bodies are not homogeneous in their spatial distribution, their grade or their ability to be processed. The downstream customer of the mine – the ore processing plant – is best designed and best operated if it receives a consistent feedstock. Having a mine plan that integrates knowledge of the orebody with the needs of the processing plant is a key means of optimising value. This and related questions needed an innovative approach beyond what was available to the industry. Implementation of our advances in this area has generated very positive outcomes for our operations.

Skills in the mining area, more specifically when applied in geotechnical research and development, have also contributed significantly to the safety of our operations. Development of improved methods for rapidly and accurately understanding structural geology at our mine sites enables improved wall and slope stability to be achieved.

Extending mine life

In ensuring the maximum value is obtained for our business, BHP Billiton strives to improve the economic life of its operations. In doing so, the Company is committed to improving the environmental and social impact of its mining activities.

It is quite common in the history of a mine that, as the operation ages, production becomes more challenging. This may, for example, be due to a decrease in ore grade or a change in the mineral type. To deal with these situations, it is advantageous to have available or to develop technologies that can accommodate such changes.

In a recent addition to our Escondida copper operation (Chile), the known technology of heap leaching of sulphide ores has been implemented. Enhanced heap leaching of copper ores is a technology which has been the subject of development in the Company for a number of years, and the objective is to improve performance such that it can be even more widely applied to lower-grade ores of differing mineral types in the future.

Some of the skills and technology developed to enhance mineral extraction is also now being applied to water treatment needs in our South African coal operations.



Geotechnical studies for better design of high walls in open pit mining can improve both production and safety outcomes



From left to right: Heap leaching R&D starts with studies in columns in a laboratory; may move to a demonstration scale heap; before full scale operation; all with the goal of producing copper metal.

Adapting to a changing world in nickel

Although world demand for nickel is strong, the available sources are changing. The outlook for discovery of high-grade massive sulphides appears poor, so attention is being directed to using lower-grade disseminated sulphides and also laterite deposits.

Laterite deposits represent the larger portion of world nickel occurrence but currently provide the smallest share of production. For the past decade, BHP Billiton has been developing improved laterite technologies to address anticipated challenges from future resources. The Company currently operates highly successful laterite nickel operations at Cerro Matoso (Colombia) and Yabulu (Australia).

A new project at Ravensthorpe (Australia) is under construction and uses an acid leach process, which combines the best available technology for pressure leaching together with an in-house improvement that adds an atmospheric leach section to the flow sheet. Overall the process is termed Enhanced Pressure Acid Leaching (EPAL).

Matching our products with our customers' needs

To ensure that mined resources are fully utilised, our Technical Marketing Team engages our customers to address any issues related to achieving the best results when using our ores. For example, steel mills typically convert fines from iron ore to a material called sinter, which must have the size and strength necessary for good performance in a blast furnace. By gaining a deep understanding of this sintering process over many years and working very closely with our customers, we have contributed to a change in patterns of use of iron ores from large deposits. Goethitic ores, which were once regarded as of marginal use as minor components in blends, are now regarded as highly desirable.

External Partnerships

BHP Billiton works with a very large network of universities and research organisations across the globe to improve technology availability. China, Russia, India, the USA, Canada, Chile, the UK, South Africa and Australia are some of the countries involved. Sometimes we follow a one-on-one arrangement with the research institution in support of specific Company initiatives. Often, however, the connection is part of a multi-participant collaborative effort targeted at achieving advances for the industry. This is often the case with environmental initiatives – such as with [FutureGen](#) (USA) and [Coal21](#) (Australia), which focus on improved greenhouse gas outcomes.

In developing external partnerships we are also sensitive to the need to contribute to the ongoing health of the research and teaching sectors. Our people serve as members of boards and advisory groups for many organisations, and we support research chairs in a number of centres and give targeted support to industry-related events and conferences.

These collaborations serve to enhance innovation across the industry as well as within BHP Billiton.

Security, Emergency Response and Business Continuity

Business continuity describes the processes and procedures an organisation puts in place to ensure that essential functions can continue during and after a disaster. Business continuity planning seeks to prevent interruption of critical services, and to re-establish full functioning as swiftly and smoothly as possible.

As a consequence of the times we live in, during the year we renewed our focus on ensuring we have the processes and procedures in place so that essential functions can continue during and after a crisis or an emergency situation — be it an extreme climatic event, disease outbreak, security issue, or any other event that poses a threat to the safety or health of employees, contractors, customers or the public or that can cause damage to assets, the environment, or our image and reputation.

Our approach to security, emergency response and business continuity is described in [HSEC Management Standard 14](#), Crisis and Emergency Management. We seek to prevent the interruption of critical services and, in the event of a crisis or emergency occurring, procedures and resources are in place to effectively respond and re-establish full functioning as swiftly and smoothly as possible.

In particular, Standard 14 requires that systems are in place to:

- Identify potential emergency situations and their impacts
- Define response plans, roles and responsibilities
- Identify, maintain and test resources to ensure their availability
- Train employees, contractors, visitors and external stakeholders
- Conduct, document, share and follow up on learnings from emergency response drills.

Security, Emergency Response and Business Continuity Guidelines

HSEC Management Standard 14 is supported by a series of Guidelines that are prepared and updated on a regular basis by the Asset Protection Group, in conjunction with the Customer Sector Groups and the HSEC Function (read more: [Governance>Structure and Responsibilities](#)). The Guidelines cover:

Security — specifically the protection of assets, access control, pre-employment screening, employment of security guard forces, the use of firearms and other weapons, and crime against the Company and the reporting of incidents (read more: [Socio-Economic Case Studies>Training for Security Personnel and the Community](#)).

Crisis and Emergency Management (CEM) — provides a global framework for the crisis and emergency response capability for the Company. The CEM plan ensures that wherever an employee is located throughout BHP Billiton, a crisis management system exists, which, while flexible enough to adapt to the unique requirements of our respective assets and operations, shares a commonality of terminology and processes that transcends the challenges of working within a global environment. The CEMP is based around a tiered system where the level of response is determined by the degree of severity of the incident and potential impact on life, property and business operations. Upon being advised of an incident and the mobilisation of relevant incident management teams, the ECC notifies the appropriate emergency management team and, subject to the real and potential degree of severity of the incident (based on the BHP Billiton severity rating scale as utilised by the [Enterprise-Wide Risk Management system](#)), activates higher-level CEM teams.

A core component of the program is the London-based Emergency Communications Centre (ECC), which operates on a 24/7 basis and serves as the central point of notification for incidents, as well as performing a key communications role throughout any emergency or incident as it occurs. It is supported throughout the Company through regional asset protection managers located in London, Houston and Melbourne.

A comprehensive scenario-based training and exercise program is regularly conducted throughout BHP Billiton and is focused on the major risks facing the Company as identified in the [Enterprise-Wide Risk Management system](#). All operations are included in these comprehensive training and exercise activities, with the effectiveness measured via the [HSEC audit and self-assessment program](#).

Operations that do not meet the requirements of Standard 14 during the HSEC audit and self-assessment process receive additional support in the following period to ensure that the identified shortcomings are addressed as a matter of priority.

Business Continuity — specifically provides an overview of and guidance on the establishment of a Business Continuity Management Program. This program integrates with the Crisis and Emergency Management Plan and Disaster Recover Planning initiatives.

In July 2006, when weather forecasters predicted Hurricane Rita would pass very close to Houston, where some 600 of our people are located, the decision was made to close the office early so people could evacuate to safe areas. The office was closed for five working days and during that time business continuity plans were enacted that saw payrolls run remotely and regular messages sent to all employees via email, phone or text messaging to help ensure their safety. For information on how our employees supported the relief efforts after the hurricane, read [Community Case Study>Disaster Relief](#)

Safe Travel Management Systems — intended to reduce the security risks associated with business travel to as low as reasonably practicable. For an example on our approach, read [Safety Case Study>Aviation Safety](#).

Avian Flu

Since June 2005 BHP Billiton has been closely monitoring the spread of avian flu and has established a Pandemic Working Group that is constantly monitoring all issues relating to avian influenza. This includes planning, response and resources required to assist businesses in the event avian flu affects our communities.

As a result, all business units have been issued with:

- Business Unit Pandemic Checklist — designed to enable businesses to determine the local conditions for their operations (measured against the six-phase pandemic scale developed by the [World Health Organization](#)) and provide considerations for developing an effective and appropriate response to any potential pandemic that may develop.
- Influenza Pandemic Planning Template — designed to help the Country Co-ordination Team or Local Contingency Planning Team to manage the local business, health and social implications of an influenza pandemic.

Performance at a Glance

Performance at a glance is intended to provide you with a quick overview of our performance over the reporting period. See the following for:

- our [HSEC Targets Scorecard](#)
- [Customer Sector Group Reviews](#)
- a summary of our internal and external [Recognition](#)
- a summary of [key sustainability data](#) and [environmental data](#).

For details on our performance, read:





- [Governance>Our Performance](#)
- [Health>Our Performance](#)
- [Safety>Our Performance](#)
- [Environment>Our Performance](#)
- [Community>Our Performance](#)
- [Socio-Economic>Our Performance](#).

HSEC Targets Scorecard




BHP Billiton's Health, Safety, Environment and Community (HSEC) Performance

(Baseline: 1 July 2001 to 30 June 2002 for reduction targets except where stated otherwise)

Overall performance against target:





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

Performance change since last reporting period:

	Performance tracking steadily
	Performance has improved
	Performance has declined




Zero Harm

Performance 2005/06

Zero fatalities		Three fatalities at our controlled activities ¹ (FY05: 3)
Zero significant environmental incidents (i.e. rated 3 and above on the BHP Billiton Consequence Severity Table)		Three Level 3 environmental incidents (FY05: 3)
No transgressions within the Group's activities of the principles embodied within the UN Universal Declaration of Human Rights		None identified (FY05: none)
Legal Compliance Zero fines and prosecutions ²		Seven fines greater than US\$1,000. Total fines paid US\$479,809 (FY05: US\$20,836) ³

Management Systems





Performance 2005/06

All sites to undertake annual self-assessments against the BHP Billiton HSEC Management Standards ⁴ and have plans to achieve conformance with the Standards by 30 June 2008		94 per cent of required self-assessments were completed at operating sites (FY05: 100 per cent)
		An overall conformance of 3.9 out of 5 has been achieved, compared to our conformance target of greater than 4 (FY05: 3.9 out of 5)
All sites ⁵ to maintain ISO 14001 Certification		98 per cent of sites requiring ISO 14001 are certified or have been recommended for certification by their ISO auditor (FY05: 100%)

<p>Risk Management Risk registers to be in place and maintained at all sites⁵ and within BHP Billiton businesses and Corporate offices</p>		<p>Risk registers are in place at 99 per cent of required sites, businesses and Corporate offices (FY05: 100%)</p>
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Health

Performance 2005/06

<p>All sites⁵ to implement a baseline survey on occupational exposure hazards and establish occupational hygiene monitoring and health surveillance programs</p>		<p>100 per cent of required sites have implemented baseline surveys (FY05: 100%)</p>
<p>Annual reduction in exposures above occupational exposure limits, expressed as a percentage of people of the workforce</p>		<p>Potential occupational exposure to Noise, if not for the use of personal protective equipment (PPE), reduced by 6 per cent from 2004/05, and reduced by 4 per cent compared to the baseline year of 2002/03 (FY05: 2% increase)</p>
		<p>During the year Other Exposures, if not for the use of PPE, reduced by 10 per cent from 2004/05, and reduced by 5 per cent compared to the baseline year 2003/04 (FY05: 5% increase)</p>
<p>20 per cent reduction in incidence of occupational disease by 30 June 2007</p>		<p>During the year the incidence of occupational illness reduced by 10 per cent, resulting in an overall reduction of 46 per cent to date against the baseline year 2002/03 (FY05: 36% reduction)</p>





Safety


Performance 2005/06

<p>50 per cent reduction in Classified Injury Frequency Rate⁶ (excluding first aid treatments) at sites by 30 June 2007</p>		<p>During the year the Classified Injury Frequency Rate (CIFR) increased from 3.9 to 4.8, resulting in an overall reduction to date of 28 per cent against the baseline CIFR of 6.7 (FY05: 42% reduction)</p>
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Environment



Performance 2005/06

<p>Energy and Greenhouse All sites with emissions greater than 100,000 tonnes per year of carbon dioxide equivalent⁷ to have and maintain energy conservation plans with specific targets</p>		<p>Energy conservation plans are in place at 98 per cent of required sites and at eight sites that were below the emissions threshold (FY05: 100%; 11 sites)</p>
<p>All sites with emissions greater than 100,000 tonnes per year of carbon dioxide equivalent⁷ are required to have and maintain greenhouse gas management programs</p>		<p>Greenhouse gas management programs are in place at 98 per cent of required sites and at seven sites that were below the emissions threshold (FY05: 100%; 12 sites)</p>
<p>Aggregate Group target for reduction in greenhouse gas emissions per unit of production of 5 per cent by 30 June 2007</p>		<p>During the year our greenhouse gas intensity index increased by 3 per cent, resulting in an overall reduction to date of 8 per cent against the baseline⁸</p>
<p>Water All sites with fresh water consumption greater than 500 ML per year⁹ to have and maintain water management plans</p>		<p>Water management plans are in place at 99 per cent of required sites and at 27 sites that were below the usage threshold (FY05: 97%; 26 sites)</p>

<p>Aggregate Group target of 10 per cent reduction in fresh water consumption per unit of production by 30 June 2007</p>		<p>During the year our water intensity reduced by 6 per cent, resulting in an overall increase to date of 1 per cent against the baseline⁸</p>
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Environment

2004/05

<p>Waste All sites⁵ to have and maintain waste minimisation programs</p>		<p>Waste minimisation programs are in place at 97 per cent of required sites and at seven sites that were not required to meet this target (FY05: 98%;, 14 sites)</p>
<p>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</p>		<p>During the year our general waste intensity index reduced by 14 per cent, resulting in an overall reduction to date of 24 per cent against the baseline⁸</p>
<p>Land management All sites¹⁰ to have and maintain land management plans to protect and enhance agreed beneficial uses</p>		<p>Land management plans are in place at 97 per cent of required sites and at 17 sites that were not required to meet this target (FY05: 98%; 21 sites)</p>
<p>Product stewardship Life cycle assessments prepared for all major BHP Billiton minerals products¹¹ (incorporating participation in industry programs as appropriate)</p>		<p>Life cycle assessments (ISO14043 compliant) have been completed for all our major commodities</p>

Community

Performance 2005/06

<p>All sites¹⁰ to prepare public HSEC reports at a local level (including incidents, community complaints and relevant site-specific emissions) on an annual basis</p>		<p>HSEC reports were prepared by 95 per cent of required sites or businesses (FY05: 100%)</p>
<p>All sites¹⁰ to have and maintain a community relations plan</p>		<p>Community relations plans are in place at 98 per cent of required sites and at 11 sites that were not required to meet this target (FY05: 98%; 22 sites)</p>
<p>Aggregate contribution to community programs, including in-kind support, of a target of 1 per cent of pre-tax profits, calculated on a three-year rolling average</p>		<p>Expenditure totalled US\$81.3 million, equivalent to 1.45 per cent of pre-tax profits on a three-year rolling average (FY05: US\$57.4 million; 1.59%)</p>

1. Controlled activities are work related activities where BHP Billiton directly supervises and enforces HSEC standards.
2. Fines reported may relate to incidents that occurred in previous years
3. Prosecutions included are those that have been determined during the year and resulted in fines. They may relate to incidents that occurred in previous years. The only exception is a safety fine, which was received in the 2005 reporting period but was not reported last year as it was being held in trust pending appeal. The fine became payable in the 2006 reporting period.
4. Issue 3 of the BHP Billiton HSEC Management Standards was introduced in September 2005.
5. Includes 59 sites in total, excludes exploration and development projects, sites being divested, closed sites, and offices. Also excludes recent acquisitions, e.g. WMC, which have two years to achieve compliance with target.
6. 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.
7. Forty-eight sites have emissions greater than 100,000 tonnes per year of carbon dioxide equivalent and, combined, account for 98 per cent of the Group's greenhouse gas emissions.
8. The Group's intensity indices have been modified to exclude data from the Chrome business in all years, including the base year, as it was divested. Ex-WMC sites data have not been included in intensity indices as they were not part of the business when the baselines were set.
9. Forty-six sites have fresh water consumption greater than 500 ML per year and, combined, account for more than 98 per cent of the Group's consumption.
10. Excludes petroleum platforms, exploration and development projects, closed sites, and offices with no significant community or land management issues. Also excludes recent acquisitions, e.g. WMC, which have one year to achieve compliance with the target.
11. Excludes petroleum and diamonds.

Customer Sector Group Reviews

We have adopted a business model based on customer-oriented groupings called Customer Sector Groups (CSGs). This structure reflects 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. Refer to the following for a summary of sustainability performance for each of our CSGs over the 2005/06 reporting period and future initiatives regarding our [Key Sustainability Challenges](#):

- [Aluminium](#)
- [Base Metals](#)
- [Carbon Steel Materials](#)
- [Diamonds and Specialty Products](#)
- [Energy Coal](#)
- [Petroleum](#)
- [Stainless Steel Materials](#).

Aluminium

BHP Billiton is a major producer of primary aluminium, with a total operating capacity from our operating sites of around 1.3 million tonnes of aluminium, approximately 14 million tonnes of bauxite and 4 million tonnes of alumina per annum.

Our network of operations has sites in South America, southern Africa and Australia. These include:

- Primary aluminium smelters – Hillside Aluminium (South Africa), Bayside Aluminium (South Africa), Mozal (Mozambique), Alumar (Brazil)
- Alumina refineries – Worsley (Australia), Paranam (Suriname), Alumar (Brazil)
- Bauxite mines – MRN (Brazil), BMS (Suriname), Boddington (Australia).

Aluminium services key market segments such as the automotive sector, the packaging sector and the construction industry.



Neville Hughes, a mine site Artisan at Boddington Bauxite Mine

2006 Sustainability Performance Overview

Key aspects of Aluminium's sustainability performance for the reporting period 2005/06 were:

- We have sustained our target Total Recordable Injury Frequency Rate with year end TRIFR being 4.12.
- We continued to roll out the BHP Billiton Fatal Risk Control Protocols.
- Behaviour-based HSE programs were enhanced with a continued drive across all sites to report near miss incidents and take appropriate action to rectify, reduce risk and raise awareness.
- No significant environmental incidents occurred.
- All managed sites maintained their ISO 14001 certification.
- The CSG continued the implementation of a leading practice occupational health management program.
- We continued the implementation of the Fit for Work/Fit for Life guideline program as part of our holistic approach to health and safety for all employees.
- Contractor management training at all sites has progressed well, with around 70 per cent of employees trained so far.
- We have continued to operate and support community programs in all countries where we operate, with international recognition being attained for community health initiatives in Mozambique and South Africa.
- Read more: [Aluminium 2006 Environmental Data Summary](#).

2007 Sustainability Outlook

Looking ahead for the Aluminium CSG, a focus on the BHP Billiton Key Sustainability Challenges will include the following:

Eliminating Fatal Risks

- Zero Harm is based on having appropriate programs and systems implemented, understood and adhered to by all. Continued implementation of the BHP Billiton Fatal Risk Control Protocols and behaviour based HSE programs for all employees will remain a high priority for leadership. Application of these programs at all sites will be maintained through self-assessments and cross-asset audits, with continuous improvement the desired result of each audit.

Sustainable Community Development and Closure of Operations

- We are continuing to focus on the control and reporting of emissions to improve air quality around our operations and ensure transparency with our key stakeholders.
- In line with the Company's Closure Standard, a review of closure plans for all sites is well advanced, with the bauxite mines in Suriname receiving significant management input. All plans will be finalised in the 2007 financial year.
- Programs to improve cross-cultural awareness have been identified as an opportunity to improve leadership effectiveness in the operations and will be tracked for wider application in all operations.
- Our focus on human rights responsibilities and community development activities will expand to ensure that our programs are relevant to the communities in which we operate.
- Community projects will continue to focus on fostering positive partnerships with the communities and governments. Programs will be designed to impact overall HSEC needs as well as capacity building, but with an increased focus on the HIV/AIDS pandemic in southern Africa and South America.

Access to and Management of Resources

- Access to available water resources is under increasing pressure from population growth and an increasing prevalence of drought. The efficient and effective use of water is a priority, with a particular focus on recycling process water.
- High-quality environmental studies associated with new developments or projects are designed to ensure minimum impact on natural resources.

Greenhouse Gas Emissions

- Aluminium smelting, being energy intensive, will ensure a continuous focus on energy efficiency to curtail cost, minimise impact and achieve BHP Billiton Corporate HSEC targets

Occupational and Community Health

- We will focus on the continued application of the CSG occupational health program for all employees and additional reporting metrics will be employed to improve our understanding of health performance. The need to establish maintenance and assessment programs to ensure sustained monitoring of occupational health programs is key, as is skills development in occupational health.
- The impact of HIV/AIDS on the smelters, as well as the communities in which we operate, will continue to be a threat into the future. For this reason an ongoing program of AIDS education within the operations, as well as in the communities, remains a high priority. In addition, skills training and succession planning is an important human resources management function.
- The threat of health pandemics, such as avian flu, now exist globally; steps to mitigate this impact are being taken; and it will remain high on the agenda in the coming year.

Base Metals

BHP Billiton is one of the world's largest producers of copper and a leading producer of uranium, silver, gold, lead and zinc. We operate two mines in Australia (Cannington, Queensland, and Olympic Dam, South Australia), two in northern Chile (Cerro Colorado in Region I and Escondida in Region II), and have a joint venture interest in the Antamina mine in Peru. The Tintaya copper mine in Peru was sold in June 2006. The Spence copper mine in Chile will come on line in fiscal year 2007.

The most important uses for Base Metals products are in the manufacture of electrical products and in the construction industry. Geographically, our markets are evenly spread between the Americas, Europe and Asia.



Escondida copper mine, northern Chile.

2006 Sustainability Performance Overview

Key aspects of Base Metals' CSG sustainability performance for the reporting period 2005/06 were:

- In July 2005, an employee at Olympic Dam was fatally injured when a drill from an approaching drive face triggered an unplanned detonation.
- Our Total Recordable Injury Frequency Rate increased by 51 per cent, taking into account acquisitions and divestments.
- All controlled sites obtained or recertified their ISO 14001 certification.
- Base Metals performance continued to merit national awards in Chile and Peru, including a safety award to Escondida (Chile), an environment award to Antamina (Peru) and both safety and community awards to Tintaya (Peru).
- There was one significant environmental incident in FY 2006, as a result of an uncontrolled release of acidic water into a local river at Tintaya.
- As it recovered from the major earthquake experienced July 2005, Cerro Colorado also played an important role in the recovery of its neighbouring communities.
- Important progress was made in integrating Olympic Dam into the BHP Billiton way of managing HSEC. Olympic Dam achieved all its HSEC integration targets for FY 2006.
- Read more: [Base Metals 2006 Environmental Data Summary](#).

2007 Sustainability Outlook

Looking ahead for the Base Metals CSG, a focus on the BHP Billiton Key Sustainability Challenges will include the following:

Eliminating Fatal Risks

Our fatal risk control strategy is based on the following four components:

- Fatal Risk Control Protocols (FRCPs). We will consolidate our FRCPs, beginning with the visible leadership of line management, and implementing the improvement plans generated with the valuable support of the FRCP Facilitators.
- Behaviour-based Safety. We will reinforce peer-to-peer safety observations, to achieve greater participation and increased awareness in the workforce.
- Significant incident reporting and investigation. There is room for improvement in our significant incident reporting and in the quality of incident investigation. We will strive to maintain our good record in incident investigation closeout.

- Management of contractors. Of our 24,000 workers in 2006, 77 per cent were contractors, so contractor management is critical to our success. We will continue to emphasise involvement of senior contractor management, participation of contractor employees in our Behaviour-Based Safety programs, and implementation of the Fatal Risk Control Protocols by contractors.

Sustainable Community Development and Closure of Operations

- Regulation of mine closure is relatively new in most countries in which Base Metals operates. FY 2006 saw significant advances in updating the closure plans at all the Base Metals assets to the BHP Billiton's Closure Standard. All the updates will be completed in FY 2007, putting us in the industry forefront in closure management.
- In Chile and Peru, public awareness of mining's increased profitability has generated significant expectations about our contribution to local, regional and national development, both long- and short-term. One of the major challenges facing us is how to respond to those expectations effectively and in a way that is consistent with our sustainable development goals.

Access to and Management of Resources

- The management of groundwater resources in arid environments is gaining increasing stakeholder attention. This is happening at a time of increasing water demand for our expanding operations.
- Base Metals is placing a priority on reducing fresh water consumption and on maintaining ecosystems in our water resource areas.

Greenhouse Gas Emissions

- Large amounts of energy are needed to process copper ore into saleable products. Rising energy prices have focused attention on energy efficiency, particularly for new projects.
- Our operations in Chile have made important achievements in green house gas emissions reduction in recent years. This progress is, however, threatened by the prospect of decreased availability of natural gas from Argentina, forcing a return to greater reliance on coal-generated power.

Occupational and Community Health

- A high priority for 2007 is to continue to consolidate and build upon the progress of the South American Occupational Health and Hygiene Network, for improved sharing of best practices and alignment of concepts and procedures.
- Our most important health risks are noise, dust and acid mist. For acid mist we have developed good practices, but we wish to participate in additional research for further improvement. For noise and dust, we have identified good practices in some sites and are in the process of disseminating these to the other sites.
- Radiation has become a higher priority risk for Base Metals, with the acquisition of Olympic Dam. Our first step in addressing it has been to identify and appoint a new senior radiation officer who has developed a comprehensive risk control program.

Carbon Steel Materials

Carbon Steel Materials is a leading supplier of raw materials and services to the international steel industry, producing and marketing a full range of steel-making raw materials – iron ore, iron pellets, coking coal and manganese ore and alloys. With operations in Australia, South Africa and Brazil, Carbon Steel Materials is currently the world's largest supplier of seaborne coking coal, and manganese and the third largest supplier of iron ore.

The following operations are part of BHP Billiton's global Carbon Steel Materials network:

- Western Australian Iron Ore operations (80-100% ownership) – iron ore
- Boodarie Iron, Australia (100% ownership) – Hot Briquetted Iron (non-operational)
- BHP Billiton Mitsubishi Alliance (BMA), Australia (50% ownership) – metallurgical and thermal coal
- BHP Mitsui Coal, Australia (80% ownership) – metallurgical and thermal coal (marketed through BMA)
- Illawarra Coal, Australia (100% ownership) – metallurgical and thermal coal (marketed through BMA)
- Samancor Manganese, South Africa and Australia (60% ownership) – manganese ore and alloy
- Samarco Iron Ore, Brazil (50% ownership) – iron ore pellets



Locomotive emerging from train load-out tunnel at Mt Whaleback, Newman, Western Australia.

2006 Sustainability Performance Overview

Key aspects of the Sustainability performance of Carbon Steel Materials (CSM) for the reporting period 2005/2006 were:

- No fatal injuries or significant environmental incidents were recorded within our operations.
- A 16 per cent reduction in the Total Recordable Injury Frequency Rate (TRIFR) across CSM was achieved, falling short of our CSM target of a 20 per cent reduction.
- A major focus on incident reporting has occurred across CSM. A significant increase in the number of potential significant incidents reported has increased our ability to proactively manage our approach to HSEC.
- Progressing compliance with the Company-wide Closure Standard; we are developing closure risk assessments for all our operations.
- We are working towards implementation of the Fit for Work/Fit for Life guidelines, with particular focus on fatigue management.
- No significant environmental incidents occurred.
- All controlled sites maintained their ISO 14001 certification.
- Read more: [Carbon Steel Materials 2006 Environmental Data Summary](#).

Specifics of our commodities are:

Western Australia Iron Ore

- Iron Ore achieved a 41 per cent reduction in its TRIFR.
- Iron Ore signed a health Memorandum of Understanding (MOU) with the Australian Health Minister for the Pilbara region. Our contribution, in a more than A\$7 million partnership, will be A\$3.342 million over three years. This MOU has more than 22 initiatives and involves a range of partners in addition to the Department of Health.
- Iron Ore also signed MOUs with each the Town of Port Hedland and the Shire of East Pilbara for A\$1 million per year for three years. This will go towards community infrastructure (read more: [Community Case Studies: Education](#)).
- Closure Plan risk assessments and risk registers were completed for all Western Australia Iron Ore operations.
- All our sites progressed well in implementing the Corporate Guidelines for Fit for Work Fit for Life (read more: [Health Case Studies: Improving Men's Health](#)).
- Fatigue management plans were developed in line with the Fit for Work/Fit for life requirements.
- An Occupational Health and Hygiene Workshop was held to help identify further work required to meet the requirements of the Company's HSEC target for health baseline exposure assessments.

Metallurgical Coal

- Metallurgical Coal achieved a two per cent reduction in its TRIFR.
- The BHP Billiton Mitsubishi Alliance (BMA) Crinum Mine (Queensland, Australia) was awarded for the second consecutive year, both the Queensland Central Region Award and the overall State Chief Inspector's Safety Management Award by the Minister of Mines and Energy and the Chief Inspector of Mines.
- BMA Hay Point Services introduced an integrated Health and Wellbeing Program for employees, based on the principle that 'if you are fit for life, you'll be fit for work' (read more: [Health Case Studies: Employee Health](#)).
- BMA Norwich Park was awarded a Category 1 environmental performance rating from the Queensland Environmental Protection Agency, making it the only operating mine in Queensland with this rating.
- Illawarra Coal received the 'Peoples Choice' award at the New South Wales Minerals Council Conference for their innovative roller change out process. The process greatly improves ergonomic safety by ensuring that the rollers can be removed easily and at the correct lifting height.
- Closure Plan risk assessments and risk registers were completed for all Metallurgical Coal operations
- Fatigue management plans were developed in line with the Fit for Work/Fit for life requirements.
- An Occupational Health and Hygiene Workshop was held to help identify further work required to meet the requirements of the Company's HSEC target for health baseline exposure assessments.

Manganese

- Manganese achieved a 15 per cent reduction in its TRIFR.
- Our Manganese Metal Company Nelspruit Plant was awarded the overall regional winner of the Nosa Integrated Five Star Management System Category during the Nosa Regional Awards.
- Peer evaluations conducted at all South African Manganese operations improved compliance with the Fatal Risk Control Protocols.
- Closure Plan risk assessments and risk registers were completed for all Manganese operations
- Developed fatigue management plans in line with the Fit for Work/Fit for life requirements.
- The percentage of South African Manganese employees attending Voluntary Confidential Counselling and Testing for HIV/AIDs increased to 70 per cent, against a target of 60 per cent.

- Manganese progressed three social investment projects during the past year. Projects were aimed at improving the level of education by upgrading buildings and installing equipment at Batlharose Learner Development Centre, improving road safety by upgrading the road surface used by the community and employees, and resolving overcrowding at the Gamohana Junior Secondary School in the North West Province of South Africa.
- Occupational Health and Hygiene Workshops were held to identify further work required to meet the requirements of the Company's HSEC target for health baseline exposure assessments.

2007 Sustainability Outlook

Looking ahead for the Carbon Steel Materials CSG, a focus on the BHP Billiton Key Sustainability Challenges will include the following:

Eliminating Fatal Risks

- Continue to work towards with the Company's HSEC Targets, including reducing the Total Recordable Injury Frequency Rate
- Progress with the implementation of behaviour-based safety systems
- Continue to implement the Fatal Risk Control Protocols, including with major contracting partners
- Work to eliminate the potential for catastrophic-type incidents at our Manganese operations through formal catastrophic hazard identification and risk assessments.

Occupational & Community Health

- Continue to focus on implementing the requirements of the Fit for Work/Fit for Life guidelines, including the implementation of fatigue management plans
- Progress in line with the Company's HSEC target to complete occupational health exposure assessments.

Sustainable Community Development and Closure of Operations

- Continue progress towards compliance with the Company's Closure Standard target
- Continue our work on improving our regional townships.

Greenhouse Gas Emissions

- Identify and scope energy efficiency projects in line with the Company HSEC targets
- Increase our focus on greenhouse gas emissions in our long-term strategy in line with Western Australian Iron Ore's projected business growth
- Continue BMA's investigation of the feasibility of using diesohol (an ethanol/diesel blend) in mobile earthmoving equipment to mitigate CO₂ emissions on a life cycle basis. This involves engine laboratory testing and various other reviews aimed at culminating in a future mine site trial of the fuel.

Access to and Management of Resources

- Focus our efforts to further improve water efficiency in line with the Company HSEC targets
- Work proactively with Western Australian Iron Ore's local communities on Native Title issues
- Achieve a better understanding of our resources and product stewardship
- Attract and retain people, including a focus on Indigenous employment
- Meet the challenge of access to skilled resources, resulting from an increase in projected business growth
- Continue with BMA Coal's Skills for Growth Program, a multi-faceted package of initiatives designed to address current and future skills requirements (read more: [Socio-Economic Case Study>Skills Development](#))
- Continue our progress towards compliance with the Company's Closure Standard.

Diamonds and Specialty Products

The Diamonds and Specialty Products Customer Sector Group encompasses diamonds, titanium and phosphate.

The cornerstone of BHP Billiton's Diamonds business is the EKATI Diamond Mine™, of which we own 80 per cent. EKATI is located in the Canada's Northwest Territories and produces approximately four million carats of rough diamonds annually. Annual production represents nearly four per cent of current world rough diamond production by weight and six per cent of value. Through our CanadaMark™ brand, we also sell high-quality, Canadian produced polished diamonds.

Richards Bay Minerals (RBM) is a 50 per cent owned heavy mineral sands mine and smelter situated in northern KwaZulu-Natal, South Africa. RBM is a major producer of titania slag, high purity pig iron, rutile and zircon. We have a titania slag project at Corridor Sands in Mozambique. Corridor Sands is the world's largest underdeveloped titania deposit.



EKATI Diamond Mine uses signage and monitoring programs to minimise the impact on the local Caribou population

2006 Sustainability Performance Overview

Key aspects of the sustainability performance of Diamonds and Specialty Products (D&SP) for the reporting period 2005/06 were:

- Achieved zero fatalities since the BHP Billiton merger with a significant increase in reporting near misses and conducting peer-on-peer work practice reviews
- Achieved a 24 per cent reduction in our Classified Injury Frequency Rate over 2005/06 and a 24 per cent a reduction in our Total Recordable Injury Frequency Rate (TRIFR)
- Implemented Behaviour-based safety programs across D&SP and, at EKATI implementing a Zero Incident Process that focuses on people's attitudes, behaviours and outcomes
- No significant environmental incidents occurred
- All controlled sites maintained their ISO 14001 certification and all Technology Laboratories achieved ISO 14001 certification
- Continued EKATI's successful Energy Smart Program, saving 2.5 million litres of diesel fuel in 2006
- Received the 2005 Community Impact Award (second time winner of the Canada Export Award) The Government of Canada awarded BHP Billiton Diamonds Inc the 2005 Canada Export Award for Community Impact. This prestigious award recognises the EKATI Diamond Mine's contribution to the communities in which it operates
- Recognised as among Canada's Top 100 Employer. For the fifth consecutive year, in 2006 BHP Billiton Diamonds Inc was named one of Canada's Top 100 Employers
- Via the Naonaiyaotit Traditional Knowledge Project, gathered information from the people of the West Kitikmeot in the Nunavut Territory about local wildlife, habitat and land use. This traditional knowledge remains the intellectual property of the Copper Inuit and will increase the company's understanding of the wildlife and environment
- Participated in the 2005 and 2006 North West Territories Mine Rescue Competition. BHP Billiton Diamond Inc's Underground Mine Rescue Team placed first overall in the Mine Rescue Competition and placed first in six out of seven competitions in 2005

- Achieve ISO 9001 certification for Quality in our Sorting and Valuation Facility. BHP Billiton Diamonds Inc's Sorting and Valuation Facility achieved BSI ISO 9001 certification for operating a Quality Management System in the preparation of diamonds from the EKATI Diamond Mine for marketing diamonds, including rough diamond cleaning, sorting, valuation, Kimberly Process and shipping services. The certificate of registration is effective from February 10, 2006 to February 9, 2009, and represents over 18 months of work by staff and management
- Read more: [Diamonds and Specialty Products 2006 Environmental Data Summary](#).

2007 Sustainability Outlook

Looking ahead for the Diamonds and Specialty Products CSG, a focus on the BHP Billiton Key Sustainability Challenges will include the following:

Eliminating Fatal Risks

- Continuing to strive towards Zero Harm, especially no fatalities
- Continuing our Total Reportable Injury Frequency Rate reduction with commencement of underground operations at EKATI
- Embedding behaviour-based safety programs.

Access to and Management of Resources

- Maintaining our proactive approach to environmental management, particularly waste and water management at EKATI
- Revitalising contractor management with an increased reliance on contractors during the construction of the Koala Project and other key development projects at EKATI

Greenhouse Gas Emissions

- Continuing reduction in energy use at EKATI through its Energy Smart Program and fuel conservation programs, which seek energy saving ideas from employees, evaluate and then implement the suggestions
- Investigate alternative sources of power for EKATI.

Sustainable Community Development and Closure of Operations

- Finalising a revised Interim Closure Plan to meet both the Company-wide Closure Standard and the requirements of our various regulators. In preparing this plan an extensive series of consultation events have been undertaken in the various communities affected by the EKATI operations
- Continuing our various community programs, such as the scholarships program. This is applicable to the communities that are signatories to the Impact and Benefits Agreements

Occupational and Community Health

- Working closely with communities and public health to ensure tuberculosis testing is up to date as there are high rates of this disease in the Northwest Territories
- Increasing our focus on our employee medical surveillance program
- Continuing to share key health trends between governments and EKATI
- Providing site-based illness management for non-work related health issues and liaising with community health professionals
- Actively promoting the return to work program to ensure a healthy mind and body.

Energy Coal

Energy Coal is one of the world's largest producers and marketers of export thermal coal that is primarily used in power generation. Energy Coal assets stretch across the globe:

- Ingwe, South Africa (100% ownership)
- Hunter Valley Energy Coal, Australia (100% ownership)
- Cerrejon Coal, South America (33.3% ownership)
- New Mexico Coal, North America (100% ownership)
- Caroon Coal Project, Australia (100% ownership)
- Exclusive agents for PT Arutmin, Indonesia



Johanna Nkosi, dragline operator for three years on Marion 8 at Eikeboom, Ingwe, South Africa.

With our unique blend of export and domestic customers we aim to play a significant role in satisfying the worldwide demand for this commodity. Our global footprint and our multi-source supply strategy underpin our commitment to and capability of delivering to customer requirements.

2006 Sustainability Performance Overview

Key features of Energy Coal's sustainability performance for the reporting period 2005/06 were:

- With great sadness, we report that Energy Coal did not achieved a fatality free year. On 24 June 2006, a contractor at Ingwe's Rietspruits Coal Processing Plant in South Africa was fatally injured as a result of an accidental release of coal into the trainloading flask he was working in. Investigations are in progress to determine the root cause.
- We also have experienced a number of potentially serious incidents involving falls of ground in our underground mines and surface mobile equipment in our opencast mines.
- We are increasing awareness and support for our four HSEC pillars, being Fatality Prevention, Behavioural Alignment, Leadership Development and Risk Management.
- We continued to implement preventative measures in accordance with the BHP Billiton Fatal Risk Control Protocols. Current self-assessments indicate that Energy Coal sites are 91 per cent compliant with Protocol requirements, against a target of 95 per cent. The changeover from a site-based risk assessment methodology to the BHP Billiton Enterprise-Wide Risk Management methodology were noted during site audits as causing some adequacy issues.
- We did not meet our expectation for overall safety performance, with our Total Recordable Injury Frequency Rate (TRIFR) reducing by 3.6 per cent this year, against a target of 20 per cent. Reductions in TRIFR were experienced at New Mexico (24.6 per cent) and Mount Arthur Coal (15 per cent); Ingwe experienced a two per cent increase due primarily to the effect of significant restructuring initiatives.
- We achieved acceptable performance against our leading safety targets: incident reporting and workplace safety observations. Workplace safety observations involve specially trained employees conducting regular assessments of colleagues' day-to-day workplace activities to ensure tasks are completed safely. We achieved 130 per cent of our target for workplace safety observations for the year, which amounted to some 40,000 observations across the CSG. Each observation presents an excellent opportunity to influence the behaviour of employees and to promote safe working conditions.

- All Energy Coal operations have completed baseline health studies from which BHP Billiton will set improvement targets for the next 5 years from 2007
- We achieved the target for implementation of our health, environment and community plans.
- Behaviour-based safety systems were implemented at all sites.
- One Level 3 environmental incident was reported at Ingwe's Optimum Colliery. Significant volumes of affected water decanted into a public stream and dam after heavy rains during January and February 2006.
- All controlled sites, except Khutala Colliery, maintained their ISO 14001 certification. The certification of Khutala Colliery lapsed due to a change in certification authority and an audit could not be scheduled in time. A certification audit for Khutala is scheduled for August 2006.
- Read more: [Energy Coal 2006 Environmental Data Summary](#).

2007 Sustainability Outlook

Looking ahead for the Energy Coal CSG, focus on the BHP Billiton Key Sustainability Challenges will include the following:

Eliminating Fatal Risks

- Continuing to foster and monitor awareness and support for our four HSEC pillars of Fatality Prevention, Behavioural Alignment, Leadership Development and Risk Management
- Embedding the Fatal Risk Control Protocols within our organisation and improving levels of compliance.

Occupational and Community Health

- Continuing to implement our occupational and community health plans to meet existing and future targets and demonstrate continuous improvement.

Sustainable Community Development and Closure of Operations

- Completing Closure Plans at all Energy Coal operations in accordance with BHP Billiton requirements and guidelines
- Demonstrating continuous improvement in the implementation of our community plans.

Access to and Management of Resources

- Monitoring the efficiency and effectiveness of our water management plans, in recognition that access to water and excess affected water presents a key sustainability challenge to our Company. Of particular interest is Ingwe, where we will be commissioning, in the near future, water treatment plants for the treatment of excess affected water from closed operations.

Greenhouse Gas Emissions

- All operations have conducted baseline studies and developed plans to limit and possibly reduce their energy consumption per unit of production, which will have a positive effect on greenhouse gas emissions. Our New Mexico operations will, however, be mining deeper and into areas with higher gas concentrations; and as a result it will be extremely difficult to reduce the amount of greenhouse gas emitted per unit of production. Other initiatives are currently being evaluated to address this issue.

Petroleum

BHP Billiton Petroleum is a significant oil and gas exploration and production business.

Our principal activities are oil and natural gas production, exploration and development in Australia, the US, the UK, Algeria, Trinidad and Tobago and Pakistan. We also have significant exploration interests in the Gulf of Mexico, Maritime Canada, South Africa, Namibia, Brunei, Darussalam, Australia, the UK, Colombia, and Algeria. We are currently developing the Atlantis, Mad Dog, Neptune and Shenzi fields in the Gulf of Mexico, the Stybarrow and Angel fields and the North West Shelf fifth liquified natural gas train in Australia, and we are conducting a Phase 2 expansion of the Zamzama Gas processing facility in Pakistan.



Mad Dog oil and gas field, Gulf of Mexico, US

2006 Sustainability Performance Overview

Key aspects of the Sustainability performance of Petroleum for the reporting period 2005/06 were:

- No fatalities occurred during the year.
- There was one significant environmental incident involving a small oil spill of approximately 0.8 cubic metres at our Liverpool Bay Asset.
- Our Total Recordable Injury Frequency Rate increased by 64 per cent, from 2.8 to 4.6. This upward trend is of concern and will be a key focus area for improvement next year.
- Actual Loss of Containment Incidents remained the same as FY2005, at eight incidents.
- All controlled sites maintained their ISO 14001 certification.
- We made progress in developing a Competency-Based Training and Assessment Program and developing and implementing a behaviour-based safety system for managers in support of existing site-based systems.
- We rolled out the Company-wide Fit for Work/Fit for Life health initiative and updated our Petroleum CSG Health Protocols.
- We conducted audits of our Environment and Marine Operations protocols and found a generally good level of compliance by teams. Opportunities for improvement were identified and the teams are in the process of implementing improvement plans.
- Our Australia Operated Asset received the 2005 Australian Petroleum Production and Exploration Association (APPEA) Environmental Award for their whale observation program.
- Our Pilbara LNG Project received a Western Australian Golden Gecko Merit Award for their site selection process. This process was also a finalist in the Leadership in Protecting Coastal and Marine Environments category of the Australian Banksia Awards.
- Through a partnership with the Trinidad and Tobago Ministry of Agriculture, we have successfully trained farmers in cassava cultivation and livestock breeding. Looking to the future of the islands, we are working closely with the Ortoire community on education, having established a homework centre to promote after-school study.
- Our Pakistan Asset community development team continued with their program to improve the livelihoods of local women by providing them with opportunities for income generation and training in production and marketing. Their project received the Community Excellence Award in the 2004/05 BHP Billiton HSEC Awards.

- In Pakistan, three new projects were initiated by the asset. Through a partnership with The Citizens Foundation we will support construction and running of a community school close to the Zamazama operation, building on our existing education program; we will support a pilot project to improve sanitation facilities in the town of Johi; and in Islamabad, we are working with the traffic police to educate residents on road safety through the sponsorship of 20,000 educational booklets
- The Algeria Asset donated US\$200,000 to the Tassili Foundation. The Foundation works with a range of international and local partners to deliver sustainable programs focused on the environmental conservation and cultural preservation of the World Heritage-listed Tassili region in the southern Algerian Sahara Desert.
- The Houston office received the Humanitarian of the Year award from the American Red Cross (Greater Houston) for its response to Hurricane Katrina.
- The America-based assets also received the Ray of Light Award from the statewide Community Health Charities of Texas for its increased participation in the Houston offices' annual employee giving campaign.
- Read more: [Petroleum 2006 Environmental Data Summary](#).

2007 Sustainability Outlook

Looking ahead for the Petroleum CSG, a focus on the BHP Billiton Key Sustainability Challenges will include the following:

Eliminating Fatal Risks

Driving continuous improvement in our performance through the full implementation of existing HSE programs:

- Integrating safety case methodologies into our project design process and operations in locations where there is no legal requirement for this approach
- Full implementation of the new Competency-Based Training and Assessment program
- Full implementation of our common behaviour-based safety improvement program
- Focus on improvement in Operating Discipline and close out of actions and findings from incidents.

Sustainable Community Development and Closure of Operations

- Increasing the focus on measuring the effectiveness of our Community Development programs and social performance
- The Algeria Asset, partnering with the Algerian Government and local NGO AREA-ED, will commence a two-year conservation and rehabilitation project in Tiout in the Algerian Sahara. The project aims to revive the current aquifer water source and repair the ancient irrigation network that feed 120 hectares of a palm grove oasis upon which 5,000 people are dependent, as well as create opportunities for alternative income generation.

Access to and Management of Resources

- Raising awareness on relevant HSEC issues; for example, contractor HSE management and oil spill management
- Participating in a global joint industry initiative for research on the biology, behaviour and habitat of a number of cetaceans, particularly whale species
- Continuing the Australia Operated Asset Team sponsored whale shark and whale migration research and turtle monitoring in the North West Cape region, Western Australia

Greenhouse Gas Emissions

- Further refining our greenhouse gas management plans in accordance with the Company-wide HSEC targets.

Occupational and Community Health

- Continuing our focus on implementation of the BHP Billiton Fit for Work/Fit for Life Program particularly in the areas of Fatigue Management, Fitness for Work Medical Assessments and the full implementation of the Company Drug and Alcohol Policy across the Petroleum CSG.

Stainless Steel Materials

BHP Billiton is the world's third largest primary nickel producer and a major producer of cobalt. The Stainless Steel Materials CSG primarily services the stainless steel industry through its wide range of high-quality nickel products. In addition, the CSG supplies nickel and cobalt to other markets including the chemicals and specialty alloy industries.

Stainless Steel Materials nickel operations include the Cerro Matoso mine and ferronickel smelter in Colombia, QNI Yabulu refinery in north Queensland, Australia, and the extensive Nickel West assets in Western Australia, including the Mt Keith and Leinster operations, the Kalgoorlie nickel smelter and concentrator, and the Kwinana nickel refinery. The Ravensthorpe Nickel Operations, an integrated mine and primary processing facility, also in Western Australia, is now in an advanced construction phase.



Mt Keith (Australia) sulphide ore prior to crushing, grinding and flotation to recover nickel as concentrate.

2006 Sustainability Performance Overview

Key aspects of Stainless Steel Materials' sustainability performance for the reporting period 2005/06 were:

- Regrettably, in February 2006, a contractor at our Leinster Operation was fatally injured when an explosive prematurely detonated during the loading of a cannon to release a blocked ore-pass.
- We began integrating the BHP Billiton HSEC management systems, including the HSEC Management Standards and Fatal Risk Control Protocols, into former WMC assets including Nickel West.
- Conducting Process Hazard Analyses on the most critical areas of our operations has been the initial focus area of our implementation of Process Safety Management throughout Stainless Steel Materials' sites.
- Our safety leadership improved, with dramatic increases in leadership interventions in the field. This provides the opportunity for management to demonstrate that safety is an integral part of the business and to set standards of performance for all employees to follow.
- We made a significant improvement in HSEC incident reporting across the organisation, which has provided many opportunities of free learnings that were used to improve our HSEC performance.
- Our Total Recordable Injury Frequency Rate increased by three per cent.
- No significant environmental or community incidents were recorded.
- All controlled sites maintained their ISO 14001 certification.
- We developed and implemented a Community Participation Team (CPT) at each Nickel West operational site to administer the distribution of Nickel West community funding. The CPT supports communications between each site and their local community, provides a transparent decision-making process for the administration of community funding and is governed by defined guidelines. The CPT meets on a quarterly basis at each site and reviews applications for funding. Each team consists of representatives from the operation as well as the community.
- Twenty-six families were relocated as part of the mining area expansion of Cerro Matoso (Colombia). A participative strategy was developed in accordance with the World Bank Operational Directive on Involuntary Resettlement, which resulted in new land lots, housing and community infrastructure for the affected families. Construction activities provided employment during the process, and the relocated families are now self-sustaining, living off the production of their land plots.
- Read more: [Stainless Steel Materials 2006 Environmental Data Summary](#).

2007 Sustainability Outlook

Looking ahead for the Stainless Steel Materials CSG, a focus on the BHP Billiton Key Sustainability Challenges will include the following:

Eliminating Fatal Risks

- Continuing to provide strong HSEC leadership in the field
- Continuing to implement Process Safety Management to further understand the risk to personnel and implement strategies to manage that risk.

Sustainable Community Development and Closure of Operations

- Continuing to align the Nickel West operations (Australia) with the BHP Billiton management system, including the Closure Standard
- Introducing a comprehensive Indigenous participation strategy at Nickel West; this will be the driver for a comprehensive indigenous engagement project for the Northern Goldfields in partnership with government, industry and community
- Continuing the foundation programs in Colombia and utilising this as the benchmark for new operations in developing countries.

Access to and Management of Resources

- Advancing strategies to reduce the impact of skills shortage in the resource industry and creating opportunities for job seekers in the future. The commodities boom has created a major skills shortage in many parts of the world, which is having a direct impact on our capability to develop projects
- Focusing efforts on water recycling, in response to water remaining a critical resource.

Greenhouse Gas Emissions

- Develop and implement energy efficiency and greenhouse gas management plans to provide management focus to these areas. These plans will be aligned to the 5-year targets.

Occupational and Community Health

- Ensuring we have adequate exposure baselines at our operations
- Maintaining our continued vigilance in the proper management and education of our workforce about the presence of potentially harmful compounds in many of our nickel operations. This follows the REACH regulatory initiative on chemicals in the European Union that resulted in the reclassification of some nickel compounds as Category 1 carcinogens, Category 2 mutagens and reproductive toxicants.

Recognition

While we are driven by outcomes, not awards, recognition helps to maintain our momentum and communicate the success of our activities to our stakeholders.

In 2006, we were again pleased to receive public recognition for our performance in public reporting, community relationships and sustainable development. [Read more.](#)

In addition, many of our operations received recognition for excellence at a local or regional level.

Each year, the BHP Billiton Employee HSEC Awards encourage and 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. [Read more.](#)

This year also marked the inaugural BHP Billiton's Safety Excellence Awards. The awards recognise sites that have either excelled or made significant improvements in safety performance measured against a mixture of lead and lag indicators aligned to elements of Our Safety Future State and overall safety strategy. [Read more.](#)

External Recognition

While we are driven by outcomes, not awards, external recognition helps to maintain our momentum and communicate the success of our activities to our stakeholders. The table below summarises the external recognition we have received at a corporate level during the reporting period 2005/06. In addition, many of our operations received recognition for excellence at a local or regional level.

Recognition	Description
Company of the Year 2005 - UK Business in the Community Awards	Our commitment to responsible business practice was recognised with the Company of the Year Award 2005 at the Business in the Community (BITC) National Awards for Excellence. The BITC is a unique movement in the UK of 800 member companies whose purpose is to inspire, challenge, engage and support business in continually improving its positive impact on society. BHP Billiton is the first company in the extractive industries to receive the award and is the first recipient recognised for its global activities. The award was announced 5 July 2005 and we included reference to it in our previous (2005) Sustainability Report.
2006 Australasian Reporting Awards – Award Winner Occupational Health & Safety Reporting Award	The Australasian Reporting Awards (established 1951) aim to encourage organisations to strive for excellence in reporting to their stakeholders.
2005 Prime Minister’s Awards for Excellence in Community Business Partnerships (Australia) – Winner Special Award Impact on Community	The special award recognised BHP Billiton’s partnerships with the Australian Indigenous Leadership Centre, the Foundation for Young Australians, the Melbourne Business School, the Powerhouse (Victoria) and Reconciliation Australia. This strategic alignment enabled BHP Billiton and its partners to achieve a range of outcomes for young indigenous people, while sharing a common objective of supporting and fostering indigenous leadership and governance.
2005 Association of Certified Chartered Accountants (ACCA) Australia and New Zealand Awards for Sustainability Reporting – Award for Sustainability Communication using the Intranet	The awards aim to: <ul style="list-style-type: none"> • reward and recognise those organisations that report and disclose environmental, social or full sustainability information within Australia • encourage the uptake of environmental, social or sustainability reporting • raise awareness of corporate transparency issues and increase accountability for responsiveness to stakeholders.
2005 Association of Certified Chartered Accountants (ACCA) United Kingdom Awards for Sustainability Reporting – Award Winner Electronic Media Commendation	The awards aim to: <ul style="list-style-type: none"> • give recognition to those organisations that report and disclose environmental, social or full sustainability information • encourage the uptake of environmental, social and sustainability reporting • raise awareness of corporate transparency issues.
Dow Jones Sustainability Indices - Sustainability Leader for the Mining Sector	Accounting for issues such as corporate governance, climate change, supply chain standards, and labor practices, the annual review of the DJSI family is based on a thorough assessment of corporate economic, environmental and social performance.

Employee HSEC Awards

The BHP Billiton Employee HSEC Awards encourage and 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.

The Awards also provide a platform for sharing creativity and best practice. A wealth of knowledge is gathered through the entry submission process, and this is published across the Company to bring business benefits.

Awards are presented in the four categories of Health, Safety, Environment and Community, together with an award for Individual Excellence, the recipient of which is personally selected by the Chair of the Judging Panel, The Rt Hon Sir Ninian Stephen (former Governor General of Australia). Each category of nominations is assessed by a separate judging panel, comprising one Company representative and four experts from the non-government, government and academic sectors.

This year, a record 365 nominations were received 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 will be presented with a specially designed sculpture, and each Merit award recipient will receive a certificate. The finalists each nominated a charity or not-for-profit organisation to share in their award. These organisations will receive a donation of US\$7,500 (Excellence Award), US\$3750 (Highly Commended) or US\$1,500 (Merit). All the recipients are to be congratulated for the high standard of their contributions.

We also thank the judges who participated in the assessment of entries and acknowledge their contribution to the Awards process.

The Award recipients in this year's Awards are presented below, together with a brief description of their project.

- [Individual Excellence Award Recipient](#)
- [Health Awards Recipients](#)
- [Safety Awards Recipients](#)
- [Environment Awards Recipients](#)
- [Community Awards Recipients](#)

Individual Excellence Award

Personally selected by the Chair of the Judging Panel, The Rt Hon Sir Ninian Stephen.

[Muliawan Margadana](#)

BHP Billiton Indonesia, Jakarta Office, Indonesia

Individual Excellence Award Short-Listed Nominees

[Jannie Kleynsmith](#)

Aluminium, Bayside Aluminium Smelter, South Africa

[Rossana Espinoza](#)

Base Metals, Cerro Colorado, Chile

[Terry Fletcher](#)

Base Metals, Ambrosia Lake, New Mexico, USA

[Eduardo Lara](#)

Base Metals, Cerro Colorado, Chile

[Tarique MacDonald-Razvi](#)

Carbon Steel Materials, Western Australia Iron Ore

[Trefor Penno](#)

Carbon Steel Materials, Western Australia Iron Ore

[Graham Perkins](#)

Carbon Steel Materials, BHP Billiton Mitsubishi Alliance, Peak Downs Mine, Australia

[Barry Quiroz](#)

Diamonds and Specialty Products, Exploration, East Asia, Beijing, China

[Aubrey Matuludi](#)

Energy Coal, Ingwe, Middelburg Mine, South Africa

[Jim Trench](#)

Petroleum Products Marketing, Supply & Trading, Singapore

Health Awards Recipients

Excellence Award

Ramiro Roy for [Reducing Dust and Noise Generation during Metal Ladle Lifting Beam Testing](#)
Aluminium, Mozal, Mozambique

Highly Commended Awards

Yusdi Sangadji (team representative) for [Bird Flu Pandemic Preparedness Project](#)
Corporate, MKT Jakarta Office, Indonesia

Mariaan Smit (team representative) for [Digital Noise Display Board](#)
Energy Coal, Ingwe, Khutala Colliery, Mpumalanga, South Africa

Garry Hughes (team representative) for [Fatigue Management in Coal Mining Program](#)
Carbon Steel Materials, BHP Billiton Mitsubishi Alliance, Peak Downs Mine, Australia

Merit Awards

Tony O'Keefe (team representative) for [Fatigue Management Project](#)
Carbon Steel Materials, Western Australia Iron Ore

Carlito Rena (team representative) for [Hallmark Nickel Prospect Community and Health Development Project](#)
BHP Billiton Minerals Exploration, Region XI, Philippines

Sebastião Rodrigues (team representative) for [Improving Ergonomic Conditions at Horizontal Direct Chilled Casting Machine](#)
Aluminium, Valesul Alumínio S.A., Rio de Janeiro, Brazil

Samantha Lee for [Risk-Based Medical Assessments](#)
Petroleum, Australia Operated Asset Team, Griffin Venture, Western Australia

Horatio Reeves (team representative) for [Fatigue and Sleep Control Project](#)
Base Metals, Antamina, Chile

Iona Williamson (team representative) for [Nickel Hygiene Baseline Study](#)
Stainless Steel Materials, Kwinana Nickel Refinery, Australia

Safety Awards Recipients

Excellence Award

Dale Bradford (team representative) for [Eliminating High Risk Activities in Drilling Operations](#)
Petroleum, Worldwide Drilling Team, Houston, USA

Highly Commended Awards

Muhammad Aftab Khan (team representative) for [Contractors Safety Awareness Program](#)
Petroleum, Pakistan Asset, Islamabad, Pakistan

Edan Stolberg (team representative) for [Dozer Training Package](#)
Carbon Steel Materials, BHP Billiton Mitsubishi Alliance, Australia

John Christowitz (team representative) for [Reducing Road Transport Risks](#)
Aluminium, Mozal, Mozambique

Merit Awards

Ross Truelson (team representative) for [BMA Road Haul Watering Project](#)
Carbon Steel Materials, BHP Billiton Mitsubishi Alliance, Peak Downs Mine, Australia

Nicole Sabourin for [Zero Incident Process](#)
Diamonds and Specialty Products, EKATI Diamond Mine, Canada

John Mitchell (team representative) for [Six Sigma Visibility Project](#)
Energy Coal, Mt Arthur Coal, Hunter Valley, Australia

Anthony Peterson (team representative) for [HSEC Contacts Process](#)
Carbon Steel Materials, BHP Billiton Mitsubishi Alliance, Goonyella Riverside Mine, Australia

Ramón Parriguez (team representative) for [Behaviour Based Competence Model](#)
Base Metals, Escondida, Region II, Chile

Johan Badenhorst (team representative) for [Measuring Contractor Performance](#)
Energy Coal, Ingwe, Middelburg Mine, South Africa

Environment Awards Recipients

Excellence Award

John Groves (team representative) for [Ore Moisture Conditioning Project](#)
Carbon Steel Materials, Western Australia Iron Ore

Highly Commended Awards

Nora Patricia González Jorquera (team representative) for [Punta Negra Salt Lake Biodiversity Monitoring Plan](#)
Base Metals, Escondida, Chile

John Read (team representative) for [Arid Recovery](#)
Base Metals, Olympic Dam, Australia

David Trench (team representative) for [Shenzi Subsea Architecture Optimisation](#)
Petroleum, Shenzi Development, Gulf of Mexico, USA

Merit Awards

Ademar Cavalcanti Silvi (team representative) for [Brazil Nut Germplasm Bank](#)
Aluminium, Mineração Rio do Norte, Brazil

Emanoel Varão (team representative) for [Coal Fine Reuse as Secondary Fuel Aluminium, Alumar, Brazil](#)

John Kline (team representative) for [San Manuel Mine Reclamation Project Base Metals, BHP Copper, San Manuel Mine, USA](#)

David Unger (team representative) for [Miami Unit No 2 Tailings Site Reclamation Base Metals, Pinto Valley Operation, USA](#)

Carl Bagnall (team representative) for [Reusing Town Treated Effluent Program Energy Coal, Mt Arthur Coal, Hunter Valley, Australia](#)

Patrick Fee (team representative) for [Tank Cleaning System Petroleum, Fourchon Shore Base, USA](#)

Community Awards Recipients

Excellence Award

José Haroldo Chaves Paulo (team representative) for [Fish Farming Development Program Aluminium, Mineração Rio do Norte, Brazil](#)

Highly Commended Awards

Humera Malik (team representative) for [Community Sanitation Program Petroleum, Zanzama Asset, Pakistan](#)

Alfredo Zuniga (team representative) for [Tintaya Foundation Base Metals, Tintaya, Chile](#)

Frans-Jozef Jaspers (team representative) for [Mozlink II Aluminium, Mozal, Mozambique](#)

Merit Awards

Salvador Traquino (team representative) for [Drought Relief Program Aluminium, Mozal, Mozambique](#)

Rick Peters (team representative) for [Groote Eylandt Liquor Management Plan Carbon Steel Materials, GEMCO, Australia](#)

Ralph Chelotti (team representative) for [Professional Skills Development Program Carbon Steel Materials, Samarco Mineração S.A., Brazil](#)

Luis Alberto Ponguta (team representative) for [Community Relocation Project Stainless Steel Materials, Cerro Matoso, Colombia](#)

Sheldon Narine (team representative) for [Livestock Training Program Petroleum, Angostura Oil and Gas, Trinidad and Tobago](#)

Victor Ladeira (team representative) for [Valesul Volunteer Program Aluminium, Valesul Alumínio S.A., Brazil](#)

Individual Awards

Excellence

Muliawan Margadana
BHP Billiton, Jakarta Office, Indonesia

The May 2006 earthquake that devastated Jogjakarta, Indonesia, killed 6,000 people and injured more than 37,000. Having experienced the Asian earthquake and tsunami disaster in December 2004, Muliawan recognised the importance of planning and preparation and within six hours had assembled a medical response team and commenced planning and coordinating the logistics needed to support the team.

While other organisations established permanent facilities and waited for the victims to come to them, Muliawan's team was mobile and went to the more remote villages that had not been covered by medical aid. As a result, over a two week the team treated 1,380 medical patients across 12 villages in five sub-districts – some 70 per cent more than the average number treated at centralized medical stations.

Throughout the process Muliawan showed considerable resourcefulness in sourcing supplies to support the team's efforts. This ranged from trading medical supplies with an NGO for tents to co-opting a psychology lecturer and 2 student psychologists from a university to provide Post Traumatic Stress Disorder counselling to earthquake victims. Working remotely also allowed Muliawan to relay valuable information back to other teams and the Government on the status of remote communities.

Muliawan's personal courage and leadership in this difficult time have been widely acknowledged from victims, doctors, volunteers to various NGOs and the Government.

Rossana Espinoza
Base Metals, Cerro Colorado, Chile

Rossana is Chief of Communications for Cerro Colorado and when a major earthquake occurred immediately adjacent to the Cerro Colorado operations on 13 June 2005 her communication skills were called into action to help maintain calm and control during the crisis.

The earthquake rendered the mine out of service for 17 days and total production was not fully recovered for eight months. The site was completely cut-off for almost a week and partially for 17 days. In the immediate aftermath of the earthquake Rossana worked tirelessly, and with little regard to her personal needs, to help management maintain the right focus and for employees to communicate with their families. This work continued after the crisis had passed where she worked diligently with community groups and authorities to advance reconstruction efforts in the region in which we are involved.

Prior to the earthquake, Cerro Colorado had been chastised for being inwardly focused. As a result, in no small part to Rossana's work, we have been able to fundamentally change the opinion of the community and respective authorities about Cerro Colorado.

Terry Fletcher
Base Metals, Ambrosia Lake, New Mexico, USA

Through a 'hands on' approach and by directing the focus from production to safe production, Terry has achieved exemplary health, safety and environment outcomes at the Ambrosia Lake operation, the largest uranium ore processing facility in the US.

Terry has been employed at Ambrosia Lake for 34 years and was appointed General Manager in 1993. In 2005, he recently took on the role of President Rio Algom Mining LLC.

A feature of Terry's style is his ability to bring innovative thinking to often challenging and unique tasks, without compromising safety. In his 13 year tenure as General Manager the operation has had a stellar safety record: not a single Lost Time Incident has occurred and there has been continued regulatory compliance. During this time, Terry has overseen the demolition of the largest uranium pre processing mill in the US in just over 30 per cent of the projected time schedule, as well as the near-completed reclamation of 300 hectares of tailings.

Employee longevity is also the envy of the industry, with the average tenure for all employees being 20 years. Terry also serves on various State boards and commissions, whose emphasis is on mining and mine safety, as well as being very active in the local community.

Terry is currently focused on successful managing the closure of Ambrosia Lakes and the Lisbon, Utah uranium milling operation, with the former expected to be completed in late 2007 and the latter in early 2007.

Jannie Kleynsmith
Aluminium, Bayside Aluminium Smelter, South Africa

Jannie is a qualified millwright in the casthouse at Bayside Aluminium. Having shown a passion for the workings of the then permit to work system, Jannie was seconded to upgrade the Lock, Test and Tag system in order to align the organisation with the requirements of the Fatal Control Risk Protocol on Isolation.

Jannie focused on making the new system as visible and user-friendly as possible, without losing sight of the requirement of the Protocol. Key elements include developing a guide to work process flow that drew upon a puzzle to guide candidates through their training; a detailed video, which was translated into Zulu and handy pocket guide that people at floor level could use to refer to when undertaking the work. Permit to Work control points were established in each department and isolation line drawings prepared for each machine to indicate all points of isolation in plant. Standard labels were also created to ensure consistency throughout plant.

The concept was introduced to the organisation using the existing Bayside Goal Oriented Learning System (GOL). This system allowed the progress of candidate during their five-month preparation to be tracked. Final competency was assessed by an appointed panel of experts.

Eduardo Lara
Base Metals, Cerro Colorado, Chile

In the aftermath of the major earthquake occurred immediately adjacent to the Cerro Colorado operations on 13 June 2005, Eduardo as Mine HSEC Coordinator, voluntarily took on the task of organising the group of workers assisting the various initiatives to help assist the neighbouring towns that had been badly affected by the earthquake.

On their days off, Eduardo and his group of volunteers travelled to the worst-affected locations to assist with reconstruction work. In the early stages, the focus was directed to restoring road access, cleaning up damage and assembling emergency housing units for the families rendered homeless.

During this time Eduardo was able to call upon his good relations with various suppliers and community members to obtain much needed supplies and equipment, including heavy machinery needed to clear rubble and other debris. As a result, some 90 per cent of the rubble was removed and 120 houses in neighbouring communities were fitted out. During this time, Eduardo also cooperated with the local municipalities in determining how to distribute help among the worst affected.

In these trying times, Eduardo's commitment and resourcefulness was unwavering.

Tarique MacDonald-Razvi
Carbon Steel Materials, Western Australia Iron Ore

Tarique is the Manager Risk and Business Continuity for BHP Billiton Iron Ore in the Occupational Health and Safety Department.

Tarique has used his management skills, a talent for engaging people, passion and sheer 'get-up and go' attitude to raise an impression AUD76,000 for the local Telethon Speech and Hearing Centre that provides early intervention and therapy-based programs for hearing-impaired children.

Tarique raised the money over a 12-month period, by enlisting the support and commitment of more than 100 people recruited from over 120 schools, private and government organisations throughout Western Australia. He stimulated interest, engaged the support of these recruits to coordinate a range of innovative fund-raising activities and developed the processes and systems required to support their efforts. The result was a snow-balling of contagious enthusiasm and a very substantial gift which will be used to improve the quality of life of many dozens of hearing-impaired Western Australian children.

Of the monies raised, AUD 50,000 of the donations forms part of the BHPB Matched Giving Program with AUD 25,000 of the amount being eligible for a matched company contribution.

Aubrey Matuludi
Energy Coal, Ingwe Middelburg Mine, South Africa

The management of HIV/AIDS continues to be a critical global health issue and the prevalence of the disease in the African subcontinent is still increasing. As Human Resources Development Superintendent at Middelburg Mine, Aubrey has been instrumental in establishing the mine response to this deadly disease.

Through his efforts, Aubrey has secured tripartite support from unions, management and communities, as well as public endorsement. He has coordinated testing sessions, ensuring that the testing process meets the national standard, and organised incentive-based campaigns to encourage testing. Recognising the need to make it easy to be tested, Aubrey has also established satellite facilities in community villages that give choice as to where and when testing will occur.

The program covers all sections and shifts, and confidentiality - so important for trust and effective communication - is maintained at all times.

While we are a long way from beating the disease, Aubrey's efforts are making a difference. His integrated approach ensures the program goes beyond the mine gate to involve the wider community, and the high number of both negative and repeat tests in an indication that the education and awareness campaigns are starting to take effect.

Trefor Penno
Carbon Steel Materials, Western Australia Iron Ore

Graham Perkins
Carbon Steel Materials BHP Billiton Mitsubishi Alliance, Peak Downs, Australia

In this role as Dragline Superintendent, Graham manages four shift supervisors and 52 operators in the operation of the six Peak Downs draglines on a 12-hour, four panel roster.

Frustrated with the extent of health and safety training being delivered to meet statutory requirements but which continually failed to excite and engage the employees, Graham set about changing the training so it would be more meaningful to his crew and the time invested in health and safety training would pay dividends in reducing incidents.

Graham started by reviewing safety incidents that had occurred in the Dragline Department. He then enlisted the support of occupational therapy specialists to work with his employees to identify programs which would meet their needs while also addressing the major areas of concern for the business.

As a result a suite of health and safety training programs have been developed under the banner "Exploring your Work Lifestyle", with the aim of changing the employees' behaviour through active participation, skill development and strengthening social supports so that the learning from each course are able to be reinforced both at home and at work.

The success of program has been reflected in the reduction to zero of sprains and stains in the Dragline area, the increased participation of employees in personal health improvement programs and the resultant interest in this program by other departments.

Barry Quiroz***Diamonds and Specialty Products, Minerals Exploration, East Asia, Beijing, China***

Barry is the program leader for the North China porphyry exploration search program. Through his efforts to develop close relationships with the project's Joint Venture partners and contractors for the field programs, Barry has prepared the ground for reducing and eliminating key HSEC risks in China.

With the support of the China team members, Barry identified the key HSEC risks and then subsequently developed an action plan to reduce the risk to our activities to a manageable level. In the early stages of the work, he recognised it was critical to engage, influence and partner all the involved third parties.

His approach focused on opening communicated his concerns to JV partners, contractors and explaining to them the rationale and objectives. To follow up he designed and arranged training courses and field demonstrations of correct Standard Operating Procedures to be followed during field activities, and organised for these procedures to translated into Chinese.

Local partners were initially apprehensive but through a process of ongoing consultation, communication and demonstration, they are accepting the program and are currently implementing and following required Company HSEC practices.

Jim Trench, Petroleum***Petroleum Products, Marketing, Supply & Trading, Singapore***

Jim's role is to procure bulk oils and industry products - including formed sulphur - for use at various BHP Billiton mines and to provide a full back-up service regarding the handling and transport of the products from an all-risks perspective. An important responsibility in this role is to define and develop common understanding around HSEC issues in managing the various products within the supply chain.

During the year Jim completed a review of the sulphur handling facilities at two former WMC locations - Southern Cross Fertilisers and Olympic Dam. As a result Jim has identified practical solutions to the handling of this dangerous product from load port to point of use and has laid the foundation for a standard practice that can be applied throughout the Company.

Sulphur is a dangerous product as plants can produce high levels of fugitive dust, which can cause problems when inhaled; safety can be compromised as the dusty atmosphere is at risk of explosion; and the environment is at risk to ground water contamination. The Company's sulphur purchases are also increasing as the Ravensthorpe nickel leaching plant moves to production.

Health Awards

Excellence Award

Ramiro Roy

Reducing Dust and Noise during Metal Ladle Lifting Beam Testing

Aluminium, Mozal, Mozambique

Ramiro at Mozal has developed a simple, low-cost device that reduces fluorinated dust and noise in the workshop generated during the metal ladle lifting beam (MLLB) testing process.

The device has revolutionised the MLLB process: dust is no longer generated, which removed the need to wear dust masks during testing and contributed to improved housekeeping. Noise during testing has also been reduced.

The device was assembled from a combination of scrap items, such as curved 60 mm pipe and flex hose; stock items, including silicone and a filter; and a redundant 210 litre empty drum locally sourced.

The greatest challenge in implementing the concept was convincing colleagues that such a simple, low-cost device would work!

Highly Commended Awards

Yusdi Sangadji (team representative)

Bird Flu Pandemic Preparedness and Prevention Project

Corporate, Jakarta Office, Indonesia

Yusdi and the Flu Team Indonesia instigated a program to demystify bird flu, and educate staff on how to manage the risks associated with bird-to-human and human-to-human transmission, and how to be prepared for a potential pandemic. Learnings have also been shared with employee families and local communities.

Bird flu is stated by the World Health Organisation as the most likely next global pandemic. Indonesia leads the world with the highest death rate and is the only country still regularly reporting new cases. The risks are now well understood and, as a result, the number of false cases reported has declined which, in turn, has reduced employee absenteeism.

Planning for the pandemic has also help foster relationships with a range of organisations for planning not only for bird flu but other potential incidents, such as natural disasters and political disturbances.

Mariaan Smit (team representative)

Digital Noise Display Board

Energy Coal, Ingwe, Khutala Colliery, South Africa

Mariaan and his colleagues conceived the idea of placing a large digital noise level display within the colliery's main workshop to indicate real-time noise levels. Employees are now more aware of the noise they create during work activities and more focused on protecting their hearing.

The main workshop conducts major overhauls on underground machinery. It is designed in such a way that noise is reflected back to the workers and noise intensities increase during operation. Time Weighted Averages of those employees who are exposed ranged from 89 to 99 decibels (dB). Personal Protective Equipment was issued to all workers and intensive noise training conducted annually, however employees had little appreciation of when noise levels became hazardous.

In collaboration with a supplier, the team developed a model that was able to viewed clearly from up to 15 metres. The moment the noise level rises above 85 dB, colleagues inform each other and bring excessive noise levels under control by either working quieter, changing the way they work or using their hearing protection devices.

Garry Hughes (team representative)
Fatigue Management in Coal Mining Program
Carbon Steel Materials, BHP Billiton Mitsubishi Alliance, Peak Downs Mine, Queensland, Australia

Garry and the Fatigue Management Team have introduced a preventative fatigue management strategy, called Strategic Napping, which allows coal haulers to take a controlled nap in designated napping areas on haul roads.

Consulting colleagues and reviewing incidents involving fatigue revealed that fatigue was primarily occurring on haul roads and not in the Run of Mine where napping rooms are located. Accordingly, the team introduced designated napping areas on haul roads.

Generally all that is needed to get an employee safely through a shift is taking stretch and coffee breaks, and rotating through other tasks which require other motor skills. If these methods fail, operators can now at their own discretion take a controlled 20 minute nap in a safe location. Unlike with random napping, safety and production is not jeopardised as operators must inform supervisors before taking a controlled nap; this also allows supervisors to identify any one suffering from regular fatigue so as to assist with gaining access to other professionals to help overcome fatigue.

The program is supported by an educational program designed to raise awareness of the hazards associated with working while fatigued and how to minimise the onset of fatigue. Since the inception of program, there have been no fatigue related incidents at Peak Downs.

Merit Awards

Tony O'Keefe (team representative)
Fatigue Management Project
Carbon Steel Materials, Western Australia Iron Ore

Tony and the Fatigue Management Team have implemented a holistic approach to managing fatigue by developing a program that is delivered to all employees, contractors and the local community.

The program has four levels: initial, a 1-day complete training, supervisory training and community education. A fatigue management policy has been developed, together with supporting procedures.

The program recognises that fatigue and alertness are issues that require both personal and corporate responsibility, with initial training focusing on personal and lifestyle issues. The program is embedded into Iron Ore's training matrix and it is expected that by the end of 2006, over 6,000 people across the business will have been trained. The local community has been included in the training, as have contract mining partners who have developed alternative working hour arrangements as a result of attending the training.

Carlito Rena (team representative)
Hallmark Nickel Prospect
BHP Billiton Minerals Exploration, Hallmark Prospect, Region XI, Philippines

Through the efforts of Carlito and his colleagues, the incidence of malaria and malnutrition in surrounding communities has reduced to negligible levels and the communities have become self-sufficient in maintaining proper hygiene and sanitation conditions.

The Hallmark Prospect is a joint venture project between BHP Billiton and AMCOR, a local Filipino company, for the exploration of nickel laterite deposits on the island of Mindanao. At an early stage of the project, Carlito and his team committed to institute basic community health programs to benefit not only employees and contractors but also the host and surrounding communities.

Consulting with the community revealed that malaria was endemic, a large proportion of elementary children were malnourished, the occurrence of rabies and TB was high and general sanitation and hygiene facilities were lacking. Projects were implemented to address each of the concerns, with the malaria program based on our Mozal experience - acknowledged as an international benchmark - and adapted to local conditions and resources.

Sebastião Rodrigues (team representative)
Improving Ergonomic Conditions at Horizontal Direct Chilled Casting Machine
Aluminium, Valesul Alumínio S.A., Rio de Janeiro, Brazil

After several workers had suffered severe bone and muscular injuries, Sebastião and the Horizontal Direct Chilled (HDC) operators set about eliminating inadequate ergonomic conditions at the HDC operation.

The HDC operations include continuous billet production, with frequent setups. General wear and tear and obsolescence required operators to assume uncomfortable postures and exert themselves excessively.

By applying Lean Manufacturing methodology, a management system focused on the elimination of waste from the production process, the project brought about changes to the operational cycle, with several tasks eliminated or improved. As a result, set-up time reduced from an average of 14 hours to two and the level of predictability for the process increased. Most importantly, inadequate ergonomic conditions were eliminated and general safety improved.

Samantha Lee
Risk-Based Medical Assessments
Petroleum, Australia Operated Asset Team, Griffin Venture, Western Australia

Samantha Lee at the Perth-based Australian Operated Asset Team (AOAT), working closely with Dr Robin Wright, has developed and implemented a new Risk-Based Medical Assessment process that streamlines medical requirements into one comprehensive medical process, for all employees and contractors.

Initially developed for use on the Griffin Venture, a floating production storage and offloading vessel, the process has now been applied across the entire Petroleum Customer Sector Group.

The project incorporates industry and BHP Billiton requirements and specifically assesses the capacity of potential employees to perform the required work; identifies relevant physical limitations due to past illness or injury; reduces occupational injury rates; improves stability of workforce; identifies and helps manage people with potentially life threatening health issues such as diabetes and heart disease; and establishes a system for effective monitoring and trending of health information.

Horatio Reeves (team representative)
Fatigue and Sleep Control Project
Base Metals, Antamina, Chile

With fatigue being one of the major causes of accidents at Antamina, particularly with heavy vehicles, Horatio and the members of the Fatigue and Sleep Control project team set about determining the sleep and fatigue profile of workers in the mine operations and then identifying and implementing control measures.

The team designed a fatigue test to collect the required data on fatigue levels and sampled 190 workers over ten days.

As a result of the study, workers are able to report fatigue as a reason for stopping their vehicles for a short rest, and they do this via the electronic panel of the truck that informs dispatch. This also allows the monitoring of the incidence of fatigue and to intervene where necessary to get professional assistance. Workers' bedrooms have also been improved to be more conducive to sleep and timetables adjusted to allow sleep to occur at times of greatest fatigue.

Iona Williamson (team representative)
Nickel Hygiene Baseline Study
Stainless Steel Materials, Kwinana Nickel Refinery, Australia

As part of a comprehensive biological monitoring program in Nickel West's operations, Iona and the study team members at Kwinana Nickel Refinery (KNR) undertook a study in 2005 to determine baseline levels of ingested nickel in employees and contractors. The study is the first of its kind to be conducted in the international nickel industry.

There are no standards setting safe levels of ingested nickel in Australia, or elsewhere in the world. Using the best available knowledge, a conservative protocol was developed for both the general workforce and pregnant workers, following research which suggested the possibility of high levels of ingested nickel leading to problems in female reproduction.

Samples were taken from a large number of employees and contractors over a 14-week period. Results revealed levels of nickel similar to that of non-occupationally exposed people, providing a level of assurance that ingested nickel exposures at KNR are not likely to cause reproductive harm. The study also led to a common level of knowledge of the potential issues, as well as an understanding of the control methods for reducing ingestion of nickel.

Safety Awards

Excellence Award

Dale Bradford (team representative)
Eliminating High Risk Activities in Drilling Operations
Petroleum, Worldwide Drilling Team, Houston, US

Dale and his colleagues at the Worldwide Drilling Team are leading a process to eliminate high risk activities in drilling operations. Through a concerted effort to work as a team with GlobalSantaFe (GSF), our drilling contractor in the region, and their ultra-deepwater drillship, the C R Luigs, the team is realising its aim to achieve Zero Harm to people and the environment, and to outperform the industry in drilling efficiency.

The process commenced with a study to determine the levels of exposures, to identify where the most significant risks lay, and what would be needed to eliminate those risks from the ship. As a result a number of initiatives were put in place to address the safety challenges found in lifting operations and dropped objects, working at height, and confined space entry.

The results have been outstanding. Our aim to achieve 'best in class' operational capabilities with outstanding safety performance has been realised, as reflected in the 2005 Safety Award for Excellence received from the Minerals Management Service (MMS) of the US Department of the Interior that was presented to GSF. The MMS is the primary regulator of the industry and performs periodic, unannounced inspections of all offshore facilities.

Highly Commended Awards

Muhammad Aftab Khan (team representative)
Contractors Safety Awareness Program
Petroleum, Pakistan Asset, Islamabad, Pakistan

As the Pakistani Asset Team utilises many contractors, there is a need to increase HSEC awareness and competency and to promote and instil the BHP Billiton HSEC culture. Muhammad and the Pakistan Asset Team have developed a Contractors Safety Awareness Program to reinforce our efforts to achieve Zero Harm in our contractor activities, an area vulnerable to HSEC-related incidents as HSEC management is a relatively new concept for most Pakistani companies.

The program consists of an HSEC starter pack and training program. The pack, which was developed to dovetail into the existing management of contractors' systems, comprises a range of HSEC-related written and visual communication tools available in both English and Urdu, the Pakistan national language. Rather than simply handing over the pack to the contractor, at the contract signing stage a formal briefing session is undertaken by the HSEC and contracts departments. At the completion of this orientation, the pack is handed over and the contractor's senior management signs an agreement of the conditions and a commitment to roll out the information within their own organisations.

The initiative has realised a number of benefits, including better working relationships with our contractors and enhanced safety performance.

Edan Stolberg (team representative)
Dozer Training Package
Carbon Steel Materials, BHP Billiton Mitsibishi Alliance, Australia

Edan and his team have developed a dozer-training package that is so realistic and extensive that it promotes full understanding and eliminates the need to learn by trial and error.

Within BHP Billiton operating dozers on stockpiles with bottom feeders is widely recognised as one of the highest risk activities. When Goonyella Riverside experienced two serious incidents, investigations revealed a general lack of understanding by operators of the level of risks involved in using a dozer on a stockpile, and that inadequate technique resulting from insufficient training was compounding the problem.

However when research was conducted on the subject, little which was informative was found and, in some cases, examples were found of material that was grossly incorrect and potentially encouraged high-risk activities. In response, Edan and the team at Goonyella Riverside decided to consolidate their learnings and present them in a way that could be used in a practical sense.

Of paramount importance was ensuring the package covered as many likely scenarios as possible, as a trainer cannot sit in a dozer with an operator. The resulting package is a comprehensive set of clear work instructions encompassing photos, videos, slideshows and a DVD. Trainees and trainers alike are now more confident having gone through the training that they have been exposed to all the risks and are therefore more aware of, and prepared for, the risks.

John Christowitz (team representative)
Reducing Road Transport Risk
Aluminium, Mozal, Mozambique

In early 2005, Mozal terminated a raw materials transport agreement due to unacceptable safety performance by the supplier and entered into a long-term agreement with a specialist logistics company that has an excellent record of safety performance. John and his team have been responsible for managing the change-over and ensuring that safety performance not only improved but became sustainable.

Our Mozal aluminium operation is located approximately 17 kilometres west of Maputo, the capital of Mozambique. Its vehicle fleet consists of 17 truck haulers and trailers that together complete an average of 148,000 kilometres per month, much of which is on public roads through densely populated suburban areas. Drivers contend with numerous risks, many of which are beyond their direct control and include pedestrians, animals, high traffic densities, poorly maintained road infrastructure and the unsafe driving habits of many road users.

As a result of numerous road safety initiatives and programs, including driver fatigue management, zero alcohol and drug tolerance, increased vehicle payloads, random speed checks, noise reduction and behavioural safety observations, implemented in partnership with the new supplier, the fleet completed over 800,000 incident-free kilometres in the six-month period from 1 September 2005 to 28 February 2006.

Merit Awards

Ross Truelson (team representative)
BMA Haul Road Watering Project
Carbon Steel Materials, BHP Billiton Mitsubishi Alliance, Peak Downs Mine, Australia

Over the past years BMA has experienced a number of safety incidents associated with over-watering of surface mine haul roads. Ross and the BMA Haul Road Watering Project team determined the best approach to reducing these safety incidents was to combine a fit-for-purpose delivery system on water trucks with improved operator training that focused on haul road watering practices.

In seeking to address an immediate safety issue, there was no time available to spend on developing new technology. Instead the team modified existing technology to deliver a simple yet reliable water delivery system able to be retrofitted to Peak Downs water trucks.

Concurrently, a review of existing road watering training revealed it to be inadequate: existing training manuals were too long, and focused on water truck operations. The team developed new training documentation that was simpler and more easily understood, and that focused on haul road watering practices.

The result is a water truck with all the features required to safely and effectively control haul road dust levels, operated by personnel who can recognise the appropriate level of water required and know how to control the water delivery system to deliver that level of water.

A secondary benefit is that less water is now required for haul road watering, reducing the demand for this increasingly scarce resources without compromising the quality of dust suppression.

Nicole Sabourin (team representative)
Zero Incident Process
Diamonds and Specialty Products, EKATI Diamond Mine, Canada

Nicole and her colleagues have introduced the Zero Incident Process – or ZIP – a psychologically based safety process designed specifically to empower individuals to achieve the goal of staying safe.

ZIP does this by providing insight into how the brain works, thinking, attitudes and values. It gives a person the tools to take control of their thinking and feeling, and thus the results obtained, particularly around safety outcomes. It moves a step beyond behaviour-based safety, which is founded only on behaviourism, to the underlying psychological cause of behaviour – our thinking.

ZIP begins with a survey that looks at the current safety culture of the organisation, including the attitude held by employees and management around safety. Training is then conducted with sessions customised for business leaders and front-line workers.

The impact of ZIP has been a catalyst for step change in safety. In particular, the ZIP training has subtly exposed and separated those who are true believers in safety from those who may be on the fringe and believe their safety is the responsibility of someone other than themselves.

John Mitchell (team representative)
Six Sigma Visibility Project
Energy Coal, Mt Arthur Coal, Hunter Valley, Australia

The Six Sigma Visibility Project, lead by John, was a joint activity between our Mount Arthur Coal operation and the diversified technology company 3M to increase the visibility of equipment, vehicles and signs at the mine through a cooperative business improvement project.

Both companies provided project teams to look into ways of improving the visibility of equipment and vehicles on site after it was found that, in the majority of near-miss incidents involving equipment and vehicles, people reported not seeing the other vehicle.

A survey of truck drivers involved in incidents revealed a number of concerns about the visibility of vehicles and signs on site. As a result, a trial involving a variety of different materials for road and vehicle markings was conducted. At the conclusion of the trial, the drivers rated visibility as improving from 74 per cent to 93 per cent. The new signage and vehicle markings have been adopted as the site standard and it is expected that the risk of vehicle collisions will be greatly reduced.

Mount Arthur Coal and 3M have since received numerous enquiries about the project from BHP Billiton sites and other companies and many have shown an interest in applying similar standards for the visibility of equipment, vehicles and signs.

Anthony Peterson (team representative) (team representative)
HSEC Contacts Process
Carbon Steel Materials, BHP Billiton Mitsubishi Alliance, Goonyella Riverside Mine, Australia

Goonyella Riverside Mine, for a considerable time, has utilised the Dupont system of Job Observations to assist in the identification and control of behavioural risk. This system had a major role in dramatically improving HSEC performance; however, it was limited in its ability to drive contact discussions around significant risks on site. The system also required large numbers of resources to administer and resulting reporting abilities were limited.

Anthony and the HSEC Contacts Process team have led the development and maintenance of HSEC contact system which was easy to use, required minimal resources to administer, encouraged discussions around significant risks on site and provided real time reporting on site risk thresholds. A working group consisting of superintendents and departmental safety coordinators assisted in the refining of the process.

The project is now fully implemented on site, proactively illustrating areas of high risk that may require intervention to further reduce risks to 'zero harm' levels. All personnel are engaged in the process to that point that safe behaviours are becoming embedded in everyday behaviour. The project has also assisted in fostering communication between all levels of the organisation.

Ramón Parrquez (team representative)
Behaviour Based Competence Model
Base Metals, Escondida, Second Region, Chile

The Behaviour-based Competence Model implemented by Ramón and his colleagues is improving safety performance by making explicit the knowledge, skills and personal attributes necessary for high performance in specific jobs and roles.

Training is delivered online via a modular system that was developed using in-house expertise.

Designed to provide a vision and direction for the kinds of performance necessary to successfully implement business strategy, the system indicates the behaviour-based performance standards against which people and their business units can be aligned and measured by answering such questions as: What is the performance standard that will allow me to fulfill my goals? What do I need to do to meet performance standard? What obstacles must I overcome or ignore? How do I know if I have achieved the required performance standards? Importantly the system helps in relating such responses as 'Don't Know, Can't or Don't want to' that are seen as inhibitors to strong performance.

Taking into account that some 90 per cent of incidents happen because of workers' behaviour, it is expected that once the project is fully implemented, incident rates will decrease.

Johan Badenhurst (team representative)
Measuring Contractor Performance
Energy Coal, Ingwe, Middelburg Mine, South Africa

Johan and his colleagues have developed service level agreements to measure contractors' performance. In particular, the agreements are designed to ensure that all contractors are aware of their contribution to the HSEC performance on site, and facilitate completion of projects and sharing of learnings.

Discussions with contractors had revealed some shortcomings in the approach to contractor management, including an inability to track performance and no coordinated approach to managing and mentoring contractors in respect of HSEC. This led to the development of a standardized system that measures contractors' performance on a monthly basis against a series of key performance indicators.

Since the introduction of the system, there has been an improvement in the safety performance of the contractors.

Environment Awards

Excellence Award

John Groves (team representative)
Ore Moisture Conditioning
Carbon Steel Materials, WA Iron Ore, Australia

Dust management is a major focus of BHP Billiton Iron Ore (BHPBIO), and developing and refining strategies to minimise dust emissions has been a long-term commitment of the business.

One of the key initiatives that BHPBIO has embarked on is effectively 'conditioning ore' with water to minimise the potential for dust emissions, while maintaining handling qualities of the ore.

This initiative, developed and implemented by John and the Growth Projects team, was aimed at developing a simple, low-cost moisture control solution and originally focused on iron ore products from BHPBIO's Area C mining operation that contained a high level of ultra (potentially dustier) fines.

The project had three key challenges: determining the optimum moisture range for iron ore; effectively applying water to condition the ore; and quantifying ore moisture. Addressing the challenges provided the impetus for developing new innovative ways of managing dust.

BHP Billiton Newcastle Technology Centre developed a new tumble-drum dust test for characterising the dust/moisture relationships of different ores. Innovative spray nozzles and placement within processing plant conveyors were conceived. Finally, partnering with CSIRO to trial the use of Low Frequency Moisture technology provided a management tool for the precise addition of water from mine to port to minimise dust, and making the most limited water supplies.

By providing our operations with an accurate decision making tool for effectively conditioning ore, the project has assisted in successfully addressing two significant environmental and community issues: the level of dust recorded in the township of Port Hedland, and the amount of water used within our Port operations – a dry area – to control the problem. It has also reduced dust levels at the receiving point for our customers. Overall, an environmental win-win outcome.

Highly Commended Awards

Nora Patricia González Jorquera (team representative)
Punta Negra Salt Lake Biodiversity Monitoring Plan
Base Metals, Escondida, Chile

Our Escondida mine is located in the Atacama Desert, in the north of Chile. As part of its operations, Escondida obtains water from groundwater tables below the Punta Negra Salt Basin by way of 120-foot well.

Punta Negra is a critical feeding and nesting site for Andean flamingos and the concern was that since water table recharge takes years, over the long term, water levels in the salt flats could drop, adversely affecting the area's flora and fauna.

Before operations began, detailed baseline studies were conducted to establish the conditions in which extraction could occur. The studies advised the establishment of a monitoring and research program for the salt lake.

In 1996, a Biodiversity Management Plan for the Punta Negra Salt Lake was developed with the support of the Agriculture and Livestock Service (SAG). The plan, managed by Nora and the Environment team, embodies an intensive monitoring and research programme directed to maintaining the balance in the ecosystem of the Punta Negra salt lake and maintaining our operating license.

By using artificial management methods, we are able to replenish the lake. The results are promising. Between 2002 and 2005, more than 2,500 active flamingo nests were observed, an event not seen since 1992 when monitoring commenced.

John Read (team representative)
Arid Recovery
Base Metals, Olympic Dam, Roxby Dam, Australia

The combined impacts of feral species and unsustainable farming have devastated Australian ecosystems since European settlement. Over 60 per cent of desert mammals have been driven to total or regional extinction and many other animals and plants remain threatened. However, a unique partnership — Arid Recovery — that is managed by John and his Land Management Department Colleagues has started reversing these trends.

Located near our Olympic Dam mine in South Australia, Arid Recovery is the largest fenced reserve in Australia from which all feral cats, foxes and rabbits have been removed. The reserve straddles the mine lease and sections of four other pastoral properties, two of which are leased by the Company. Native plants and animals, including five nationally threatened mammal species that have been reintroduced to the reserve, are now thriving within the 86-square-kilometre enclave, which has become both a centre for ecological research and the site of a nationally significant conservation program.

Arid Recovery was initiated in 1987 by a partnership comprising the Olympic Dam mine, the South Australian Department for Environment and Heritage, the University of Adelaide and a community group, Friends of Arid Recovery. The project has not only enhanced biodiversity protection but has also developed strong partnerships with the community and other groups. A key future objective for John and his team is to leverage broad-scale benefits to the environment and to the perception of resource industries by re-establishing threatened species outside the reserve, on both the Olympic Dam mine lease and surrounding pastoral properties.

David Trench (team representative)
Shenzi Subsea Architecture Optimisation
Petroleum, Shenzi Development, Gulf of Mexico, USA

The Shenzi Field is located in the Gulf of Mexico in approximately 1,300 metres (4,300 feet) of water. Field development is based on a subsea system that produces a stand-alone floating production facility. Such development inherently has extra challenges when compared to shallow water developments, and increasing regulatory protection of marine environments in order to maintain biodiversity is one such challenge.

David and the Shenzi Subsea Engineering Team were responsible for developing an efficient and operable subsea system. Survey work commissioned to investigate the flowline routing and surrounding seabed condition revealed that a segment of the flowlines crossed an area of expulsion mounds close to relatively inactive faulting zone.

Past experience and research indicated that chemosynthetic communities — tubeworms, clams, mussels and a variety of associated organism — could be present on the mounds. Such organisms are strictly protected by environmental regulations.

Thorough evaluation showed the mounds consisted of solid tar and that a species of sea-fan was present, and not a chemosynthetic community. The sea-fans are not protected by regulation but are unique to the conditions found at Shenzi. In the spirit of sustainable development, the team set out to preserve the unique organism and its environment.

Using a technology only previously used in military operations, the team determined a 'mound-free' flowline route, and hence a route with minimal environmental impact. Our commitment to sustaining the environment has been recognised by the Minerals Management Services of the United States Department of the Interior who stated that we have set the standard in dealing with such unknown marine life and seafloor characteristics in deepwater Gulf of Mexico.

Merit Awards

Ademar Cavalcanti Silvi (team representative)
Brazil Nut Germplasm Bank
Aluminium, Mineração Rio do Norte (MRN), Brazil

Ademar and his team are responsible for coordinating and implementing a germplasm bank in the Saracá – Taquera National Forest in the Pará State that aims to preserve, characterize and quantify the genetic variability of the Brazil nut (*Bertholletia excelsa*). Germplasm banks of plants are collections of living material, as seeds, pollen, tissue and cultivated individuals aimed at the conservation of vegetal species.

The project commenced in November 2002 and represents a partnership between MRN, the Brazilian Environmental and Renewable Resources Institute and the National Amazon Research Institute.

The Brazil nut holds great economic, social and environmental importance in the Amazon. The nut has a variety of uses — food, emollient, soap and insect repellent — and commercially creates revenue for local peoples, with the monetary value of exporting Brazil nuts from the Amazon second only to that of rubber.

The Brazil nut tree is also good example of the intricate ecosystem of the Amazon, where plants and animals are inexplicably intertwined. Not only is the pollination of this tree so specialized, requiring one particular insect species to produce the fruit, but only one species of animal is capable of chewing through the extremely tough fruit pod to disburse the seeds for new tree growth.

By developing a greater understanding of the nut's genetics characteristics, the project is expected to foster the creation of new Brazil nut plantations offering higher yields as well as adding to existing plantations that otherwise have low yields and that are not being regenerated naturally.

Emanoel Varão (team representative)
Coal Fine Reuse as Secondary Fuel
Aluminium, Alumar, Brazil

Emanoel and his team at the Alumar aluminium operation are responsible for a waste recycling project that has resulted in coal fines from the refinery boilers being reused as a substitute for the coke burned in the cement kilns at a cement plant.

Coal fines have a high heat value and are not corrosive nor a hazardous waste. These properties make them suitable for use in cement plants as a partial replacement for the coke burned in the kilns.

The innovative recycling concept, which has the approval of all environmental authorities, has the potential to produce significant environmental and socio-economic benefits, in line with our HSEC Policy and sustainability aims.

A waste product will be recycled in a productive way and replace the use of a fossil fuel (coke). The use of large amounts of land for ash storage will no longer be required. With no need for new storage areas, impacts on flora and fauna will be avoided.

Fugitive emissions generated during ash handling will also be eliminated, mitigating risks to human health and the environment and improving visual amenity at the plant. As well, significant costs associated with the construction, operation and maintenance of ash storage will be saved.

The outlook for further adoption of the re-use concept is positive, with potential for additional customers in the cement industry and use in the steel and pig-iron industries. Finally, there is increasing awareness of our endeavours to provide leadership in environmental management.

John Kline (team representative)
San Manuel Mine Reclamation Project
Base Metals, BHP Copper San Manuel Mine, USA

In managing the closure and rehabilitation of the San Manuel mine, John and the multi-disciplinary reclamation team have implemented the first operator-led, full-scale closure of a mining operation of its size and complexity under present-day environmental regulation in the US. The project was also the first in BHP Billiton to utilize the risk-based probabilistic method for estimating closure costs.

San Manuel was constructed in 1952 as an underground mine. Open pit mining commenced in 1985 and ceased in 1999. Formal closure of the mine site, which covers nearly 1,800 hectares, was announced in January 2002. Surface reclamation activities were completed in May 2006, eighteen months ahead of the original closure project schedule and well below the original budget. Most importantly, the entire project, which totalled more than one million work-hours, was accomplished with just one recordable injury.

The approach went beyond simply stabilizing a site. John and his mine closure team utilized a plan based on reducing long-term risk, minimizing maintenance costs, addressing community concerns and meeting regulatory requirements. The overall design approach blends the reclaimed mine facilities into surrounding landforms and guarantees that the site and surrounding areas will be successfully reused for future activities.

The long history of mining in Arizona makes the reclamation activities performed at San Manuel mine site important not only to BHP Billiton and the San Manuel townsite but to mining properties in general. The reclamation activities to recontour the overburden stockpiles, heaps and mine slopes while maintaining some of the history of the district, provides a model for other reclamation projects.

David Unger (team representative)
Miami Unit No 2 Tailings Site Reclamation
Base Metals, Pinto Valley Operation, Miami Unit No 2 Tailings, USA

David and his team of specialists have successfully managed the reclamation of an historic tailings impoundment located in the town of Miami, Arizona, in a manner that went beyond simply stabilizing the site and set a new benchmark for closure.

The No 2 tailings impoundment, dating back to the early 1900s, was located within the 100-year flood plain of Bloody Tanks Wash (BTW). The tailings were hydraulically mined from 1988 to 2001 to remove a potential source of contamination from BTW while simultaneously recovering residual copper value. The re-processed tailings were placed in a former open pit.

In addition to the potential negative impacts if the tailings entered the wash, there were also considerable issues with dust blowing across the nearby highway, obscuring visibility to the extent that drivers would turn on their headlights when passing on windy days.

Reclamation started after the completion of the hydraulic mining and occurred over two phases. Phase 1 involved constructing a new channel next to the historic channel of BTW and removing the antiquated retaining wall. Phase 2 addressed the remainder of the tailings by re-contouring and covering the slopes with a soil cap to allow for revegetation. The slopes were then armoured with rock to prevent erosion, drainage channels were installed and the site was seeded.

The result is that the site and the surrounding areas will be successfully reused for future activities, without the need for additional clean-up.

Carl Bagnall (team representative)
Re-Use of Town Treated Effluent
Energy Coal, Mt Arthur Coal, Hunter Valley, Australia

The responsible use of water resources is of increasing importance; access to clean water is an international issue and a key challenge for sustainable development. Wherever we operate we aim to reduce fresh water consumption and increase water recycling and reuse.

Mt Arthur Coal is a net user of water and relies upon external supplies to meet its water demand. Carl and members of the Environment and External Affairs Department are responsible for managing a comprehensive water management system that was founded on recycling initiatives developed in partnership with the local community, Council and neighbouring mines. The system aims to maximise capture and reuse of mine water and grey water from the local sewerage treatment works, and in doing so, reduce the need to draw from clean water sources, including the neighbouring Hunter River.

The Hunter River is the lifeblood of the catchment, providing the potable water supply for the nearby township and other industries. Previously town effluent was discharged into the Hunter River; today, some 90 per cent of the total town effluent is re-used.

The re-use system is enhanced by artificial wetlands constructed from coarse reject, a waste product from coal processing that filters the treated effluent prior to re-use onsite. In addition to the water treatment value, the wetlands also provide an important habitat for local waders and aquatic life that are dependent on reliable water in this dry region. In partnership with local Council and universities, this treated effluent has also been irrigation on rehabilitation areas to promote successful native reforestation.

Patrick Fee (team representative)
Tank Cleaning System
Petroleum, Fourchon Shore Base, USA

In our Petroleum business, supply vessels transport drilling fluids to and from our offshore operations in internal tanks. The cleaning of these tanks often requires entry to confined spaces and can be hazardous, time-consuming and wasteful of water. The problems have been escalated by the expansion of our activities into the deep-water Gulf of Mexico, which has resulted in the introduction of bigger supply vessels with high-capacity tanks.

Patrick and his team from our shore base in Fourchon, Louisiana, USA have developed an innovative solution that has resulted in a win-win situation where risks to personnel safety are significantly reduced. There are also environmental benefits and major savings in time and costs.

By replacing personnel with mechanical devices that use hydraulic jets to perform the cleaning operation, it is estimated that, annually, there will be around 72,000 fewer confined space entry (CSE) work-hours, in total nearly 100,000 work-hours will be saved, and nearly 149 million fewer litres of waste wash-water will be generated.

Community Awards

Excellence Award

José Haroldo Chaves Paulo (team representative)
Fish Farming Development Program
Aluminium, Mineração Rio do Norte, Brazil

The objective of the Fish Farming Development Program, as managed by José and his colleagues, is to stimulate local interest for fish farming as a viable means of generating income while simultaneously building awareness for the importance of conserving local fish species.

MRN is located in the far west of the State of Para. Its host communities dwell along the banks of the Trombetas, Amazon and Inhamunda Rivers, relying on fishing, cattle ranching and subsistence agriculture.

Uncontrolled, predatory fishing has substantially reduced the availability of fish in the region, to the point where in some regions and periods of the year, it is difficult to even catch fish for family consumption. The family income is already low - families live on a monthly income equivalent to 20 per cent of Brazil's minimum salary. Facing limited options, many locals migrate to the nearest cities or attempt activities for which they are unskilled.

Fish farming (specifically in net pools) is an important new source of income. As a consequence, living standards improve and the populations remain settled in the countryside. With families having more financial resources, riverside children will enjoy better schooling and time to study, since fish farming does not require full-time labour, unlike other traditional activities such as agriculture.

At the same time the project also builds awareness for the importance of preserving local fish species.

Highly Commended Awards

Humera Malik (team representative)
Community Sanitation Program
Petroleum, Zanzama Asset, Pakistan

Humera and her colleagues, as part of our Pakistan asset's community development program, have initiated a community-based sanitation project that is based on building local awareness of the importance of sanitation and organising local committees to represent the community in the planning and implementation process.

Johi is the tehsil (municipal administration) headquarters of the Dadu district and supports a growing population of approximately 18,000. While clean water is critical, so is a proper sanitation system, without which the local communities are deprived of any possibility of improving hygiene in the area.

The project is being undertaken in partnership with a local NGO, the Kachho Foundation, and is supported by the local government. Our contribution entails upgrading the sanitation system in Sayedabad as a model for future upgrades in the area. A concrete drainage system will be installed and pavements resurfaced. The project will immediately benefit the 50 households in the village and will provide jobs and business opportunities for local people.

Alfredo Zuniga (team representative)
Tintaya Foundation
Base Metals, Tintaya, Chile

Alfredo and his multi-task team of professionals are responsible for the Tintaya Foundation, an independent non-profit organisation created, with the support of our Tintaya copper operation, to contribute to the sustainability of mine's host communities by promoting and improving community self-management and participation processes.

Tintaya is located in the Espinar province and has had a history of community unrest stemming back many years to when the project was owned and operated by the State. In recent years, the Company has sought to improve relationships with the mine's host communities and the Foundation has played a key role in this regard.

Established in 2001, the Foundation includes external representation to ensure a full understanding of the community's needs and an ability to work with local and international non-government organisations (NGOs) to establish formal dialogue processes and agreements regarding community benefits.

The Foundation has delivered some 50 programs spanning the areas of education, health, agriculture, livestock development, and infrastructure. Preliminary research indicates an improvement in the quality of life of beneficiaries to the program, which are estimated to be around 10,000 local people.

Merit Awards

Frans-Jozef Jaspers (team representative)

Mozlink II

Aluminium, Mozal, Mozambique

Following a benchmarking exercise with the International Finance Corporation, Frans-Josef and his colleagues conceived Mozlink II as way to build on the benefits being derived from the existing Mozlink program that awards Company contracts to Mozambican suppliers. As a result, other Mozambican companies are switching to locally sourced materials and products.

Since 2002, Mozal has increased spending with Mozambican companies from around US\$6 million per month to more than US\$15 million per month. This significant increase is the result of a focused drive by Mozal to award contracts to Mozambican suppliers who comply with the Company's HSEC and business conduct principles. Additionally, Mozal continued to pro-actively support programs and initiatives aimed at building the capacity of small and medium enterprises. Mozlink II is the way to extend this good practice and help to further accelerate the growth of the Mozambican economy.

The first contract package under the enhanced Mozlink program has boosted the economy by around US\$500,000 and it is anticipated the value of the contract could grow to around US\$5 million per annum within two years.

Salvador Traquino (team representative)

Drought Relief Program

Aluminium, Mozal, Mozambique

Since 2003 Mozambique has been experiencing a serious drought. Salvador and his colleagues at the Mozal Community Development Trust have initiated a program that is helping local farmers generate crops throughout the year.

The impact of the drought on local communities has been devastating. Food shortages have lead to increased levels of starvation, which, in turn, has accelerated the cycle of poverty. With the cooperation of the local government authority, the MCDT is rehabilitating water channels; providing seeds, fertilisers and fungicides, and technical support for the irrigation and production system; and teaching new agricultural techniques.

As a result of the project, annual production has increased almost four-fold. Farmers have access to food throughout the year and are generating income from the sale of surplus produce. This, in turn, is helping to break the cycle of poverty by reducing debt and increasing spending on such basic needs as food, health and education. The local economy is strengthened by an improvement in the local employment rate and an increase in disposable income levels.

Rick Peters (team representative)
Groote Eylandt Liquor Management Plan
Carbon Steel Materials, GEMCO, Australia

The GEMCO manganese mine is on Aboriginal land owned by the Anindilyakwa people. Under an agreement with the traditional owners, we are committed to managing the impacts of alcohol on the local people.

Following extensive consultation with all stakeholders, Rick and the Community Relations team at GEMCO have developed a liquor management plan that has not only been accepted by the local people but also passed as law under the Northern Territory Liquor Act.

The impact on the Groote Eylandt community has been extremely positive. Police have recorded a significant decrease in criminal charges and the incidence of alcohol-related health issues has declined. The plan has also assisted GEMCO's Aboriginal Employment Strategy, which has seen absenteeism decrease from an average of 9 per cent to 2.5 per cent. The local community employment program is recording similar decreases in absenteeism and now has a fully functional workforce committed to improving the quality of life of Aboriginal people on Groote Eylandt.

Ralph Chelotti (team representative)
Professional Skills Development Program
Carbon Steel Materials, Samarco Mineração S.A., Brazil

The goal of the Professional Skills Development Program implemented by Ralph and his colleagues is to enhance the skills of people from local communities so that they can seek employment with both Samarco and other local industries.

The driver for the program was the need for a workforce of qualified professionals to support MRN in commissioning its third pellet plant. Recognising that the labour market from nearby communities lacked the required skills, the team set about investing in developing a workforce.

With the full ongoing support of all levels of government, two teaching centres for vocational training and professional development courses have been established. This, in turn, has led to the opening of federal employment agencies in the local communities. Currently all new hires for MRN Third Pellet Plant Project are processed by the agencies, giving priority to the people who have received training at the teaching centres.

The program is the first of its kind in the states of Minas Gerais and Espirito Santo. To date over 1,950 people have completed courses in civil construction and electromechanical assembly, and indicators point to a trend of increasing enrolment; they also show that only 12 per cent have failed to achieve certification.

Luis Ponguta (team representative)
Community Relocation Project
Stainless Steel Metals, Cerro Matoso, Colombia

With the expansion of the mining field, 26 families living in the neighbouring area needed to be relocated. Luis and his team successfully managed the relocation in accordance with the World Bank Guidelines for Involuntary Resettlement. Key to the process was ongoing consultation and participative decision-making.

Weekly meetings were held with all stakeholders, including local government representatives. Two team members also lived on-site with the families during the moving process and immediately after the relocation, which made it easier to monitor the project and build trust. Each family participated in choosing the new site for their homes and at least one member from each family was employed in the construction of the new homes and associated infrastructure. Overall, some 90 per cent of the required labour for the project was sourced from the local community.

Prior to relocating, the project team also initiated community projects that were designed to assist with assimilating the relocated families into the new community.

In the beginning the families were reluctant to move but the participative, multi-disciplinary approach addressed their concerns; all families are now self-sufficient.

Sheldon Narine (team representative)
Livestock Training Programme
Petroleum, Angostura Oil and Gas, Trinidad and Tobago

Sheldon and his HSEC and External Affairs colleagues, in partnership with the local community and the Ministry of Agriculture, have initiated a project to assist farmers become self-reliant through the breeding and marketing sheep and goats as a small-scale commercial venture.

Prior to our endeavours agriculture was declining, the community was divided and fragmented, and there was strong resentment towards multi-national organisations which was manifested itself in vandalism to our pipelines and other assets. The programme has helped develop an entrepreneurial spirit within the community and build a relationship based on openness, trust, and involvement.

The programme is the first of its kind in the West Indies, and there is already evidence of parents

Victor Ladeira (team representative)
Valesul Volunteer Program
Aluminium, Valesul Alumínio S.A., Brazil

The Valesul operation is located among communities facing extreme economic and social hardship. Following extensive analysis, Victor and the members of the Volunteer Program are delivering programs in partnership with various public bodies that have benefited 15,000 in just over three years.

Key to the program's success has been extensively mapping and surveying the needs of and provision of services in the surrounding communities in order to establish programs that reflect their true needs, and even their culture.

The program focuses on creating initiatives for the prevention and improvement of health conditions of the surrounding communities; implementing environmental projects at public schools that are designed to raise awareness around the importance of preserving the environment; encouraging participation in a formal Street Art project as a means of both stimulating an interest in art and acting as an informal social network; offering free professional development courses for local citizens; and fostering public investments in social infrastructure.

Key Sustainability Data Summary

	Units	2001/02	2002/03	2003/04	2004/05	2005/06
Health						
Number of new cases of occupational illnesses	Total number	N/A	226	197	152	123

Safety						
Number of fatalities at our controlled operations	Total number	13	3	17	3	3
Classified Injury Frequency Rate	See CIFR	6.7	5.4	5.0	3.9	4.8
Total Recordable Injury Frequency Rate	See TRIFR					8.7

	Units	2001/02	2002/03	2003/04	2004/05	2005/06
Environment¹						
Land use						
Land newly disturbed	hectares	4,500	3,540	5,620	4,940	4,930
Land rehabilitated	hectares	2,210	1,790	2,060	1,850	2,410
Land requiring rehabilitation²	hectares	82,910	77,160	65,250	73,330	84,310
Resource Consumption						
High-quality water consumption	Megalitres	120,800	132,630	153,000	153,170	170,250
Low-quality water consumption	Megalitres					33,800
Energy Used	Petajoules	265	292	327	309	304

	Units	2001/02	2002/03	2003/04	2004/05	2005/06
Emissions						
Greenhouse gases	'000 tonnes CO ₂ - equivalent	46,660	47,070	51,960	52,110	51,400
Oxides of sulphur	tonnes	41,080	42,280	48,240	50,540	93,390
Oxides of nitrogen	tonnes	44,240	49,640	54,600	57,120	165,100
Fluoride	tonnes	1,680	910	900	950	1,360
Waste³						
General waste disposed to landfill	tonnes	99,300	115,280	124,990	154,820	158,970
Hazardous waste disposed to landfill	tonnes	56,800	79,940	59,100	68,100	43,530
Community						
Community contributions	US\$ million	40.3	42	46.5	57.4	81.3
	% pre-tax profit ⁴	1.4	1.4	1.3	1.53	1.45
Socio-economic						
Total number of full-time employees	Total number	51,000	34,800	35,070	36,468	37,762
Employee turnover rate	%	N/A	5	6	2	1
Full-time employees that are female	%	9	8	9	12	13
Total Value Add ⁵	US\$ million	N/A	12,466	14,085	15,927	10,931
Financial						
Group turnover ⁶	US\$ million	15,228	17,506	24,943	31,804	39,099
Earnings before interest and tax ^{6,7}	US\$ million	3,102	3,481	5,488	9,330	15,277

N/A – Data not available.

Figures in italics indicate that this figure has been adjusted since it was previously reported.

1. Figures restated to facilitate year-to-year comparison of performance without BHP Steel, which was demerged in July 2002.
2. Assumes immediate closure of all operations.
3. Excludes recycled materials and mining related materials, such as waste rock, tailings, coal reject and slag. Hazardous waste includes waste oil.
4. % pre-tax profits calculated on a 3-year rolling average.
5. The definition of value add has been expanded to reflect the approach of the draft 2006 update of the Global Reporting Initiative . See Socio-economic > Our Performance > Economic Contributions.
6. From continuing operations, including the Group's share of joint ventures and associates.
7. Excluding exceptional items.

Environmental Data Summary

Data in these tables are aggregate figures based on site data reported by BHP Billiton's managed businesses for the financial year 2005/06. Totals may differ due to rounding of data.

View Environmental Data Summaries for: [Aluminium](#) [Base Metals](#) [Carbon Steel Materials](#) [Stainless Steel Materials](#) [Energy Coal](#) [Petroleum](#) [Diamonds & Specialty Products](#)

View Environmental Data Summaries for: [Land](#) [Water](#) [Waste](#)

Environmental Data Summary

	Aluminium	Base Metals	Carbon Steel Materials	Stainless Steel Materials	Energy Coal	Petroleum	Diamonds & Specialty Products	BHP Billiton Total⁸
Accidental Discharges (litres)								
Hydrocarbons ¹	1,590	28,540	87,060	5,150	1,000	1,500	4,100	128,940
Other materials	10,022,410	2,119,090	3,725,050	2,518,320	11,124,000	2,465,960	267,660	32,242,490
Land (hectares)								
Total footprint ²	585,910	1,403,020	461,250	183,990	172,010	56,480	345,890	3,209,370
Newly disturbed in the reporting period	570	330	2,340	470	1,000	20	160	4,930
Rehabilitated in the reporting period	190	580	350	150	1,100	10	0	2,410
Land requiring rehabilitation ³	3,380	9,180	49,030	6,700	12,960	140	2,900	84,310
Land available for rehabilitation	180	3,200	1,820	270	3,460	40	2,010	10,990

	Aluminium	Base Metals	Carbon Steel Materials	Stainless Steel Materials	Energy Coal	Petroleum	Diamonds & Specialty Products	BHP Billiton Total
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Water Consumption (megalitres)⁴

High-quality water	10,090	86,230	42,400	13,710	8,690	510	8,580	170,250
Low-quality water	0	11,120	8,610	10,460	3,480	50	80	33,800
Recycled water	2,300	38,660	42,790	65,420	13,490	0	6,000	168,660

Energy Use (petajoules)⁵

Coal and Coke	35.4	0.3	15.0	9.3	0.0	0.0	0.0	60.0
Purchased electricity	75.0	14.5	14.7	8.2	3.9	0.1	0.1	116.4
Natural gas	14.4	2.2	1.0	10.7	0.0	21.9	3.0	53.2
Distillate	3.0	11.2	23.8	2.9	9.4	2.1	3.1	55.7
Fuel Oil	0.2	0.3	0.3	10.1	0.4	0.1	0.0	11.3
Other	6.0	0.8	0.0	0.3	0.0	0.0	0.0	7.2
Total	134.1	29.3	54.8	41.4	13.7	24.2	6.2	303.8

Greenhouse Gas Emissions (000 tonnes CO₂-e)⁶

Carbon dioxide	25,330	3,390	6,850	3,270	1,750	1,600	700	42,890
Methane	0	0	5,270	0	2,200	190	0	7,660
Perfluorocarbons (PFCs)	850	0	0	0	0	0	0	850
Total	26,180	3,390	12,120	3,270	3,950	1,790	700	51,400

Other Gaseous Emissions (tonnes)

Oxides of sulphur	38,050	1,900	4,250	29,480	170	390	19,150	93,390
Oxides of nitrogen	5,830	10,460	121,580	6,860	8,360	6,160	5,840	165,100
Fluoride	980	0	0	0	0	0	380	1,360

	<u>Aluminium</u>	<u>Base Metals</u>	<u>Carbon Steel Materials</u>	<u>Stainless Steel Materials</u>	<u>Energy Coal</u>	<u>Petroleum</u>	<u>Diamonds & Specialty Products</u>	BHP Billiton Total
Waste (various units)								
Wastewater and effluent discharged (megalitres)	3,230	42,000	16,050	4,520	11,850	1,210	9,310	88,190
Waste oil disposed to landfills (kilolitres ⁷)	180	40	140	0	0	0	0	360
Hazardous mineral waste disposed (tonnes)	6,985,960	20,695,880	13,867,110	70	18,230	0	2,164,510	43,731,760
Other hazardous waste disposed to landfill (tonnes)	17,690	20,970	1,750	700	1,520	830	0	43,530
Non-hazardous mineral waste disposed (tonnes)	107,530	102,216,460	24,108,030	18,189,780	21,074,540	0	5,198,830	170,895,320
General waste disposed to landfill (tonnes)	10,240	77,740	38,460	20,170	4,670	1,230	6,400	158,970

1. Includes hydrocarbons released to secondary containment facilities and subsequently recovered.
2. Includes onshore exploration leases but excludes offshore exploration leases.
3. This value includes the area to be rehabilitated while the project is operational, not the total area that will require rehabilitation at the end of project life.
4. One megalitre is equal to 10⁶ litres.
5. One petajoule is equal to 10¹⁵ joules.
6. CO₂-e = Carbon dioxide equivalent (the basis of comparing the warming effect of greenhouse gases such as carbon dioxide, methane, perfluorocarbons, etc.)
7. One kilolitre is equal to 10³ litres.
8. The BHP Billiton Total figure is inclusive of data from our closed Beenup site in Western Australia, Minerals Exploration and Technology Centres which are not reported separately in this table.

Governance



[Our Approach](#)

[Our Performance](#)

'Strong economic, environmental and social performance as well as good governance are critical success factors for the Company.'

Message from Special Advisor to the CEO and Head of Group Secretariat

BHP Billiton's corporate objective is to create long term value through the discovery, development and conversion of natural resources and the provision of innovative customer focused solutions. In pursuing this objective we have committed to the highest level of governance and strive to foster a culture that values and rewards exemplary ethical standards, personal and corporate integrity and respect for others. We consider this fundamental to our commitment to sustainable development. We also believe that there is a link between high-quality governance and the creation of value.

The Board of BHP Billiton has delegated the authority necessary to run the business in pursuit of the corporate objective to the Chief Executive Officer. In so doing the Board has imposed certain limits on how the CEO uses that authority. Those limits include requirements that the CEO will not allow the business to operate without ensuring that there are appropriate systems in place to meet the highest standards of governance. Those systems include processes to identify and control risks and to ensure that we do not allow the culture of the company to develop or subsist in a way that condones dishonest conduct, or lack of integrity, respect or dignity in relationships amongst those involved in or affected by its activities.

The Board and its Committees monitor the performance of management to gain assurance that the progress is being made toward the corporate objective within the limits that have been imposed. The Sustainability Committee, for example reviews the effectiveness of the Group's policies and systems for identifying and managing the health, safety, environment and community risks we confront, while the Risk and Audit Committee evaluates the effectiveness of the systems for identifying and managing strategic and business risks.

Fostering a culture that reflects our commitment to our Charter values is a challenge for an organisation as broad and diverse as ours. In assuming responsibility for the corporate culture the CEO is supported by the Global Ethics Panel. That Panel is made up of representatives from our geographic regions and our businesses and advises the CEO on matters affecting the values and behaviors of the company including its ethical foundations.



Karen Wood
Special Advisor to the CEO and
Head of Group Secretariat

While the global nature of our business presents many challenges, it also affords us the opportunity to take best practices on matters of governance wherever we find them and integrate those practices into our way of life. The pages that follow illustrate the systems and processes that have been put in place to meet our governance commitments. More information on how we manage governance can be found in the Corporate Governance Statement that forms part of our 2006 Annual Review.

Karen Wood

Special Advisor to the CEO and Head of Group Secretariat

Read more:

- [Governance>Our Approach](#)
- [Governance>Our Performance](#).

Governance – Our Approach

At BHP Billiton we believe that to maintain our position as one of the world's leading companies, we must commit to the highest standards of governance. Our approach to governance is predicated on the belief that there is a demonstrable link between high-quality governance and business performance.

GOVERNANCE – THE ZERO HARM FOUNDATION



While this section focuses on those governance processes we have in place to implement our commitment to sustainable development, we also have a suite of corporate governance processes that manage the broader affairs of the Company. The [Corporate Governance Statement](#) outlines the key principles and practices of the BHP Billiton Group. Our financial [Annual Report](#) also provides details in this regard.

This section outlines our approach to sustainable development governance, which comprises:

- a dedicated organisational [structure and responsibilities](#)
- a clear [hierarchy of systems and documents](#)
- a number of [key management processes](#), central to integrating sustainability into our decision-making.

Structure and Responsibilities

Our organisation for sustainable development is characterised by the following key features:

- The Sustainability Committee of the Board oversees HSEC matters across the Group.
- Business line management has primary responsibility and accountability for HSEC performance.
- The HSEC function provides advice and guidance directly, as well as through a series of networks across the business.
- Clear links exist between remuneration and HSEC performance.
- The HSEC function advocates best practices and commercially effective global solutions.

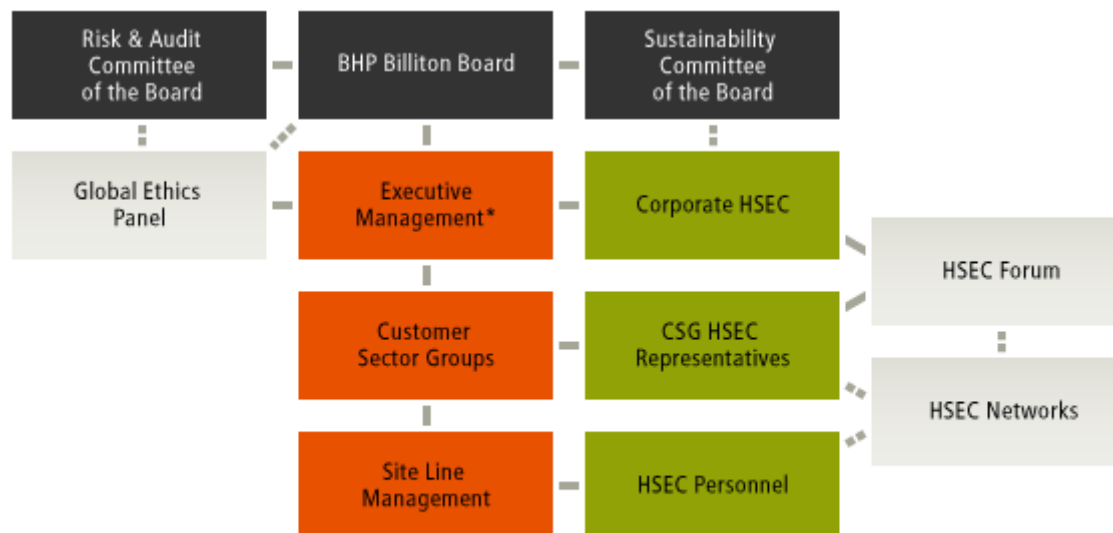
At every level of the organisation, our line managers are responsible for HSEC matters. Although they are supported by functional personnel who provide specialist advice and support in managing all aspects of HSEC, ultimate responsibility rests with the general and senior management teams. Executive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

See below for further details on the following responsibilities:

- [Sustainability Committee of the Board](#)
- [Risk Management and Audit Committee](#)
- [Global Ethics Panel](#)
- [Executive Management](#)
- [HSEC Forum](#)
- [Corporate HSEC](#)
- [HSEC Networks](#).

The diagram below illustrates our organisational structure for sustainable development.

Sustainable Development Organisational Structure



* Authority to manage the business is delegated to the CEO. The CEO on-delegates authority to committees, including the Office of the Chief Executive and the Executive Committee, and individuals.

Sustainability Committee of the Board

The Company's peak sustainable development governance body is the Sustainability Committee, a subcommittee of the Board.

Following a review of its effectiveness the Sustainability Committee was restructured during the year, and the Committee's terms of reference are being reviewed. The Committee's members now comprise only non-executive directors - Dr D C Brink (Chairman), Mr P M Anderson, Dr E G de Planque and Dr J M Schubert. Prof. Jim Galvin acts as an advisor to the Committee. The BHP Billiton Board itself consists of 14 directors: four executive and ten independent. The Committee met four times during the year. For profiles of Sustainability Committee members see [Sustainability Committee of the Board Profiles](#).

The role of the Sustainability Committee is to assist the Board in its oversight of:

- health, safety, environment and community risks
- the Group's compliance with applicable legal and regulatory requirements associated with health, safety, environment and community matters
- the Group's performance in relation to health, safety, environment and community matters
- the performance and leadership of the health, safety and environment function and the sustainable development function
- the Group's Annual Sustainability Summary Report
- the preparation of a report by the Committee to be included in the Annual Report.

Executive members and external advisors no longer sit as members of the Committee but participate in Committee work at the discretion of the non-executive director members. While not a governance body, the [Forum on Corporate Responsibility](#) 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.

Risk Management and Audit Committee

The purpose of the Risk Management and Audit Committee is to assist the Board to fulfil its corporate governance and oversight responsibilities in relation to financial reporting, internal control structure, risk management systems and the internal and external audit functions. In this role they oversee the Global Ethics Panel.

Global Ethics Panel

The purpose of Global Ethics Panel is to assist the Chief Executive Officer in meeting the requirement in the Board Governance Document relating to the ethics and culture of the Group. The Global Ethics Panel promotes the effective implementation of our [Guide to Business Conduct](#).

The Panel includes business representatives and corporate representatives from relevant functional areas – Group Audit Services, Human Resources and Legal – and two external representatives. Karen Wood, Special Advisor to the Chief Executive Officer and Head of Company Secretariat, holds the position of Chairman. Our external representatives are Dr Simon Longstaff, Executive Director, St James Ethics Centre; and Graham Evans, current Chairman of the Victorian Competition and Efficiency Commission, former chairman of the Global Ethics Panel and former Head of External Affairs at BHP Billiton.

In addition to providing a high-level point of contact for employees, the Global Ethics Panel regularly reviews all business conduct cases that have been raised through the Business Conduct helpline and fraud hotline or email system. It also assesses emerging policy issues and recommends to the Office of the Chief Executive appropriate changes to the Guide to Business Conduct.

Read more:

- [Global Ethics Panel Charter](#)
- [Global Ethics Panel Member Profiles](#).

Executive Management

The Chief Executive Officer (CEO) holds delegated authority from the Board to achieve the Corporate Objective, save for those matters the Board has retained for its own decision-making. In devolving that authority the CEO has developed an Approvals Framework that delegates authority to committees and individual members of management. Notwithstanding those further delegations the CEO remains accountable to the Board for the authority delegated to him.

The CEO has established the Office of the Chief Executive (OCE) to assist him in exercising his authority. The role of the OCE is to provide advice to the CEO and to make determinations on matters defined in its Charter. The members of the OCE are:

- Charles Goodyear, Chief Executive Officer and Executive Director
- Mike Salamon, Executive President and Executive Director
- John Fast, Chief Legal Counsel and Head of External Affairs
- Chris Lynch, Group President Carbon Steel Materials and Executive Director
- Marius Kloppers, Group President Non-Ferrous Materials and Executive Director
- Robert Kirkby, Executive President
- Marcus Randolph, Chief Organisation Development Officer
- Alex Vanselow, Chief Financial Officer
- Karen Wood, Special Advisor to the CEO and Head of Group Secretariat
- J. Michael Yeager, Group President Energy.

The CEO draws on the work of other committees including the Executive Committee, Financial Risk Management Committee (FRMC) and the Investment Risk Committee (IRC).

The Executive Committee has a communications and influencing role across the Group. The FRMC monitors the Group's financial risk management policies and exposures and approves financial transactions within the scope of its authority. The IRC oversees the management approval processes for major investments, which are designed to ensure that investments are aligned to the Group's agreed strategies and values, risks are identified and evaluated, investments are fully optimised to produce the maximum shareholder value within an acceptable risk framework,; and appropriate risk management strategies are pursued.

HSEC Forum

The HSEC Forum is the peak functional group and includes Corporate representatives and HSEC functional heads from each CSG. The Forum is chaired by the Vice President HSE and sets the direction for the HSEC function, identifies priority issues, measures HSEC performance and builds consensus for the way forward.

Corporate HSEC

Core HSEC governance functions are provided from the Corporate Centre, with the majority of staff embedded in the Customer Sector Groups. A critical component of the HSEC governance function provided by Corporate is the HSEC audit program, specifically designed to ensure our Charter, Sustainable Development Policy and HSEC Management Standards are effectively implemented across the Group.

HSEC Networks

Across the Company, various specialist networks have been formed to foster the sharing of knowledge. Each network consists of people from across the Company who apply what they know about topics of common interest. Four specialist HSEC Networks have been established to manage the development of HSEC practices and the response to issues of Company-wide significance. The networks include:

- Global Community Network
- Environment Network
- Occupational Hygiene Network
- Safety Network.

Sustainability Committee of the Board Membership

David Brink *MSc Eng (Mining), DCom (hc), 67*

Chair of the Sustainability Committee of the Board

Term of office: Director of Billiton Plc since June 1997. Director of BHP Billiton Limited and BHP Billiton Plc since June 2001. Mr Brink was last re-elected in 2003 and is standing for re-election in 2006.

Independent: Yes

Skills and experience: David Brink brings considerable mining and finance experience to the Group. He has over 20 years' experience in the mining industry, in particular shaft sinking, tunnelling and exploration contracting, followed by 12 years as the CEO of a major listed construction, engineering and manufacturing conglomerate.

Other directorships and offices (current and recent):

- Chairman of Unitrans Limited (since November 1997)
- Deputy Chairman of ABSA Bank Limited and ABSA Group Limited (since April 1992)
- Director of Sappi Limited (since March 1994)
- Former Director of Murray & Roberts Holdings Ltd (from July 1984 until December 2003)
- Former Director of Sanlam Limited (from January 1994 to June 2006)
- Vice President of the South African Institute of Directors.

Board Committee membership:

- Chairman of the Sustainability Committee
- Member of the Risk and Audit Committee.



Paul Anderson *BSc (Mech Eng), MBA, 61*

Term of Office: Appointed a Non-executive Director of BHP Billiton Limited and BHP Billiton Plc on 26 April 2006 with effect from 6 June 2006. He was the Chief Executive Officer and Managing Director of BHP Billiton from 1998 to July 2002 and a Non-executive Director from July to November 2002.

Independent: No

Skills and Experience: Paul Anderson has an extensive background in natural resources and energy and, as an architect of the merger that created BHP Billiton, has a deep understanding of the strategy behind the company's success. He is Chairman of the Board of Duke Energy Corporation and has more than 20 years experience at Duke Energy and its predecessors.

Other directorships and offices (current and recent):

- Chairman of Duke Energy Corporation (since November 2003) and former Chief Executive Officer (from November 2003 to April 2006)
- Director of Qantas Airways Limited (since September 2002)
- Former Director of Temple Inland Inc. (from February 2002 to May 2004)
- Former Director of Fluor Corporation (from March to October 2003)
- Member of the US President's Council of Advisors on Science and Technology.

Board Committee membership:

- Member of the Sustainability Committee (with effect from 6 June 2006).



Gail de Planque *AB Mathematics, MS (Physics), PhD (Env Health Sciences), 61*

Term of office: The Hon. E G de Planque was appointed a Director of BHP Billiton Limited and BHP Billiton Plc on 19 October 2005. Dr de Planque was re-elected in 2005.

Independent: Yes

Skills and experience: Gail de Planque is an expert in nuclear technology and has over 30 years' experience as a physicist, advisor and regulator in the field of nuclear energy. She also has significant experience as a Non-executive Director of global energy companies and is a consultant on atomic energy matters. She is a former Commissioner of the United States Nuclear Regulatory Commission, a former Director of the Environmental Measurements Laboratory of the US Department of Energy, a Fellow and former President of the American Nuclear Society, a Fellow of the American Society for the Advancement of Science and a Member of the US National Academy of Engineering.

Other directorships and offices (current and recent):

- President of Strategy Matters Inc (since March 2000)
- Director of Strategists Consultancy Ltd (since May 1999)
- Director of TXU Corp (since February 2004)
- Director of Northeast Utilities (since October 1995)
- Director of Landauer Inc. BNG America Inc. (since December 2001)
- Former Director of BNFL Plc (from November 2000 to March 2005) and BNG America Inc. (from March 1996 to March 2006).

Board Committee membership:

- Member of the Sustainability Committee
- Member of the Remuneration Committee.



John Schubert *BC Eng, PhD (Chem Eng), FIEAust, FTSE, 63*

Term of office: Director of BHP Limited since June 2000 and a Director of BHP Billiton Limited and BHP Billiton Plc since June 2001. Dr Schubert was last re-elected in 2004.

Independent: Yes

Skills and experience: John Schubert has considerable experience in the international oil industry including at CEO level. He has had executive mining and financial responsibilities and was CEO of Pioneer International Limited for six years where he operated in the building materials industry in 16 countries. He has experience in mergers, acquisitions and divestments, project analysis and management. He was previously Chairman and Managing Director of Esso Australia Limited and President of the Business Council of Australia.



Other directorships and offices (current and recent):

- Chairman of Commonwealth Bank of Australia (since November 2004), Director (since October 1991)
- Director of Qantas Airways Limited (since October 2000)
- Chairman of G2 Therapies Limited (since November 2000)
- Former Director of Hanson Plc (from May 2000 until May 2003)
- Former Chairman and Director of Worley Parsons Limited (from November 2002 until February 2005).

Board Committee membership:

- Member of the Sustainability Committee
- Member of the Nomination Committee.

Qualification Abbreviations

AB/BA Bachelor of Arts

BE Bachelor of Engineering

BSc Bachelor of Science

DCom (hc) Doctorate Commerce (honora causa)

FIEAust Fellow Institution of Engineers, Australia

FTSE Fellow Academy of Technological Sciences and Engineering

MBA Master of Business Administration

MS/MSc Master of Science

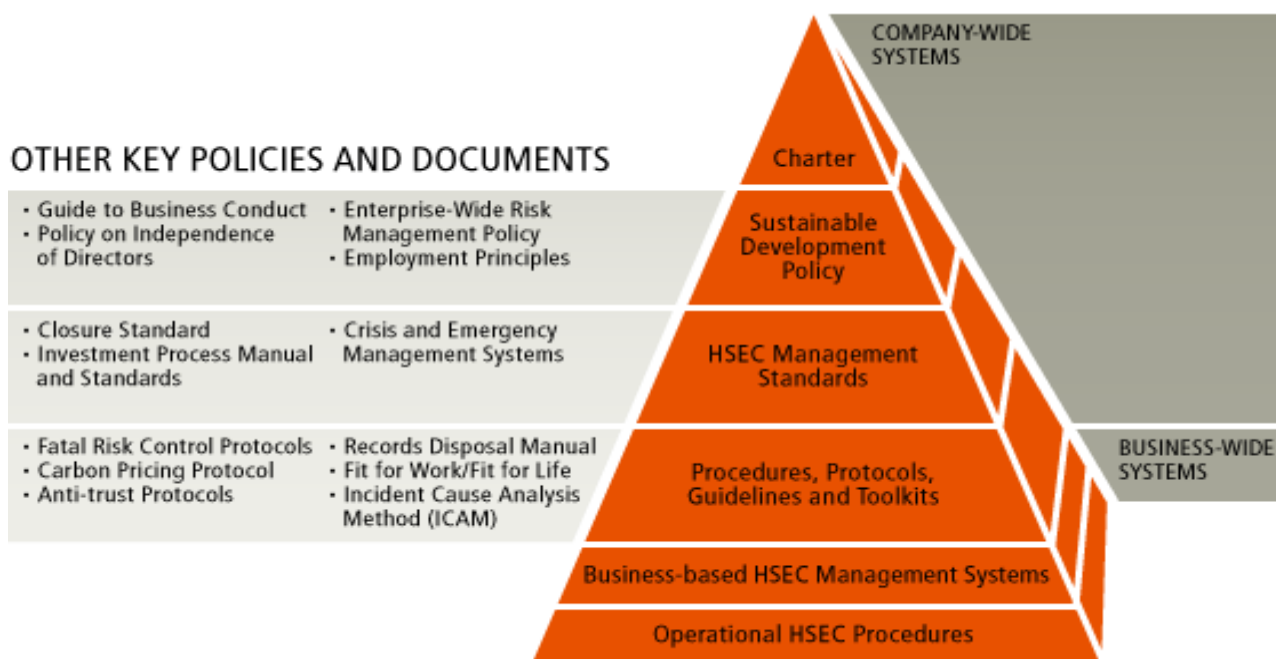
PhD Doctor of Philosophy

Hierarchy of Systems and Documents

Sustainable development is a global concept – yet implementation tends to have most meaning and relevance in local situations. As a result, our focus is on establishing management systems that can be consistently applied at local levels, while meeting governance requirements specified at the Company-wide level. Sustainable development at BHP Billiton is put into practice through the effective implementation of our HSEC management system.

The BHP Billiton HSEC management system is hierarchical, where documents and systems meet and support the requirements of those at higher levels. In line with our HSEC target, all our major operating sites have now achieved and are required to maintain ISO 14001 certification.

BHP Billiton Hierarchy of Systems and Documents



See below for further details on the key aspects of our management system hierarchy:

- [Company Charter](#)
- [Sustainable Development Policy](#)
- [HSEC Management Standards](#)
- [Company-Wide Procedures, Protocols, Guidelines and Toolkits.](#)

There are also a number of other [key management processes](#), which although managed by areas external to the HSEC function, are integral to our ability to contribute to sustainable development. These include [business conduct](#), [risk management](#), [audit](#) and [investment](#).

Company Charter

Central to our business is our [Company Charter](#), which states our 'overriding commitment to health, safety, environmental responsibility and sustainable development'. Honesty and transparency are core to this commitment and, importantly, the Charter also recognises that 'to prosper and achieve real growth, we must ...earn the trust of employees, customers, suppliers, communities and shareholders by being forthright in our communications and consistently delivering on commitments'.

Sustainable Development Policy

Supporting the values of our Charter is our [Sustainable Development Policy](#). While we strive to deliver strong financial returns to shareholders, we fully recognise and deliver on our wider responsibilities to our stakeholders: as the Policy states 'our objective is to be the company of choice – creating sustainable value for our shareholders, employees, contractors, suppliers, customers, business partners and host communities.' Integral to this is our aspiration to Zero Harm.

Knowing that much of our success as a global company depends on how effectively we work with our employees, contractors and host communities, the Policy is central to our future success. While the Policy broadly aligns with a number of international conventions, such as the [UN Universal Declaration of Human Rights](#), it also requires that we meet or, where less stringent than our standards, exceed applicable 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 and sets the foundation from which we operate. Wherever we operate, sustainable development aspects are addressed in our decision-making processes, alongside other business considerations.

Download our [Policy Guide](#) (PDF 468 Kb) for a detailed explanation on the rationale behind our Policy objectives.

HSEC Management Standards

The BHP Billiton HSEC Management Standards form the basis for the development and application of HSEC management systems at all levels in the Company and represent a key process through which we drive our contribution to sustainable development.

Purpose and application

The objectives of the Standards are to:

- support the implementation of the Charter, the Sustainable Development Policy and the Guide to Business Conduct across BHP Billiton
- provide a risk-based HSEC management system framework, consistent with:
 - the BHP Billiton Enterprise-Wide Risk Management Policy
 - ISO 14001
 - OHSAS 18001
 - SA 8000
 - other international policies, standards and management practices to which BHP Billiton has committed, including the:
 - UN Global Compact
 - UN Universal Declaration of Human Rights
 - International Council on Mining and Metals (ICMM) Sustainable Development Framework
 - World Bank Operational Directive on Involuntary Resettlement
 - US-UK Voluntary Principles on Security and Human Rights
 - other regional commitments
- set out and formalise the expectations for progressive development and implementation of more specific and detailed HSEC management systems at all levels of BHP Billiton
- provide auditable criteria, against which HSEC management systems across BHP Billiton can be measured
- provide a basis from which to drive continual improvement towards leading industry practice.

The Standards are reviewed at least every three years. They cover all operational aspects and activities with the potential to affect the four key components of sustainable development:

- Health – promoting and improving the health of the company's workforce and host communities
- Safety – ensuring that safety values are not compromised, and providing a workplace where people are able to work without being injured
- Environment – promoting the efficient use of resources, reducing and preventing pollution and enhancing biodiversity protection
- Community –
 - internal community – engaging regularly with employees and contractors, where everyone is treated fairly and with respect and can realise their full potential; upholding ethical business practices, and encouraging a diverse workforce
 - external community – engaging regularly with those affected by BHP Billiton operations, enhancing economic benefits and contributing to sustainable community development
 - human rights – understanding, promoting and upholding fundamental human rights within BHP Billiton's sphere of influence.

The Standards cover the entire life cycle of operations, from exploration and planning through to operation and closure (decommissioning, remediation and rehabilitation) and apply to all BHP Billiton sites and operations throughout the world, including:

- facilities and activities (from exploration through to closure and rehabilitation) that are owned or operated by BHP Billiton
- development projects
- mergers
- acquisitions
- divestments
- major activities by contractors on our sites or under our management.

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

Our HSEC Management Standards include a requirement for an auditing process to check that our Charter, Sustainable Development 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. During any year, those sites not scheduled for a Corporate HSEC audit must complete a self-assessment against the Standards and prepare performance improvement plans to progress to full conformance with the Standards. Read more: [Audit](#).

Coverage

There are 15 HSEC Management Standards, each with a number of performance requirements that provide the detail by which our sites establish systems and processes to meet the intent of each standard.

Download: the complete [HSEC Management Standards](#) and their associated performance requirements.

The framework for the HSEC Management Standards is based on the Plan-Do-Check-Act model.

HSEC Management Standards continual improvement model



All aspects of performance are incorporated into the HSEC Management Standards, including

- accountabilities
- risk assessment and management
- business planning and target setting for improvement
- communication
- training and awareness
- emergency response
- performance monitoring and auditing
- management review.

The Standards require that reporting processes be based on key risks and that environmental and occupational accident and illness reporting processes comply with the relevant laws in the regions where we operate.

All sites are required to have consultation and communication processes for both internal and external stakeholders. Internally, sites must establish processes that comprise management, employee and contractor representation to address and review HSEC issues. Externally, systems must be put in place to identify and work with communities and other stakeholders. Read more: [Engaging Stakeholders](#).

Management Standard 11 requires operations to evaluate the social and environmental performance of contractors, suppliers and partners, including such issues as human rights records and previous environmental incidents. Read more: [Our Approach>Supply](#).

Management Standard 12 – Stewardship covers the consumption end of our material life cycle. Read more: [Stewardship](#).

Management Standard 14 – Crisis and Emergency Management outlines our expectations for the establishment of systems and processes to deal with potential emergencies and the consequent mitigation of any related HSEC impacts.

To ensure that HSEC management requirements are embedded into significant investment decisions, an investment process has been established that covers a range of investment types and establishes how all investments are to be reviewed and authorised. Read more: [Investment Processes](#).

Company-Wide Procedures, Protocols, Guidelines and Toolkits

Company-wide procedures and protocols are mandatory to all BHP Billiton sites, operations and controlled activities. These documents address specific areas where it is important that activities are conducted consistently across the Company, and cover such areas as corporate performance reporting, [Fatal Risk Control Protocols](#), and [incident reporting and investigation](#).

Company-wide guidelines are advisory only and guide our businesses on effective implementation of the HSEC Management Standards. Company-wide Toolkits provide preferred methods for meeting the requirements of the HSEC Management Standards and the Company-wide procedures, protocols and guidelines. They are not mandatory.

Key Management Processes

Wherever BHP Billiton operates, HSEC aspects are addressed in its decision-making processes, alongside other business considerations. 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. Excellence in HSEC management is good business.

A number of key management processes exist across the Company to ensure there is a common approach to the consideration of HSEC in business decisions. Read more:

- [Business Conduct](#)
- [Risk Management](#)
- [Incident Reporting and Investigation](#)
- [Investment](#)
- [Audit](#).

Business Conduct

BHP Billiton adopts an integrated approach to business conduct, comprising the BHP Billiton Guide to Business Conduct, regional hotlines and the Global Ethics Panel.

Guide to Business Conduct

The BHP Billiton Guide to Business Conduct is founded on our Charter. The Charter states that the Company cares as much about how results are obtained as it does about delivering good results. How the Company achieves results is important because:

- good behaviour enhances the Company's 'licence to operate' and facilitates the sustainable expansion of our business
- communities value companies who value them
- suppliers value customers who honour commitments
- customers value honesty and integrity
- shareholders value companies that set and live up to high standards
- employees value companies where they trust the integrity of their colleagues and management.

The Guide to Business Conduct applies to our entire workforce regardless of their specific job or location. It provides employees and contractors with direction and advice on carrying out business and interacting with governments, communities and business partners. This includes clear guidelines on general workplace behaviour as well as our policies, standards and guidelines on a wide range of ethical issues such as conflict of interest, financial inducements and bribery, insider trading and political contributions.

The Guide and its principles are embedded throughout the organisation, with managers and supervisors held accountable for not only their actions but also the actions of their staff. This starts at the most senior level of the Company, with the CEO requesting annual confirmation from his direct reports that they and their direct reports have read the Guide and have discussed its contents.

Internal performance requirements regarding business conduct are included in 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. In addition to the English version, the Guide is available in seven other languages commonly used at our sites around the world.

Regional helplines

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 the telephone-based Business Conduct Helplines based in southern Africa (Johannesburg), Europe (London), Australasia (Melbourne), North America (Houston) and South America (Santiago). Helpline advisers have received training on business conduct issues. BHP Billiton does not track the phone number or location of callers to the Helpline. A confidential email address is also increasingly used. For issues related to fraud or bribery, the Group Audit Services Fraud Hotline can be contacted. Employees can escalate issues to the Global Ethics Panel. Read more: [Global Ethics Panel](#).

Global Ethics Panel

The Chief Executive Officer (CEO) has established the Global Ethics Panel to assist him in meeting the requirements of the [Board Governance Document](#) relating to the ethics and culture of the Group. The CEO is required to ensure that the culture of the Group does not develop in a way that condones dishonest conduct or lack of integrity, respect or dignity in relationships amongst those involved in or affected by the Group's activities.

The role of the Panel includes advising the CEO on matters affecting the values and behaviours of the Group; assisting business leaders in assessing acceptable outcomes in cases where adjudication is required; reviewing the rationale, structure and content of the Guide to Business Conduct; promoting and facilitating effective implementation of and compliance with the policies and standards contained in the Guide; reporting regularly on compliance with the Guide; and overseeing processes for handling breaches of business conduct. In 2006, the role of the Panel was formalised by the adoption of a [charter](#) outlining its scope of responsibility.

The panel is chaired by Karen Wood, Special Advisor to the CEO and Head of Group Secretariat. In 2006, the number of panel members was expanded from six to ten. Panel members include internal and external members selected to achieve a mix of knowledge and experience of the Group's operations, with knowledge and experience in contemporary aspects of ethics and culture that are relevant to the Group.

Internal members:

- Karen Wood, Special Advisor to the CEO and Head of Group Secretariat (Chairman)
- Marcus Randolph, Chief Organisation Development Officer
- Stefano Giorgini, Vice President Risk Management and Assurance
- Stephen Mitchell, Regional Counsel Europe/Africa
- Ian Ashby, President and Chief Operating Officer, Western Australia Iron Ore
- Vincent Maphai, Chairman South Africa
- Mike Anglin, Vice President Operations and Chief Operating Officer, Base Metals
- Holly Lindsay, Vice President Public Policy and Business Conduct (Holly also acts as Panel Secretary).

External members

- Dr Simon Longstaff, Executive Director, St James Ethic Centre
- Graham Evans, Chairman of the Victorian Competition and Efficiency Commission

Read more: [Global Ethics Panel Member Profiles](#)

Read more: [Global Ethics Panel Charter](#)

Anti-trust protocols

Anti-trust laws are designed to prohibit a variety of practices that restrain trade.

BHP Billiton has adopted Anti-trust Protocols that set out and confirm the minimum anti-trust compliance standards expected of all Company personnel regardless of their specific job or location. The Protocols reflect the Group's ongoing commitment to its Guide to Business Conduct and corporate governance policies.

BHP Billiton decides and implements its own commercial strategy as regards production decisions, setting of prices and negotiating other terms of trade with its customers. It must not engage in any of the foregoing activities in concert with, or as result of, bilateral or multilateral contacts with its competitors, either directly or indirectly.

The Anti-trust Protocols are presented in three parts:

- the detailed BHP Billiton Anti-trust Protocols - Group Principles
- Technical Benchmarking
- a short summary guide, entitled Do's & Don'ts, intended as a quick reference guide in point form. The summary Do's & Don'ts document is derived from the latter two documents.

Given the complexity surrounding international anti-trust compliance, with regulations constantly evolving and differing from jurisdiction to jurisdiction, BHP Billiton has established a panel of both internal and external experts to deal with any anti-trust issues facing any employee, officer or representative of the Group.

Risk Management

The Company has a [Risk Management Policy](#) and uses a common framework across all operations and functions to identify, assess and monitor risks. This includes business and HSEC risks and includes risks associated with projects and investment opportunities.

Our risk management methodology includes an assessment of 'country risk' where the social, political, economic or other factors related to the countries in which we operate or plan to operate can impact on our operations, business or reputation.

Our common risk management framework is called Enterprise-wide Risk Management (EWRM). The risk management processes covered by EWRM are consistent with the Australian Standard - AS4360.

HSEC Management Standard 3 – Risk and Change Management establishes expectations of how HSEC risks are to be managed within the EWRM framework.

The EWRM framework requires all operations and business groups to establish and maintain a register of their significant risks. The risk registers are stored on a common, company-wide database and include details of the individual risks and the measures in place for their management. Risk control measures include individual accountabilities where appropriate. Risk reduction plans are implemented when risks are assessed to be unacceptable.

Operations and business groups are required to review and update their risk registers annually. A range of risk assessment and management guidelines are available to operations and business groups. A network of Risk Champions and HSEC specialists is also available to assist operations and business groups achieve a high level of consistency in the application of the Company's Risk Management Policy and Standards.

Risks are assessed and ranked using a common methodology. This allows direct comparison of risks across different assets and business groups.

Operations and business groups undertake annual self-assessments of their risk management processes. Risk Management (Improvement) Plans are developed based on identified shortcomings.

Operations and business group risk registers, risk management performance and Risk Management Plans are reviewed every six months during [Risk and Audit Committee](#) meetings. These meetings include an independent Board member and senior executive management.

A company-wide risk profile has been developed and is updated every six months. This profile includes the significant risks rolled up from the operations and business group risk registers. It also includes key strategic risks identified by executive management.

The company-wide risk profile, and the plans to manage or mitigate the risks, is reviewed annually by the company Board.

Operations and business groups are required to develop and maintain emergency response, crisis management and business continuity plans consistent with their business and HSEC risks. Exercises and simulations are routinely conducted at operations and within corporate groups to test our capacity to respond to emergencies and to manage crises.

Incident Reporting and Investigation

The BHP Billiton HSEC Management Standard 13 directs our approach to incident reporting and investigation: 'HSEC incidents, including near misses, are reported, investigated and analysed. Corrective and preventive actions are taken and learnings shared'.

All incidents at BHP Billiton [controlled sites and activities](#) are reported.

A significant (HSEC) incident is any occurrence that has actually resulted in or had the potential to result in the descriptors outlined in the shaded areas of the [BHP Billiton Consequence Severity Table](#). These are incidents rated in the Table as:

- Level 4 or higher, for Injury and Illness
- Level 3 or higher for all other incident types.

Our definition of significance is conservative to ensure all learnings are captured from relevant HSEC incidents. We recognise that categorising an event as 'significant' may create unnecessary cause for concern by external stakeholders but consider it is important that these incidents are given adequate profile internally.

Incidents defined as a significant HSEC incident are investigated using the Incident Cause and Analysis Methodology (ICAM).

ICAM provides a process to identify what led to the event so that effective corrective and preventive actions can be implemented to prevent recurrence. It does not apportion blame or liability. The Company has, on average, four trained ICAM investigators per 100 site-based personnel. Investigators are drawn from all areas of the business, with a range of experience and knowledge.

In the event of a significant incident, it is our policy that associated work does not resume until actions have been taken to reduce the risk of recurrence and authorisation to resume work is given at the appropriate level.

Information gathered from near miss and significant incidents is analysed to identify lessons and to monitor trends and is reported to management to improve standards, systems and practices. Learnings are shared across the organisation and with stakeholders and others as appropriate. Systems are in place at all our operations to ensure that all remedial actions, including changes in procedures, are documented, communicated, followed-up and completed.

Read more: [Safety>Our Approach>Near Miss and Significant Incident Reporting](#).

Investment

New investments are essential for the Company to deliver on our strategic and financial objectives and to shape the organisation to best respond to the changing external environment. We clearly recognise, however, the potential risks and opportunities new investments pose to our commitment to sustainable development and, consequently, have integrated the consideration of HSEC into our investment processes and decision-making.

Our investment system is based on a common approach across the organisation, using consistent processes, terminology, standards, tools and techniques. The system's structure is sufficiently flexible to allow individual CSGs to deal with their specific circumstances and dovetail into the specific requirements of our Group investment process. Our investment system applies to capital investments, mergers and acquisitions, as well as to divestments.

The Investment Review Committee (IRC) operates under powers delegated by the Chief Executive Officer. The role of the IRC is to oversee the management approval processes for major investments with a threshold of US\$100 million or more. Those processes are designed to ensure that investments are aligned to the Group's agreed strategies and values, that risks are identified and evaluated, that investments are fully optimised to produce the maximum shareholder value within an acceptable risk framework, and that appropriate risk management strategies are pursued.

The IRC oversees investment processes across the organisation and coordinates the Independent Peer Review and endorsement of major investments.

A tollgating process is utilised to ensure investments meet the requirements of our investment standards prior to progressing to the next phase of development. There are five phases to project development to which there are clearly aligned HSEC requirements that must be addressed, consistent with our Sustainable Development Policy and HSEC Management Standards requirements. These are outlined in the following table.

Summary of BHP Billiton HSEC Requirements for Project Tollgating

Project Phase	Objectives	Summary HSEC Requirements
Concept	<ul style="list-style-type: none"> Identify major project options Determine potential value Identify potential fatal flaws and major risks Define further work requirements 	<ul style="list-style-type: none"> Develop preliminary HSEC risk assessment, identify potential fatal flaws or major risks Develop conceptual HSEC management and monitoring plan Identify statutory requirements Scope project environmental and social impact assessment Identify any significant closure issues Identify stakeholders Identify any socio-economic issues
Pre-feasibility	<ul style="list-style-type: none"> Select preferred project option Ensure viability Ensure no fatal flaws 	<ul style="list-style-type: none"> Detailed HSEC risk assessment, including control measures Update legal requirements and commitments register Commence environmental and social baseline studies Prepare preliminary environmental and social impact assessment Develop HSEC management and monitoring plan Develop conceptual closure plan Develop community relations/development plan
Feasibility	<ul style="list-style-type: none"> Optimise life cycle costing Finalise scope, schedule and key performance indicators Establish project execution plan Obtain funding approval 	<ul style="list-style-type: none"> Review and update HSEC risk assessment, including control measures Update legal requirements and commitments register Complete environmental and social impact assessment, ensure mitigation measures are in project design Review and update HSEC management and monitoring plan Complete and cost closure plan Review and update community relations/development plan

Project Phase	Objectives	Summary HSEC Requirements
Execution	<ul style="list-style-type: none"> Deliver the asset consistent with business and project KPIs 	Maintain HSEC management system developed throughout project development stages, consistent with the requirements of the HSEC Management Standards and the Sustainable Development Policy
Operation	<ul style="list-style-type: none"> Operate and evaluate the asset to ensure performance to specification Plan for exit and/or closure 	

Independent Peer Reviews are integral to the assessment and approval of investments. They are undertaken by a cross-functional team of experts (one of which is an HSEC professional), independent of the investment proponents and generally from within the Company, who review the investment prior to the required tollgates. These reviews provide assurance that investment opportunities are robust and have undergone independent, rigorous and consistent reviews. They are essential, not only for satisfying our governance requirements, but also for providing the opportunity to add further value by drawing on the experience and global perspective of the Independent Peer Review team.

Audit

Our HSEC Management Standards include a requirement for an auditing process to check that our Charter, Sustainable Development Policy and HSEC Management 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 Program 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 Plans. The process provides assurance to the Group and the Board that the HSEC Management Standards are being implemented and identifies leading practices that can be shared across the Company.

During any year, those sites not scheduled for a Corporate HSEC audit must complete a self-assessment against the Standards and prepare Performance Improvement Plans to progress to full conformance with the Standards.

The audit program is proving invaluable in accelerating the rate of improvement in all aspects of HSEC management through the identification and communication of leading practices. Refer to [Our Performance>Audit and Self-Assessment](#) to view the results of our HSEC audit and self-assessment process for the reporting period.

The review of the results of the HSEC Audit Program is one of the roles of the [Sustainability Committee of the Board](#). The review of the operation of our internal control systems, including the HSEC auditing process, is one of the roles of the Risk and Audit Committee, which is also a committee of the Board. The Committee's responsibilities also include overseeing the appointment of the Vice President Risk Management and Assurance (who is responsible for the Company's risk assessment, internal audit and insurance activities) and evaluating his or her performance. For further details on the Risk and Audit Committee of the Board refer to the [Corporate Governance](#) section on our Company website.

Governance – Our Performance

Refer to the following for a discussion on the performance and key initiatives related to our sustainable development governance systems over the reporting period:

- [Risk Management](#)
- [Management Systems Review](#)
- [Business Conduct](#)
- [Audit and Self-Assessment](#)

Read [Governance>Our Approach](#) for details on our governance systems for sustainable development.

Risk Management

Comprehensive risk registers are maintained at our operations and within our business groups. Risks are identified and assessed using the common methodology specified in our Enterprise-Wide Risk Management (EWRM) Standards.

A project has been completed, as planned, to further refine our health, safety and environment risk assessment methodology. The methodology aims to ensure that potential catastrophic events are identified, understood and effectively managed. The project included external benchmarking with well-established safety risk management programs.

The challenge is now to effectively deploy this comprehensive approach to catastrophic HSEC risk assessment. This will start with 'road-testing' the methodology at key operating sites during 2007.

Pilot programs for a new quantitative operational risk assessment methodology have also been completed. This methodology is aimed at improving our understanding of operational risk where there is the potential for significant impact on people, the environment or our business. When applied, the methodology allows better targeting of efforts to manage risks and provides quantitative justification for risk-reduction investments. This pilot program has included risk assessments at three major port operations and a review of the high voltage electrical system at an alumina refinery.

We have continued with our efforts to fully integrate risk management into our key business processes. This includes ongoing work with our:

- Business Development group – to improve our understanding and assessment of country risk
- Global Maintenance Network – to provide better guidance to sites on the identification and management of critical equipment
- Global Supply group – to incorporate risk reduction into their Value Capture Evaluation process
- Asset Protection group – to further incorporate risk assessment into our emergency response, crisis management and business continuity planning.

Our challenge over 2007 and 2008 is to effectively and efficiently deploy our enhanced risk assessment methodologies and to further integrate risk management into our business processes while maintaining focus on our existing over-arching programs.

Management Systems Review

Sustainable Development Policy – Revision and Rollout

Our HSEC Policy was revised in 2005 and became our Sustainable Development Policy. The revised policy better articulates sustainability in the context of BHP Billiton, maintaining an emphasis on health, safety, environment and community while clarifying our commitment to some broader aspects, such as biodiversity, human rights, ethical business practices and economic contributions.

The revised Policy has been rolled out in 2006 to all operating assets and businesses, including the former WMC assets, via a video message from CEO Chip Goodyear who reiterated our vision for sustainable development 'is to be the company of choice'. The Policy has been translated into ten languages. A comprehensive Policy Guide and training materials were also provided to ensure clear and consistent interpretation and application.

Read more:

- [Sustainable Development Policy](#)
- [Sustainable Development Policy Guide](#).

HSEC Management Standards – Revision and Rollout

Our HSEC Management Standards are reviewed at least every three years, and revised as required, to ensure they remain consistent with current national and international developments and continue to be relevant and appropriate for the level of HSEC maturity of the organisation. In 2005 the Standards were revised to be more stringent and broader in scope, with rollout of the new version completed in October 2005.

The rollout has also marked the commencement of the next triennial Company-wide HSEC audit cycle, with 15 audits completed against the revised Standards in the current reporting period.

Read more:

- [BHP Billiton HSEC Management Standards](#)
- [Governance>Our Performance>Audit and Self-Assessment](#).

Documentation and Guidelines Review

During the reporting period we made further progress preparing and revising our HSEC documentation to support sites in implementing the requirements of the Sustainable Development Policy, the revised HSEC Management Standards and the Fatal Risk Control Protocols. The following documents were either revised and reissued or developed during the reporting period.

Revised and reissued documents and guidelines

All documentation is in the process of being updated as a result of the recent revisions to the HSEC Management Standards. (Twenty-five have been updated in the reporting period). In addition, substantial changes were made to the content of the following documents and guidelines:

- Sustainable Development Policy and Policy Guide (available in several languages other than English)
- Occupational Exposure Limits Procedure
- Human Rights Guideline and Self-Assessment Toolkit
- Preferred Airlines Guideline
- Incident Cause and Analysis Methodology (ICAM) Guideline
- Hazardous Materials Management Guideline (supports Fatal Risk Control Protocols (FRCPs))
- HSEC Audit and Self-Assessment Protocol and Database
- Greenhouse Gas Emissions Toolkit.

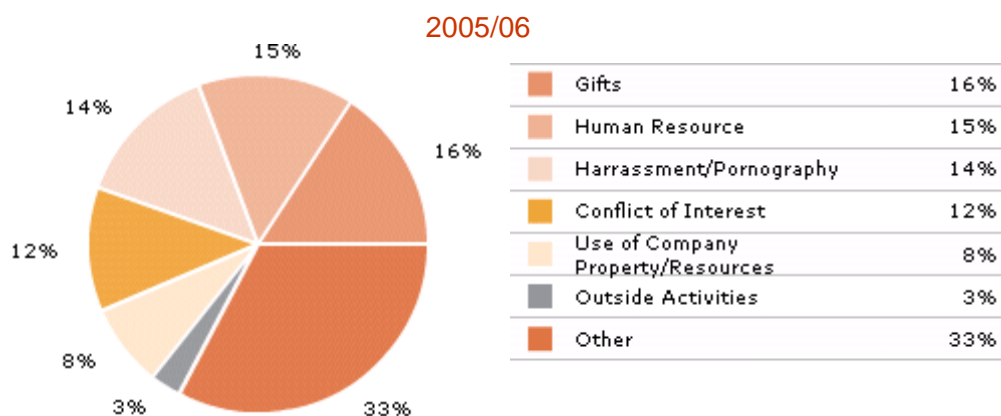
New documents and guidelines

- Meetings of the BHP Billiton Health Network Procedure
- Meetings of the BHP Billiton Global Community Network Procedure
- First Aid and Medical Management of Electric Shock Guideline
- Prevention and Management of Exposure to Human Blood and Body Fluids Guideline
- Isolation Guideline (supports FRCPs)
- Molten Materials Management Guideline (supports FRCPs)
- Underground Ground Control Guideline (supports FRCPs)
- Working at Heights Guideline (supports FRCPs)
- Equipment Safeguarding Guideline (supports FRCPs)
- Underground Mobile Equipment Guideline (supports FRCPs)
- Surface Mobile Equipment Guideline (supports FRCPs)
- Lifting Operations Guideline (supports FRCPs)
- Explosives Guideline
- Confined Spaces Guideline
- Immediate Actions (ICAM) Toolkit
- Investigation Planning (ICAM) Toolkit
- Data Collection (ICAM) Toolkit
- Data Organisation (ICAM) Toolkit
- ICAM Analysis (ICAM) Toolkit
- Preventive and Corrective Actions (ICAM) Toolkit
- Report the Findings (ICAM) Toolkit.

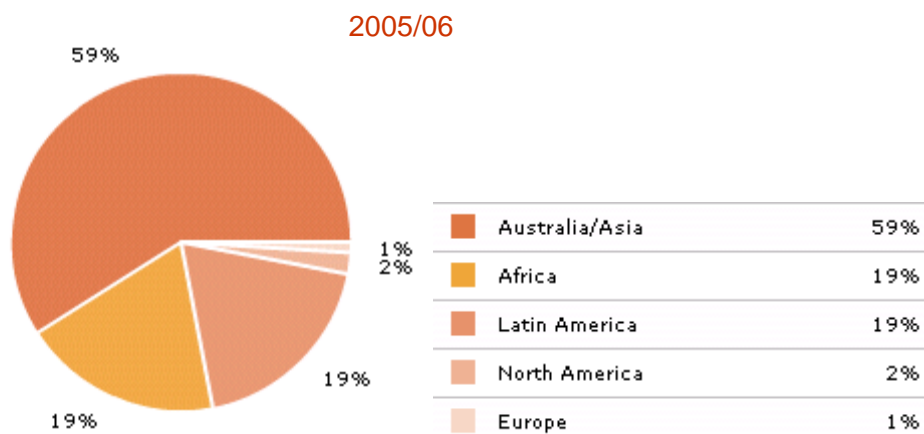
Business Conduct

There were 81 enquiries to the Business Conduct Helpline and fraud hotline systems in the year to 30 June 2006. This compares to 103 in the previous year. Of the total number of enquiries, 90 per cent were to the Business Conduct Helpline or email address. A breakdown of the categories of enquiries and the geographic origin of enquiries are presented in the charts below.

Business Conduct Helpline and Fraud Hotline Enquiries by Category



Business Conduct Helpline and Fraud Hotline Enquiries by Region



The most common issues related to gifts, human resource, conflict of interest and harassment/pornography. In terms of geographic origin of business conduct enquiries, and 59 per cent of calls originated from Australia. A further 19 per cent of enquiries emanated from both southern Africa and Latin America and two and one per cent respectively from North America and Europe.

All business conduct cases and their treatment were reported (with appropriate management of confidential information) to the Global Ethics Panel.

All fraud-related cases were reported to Group Audit Services, which in turn reports to the Risk and Audit Committee of the Board. During the year a formal set of guidelines was used for business conduct investigations. These include principles that every investigation should be independent, confidential and thorough and that the results and follow-up action should be reported to the Global Ethics Panel.

The Board has been involved in decision-making in regards to our approach to business conduct. In February 2005, the Board took a decision to extend the trial of the external independent helpline system that was put in place in October 2003 in southern Africa. The trial provided staff with an external free-call phone number to call as an alternative to the internal BHP Billiton Business Conduct Helpline or the fraud hotline. Following a review of the service that indicated the service was not cost-effective, the Board took a decision in October 2005 to cease the external helpline and return to running one globally consistent in-house system.

We recognise that there is a continuous need to reinforce and refresh business conduct principles. This is supported by a strong commitment from the most senior management levels of the Company to ensure the principles of the Guide to Business Conduct are understood and practiced.

A key part of the assurance process for business conduct is an annual communication by the Chief Executive Officer to his direct reports to ensure that the Guide to Business Conduct has been rolled out and understood. This requirement is then cascaded through the Company. Internal performance requirements for business conduct are fully integrated in the HSEC Management Standards under Standard 8. Questions regarding business conduct are included in the HSEC audit and self-assessment process, which has helped to quantify the extent to which employees and contractors are aware of the Guide to Business Conduct. Evidence also suggests that, following the acquisition of WMC in 2005, former WMC employees have adopted the Guide. This evidence consists of a number of calls to the Business Conduct Helpline from former WMC assets, indicating that they are aware of the helpline facility.

Communication of the Guide is facilitated with posters, a printed summary version of the Guide, electronic information and other communication tools. An addendum was produced in February 2006 to reflect the adoption of a new regional fraud hotline service and the Sustainable Development Policy.

Commission of Inquiry into the UN Oil-For-Food Program

On 10 November 2005 a Commission of Inquiry (Cole Inquiry¹) was established by the Australian Government into possible breaches of Australian law by the three Australian companies (AWB Limited, Alkaloids of Australia Pty Limited and Rhine Ruhr Pty Ltd) mentioned in the Final Report of the Independent Inquiry Committee into the UN Oil-For-Food Programme (the Volcker Report). BHP Billiton was not named in the Volcker Report.

In the course of the Cole Inquiry, reference was made to a shipment of wheat to Iraq that had been financed by a BHP Billiton subsidiary (BHP Petroleum) in 1996. On 19 January 2006, BHP Billiton publicly said that it was concerned about those references and had begun an investigation to clarify the facts.

On 6 February 2006 the terms of reference of the Cole Inquiry were extended to include BHP Billiton.

BHP Billiton's internal review is well advanced and has been supported by external advisory support as well as BHP Billiton's internal audit team. The report from that review will include an assessment of compliance by BHP Billiton with the law and an assessment of compliance with BHP Billiton's own business conduct requirements with a view to determining whether there has been a breach by any officer or employee of his or her duties to BHP Billiton. It will also include a report on any remedial actions that are identified as necessary in the course of that review.

Chief Executive Officer Chip Goodyear has made it clear from the beginning of this matter that BHP Billiton is deeply concerned at the issues raised in the Cole Inquiry and that he is committed to understanding all of the facts surrounding the issues and to reporting the conclusions from our review. Significant resources have been committed to the review.

Issues raised by our involvement in the Cole Inquiry were discussed at a meeting of the Forum for Corporate Responsibility in May 2006. In July 2006 the issues were again discussed in a meeting of the Global Ethics Panel at which external members of the Forum were present.

For our review to be thorough, we have to take account of any relevant information that may emerge from the Cole Inquiry and, therefore, will not be in a position to release the findings from the internal review until the Cole Inquiry process has been completed. At the time of writing, the Cole Inquiry is due to report by 29 September 2006.

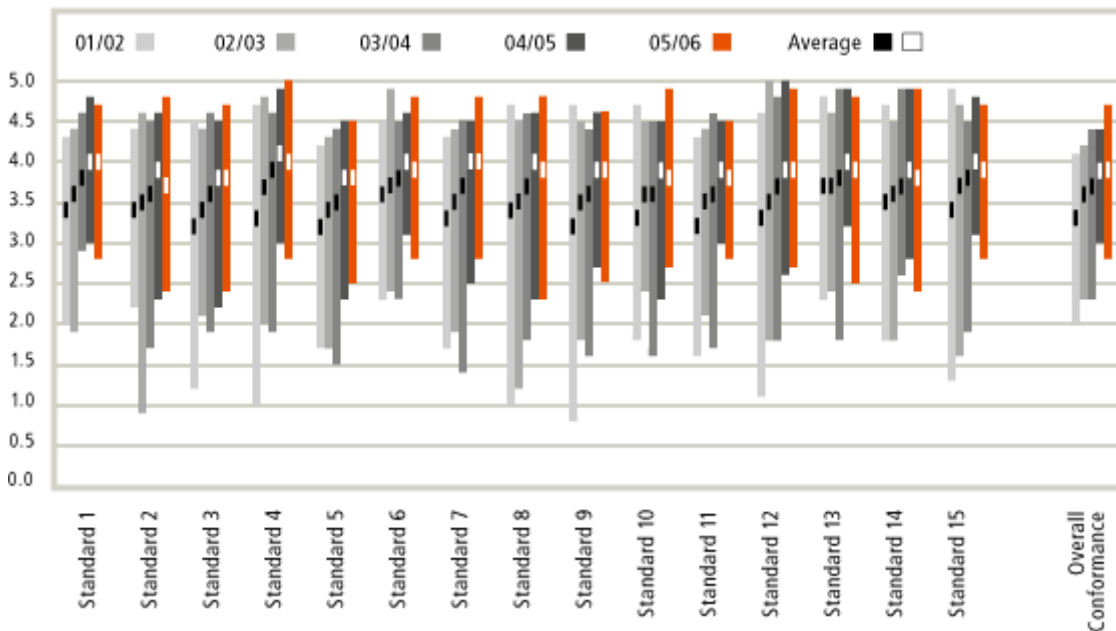
Audit and Self-Assessment

Fifteen HSEC audits were conducted during the reporting period to assess the level of implementation of the revised and more stringent HSEC Management Standards (Issue 3). The program involved 50 personnel from both HSEC functional roles and operational roles and five external auditors. This brings to 106 the number of site audits conducted since the program commenced in September 2001, with 292 BHP Billiton and 26 external auditors involved.

As in previous years, operating sites not audited during the year were required to undertake self-assessments against the Standards. The results from these 61 self-assessments have been combined with the audit results to give the range and average level of conformance for each of the Standards shown in the diagram below. This shows an overall conformance of 3.9 out of 5 against the broader scope of the revised (Issue 3) HSEC Management Standards and indicates that we are on track to meet our target of full conformance (a score of greater than 4 out of 5) with the Standards by 30 June 2008.

The audit and self-assessment process is assisting sites to accelerate the rate of implementation of the HSEC Management Standards through identifying and communicating leading practices.

Audit and Self Assessment Conformance Scores against each of the HSEC Management Standards 2001/02 to 2005/06



Health



[Our Approach](#)

[Our Performance](#)

[Case Studies](#)

'Occupational and community health is a key sustainability challenge for our Company.'

Message from the Vice President Health

Occupational and community health is a key sustainability challenge for our Company. In 2006 we continued to improve our approach to the various health risks present in the regions in which we operate, and achieved a number of key successes.

A key improvement was the consolidation of health significant incident data into the Company-wide Significant Incident Reporting System. As a result, analysis of, and learnings from, significant incidents will be improved.

The Fit for Work/Fit for Life initiative, which was introduced in the previous reporting period, is now an established Company program. In 2006 we enhanced our approach with the appointment of a Global Practice Leader, supported by an active Community of Practice and associated regional and site-based workshops.

Fatigue in the workplace is one of the many health issues identified by our Fit for Work/Fit for Life Program and during the year it emerged as a key health risk, with a number of significant incidents having fatigue as a primary cause. A Practice Leader has also been appointed to provide our operations with expert assistance in implementing fatigue management strategies, and we are also working closely with a key supplier of vehicles and equipment to review available fatigue management technologies.

During the year we also initiated a Medical Assessment Project designed to facilitate the development of a set of Company-wide guidelines. With diverse work environments and an increasingly ageing workforce, the need for improved assessment of fitness for work is paramount. Aligned with this initiative will also be an increased focus on health promotion.

Reducing exposure of employees to potentially harmful elements in the workplace remains a challenge, and current data suggests that there has been reduction in employee exposure when taking a whole-of-Company perspective. However, our continued aim is to remove or avoid hazards through engineering or design solutions wherever possible.

Our Diesel Particulate initiative has been rolled out at all current underground mining operations to help reduce exposure to this contaminant. We have also initiated projects to reduce acid mist and nickel exposure at relevant operations.

A Noise Community of Practice has been established across the Company to advance the reduction of noise exposure, particularly in the design and purchase of new equipment.



Peter Shanahan
Vice President Health

We have also continued our good work towards assisting the prevention and treatment of the major infectious diseases that affect many of our operations.

Over the last year the threat of a worldwide pandemic associated with the avian flu has become more evident. The Company formed a Pandemic Working Group in mid 2005 to respond to this issue and assist in business continuity planning. Documentation has been developed to assist all businesses with this process and ensure that the issue is linked to standard contingencies and crisis and emergency response procedures.

We continue to have a responsibility to manage the impact of HIV/AIDS in order to care for our employees, protect the viability of our operations and support the wellbeing and development of our host communities. We have taken a lead role in promoting the development of a new HIV/AIDS immune therapy which we hope will be trialled in South Africa. The treatment is delivered in the form of a vaccination, and it is expected it will offer new options for management of the disease in resource-constrained environments of the developing world.

The health and wellbeing of people are central to the success of our business. We are proud of our efforts to understand the potential for health risks and establish suitable mitigation measures that are integral to the success of our journey towards Zero Harm, while acknowledging that there are still many opportunities to improve our performance.

Peter Shanahan
Vice President Health

Read more:

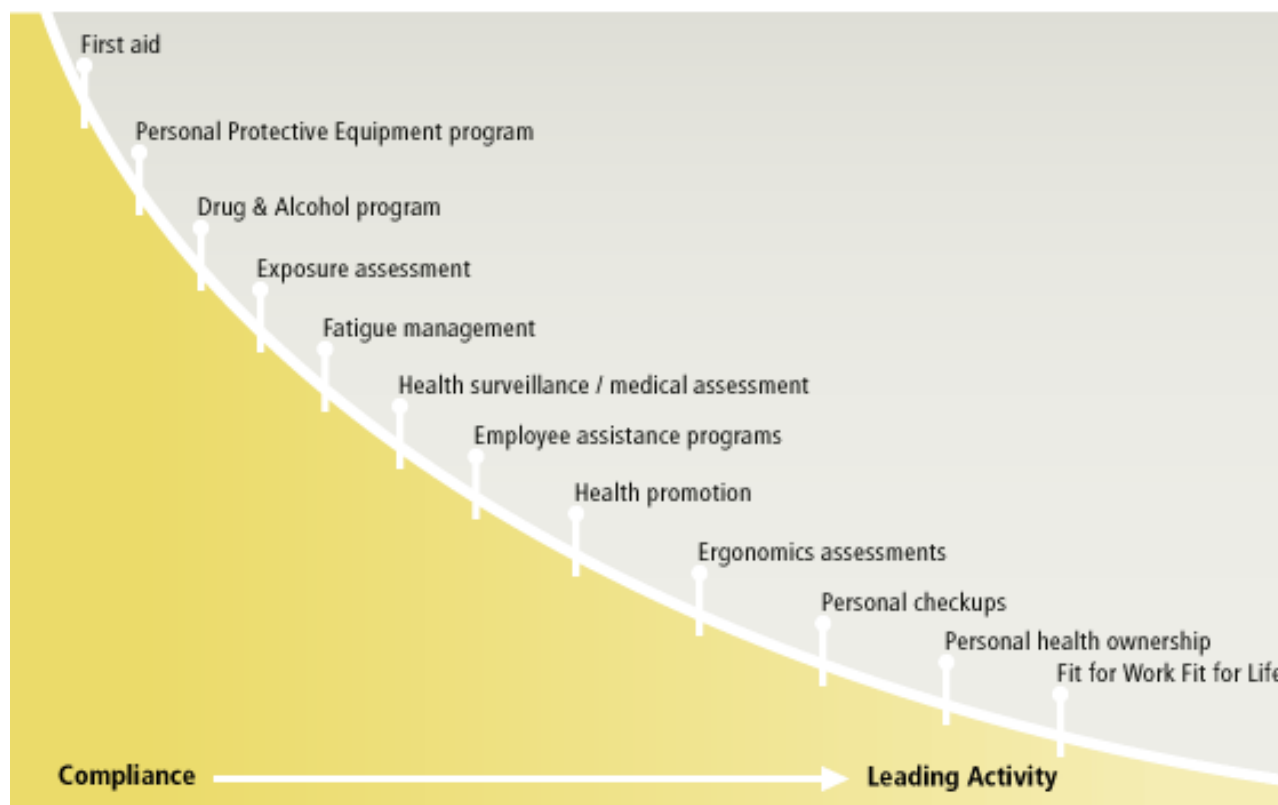
- [Health>Our Approach](#)
- [Health>Our Performance](#)
- [Health Case Studies](#).

Health – Our Approach

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

Our Health Road Map (below) illustrates the key steps to effectively implement our Health Strategy.

ZERO HARM JOURNEY FOR HEALTH



Health risks continue to be an area where we are attempting to reduce potential short- and long-term impacts. These health risks are diverse in the areas in which we operate and are not only related to work processes. Significant community-based health risks exist in our business, and we continue to contribute to the management of these issues on both a local and global basis.

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.

Fitness for work issues are an important area of employee health, and we have undertaken a great deal of work to advance this area within the Company. One aspect is to ensure that health matters do not impact on the safety of the workplace, exemplified by the development of drug and alcohol and fatigue management programs at our operations.

To ensure we adopt a holistic approach to employee health, we have combined our Fit for Work program with a series of Fit for Life initiatives that include injury management, employee counselling and health promotion.

For details on our approach to the management of these aspects, refer to [Employee Health](#) and [Community Health](#).

Employee Health

This section discusses our approach to managing employee health at our operations.

Our approach to employee health recognises the need to establish a number of measures to reduce any potential for exposure to risk. Use of personal protection equipment (PPE) is vital, however, use without the associated knowledge and expertise will create an environment where many potential exposures could occur. Our health initiatives are aimed at addressing a range of health management areas.

See below for further details:

- [Personal Protective Equipment](#)
- [Exposure Management](#)
- [Hygiene Knowledge Base](#)
- [Fit for Work/Fit for Life](#).

Read [Our Performance](#) for details on our health performance over the reporting period.

Personal Protective Equipment

The use of personal protective equipment (PPE) continues to be important while we search for ways to reduce exposures in the Company. The PPE Compliance Auditing Guideline and Respiratory Protection Guideline assist sites to ensure there are standard processes for PPE compliance across the organisation.

Despite the use of PPE there are still potential pathways to exposure. These may include:

- inadequate training in or incorrect use of the PPE equipment
- PPE equipment failure or poor maintenance
- multiple similar exposures and surges of exposure that overwhelm protection.

Our aim is to understand the nature of our occupational exposure hazards where they do occur and to remove or avoid hazards through engineering or design solutions wherever possible.

Exposure Management

Occupational exposure limits have been standardised across the Company since 2003, which ensures consistent reporting on exposure. There is a Company-wide standard method for assessing exposure, and this is being applied to a computer-based program for use by all our operations.

Position statements for key exposures throughout the Company provide further detail to professionals on how these should be managed. Key exposures include:

- Carbon monoxide
- Coal dust
- Coal tar pitch volatiles / polycyclic aromatic hydrocarbons
- Diesel particulate as elemental carbon
- Fluorides
- Lead, as inorganic dusts and fumes
- Manganese as dusts, compounds as manganese and fume
- Nickel (all species)
- Silica (crystalline as quartz and cristobalite)
- Sulphuric acid.

Many of these exposures have the potential to cause cancer, and it is vitally important that we manage them at a leading-practice level.

Over the past year there has been increased effort throughout the Company to reduce adverse exposures. Particular focus has been given to noise with the formation of a Company-wide Noise Community of Practice to promote activities in noise reduction. Further efforts have also been made to find new forms of engineering to reduce exposure to potentially cancer causing chemicals.

Hygiene Knowledge Base

In response to an increasing need of skilled occupational hygienists, we are supporting a graduate training program for occupational hygienists with Deakin University in Victoria, Australia.

The first intake occurred during 2005. In 2006, this initiative continued successfully with an increase in intake. Through our involvement, we are seeking to ensure course work reflects leading developments in hygiene practice and that graduates are exposed to our operations with the intent of attracting appropriately qualified occupational hygienists in the future. We will continue to monitor the success of the program.

The Company-based occupational hygiene network continues to develop and facilitate learning by sharing knowledge across the organisation. Face-to-face meetings occur in all regions of the world. The engagement of this network has proved important for specific initiatives across our global operations. The Diesel Particulate Initiative was advanced through this group, and underground operations were visited during the year to implement this important work in exposure reduction. Key aspects of the program include:

- methods for the site mechanical maintenance team to best manage engines to minimise both gaseous and particulate emissions
- processes for matching vehicle emissions to the mine ventilation to minimise exposure
- use of the correct fuels and lubricants to achieve cleaner, more complete combustion and reduce emissions.

Read more: [2005 Health Case Study>Diesel Particulate Initiative.](#)

Fit for Work/Fit for Life

Fit for Work/Fit for Life is a Company-wide initiative that was launched during 2004/05 to assist our drive towards Zero Harm. The initiative seeks to promote a consistent approach to the management of health issues in the work environment. The initiative recognises that many health issues not only have the potential to impact on our safety performance, but also can cause community issues and consequently impact on our ability to contribute to sustainable development.

The initiative is intended to provide guidance to sites in developing site-based health management programs covering:

- drug and alcohol use
- fatigue management
- medical assessment
- travel health
- ergonomic analysis
- occupational rehabilitation
- health promotion
- employee assistance.

By taking a holistic approach to health management, the initiative intends to ensure:

- we do not adversely impact the safety of our employees
- employees are physically capable of performing all activities required of them
- medical assessments are undertaken where work requirements change
- family members are also involved in educational health programs.

During the past year there has been continued development of this initiative. Regional and business based-workshops have provided opportunities to share leading practices.

Focus has been directed to fatigue management as this has been identified as a primary factor in many safety incidents. In the coming year there will also be a focus on standardising medical assessment processes throughout the Company; these will include important preventive and health promotional activities.

For our progress in employee health management read [Health>Our Performance](#).

Community Health

As members of the community, our employees and contractors can be significantly affected by communicable diseases. Our focus in community health is, therefore, directed towards the prevention and treatment of the three major infectious diseases that affect many of our operations.

A summary of our approach to these is discussed below, with details on our progress provided in [Health>Our Performance>Community Health](#).

HIV/AIDS

In the communities in South Africa and Mozambique where our operations are located, the incidence of HIV/AIDS is among the highest in the world. We continue to have a responsibility to manage the impact of the disease in order to care for our employees, protect the viability of our operations and support the wellbeing and development of our host communities.

For many years, we have adopted a proactive approach to managing the disease within our workplaces. This has included conducting education programs; offering voluntary testing and counselling programs under the strictest confidentiality; ensuring employees and their dependants have appropriate access to medical care; and reducing hostel-type accommodation for employees which is known to be a risk factor for the disease.

We are now seeking ways to support initiatives that will help manage the disease in the wider population. An example of this commitment will commence during the coming year with a trial of a new HIV/AIDS immune therapy in South Africa.

The trial will be supported financially through a consortium of companies. BHP Billiton has a lead role, promoting development of this consortium and providing major cornerstone funding. The treatment is delivered in the form of a vaccination; and it is expected to offer new options for management of the disease in resource-restrained environments of the developing world.

Tuberculosis (TB)

In the Northwest Territories of Canada, tuberculosis is a significant issue among the Inuit population, which as a consequence has an impact on our EKATI Diamond Mine operation. In an effort to limit development of the disease, we are developing a screening program to detect latent TB infection in our workforce and the local community.

An outline has been developed for the project, and we are now progressing approval from the local indigenous community to proceed with this project.

Malaria

Along with TB and HIV/AIDS, malaria is one of the major infectious diseases responsible for significant illness and mortality around the world. For the Company, malaria is a significant health issue in southern Mozambique and northern Brazil where our operations are located. The disease can impact on the ability of these regions to provide sustainable workforces. The health of employees can also affect productivity and safety.

We are supporting the Medicines for Malaria Venture (MMV), which has been established through the World Health Organization with the aim of developing affordable anti-malarial drugs for people in the disease-endemic countries. We are among the first small group of global companies invited to become corporate supporters of the Medicines for Malaria Venture.

RV2 Rotavirus Vaccine Production

We are currently funding a project through Murdoch Children's Research Institute in Australia to develop an effective rotavirus vaccine that is affordable for children in developed and developing countries. Rotavirus infection is the leading cause of severe dehydrating gastroenteritis for children under the age of five worldwide and contributes substantially to the mortality and morbidity of children in developing countries.

Avian Flu

Over the last year the threat of a worldwide pandemic associated with the avian flu has become more evident. The Company formed a Pandemic Working Group in mid 2005 to respond to this issue and assist in business continuity planning. Documentation has been developed to assist all businesses with this process and ensure that the issue is linked to standard contingencies and crisis and emergency response procedures. Read more: [Sustainability at BHP Billiton>Security, Emergency Response and Business Continuity](#).

Health – Our Performance

Supporting our aspiration towards Zero Harm, our Sustainable Development Policy sets the objective for us to 'seek ways to promote and improve the health of our workforce and the community'. Details on our progress towards this goal during this reporting period can be read at:

- [Occupational Exposures](#)
- [Occupational Illnesses](#)
- [Personal Protective Equipment Compliance](#)
- [Health Fines](#)
- [Community Health](#).

To understand the systems we put in place to manage our health performance, read [Health>Our Approach](#). For examples of policy in action, read our [Health Case Studies](#).

Occupational Exposures

The control of employee exposures and a reduction of occupational illnesses are the thrust of our approach to occupational health management. Our aim, consistent with the 'hierarchy of control' approach, is to remove or avoid hazards through engineering or design solutions wherever possible.

The 'hierarchy of control' approach uses methods to decrease the exposure source itself or to minimise the potential amount of employee contact. Personal protective equipment (PPE) is utilised where this approach is yet to be implemented or is not currently feasible.

While we seek to eliminate or minimise hazards wherever possible, it is equally important to fully understand the nature of our occupational exposure hazards where they do occur. To date, therefore, our occupational health targets have been focused on establishing baseline data on occupational exposure hazards and the consequent establishment of occupational hygiene monitoring and health surveillance programs.

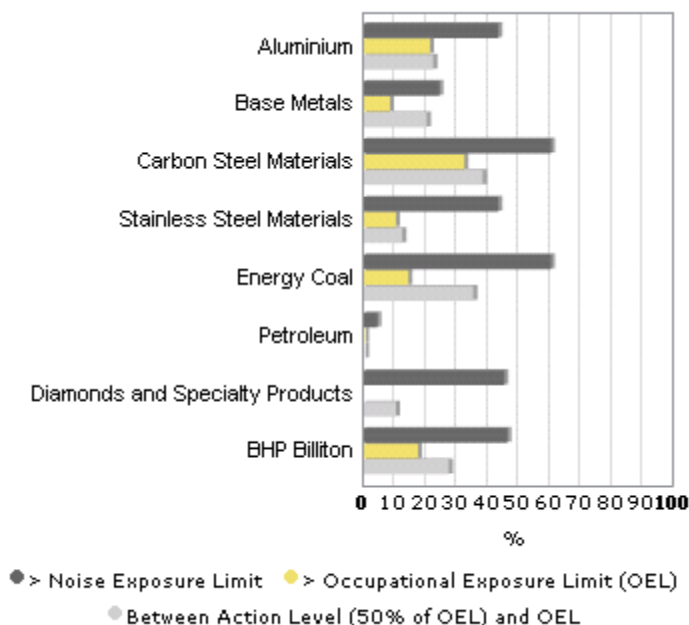
Where engineering controls are not practicable, we make every effort to protect all employees potentially exposed from any adverse health effect through the use of PPE. It should be noted that all exposures monitored are potential exposures and do not take into consideration the use of PPE where utilised to mitigate exposure.

The drive within the Company is to progressively reduce exposures over time. The graph below illustrates potential employee exposures expressed as a percentage of the workforce, if not for the use of PPE, recorded during the reporting period.

Percentage of Employees in Potential Exposures*

2005/06

*i.e., would be exposed if not wearing PPE



As the graph illustrates, we focus on three distinct categories for our exposure measurement data. These are:

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

We have established the requirement for reporting potential exposures above action levels but below occupational exposure limits to give us an understanding of the potential for harm and to enable us to establish proactive plans to mitigate exposures.

At levels above the occupational exposure limits, it is understood that harmful effects on health may eventually occur in a proportion of individuals if they are not adequately protected. While all operations provide PPE and other measures to reduce exposure, the reporting on employees in this category 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 on-site exposures over time and consequently reduce the incidence of occupational illness.

When compared to the previous period, potential exposures to noise, if not for the use of PPE, have decreased by six per cent across the Company from the previous year. Our focus will be to continue to improve these figures by maintaining a focus on controls to noise exposure that can be implemented. During the year a specific Community of Practice was developed for noise to further enhance work in this area. One outcome of this was the development of a "Buy Quiet" Guideline to assist operations to purchase equipment with the lowest practicable noise levels.

For exposures other than noise the exposure data is set against our Company-wide Exposure Standards that, in many cases, are more stringent than local regulations and reporting processes, and set a lower baseline target throughout the Company.

For potential exposures other than noise, there has been a ten per cent decrease in exposures, compared to the 2003/04 baseline and if not for the use of PPE, and expressed as a percentage of employees. This is a result of our concerted effort to reduce these exposures over time. We will continue our focus on this challenge to further improve these figures.

One of the key areas in exposure reduction has been in the area of potential exposure to substances that may cause cancer. In the previous year we reported on the Diesel Particulate Initiative that developed from work conducted at the Illawarra Coal business. This initiative, which focuses on reducing exposure to diesel exhaust fume, has been taken to underground mining operations in the Company where the potential for exposure is highest.

We have also initiated a research program with an external manufacturer to explore technology to further reduce acid mist exposure that occurs in some of our metal processing plants. Sulphuric acid mist is regarded as a potential cancer-causing substance if exposure is too high; and, if successful, this technology will reduce the potential exposure dramatically.

Other principal exposures include those related to dust, heat, vibration and welding fumes. Vibration exposures mainly occur in drivers of earthmoving equipment and in the longer term may result in back injury or pain. In addition to other health and safety modifications, we have continued to work to reduce vibration exposures as part of our strategic alliance with Caterpillar, our major earthmoving equipment supplier.

BHP Billiton is also supporting the Australian Garvan Institute of Medical Research's project to investigate whether adult stem cells can be used to replace hair cells in the inner ear that has been damaged by sustained exposure to noise. Noise-induced hearing loss is a significant issue for BHP Billiton.

In line with our current health target, occupational exposure baselines have been established and occupational hygiene programs are being implemented. Over the reporting period we reviewed our health targets to further focus on reducing the number of people potentially exposed above the occupational exposure limit.

A number of our operations have been progressing initiatives to better understand and reduce occupational exposures. Refer to the following for examples of our policy in action:

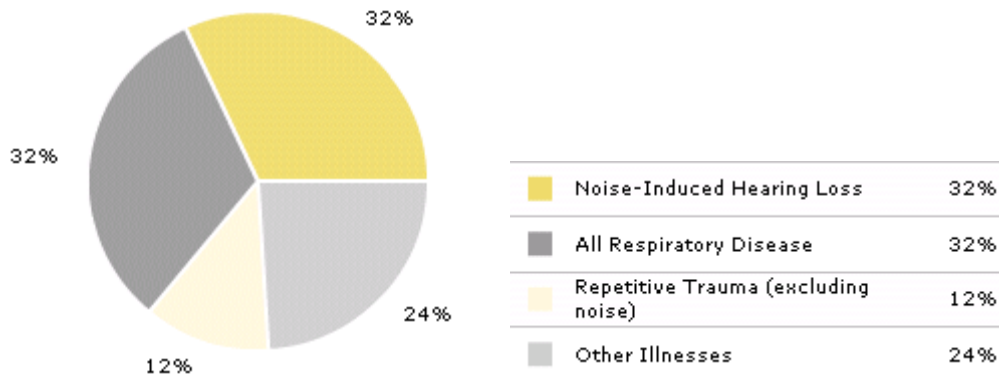
- As part of a comprehensive biological monitoring program in Nickel West's operations, Kwinana Nickel Refinery undertook a study to determine baseline levels of ingested nickel in employees and contractors. The study is the first of its kind to be conducted in the international nickel industry. Read more: [Health>Case Studies>Health Management](#)

- A team at our Ingwe Khutala Colliery developed a digital noise-level display board that displays real-time noise levels in the main workshop. Employees are now more aware of the noise they create during their work activities, and they work to keep noise levels below 85 dB. Read more: [Our Performance>Recognition>Employee HSEC Awards>Health Awards](#).
- Our Mozal Aluminium smelter developed a filter from waste material to mitigate fluorinated dust and noise generated during the metal ladle lifting beam test process. Read more: [Our Performance>Recognition>Employee HSEC Awards>Health Awards](#).

Occupational Illnesses

New Illnesses by Type

2005/06

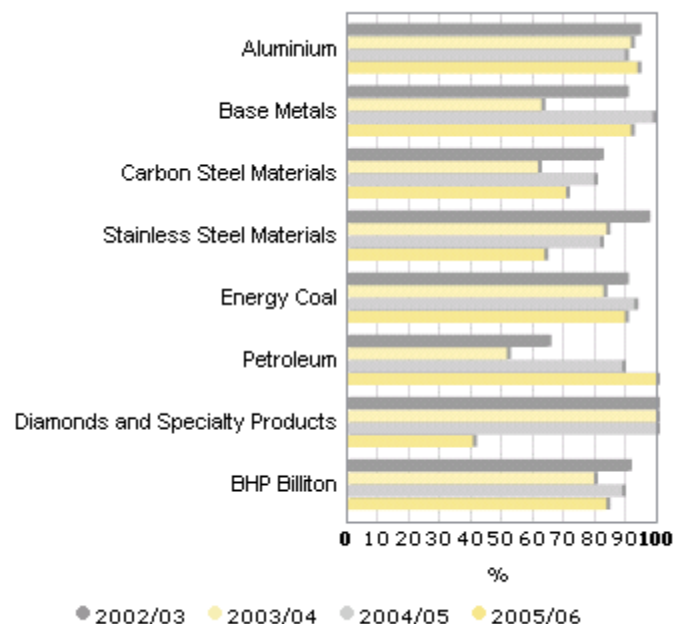


An occupational illness is an illness that occurs as a consequence of work-related activities or exposure. During the year, 123 new cases of occupational illness were reported throughout the Company, a reduction from 152 last year, resulting in an overall reduction to date of 46 per cent against the baseline numbers for 2002/03. The breakdown of these new illnesses is illustrated in the graph above. The 46 per cent reduction in new cases of occupational illness means we are on target to exceed the 20 per cent reduction target across the Company by June 2007.

Our medical surveillance program requires a standardised approach to diagnosis and consequently has resulted in an increased awareness of conditions and therefore better diagnostic programs. As shown in the graph below, 84 per cent of employees requiring medical examinations completed those examinations during the period, compared to 89 per cent in the previous reporting period.

Employees Who Completed Medical Examination (as % of Employees Requiring Medical Examination)

2002/03 to 2005/06



Efforts to implement our Fit for Work/Fit for Life initiative continued. The initiative was introduced in the previous reporting year and seeks to promote a consistent approach to the management of health issues in the work environment by taking a holistic approach to the health management of our employees. During the year two Global Practice Leaders were appointed to assist sites with the implementation of the program, with one of these positions specifically focused on fatigue management, which is a complex issue of risk within the Company. Read more: [Health>Our Approach>Employee health](#)

For examples of policy in action, refer to our case study, [Employee Health](#), which demonstrates a number of initiatives to manage health issues in the workplace, as well as the following Employee HSEC Award finalists:

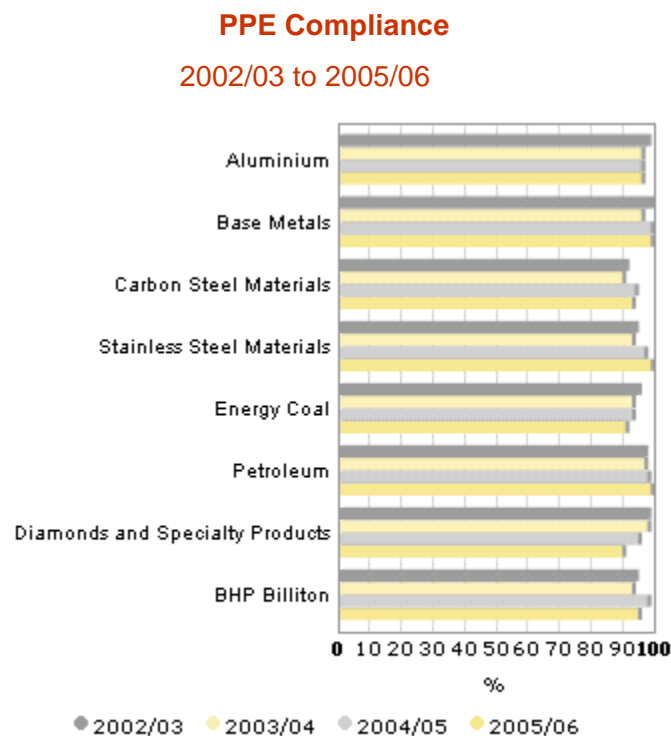
- Petroleum's Perth-based Australian Operated Asset Team have developed and implemented a new Risk Based Medical Assessment Process for all employees and contractors on the *Griffin Venture*, a floating production storage and offloading vessel. Read more: [Our Performance>Recognition>Employee HSEC Awards>Health Awards](#)
- Fatigue management programs at:
 - Western Australian Iron Ore
Read more: [Our Performance>Recognition>Employee HSEC Awards>Health Awards](#)
 - Antamina, Peru
Read more: [Our Performance>Recognition>Employee HSEC Awards>Health Awards](#)
 - Peak Downs, Australia
Read more: [Our Performance>Recognition>Employee HSEC Awards>Health Awards](#).

Personal Protective Equipment Compliance

While the elimination of exposure risks is our key driver, often this is not readily possible or feasible, and personal protective equipment (PPE) is used.

At the end of the reporting period, the status of overall PPE compliance in the Company was 95 per cent, compared to 98 per cent in the previous reporting period, as shown in the graph below.

This is an area where we continually seek improvement, and we are encouraging operations to implement formal audit programs of PPE compliance. Read more about some of our initiatives at [Health>Our Approach](#).



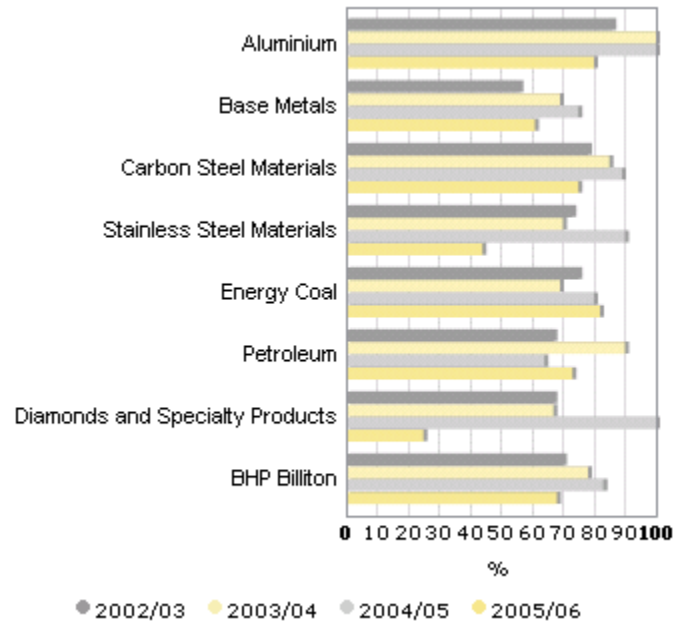
Note: Only includes data for those sites that have a formal PPE monitoring system.

PPE compliance has essentially remained stable in the Company over recent years.

With our continued drive for improvement in this area, we have recognised that our formal auditing programs for PPE compliance do not, in all cases, meet strict Company requirements. As a consequence, this parameter has reduced to 68 per cent from 83 per cent the previous year. We will be focusing on this area in the coming year to raise this performance.

Formal Audit Programs for PPE Compliance

2002/03 to 2005/06



Note: This is a ratio the number of Yes responses to the number of HSEC questionnaire responses received. Some BHP Billiton sites do not submit an HSEC questionnaire and are therefore not included.

Health Fines

Regrettably, we did not meet our goal this year of zero health fines or prosecutions. The table below outlines the health fines for this period. Note: Fines reported may relate to incidents that occurred in previous years.

Health Fines 2005/06

Site	Customer Sector Group	Description	Fine (US\$)
Escondida	Base Metals	Fine for two food items that had passed their expiry date	23,530
Cerro Colorado	Base Metals	Levels of arsenic and mercury in the potable water supply were not correctly monitored in the calendar year 2004. This lapse has not reoccurred and the lack of monitoring in 2004 had no impact on the health of the workforce.	343
Total			23,873

Community Health

During the year we continued our support of the Medicines for Malaria Venture to develop new anti-malarial medication. Malaria is a significant health issue for us in southern Mozambique and northern Brazil where our operations are located, and many other areas where we have development activities. The Medicines for Malaria Venture, established through the World Health Organization, aims to provide affordable anti-malarial drugs to people in disease-endemic countries. The program has proved very successful and is ahead of schedule in its aim to produce new anti-malarial medication. We have also continued our strong support for the malaria eradication program in southern Africa by collaborating in an extensive mosquito-spraying program.

The study at EKATI to limit the spread of tuberculosis (TB) is progressing through the final stages of approval prior to its full implementation. In the Northwest Territories of Canada, TB is a significant issue among the Inuit population, which as a consequence has an impact on our EKATI Diamond Mine operation. Our TB program is a screening program aimed at detecting latent TB infection, thereby enabling a course of treatment to reduce the chances of active TB developing and infection of others occurring. For an overview of the program, read our 2004 case study, [EKATI screening program](#).

The HIV/AIDS immunotherapy project that was initiated during the previous year has progressed to a point where it is possible that a clinical trial will commence in the coming year. Funding is almost complete and the documentation required for the trial is ready for submission for approval. BHP Billiton has assisted in recruiting other organisations to provide funding and has provided logistic support and funding to develop the early stages of the clinical trial program.

If this treatment proves successful, it will potentially provide an approach to the epidemic that can be delivered to a wider number of the affected population and reduce the often significant compliance issues and costs associated with antiretroviral medication. The genesis of the program is detailed in our 2005 case study, [Supporting the development of advancements in HIV/AIDS treatments](#). Additional examples of our current activities to help manage the impact of the disease include:

- Read more: [Health Case Studies>HIV/AIDS](#)
- Ingwe's Middelburg Mine has introduced satellite testing facilities in community villages that give choices about where and when voluntary testing will occur. This approach recognises the importance of taking HIV/AIDS programs 'beyond the mine gate' and involving the wider community. Read more: [Our Performance>Recognition>Employee HSEC Awards>Individual Excellence Awards](#).

In addition, a number of other community health initiatives were progressed through the reporting period at our sites. At the Hallmark Prospect, a joint venture between BHP Billiton and Asiaticus Management Corporation for the exploration of nickel laterite deposits in the Philippines, a range of basic community health programs have been introduced to benefit employees, contractors and the surrounding communities. Programs include malaria control, school feeding, tuberculosis identification, anti-rabies vaccination and filariasis control. Read more: [Performance>Recognition>Employee HSEC Awards>Health Awards](#).

Health Case Studies

The following case studies are examples of health issues, initiatives, projects and programs across the Group that highlight some of the sustainability opportunities and challenges faced by our operations. Case studies are also presented for the areas of [safety](#), [environment](#), [community](#) and [socio-economic](#).

[View](#) all case studies.

Read more:

<p>Employee Health</p>	<p>The health and wellbeing of people are central to the success of our business. Read how BMA and Iron Ore (Australia) are helping employees monitor and manage their health.</p>
<p>Health Management</p>	<p>Our approach to occupational health management is based on controlling employee exposures and reducing occupational illnesses. In 2005/06 Kwinana Nickel Refinery (Australia) conducted an industry-first baseline study of ingested nickel in employees.</p>
<p>Community Health Clinics</p>	<p>In the areas in which we operate, health risks are diverse and are not only related to work processes. Valesul (Brazil) and Hotazel (South Africa) are examples of some of the ways we are helping to improve health standards in local communities.</p>
<p>HIV/AIDS</p>	<p>Managing the impact of HIV/AIDS is a key challenge for our Company as we have a responsibility to care for our employees, protect the viability of our operations and support the wellbeing and development of our host communities. The Ethembeni Care Centre is a 'Place of Hope' in southern Africa.</p>
<p>Exposure Management</p>	<p>Reducing exposure of employees to potentially harmful elements in the workplace is a major objective for the Company. Read how pioneering technology for unloading coal dump wagons at BMA Hay Point (Australia) alleviates employee health issues.</p>

Health Case Studies

Health – Employee Health

Case Study Contributor:	BHP Billiton Mitsubishi Alliance (BMA)
BHP Billiton Interest:	50%
Location:	Central Queensland, Australia
Customer Sector Group:	Carbon Steel Materials
Commodity:	Metallurgical and Thermal Coal
Case Study Status:	New for 2006

BMA Introduces Fit For Work/Fit For Life Health Promotion

BMA owns and operates eight coal mines and the Hay Point coal terminal and, on behalf of BHP Mitsui Coal, also operates the South Walker Creek mine and the new Poitrel mine, which is under development.

At BMA, our vision for employee health is a workforce that is aware of health risks and is capable of making proactive, positive choices to eliminate or reduce those risks. In line with the BHP Billiton [Fit for Work/Fit for Life](#) principles, the Healthy Lifestyle Program we have introduced encourages our employees to take an active role in maintaining their quality of life and health. We assist this process by providing regular health assessments and offering health information and health promotion activities that benefit our employees and, where possible, the local community.

By assisting our employees to adopt beneficial health behaviours, we can support their desire to live, work and retire well.

Why we needed to adopt the Healthy Lifestyle Program

The risk of developing preventable chronic disease in Australia has been attributed to nine health risk factors: smoking, abnormal cholesterol levels, high blood pressure, unhealthy distribution of body weight, stress, depression, overuse of alcohol, lack of regular physical activity and insufficient consumption of fruit and vegetables. An estimated 92 per cent of Australian adults have at least one of the nine risk factors, the most common being poor diet.

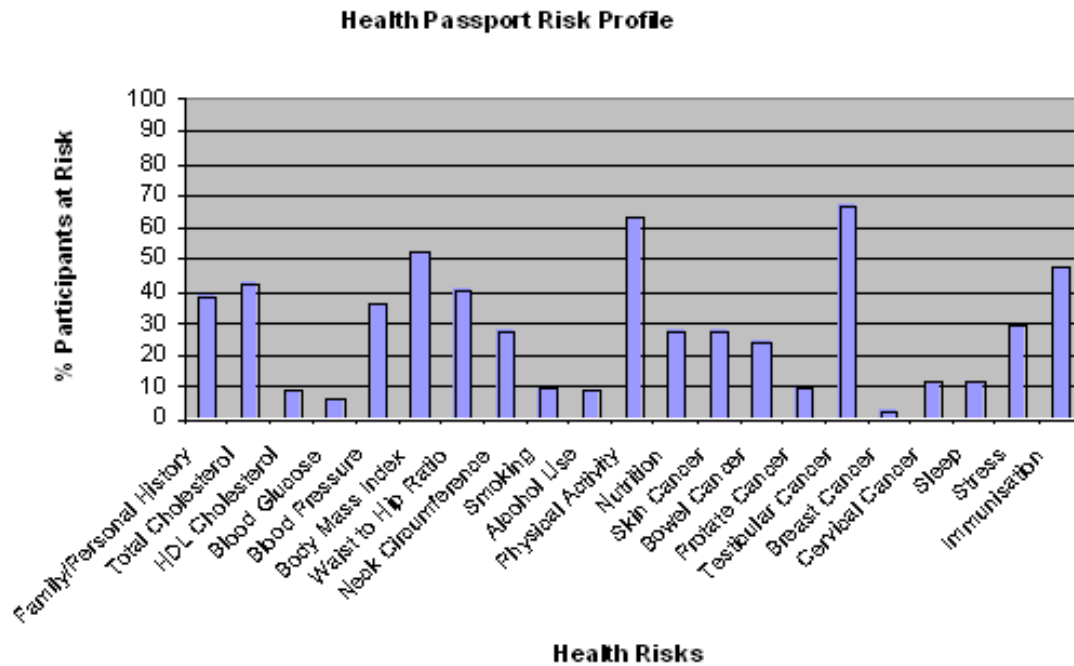
Furthermore, we recognise that employees perform their best when they are healthy and that optimal employee performance is necessary for the Company to succeed. Due to the longevity of many of our operations, we also recognise the need to assist and support our workforce as it ages. Some BMA operations are in excess of 30 years old. The average age of our employees is 44 years. In some roles, such as dragline operators, the average age is 55. One of the drivers of the Healthy Lifestyle Program is to improve skills retention and decrease retirements due to preventable, lifestyle-related disease and to create a more sustainable workplace for older employees.



Gregory Mine electrical operator Clayton Hanrahan has his blood pressure tested by BMA health advisor Fiona Rosenberg as part of the Healthy Lifestyle Program

Our evidence-based approach to health

We applied an evidence-based approach to the development of our Healthy Lifestyle Program. The nine recognised Australian health risk factors have been combined with other health issues, such as cancer awareness risks, to create a health status and awareness assessment tool called the Health Passport, which is used across BMA operations. The Health Passport is a personal five-year record of an individual's health status at each assessment. It also permits the individual to set personal health and awareness goals between each annual assessment period. Data can also be collected during each assessment and aggregated to provide a health risk profile for the specific operation (see graph). This data can then be used to target specific health issues and plan health promotion activities.



The Health Passport was developed by BMA in conjunction with a professional exercise physiologist and was critiqued by a corporate health and wellbeing service provider, Wesley Corporate Health. Sheree Richmond, Wesley's Health and Wellness Services Manager, says, 'The Health Passport is a comprehensive way of identifying, recording and targeting risky health behaviors at the employee's health assessment. It then becomes an invaluable resource for the employee to facilitate change, using the applicable action plans, and improve their results before their next assessment'.

Use and acceptance of the Healthy Lifestyle Program in BMA

A pilot using the newly created Health Passport was conducted at our Peak Downs Mine in June 2005. The pilot was well received and resulted in further refining of the assessment tool. In August 2005, the Healthy Lifestyle Program was introduced to all our operations.

One of our employees who is participating in the program is Clayton Hanrahan (pictured), an electrical operator in the coal handling preparation plant at Gregory Mine. He says, 'I decided to do the Healthy Lifestyle Program assessment because it was a good opportunity to find out about my health situation and anything I needed to improve upon. I learnt a lot about different health areas that I wasn't even aware of beforehand; it really opened my eyes. As a result of doing the assessment, I am now watching my diet and alcohol intake. It will be really good to see if there are any improvements [to my health] in the next few years'.

To date, six of our mines and offices have used or are using the Health Passport to conduct an initial baseline health assessment.

Conclusion

We believe that the Company has a realistic expectation of the impact that the health promotion programs may have on an individual's health and wellbeing, but we are of the opinion that by taking the longer-term view of health promotion we will start to see the rewards for both individuals and BMA in the decades to come.

Health Case Studies

Health – Employee Health

Case Study Contributor:	BHP Billiton Mitsubishi Alliance (BMA)
BHP Billiton Interest:	50%
Location:	Central Queensland, Australia
Customer Sector Group:	Carbon Steel Materials
Commodity:	Metallurgical and Thermal Coal
Case Study Status:	New for 2006

Integrated Health and Wellbeing Program is Helping Hay Point Employees to Monitor and Manage Their Health

At Hay Point terminal in 2005 we introduced an integrated Health and Wellbeing Program for employees, based on the principle that 'if you are fit for life, you'll be fit for work'. This means knowing how to implement positive lifestyle and behavioural changes.

The program is available to all our full-time employees and permanent contractors. Participation in the program is continuing to increase, with more than 70 per cent of our workforce currently involved in its various components.

A three-part program

Our Health and Wellbeing Program is comprised of three components: the wellbeing program, lifestyle medicals and educational events.

The wellbeing program involves a team of lifestyle consultants who visit the site every three weeks to conduct basic evaluations of health indicators such as blood pressure, weight and cholesterol. Using this information as a baseline, the team assists participants to set personal health goals and develop a health plan. The participants can have their progress reviewed each time the consultant team returns.

The lifestyle medicals are more rigorous and are undertaken to investigate potential 'red flag' issues, such as high blood pressure, identified through the program. These are conducted by a nominated medical practitioner or the employee's own doctor and may lead to a course of treatment.

On a regular basis, information days or events are scheduled during the working week to inform employees about particular health issues and risks. In some cases, opportunities for tests and screenings are provided. Topics have included healthy hearts, skin cancer and men's health issues.

The Health Passport

The Health and Wellbeing program is complemented and strengthened by a recent BMA-wide initiative, the Health Passport. This diary-type tool is an easy way for employees to monitor a range of health indicators, which are the same as those measured in the Health and Wellbeing Program. The passport is also a handy reference when employees visit their doctors.



Hay Point employee Jamie McCorkell undergoes a health check

Increasing participation

Paul York, Human Resources and HSEC Manager, says, 'As well as growing participation in the overall Health and Wellbeing Program, the information sessions are attracting increasing involvement'.

'Skin cancer screenings were undertaken by 57 per cent of the workforce, similar to last year. Fifty-three per cent had influenza shots, a ten per cent increase. Heart screenings were undertaken by 71 per cent, a 38 per cent increase,' said Paul.

Through its ongoing development, we are achieving a practical and comprehensive lifestyle enhancement program with the potential to improve the health and wellbeing of our workforce.

Health Case Studies

Health – Employee Health

Case Study Contributor:	BHP Billiton Iron Ore
BHP Billiton Interest:	80 – 100%
Location:	Pilbara Region, Western Australia
Customer Sector Group:	Carbon Steel Materials
Commodity:	Iron Ore
Case Study Status:	New for 2006

Car Analogies Help Promote Men's Health Messages

At our BHP Billiton Iron Ore operations in Port Hedland, Western Australia, the health services team has introduced an innovative health program in partnership with the Royal Flying Doctor Service (RFDS). The program, developed by Western Australia's Gascoyne Public Health Unit, is designed to help improve health outcomes for male employees and contractors.

The PitStop Men's Health Program is based on research that demonstrated that men are generally less healthy than women and less likely to see their doctors for health assessments. It is aimed at raising awareness and reinforcing health and wellbeing messages that are generally unsupported by men. The program appeals to men's understanding and knowledge of cars and transfers this to a concept of body systems as car 'parts'.

We adopted the program – given our predominantly male workforce – in July 2005, after extensive consultation with the concept developers and customisation to meet the Company's needs. For example, obesity, physical inactivity and smoking are the main health issues facing our workforce.

Monthly PitStop sessions

Coordinated by our health services team, the program consists of monthly PitStops, which are conducted by personnel from the RFDS and other health professionals including dietitians and local health providers. Each PitStop has up to eight checkpoints per session, with each looking at one of the following seven key health areas:

- 'Chassis check' – hip-to-waist measurement ratio
- 'Torsion' – flexibility
- 'Exhaust' – smoking and lung function
- 'Fuel additives' – alcohol
- 'Oil pressure' – blood pressure
- 'Spark plugs' – testicles and prostate
- 'Duco' – skin cancer.

The PitStops are held on site and at local community events. To date, more than 500 people have attended the program, with many returning for more advice or a free check-up.



Employees call in for a check-up at one of the monthly PitStop sessions

Outcomes

Results from the PitStops, which have been extended to include female employees and community members, have led to the Company developing a range of walking activities and providing advice on physical activity, diet and nutrition after the sessions. Additionally, the health services team has been trained to deliver smoking cessation programs that are made available to staff who want to quit.

'What the PitStop did was to show you in a fun way how your lifestyle is actually impacting on your health and gave some targets to work towards,' said Gerhard Veldsman, Superintendent Maintenance Coordination. 'I took my results with the yellow sticker saying I need a lifestyle change and placed it on the fridge so every time I went to the fridge it acted as a reminder. My blood pressure went down from 140/95 to 125/80 in the three months and my waist/hip ratio went down from 0.95 to 0.90. I sleep better, I'm more relaxed and have more energy'.

Health Case Studies

Health – Health Management

Case Study Contributor:	Nickel West (Kwinana Nickel Refinery)
BHP Billiton Interest:	100%
Location:	Northern Goldfields, Western Australia, Australia
Customer Sector Group:	Stainless Steel Materials
Commodities:	Nickel and Cobalt
Case Study Status:	New for 2006

Kwinana Nickel Refinery Conducts Nickel Hygiene Baseline Study

Kwinana Nickel Refinery (KNR) undertook a study in 2005 to determine baseline levels of ingested nickel in employees and contractors. This study is part of a comprehensive biological monitoring program in Nickel West's operations. The aim is to determine levels of ingested nickel throughout the nickel mining, concentrating, smelting and refining processes.

Nickel is present in food and drinking water and is a necessary element for human bodily function. It is not stored in significant amounts in the body and is excreted within a matter of days. Very little quality information has been collected globally about ingested nickel levels for refinery or smelter workers. The KNR study is the first of its kind to be conducted in the international nickel industry.



Matt Taylor, leach area process technician, hoses the KNR sulphides packaging area

Background

In 2002 at an international conference, information was presented regarding the potential reproductive toxicity of certain nickel species. This related to research at a Russian refinery which found higher than normal levels of late-term miscarriage among female workers. This information supported earlier findings from animal studies, which showed rats and mice experienced reproductive issues when fed large amounts of nickel.

While there have been no studies conducted in Australia to determine background levels in people not occupationally exposed to nickel, those conducted in Europe found levels of 0.2 to 10 micrograms per litre (ug/L) of urine.

There are no standards setting safe levels of ingested nickel in Australia nor elsewhere in the world. Using the best available knowledge at the time, a conservative protocol was developed for both pregnant workers and the workforce generally. The standard set for pregnant workers was 10 ug/L and the standard set for the workforce generally was 75 ug/L.

Subsequently, KNR undertook a voluntary study of urinary nickel in women working at the site. There was good participation in the study, which ran for a year. Higher-than-expected levels were detected in the laboratory and cleaning personnel, as well as in some office people. It should be noted that these increased levels occurred at the same time as operational issues at the site, which had resulted in an accumulation of nickel dust on building roofs and in airconditioning systems.

The Nickel Steering Committee, members of which included the general managers from the Nickel West sites and representatives from the Nickel West corporate team, planned a full study with KNR to:

- establish baseline levels of ingested nickel in all site personnel (male and female)
- identify factors influencing bodily intake of nickel

- Identify appropriate nickel in urine action levels for workers.

The study and process

For the full study, a leading Western Australian toxicologist assembled a project team that included an occupational physician, epidemiologist, statistician and hygienist. At the site, the majority of work on the study was conducted by the KNR HSE Team.

A widespread communication plan was developed, which involved presentations to all individuals on site to brief them on the potential health effects of nickel generally and to outline the proposed monitoring program.

The study involved information from:

- a questionnaire, filled out once at the start of the study
- urine samples, collected approximately the same time each week
- targeted questioning on delivery of each sample
- additional site samples of dust and hand swabs for nickel.

The questionnaire sought information regarding site exposure to different forms of nickel, types of hobbies that may expose people to nickel at home, and general health information. The aim was to determine factors that influenced the ingestion of nickel and to identify people who would require intervention if high levels of nickel were found in the study.

The urine samples were collected from employees and contractors over a period of 14 weeks from August to November 2005. When collected, the samples were analysed at independent external laboratories to determine the levels of nickel and creatinine (allows for correction based on whether urine is diluted or concentrated and to what extent).

For the samples to represent the true baseline levels, results were provided at the completion of the sampling period unless there was a potential health concern. A protocol was developed for this.

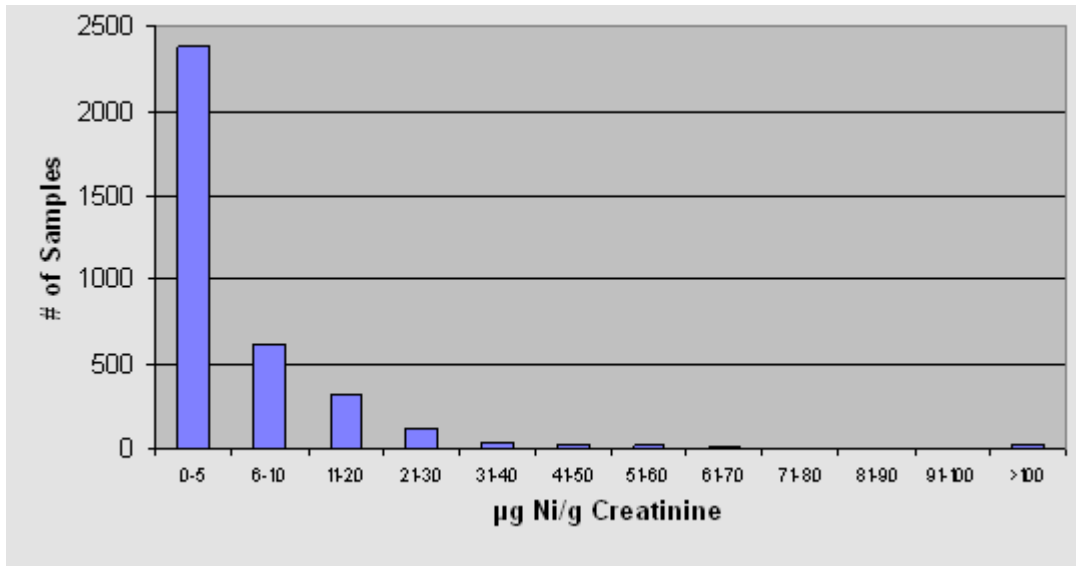
The study team was overwhelmed by the response from the workforce. A total of 405 people participated, including the majority of the contractors at KNR, and approximately 4,000 samples were collected and analysed.

The large number of participants presented some interesting logistical problems during collection of the samples. To reduce the likelihood of contamination, participants were required to shower before providing the sample. Normally, people who shower do so at the end of their shift; however, the facilities could not cope with the greatly increased demands due to the study, so a schedule was developed. This required most people to shower during their shifts. This meant showering at a specific time during their shift – even at 2.00 am – then returning to work.

Recognising the imposition this placed on those participating, the study team added some appeal by offering a variety of sweeteners, including fluffy towels, muesli bars, drinks, hair-dryers and, on some occasions, homemade choc-chip biscuits!

Results

For participants in the study, the mean urine levels of nickel were 8 ug/L, with 80 per cent recording levels comparable to non-occupationally exposed individuals (0.2 to 10 ug/L). Results where the urine was too diluted or concentrated were excluded. The results of the study are shown in the following graph.



The study identified individuals, mostly working in the parts of the plant where they are exposed to fine nickel powder, who recorded levels above 75 ug/L; however, when compared to the initial women's voluntary study, the levels overall were lower than expected. Influences on this decrease seem to have been the showering requirement and the correction of the operational issues that had occurred while the initial voluntary study was being conducted.

As a result of the study, in particular the information gained from the questionnaire, a number of areas for improvement have been identified. For example, answers to the questionnaire indicated that 30 per cent of respondents did not always wash their hands prior to eating. Of the smokers, 86 per cent did not always wash their hands before smoking. Focusing on personal hygiene, such as washing hands prior to eating, drinking and smoking, has been shown to be a simple but effective method of reducing ingestion of nickel.

Where required, support is being provided to individual participants with concerns revealed by the study. For instance, a shift process technician became concerned when he found he had higher results than the average for his workgroup. A personal program has been developed for him, involving changing the respiratory protection he was using for particular dusty jobs and taking care to wash his hands before eating and drinking. Observing this personal program is expected to translate into lower ingested nickel levels.

Conclusion

The results of the study show levels of nickel similar to that of non-occupationally exposed people, and this provides a level of assurance that ingested nickel exposures at KNR are not likely to cause reproductive harm, providing appropriate hygiene practices are followed.

For employees, this finding has helped provide peace of mind. A contract records manager, who was a new employee when she joined the study, initially expressed concerns that the job may expose her to a risk that might affect her health, but after seeing her personal results she now feels at ease working at KNR.

The results from the final report are being made available to the international nickel industry.

Health Case Studies

Health – Community Health Clinics

Case Study Contributor:	Samancor Manganese (Hotazel Manganese Mines)
BHP Billiton Interest:	60%
Location:	Northern Cape Province, South Africa
Customer Sector Group:	Carbon Steel Materials
Commodity:	Manganese Ore
Case Study Status:	New for 2006

Mobile Healthcare Clinics and Water Tanks Improve Access to Medical Services for the People of Kgalagadi

The Hotazel manganese operation is located in the rural Kgalagadi district, which is one of the poorest in South Africa. Around half of the 177,000 people in the district reside in the Moshaweng municipality, which has the lowest annual household income in the region; most people still use candles for lighting and paraffin and wood for energy.

Many households in the community are affected by HIV/AIDS and face extreme economic, social, and psychological difficulties. In addition, Kgalagadi was previously an asbestos mining area and asbestos-related diseases are reported to be high. Health services remain inaccessible to a large proportion of the population due to the arid nature of the region. Even where health services are available, many people cannot afford medical care.

A major issue affecting the availability and quality of health services is the shortage of doctors and professional nurses. Because of this shortage, the two hospitals in Kgalagadi cannot provide adequate levels of health care.



Health professionals attend a patient in one of the new mobile healthcare clinics

Responding to community needs

Following consultation by the BHP Billiton Development Trust (BBDT) with relevant stakeholders including local health professionals and the Member of the Executive Council (MEC) for Health in Northern Cape Province, access to medical care and the provision of clean water were identified as key needs.

In response, on 1 September 2005, four state-of-the-art mobile healthcare clinics were contributed to the Kgalagadi municipality along with seven water tanks to provide clean water. The mobile clinics provide primary healthcare services, including treatment for HIV/AIDS and other diseases, counselling and testing, antenatal and perinatal care, immunisation, mental health services, and health monitoring and promotion. The clinics are designed with wheelchair lifts, so they can easily be accessed by disabled and elderly people. The water tanks are located at seven rural health clinics to enable them to render their services efficiently while providing the community with access to clean water.

Before the introduction of the mobile clinics there were only 36 visiting points in the region where people could access medical assistance, and these were serviced once a month. With the mobile clinics, there are presently 218 visiting points, including the Hotazel mines and farms near the Botswana border, that did not previously have easy access to health care.

The Head of the Department of Health in the Northern Cape, Deon Madyo, has noted, 'The social corporate investment strategy of BHP Billiton is well rooted in a codetermination spirit with its stakeholders. The need assessment and proper consultation with [the Company] was valuable for ensuring that a good investment is made for the people of the Northern Cape. This investment has restored the dignity and pride of our people who are now receiving a service in proper state-of-the art mobile clinics. We value the relationship we have with BHP Billiton to change the lives of our people for the better'.



Left: One of the four new mobile healthcare clinics *Right:* Presentation of a mobile clinic attended by (L to R) Jeff Leader, General Manager, Hotazel Manganese Mines; Nomonde Rasmeni, MEC for Health, North West Province; Dr Vincent Maphai, Chairman, BHP Billiton Southern Africa (on steps); Shiwe Selao, MEC for Health, Northern Cape Province; and Councillor Adriaan Lubb of the local Ga-Segonyana municipality

Health Case Studies

Health – Community Health Clinics

Case Study Contributor:	Valesul Alumínio
BHP Billiton Interest:	45.5%
Location:	Rio de Janeiro, south-eastern Brazil
Customer Sector Group:	Aluminium
Commodity:	Aluminium
Case Study Status:	New for 2006

Valesul Health Program is Helping to Improve the Quality of Living in Local Communities

The Santa Cruz district of Rio de Janeiro is very poor. Many of the communities have evolved through land trespassing and, as a result, there is a lack of basic health services, sanitation and clean water, and efforts by civic bodies to implement infrastructure projects are hampered. Diseases such as leprosy and dengue fever are prevalent. To assist our host communities, we initiated a wide-ranging health program, which commenced in 2002.

The health program is conducted in collaboration with the sole healthcare facility in the region, the government-run clinic of Dr Décio Amaral Filho. The program began by identifying, through a public survey, the main health-related issues in the communities surrounding the plant. The next steps were to combine the survey results with data from public health bodies and then to support and develop initiatives to prevent illness and improve the health of the people. The program directly or indirectly benefits around 5,000 people in the district.



A fitness class in the covered exercise area at the clinic

Leprosy control

The Santa Cruz district has one of the highest rates of leprosy in Brazil. The health program includes an information campaign to educate the community about the disease and how it can be transmitted and treated. Brochures are distributed and public lectures delivered. The main objective is to identify infected people and enable them to receive treatment, which is provided by the clinic free of charge.

Water and sewage

Periodic meetings are held with public bodies to discuss and propose solutions to water shortages and sewage problems in our host communities. As a result of these talks, water supply plants are being constructed in two communities.

Assistance to the elderly

Through a project coordinated by the clinic, approximately 100 senior citizens benefit from gymnastics classes, oriental therapies, dance classes and sightseeing tours. Special facilities have been erected at the clinic, including a roofed area for classes and a leisure room with TV and library; and transportation is provided. The project has now been expanded to another community centre, additional courses are being developed, and the number of participants will be doubled.

The managers of the healthcare clinic have noted that, 'The area erected by Valesul for the activities carried out with the senior groups has helped raise their self-esteem in addition to enhancing their wellbeing, physical activities and relationships.' This is confirmed by senior citizen Walfredo Lobato, who says, 'The activities make us feel hale and hearty for the day and we feel pleased to meet the group every day. These partnerships can change, and are changing, our spirits.'

Our partnership with the health clinic is important to us as it assists in assessing the impact of our activities on our communities and in earning their trust. Through the health program we are continuing to learn together and use these learnings to fulfill our social responsibilities.



Residents attending the healthcare clinic



The leprosy control campaign includes public information meetings

Health Case Studies

Health – HIV/AIDS

Case Study Contributor:	Bayside and Hillside Aluminium Smelters
BHP Billiton Interest:	100%
Location:	Richards Bay, Northern KwaZulu-Natal, South Africa
Customer Sector Group:	Aluminium
Commodity:	Aluminium
Case Study Status:	New for 2006

Ethembeni Care Centre — A 'Place Of Hope' for HIV/AIDS Patients

Ethembeni Care Centre was founded in Richards Bay, South Africa, in 1996 by occupational health nurses from BHP Billiton and five other major companies operating in the region. It began in an abandoned farmhouse donated by one of the companies, initially caring for six patients. The original intention was for the centre (its name means 'place of hope') to address HIV/AIDS-related problems that the occupational health clinics were experiencing.

In 2002, Ethembeni Care Centre relocated to Amangwe Village, a community support complex being set up on ten hectares of land. In December the following year, the centre opened a new 18-bed facility at Amangwe under the auspices of the Zululand Chamber of Business Foundation. As well as caring for HIV/AIDS patients, the new centre included facilities for orphans and vulnerable children and began providing community outreach, education and training programs.



Healthcare professionals provide a wide range of services and community programs at Ethembeni Care Centre

Ethembeni Care Centre was established primarily for use by the employees of local companies. The original business model was based on the assumption that the centre would be self-sustainable through the fees charged to the companies for patient services. Over time, this assumption proved incorrect; news of Ethembeni's facilities and services spread through word of mouth and the clinic began to admit patients from the wider community. Subsequently, our Bayside and Hillside Aluminium operations took on the role of covering the costs of patients who could not afford the fees, as well as providing the majority funding for infrastructure works.

New beginnings and partnerships

The issue of sustainability has been addressed by transferring the management of Ethembeni Care Centre, with effect from 1 April 2005, to another organisation that operates with support and assistance from the Department of Health. On 31 August 2005, Ethembeni Care Centre was registered as a Section 21 company (similar to a non-government organisation). Directors and auditors have been appointed, and the centre is in the process of registering for Non Profit Organisation status and Public Benefit Organisation status, which will mean it is exempt from income tax and other government taxes and duties.

Ethembeni Care Centre has entered into a Service Level Agreement with the Department of Health to provide operational sustainability for the centre. The Service Level Agreement is one of only two that the Department has undertaken with institutions in KwaZulu-Natal.

Ethembeni Care Centre's General Manager, Busisiwe Nhlabath, says, 'Ethembeni Care Centre management and its staff are committed to ensuring that the centre remains sustainable indefinitely through maintenance of strong partnerships with the Department of Health and other government structures. Ethembeni Care Centre is also committed to ensuring that the high quality of care delivered to its patients and the communities that it serves is maintained and exceeded. With strong partnerships maintained with the Department of Health, its main financial contributor BHP Billiton and other government

departments, there is no doubt that the existence of the centre will remain of great benefit to the communities that rely on its services'.

At present, Ethembeni Care Centre comprises a 45-bed ward for adults and an 18-bed paediatric centre and provides a range of other services and community programs. A recent upgrade of the sewerage system has resulted in the centre having a 200-bed capacity, providing significant scope for future development. Presently, the range of services at the centre includes:

- in-patient care for adults and children
- outpatient services
- voluntary counselling and testing
- anti-retroviral drug treatment administration
- anti-retroviral drugs education program (e.g., drug literacy, drug adherence and nutrition literacy)
- tuberculosis and other infectious diseases management
- pharmacy services
- HIV/AIDS counselling (pre and post diagnosis)
- social security assistance (applications for grants)
- a 'buddy' system (replacing the traditional home-based carer system).

Ethembeni Care Centre has also entered into a Memorandum of Agreement with Ngwelezane Hospital in northern KwaZulu-Natal, which provides access to other services including ambulance, social worker, physiotherapy, psychology, medical and mortuary services.

The story of the Ethembeni Care Centre is an excellent example of companies working together and with government, healthcare professionals and other agencies to provide essential health services to employees and the wider community. Bayside and Hillside Aluminium are continuing to provide significant support for this 'place of hope'.

Health Case Studies

Health – Exposure Management

Case Study Contributor:	BHP Billiton Mitsubishi Alliance (BMA)
BHP Billiton Interest:	50%
Location:	Central Queensland, Australia
Customer Sector Group:	Carbon Steel Materials
Commodity:	Metallurgical and Thermal Coal
Case Study Status:	New for 2006

Pioneering Technology for Unloading Coal Dump Wagons at Hay Point Alleviates Employee Health Issues

The coal from the mines operated by the BHP Billiton Mitsubishi Alliance (BMA) in Central Queensland is delivered by train to our coal terminal at Hay Point. It is conveyed in 'bottom dump' wagons, which have floors that open and allow the coal to be dumped into bins below. During transportation from the mines, the coal often becomes moist and some of it settles and sticks to the walls and floor of the wagons.

Operators at Hay Point's two dumpstations conventionally use jackhammers to vibrate the side of the wagons, loosening the sticky coal and allowing it to drop into the bins. The use of jackhammers may give rise to health and safety issues. BMA set a project team the challenge of addressing these issues and the team developed an innovative machine that vibrates the wagons to loosen the coal. The pioneering technology has alleviated the health and safety issues and could potentially lead to full automation of the coal unloading process.



A wagon vibrator in action at the Hay Point coal terminal

Background

The coal-sticking problem is an industry-wide issue where bottom dump carriers are used. From an operator's point of view, using the jackhammer to loosen the sticky coal is considered one of the most manually demanding jobs on site. During frequent unloads, an operator may be using the jackhammer constantly for periods of up to two hours: this can place a physical toll on the body and can also potentially create a safety risk.

A neighbouring coal terminal had explored the idea of a wagon vibrator to eliminate the safety issues but had eventually abandoned its research. In 2003, our project team, after consulting the other terminal and conducting their own research, set out to develop the concept into a fully operational machine.

The project team's work led to a prototype wagon vibrator, which was engineered and tested on site and began operating in one of our dumpstations in late 2004 – it was a world first. The machine eliminates the need for jackhammers and is operated from an enclosed control room that provides the operator with a working environment that is quiet and climate-controlled.

Following further development of the prototype, a second machine has been built and installed and another is planned for 2007.

Challenges

The project team has faced several major challenges relating to technology, adjustability and fine-tuning of the wagon vibrator.

Technology – The biggest challenges arose in developing the prototype wagon vibrator from concept through to implementation. As there were no precedents to follow, design and development of the engineering technology was a process of trial and error, with no certainty that the machine could be built to work.

Ashley Goodwin, Senior Engineer - Engineering and Business Improvement, says 'The project team's determination to succeed saw them go through a process of continual testing until they developed a workable solution.'

Adjustability – The types of wagons used in transporting coal are not standardised and can be quite varied. Because of this, the vibrator had to be able to work with a range of wagon types. The machine has been designed with the intelligence to read an electronic specification tag on each wagon and adjust its operation to suit. If it cannot identify the wagon type, it applies a generic regulation. This adjustability is a particularly innovative component of this pioneering process.

Fine-tuning – The prototype wagon vibrator, being the first of its kind, underwent further fine-tuning following installation. There were some teething problems, such as the breaking of minor parts, which required periods of downtime for maintenance. This meant jackhammers had to again be used from time to time. These problems have been resolved and there is no longer the need for unscheduled maintenance.

Outcomes

The notable outcomes of the project are as follows:

- The unloading process at Hay Point is now more efficient as the effectiveness of the wagon vibrator allows the coal to be removed with less hands-on labour.
- With no need for the use of jackhammers, the physical toll on operators has been significantly reduced.
- The risk of hearing damage for operators has also been mitigated; when operating the wagon vibrator they sit inside a quiet control room.
- Overall noise on site has been reduced, as the wagon vibrator operates much more quietly than the jackhammers.
- With less hands-on labour, safety risks are also reduced.
- The new machine is less harsh on the wagons than the jackhammers, minimising the risk of damage.

Operators have welcomed the new technology and its benefits during train unloading.

The development of the wagon vibrator has had a direct and significant impact on the logistics of unloading coal at Hay Point, and its benefits can be extended throughout the coal industry and beyond. The technology is suitable for use by any company involved in transporting bulk materials with bottom dump carriers.

While the pioneering wagon vibrator has met the immediate objective of alleviating health and safety concerns for our operators at Hay Point, its technology has even greater potential and could lead to the total automation of train unloading in the future.

Safety



[Our Approach](#)

[Our Performance](#)

[Case Studies](#)

'The reporting of Near Miss Incidents provides...invaluable free lessons and improvement opportunities...'

Message from the Vice President Safety

Regrettably and despite all of our efforts three colleagues were fatally injured at our operations in 2005/06. We recognise that we will not be truly successful until we completely eliminate fatalities from our operations, and this remains our key immediate objective.

The 2005/06 Total Recordable Injury Frequency Rate (TRIFR) was 8.7 which was the same result as the previous year, while the Classified Injury Frequency rate (CIFR) increased from 3.9 to 4.8, in part due to a range of acquisitions and divestments made during 2005/06. Encouragingly, the Duration Rate, which measures the impact of injuries on people by the number of days people are away from their unrestricted duties per injury, improved by 28 per cent.

A key activity during the year was providing support and assistance for the successful integration of the former WMC assets into the BHP Billiton safety system. The institutionalising of our Fatal Risk Control Protocols (FRCPs) continued throughout the Company and was reinforced with the provision of guidelines for each of the ten FRCPs. The FRCP facilitators appointed at the end of the previous year have also proved to be invaluable to assets in supporting the understanding and implementation of the FRCPs.

We commenced monitoring TRIFR as our primary lag indicator during the year. This broader indicator includes all medical treatment and restricted work day cases thus enabling a greater focus on the types of injuries occurring in the workplace. We conducted measurement and analysis of safety performance in our three key regions of Australasia, Africa/Europe and the Americas. This data provided greater insight and perspective on the cultural issues impacting safety performance.

At the end of the reporting period, we established our Global Safety Network. The network is made of representatives from all of our assets and is a key mechanism for the sharing and learning of safety related information across the organisation. The immediate objectives of the network is to harness the organisation's enthusiasm for Zero Harm and facilitate more efficient sharing of leading practices and engagement of contractors. A key focus of our safety management systems is working closely with our contractors to ensure their safety approach and management systems align with ours. In 2006 contractors represented 64 per cent of our total workforce. During the year we conducted forums in Australia and South America where CEOs of our contract partners joined us to discuss our safety approach and how we can work together to drive improvement. A similar forum is also planned for southern Africa in late 2006.



Barry Formosa
Vice President Safety

During the year we also continued the encouragement and recognition to individuals and sites of the benefits of high Near Miss reporting as a key leading measure for the prevention of injuries and fatalities. As a result there was an unprecedented increase in reporting – almost three times more than the previous financial year. This yielded 1,840 Near Miss Incidents, which are categorised under the FRCPs and provides invaluable free lessons and improvement opportunities. To assist with the effective and efficient sharing of these learnings, Repeat Incident Alerts and Zero Barrier Alerts were circulated regularly throughout the organisation.

A revised BHP Billiton Leadership model, in development for the past 18 months, was finalised at the end of the reporting year. The core of the model is based on eight well established safety leadership dimensions and four leadership styles. The model will provide the opportunity to fully integrate and align what we know is essential for successful safety leadership into:

- Our recruitment processes
- Our leadership development Initiatives, and
- Our measures of safety culture and safety leadership.

A key focus in 2007 will be the integration and rollout of this model across the organisation.

Recognition and reward form an important element of any successful safety program. This year we have introduced the Safety Excellence Awards to recognise overall sites that have excelled in safety. Each CSG President will award a President's Excellence Award and a President's Most Improved Award. This two-tiered approach recognises and encourages those mature sites to continue improving, and those requiring improvement to accelerate their efforts. Recipients are then considered for the CEO's Excellence Award for the Overall Site of Safety Excellence in BHP Billiton and the CEO's Most Improved Award for the site that has demonstrated the most improvement in performance and maturity across the Company. The Presidents Award recipients are listed in the Safety>Our Performance section of this report.

In closing, I would like to recognise the effort and commitment of our people to improve the safety performance and culture of BHP Billiton. We remain confident that the approach and strategies in place are the right ones. Our focus remains on supporting the understanding and execution of these in all of our operations globally.

Barry Formosa
Vice President Safety

Read more:

- [Safety>Our Approach](#)
- [Safety>Our Performance](#)
- [Safety>Case Studies](#)

Safety – Our Approach

The safety of our employees, contractors and the communities in which we operate is an integral part of our business. Our goal is Zero Harm.

To this end, we seek to create a mindset and an environment 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 through our risk-based HSEC Management Standards. Our line managers are accountable for the implementation of these Standards and responsible for ensuring that supporting systems and procedures are in place. We are confident that our Standards and associated systems are the right ones, and have directed our efforts towards the effective and consistent implementation of these across the organisation. We call this Operating Discipline.

Our safety focus areas are:

- Fatal Risk Control Protocols
- Catastrophic risk management
- Visible leadership
- Behavioural/awareness processes
- Leading indicators
- Contractor management
- Near miss reporting.

See the following for details on our approach to safety management:

- [Our Safety Improvement Road Map](#)
- [Fatal Risk Control Protocols](#)
- [Leadership, Behaviour and Awareness](#)
- [Leading Indicators](#)
- [Near Miss and Significant Incident Reporting](#)
- [Safety Excellence Awards](#).

See [Safety>Our Performance](#) for a summary of our safety performance for the reporting period.

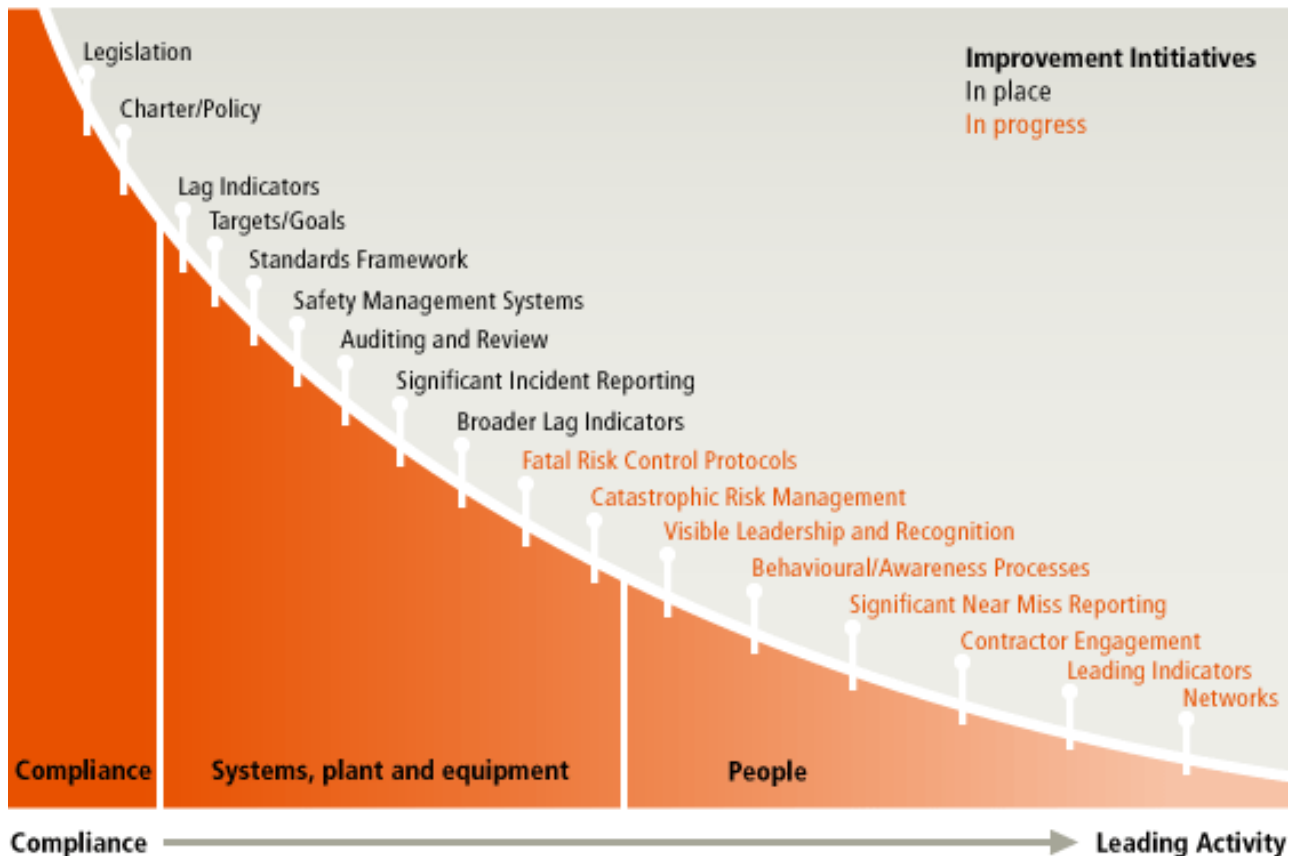
Our Safety Improvement Road Map

Decision-making and thinking for safety in the organisation is directed by '[Our Future State](#)' (PDF 726 Kb), which sets the vision for BHP Billiton as an organisation in which:

- The safety of our people is a value that is not compromised.
- Safety excellence is recognised as good business.
- Leaders at all levels are safety role models.
- Effective safety leadership is a prerequisite for promotion.
- People are aware of the hazards and risks in their workplace and act accordingly.
- Compliance with safety standards and procedures is absolute.
- 'At risk' behaviours are not acceptable and are addressed when observed.
- Effective skills to lead and work safely are developed through ongoing training and mentoring.
- Repeat incidents are evidence of an out of control operation..

The Safety Improvement Road Map (see diagram below) remains 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 IMPROVEMENT ROADMAP



Key learnings for the organisation remain as:

- Low injury frequency rates do not mean low fatality rates – we cannot and should not draw any comfort from low injury rates in terms of our capacity to eliminate fatalities.
- Injury reduction programs alone will not prevent fatalities – a complementary, focused effort is required on fatal risk. This is why we have implemented the Fatal Risk Control Protocols.
- Our fatalities often have similar underlying causes.

- High near miss reporting often correlates with declining injuries or fatalities – our ability to take heed of the signals from near miss events is crucial to our efforts in eliminating fatalities.
- Leadership visibility in the field is vital – our current state of safety maturity relies heavily on leadership energy to deliver improved performance.
- Effective contractor management is essential.
- Hazard identification and risk awareness are fundamental to success.

Fatal Risk Control Protocols

A review of our past fatalities and significant incidents identified a series of key fatal risks to our people – risks that require the development of sound practices to eliminate fatalities and incidents that could, in different circumstances, cause fatalities.

As a result, the [Fatal Risk Control Protocols](#) (FRCPs) (PDF 1,100 Kb) were established in 2003 and revised in 2005.

The Protocols were developed by workgroups comprising individuals from across BHP Billiton with extensive experience in operations. Their goal was to establish minimum performance expectations for managing these risk areas at leading-practice levels. Following the initial release of the Protocols, a series of review workshops were also held across the Company. Identifying the need for an additional Protocol to cover the risks associated with lifting operations was an outcome of these workshops.

The existence of the Protocols does not presume coverage of all risks faced by our operations. The HSEC Management Standards provide the management framework for these other risks.

The Protocols cover the potential for fatal risks arising from activities associated with:

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

Each Protocol has a common format that outlines its reason for inclusion and sets out implementation requirements that cover plant and equipment, procedural and people requirements.

The focus for sites has been on embedding the FRCPs. Initiatives designed to support this include:

- an online assessment and tracking tool
- establishing a dedicated FRCP intranet site and Communities of Practice for each Protocol
- conducting workshops in key regional operating areas involving site and business representatives
- appointing a Global Facilitator for each FRCP
- developing guidelines on effective implementation
- developing an online leading-practice library.

For details on the implementation of the Protocols and the activities of our Global FRCP Facilitators, see [Safety>Our Performance>Fatal Risk Control Protocols](#).

Leadership, Behaviour and Awareness

The essence of our approach is that line management is accountable for the safety culture and performance at our operations.

The [Future State](#) clearly articulates the role of leadership in the organisation and the desired safety culture.

The revised BHP Billiton leadership model is based on eight well-established safety leadership dimensions and four leadership styles. This model provides the opportunity to fully integrate and align what we know about successful safety leadership into:

- our recruitment processes
- our leadership development initiatives
- our measures of safety culture.

HIERARCHY OF SAFETY AUDITS AND OBSERVATIONS



The core of our behavioural and awareness approach is employee engagement through a variety of workplace interactions, audits and observations. The base of the diagram highlights the three critical components of our behavioural awareness approach.

Critical task observations involve observing critical tasks against the standards in place to ensure they are understood, valid, reliable and followed.

Safety observations involve people observing each other to identify good practices, as well as unintentional at-risk behaviours, hazards and situations. The greatest benefit of safety observations is the discussion that takes place following the observation, where workers reinforce the safe activities and identify better ways of controlling the associated hazards.

Safety contacts are everyday discussions and interactions about improving safety in the workplace. They occur at all levels of the organisation.

Leading Indicators

The majority of sites have introduced leading indicators to support the measurement and tracking of their critical safety interventions.

A leading indicator is a metric used to drive and measure activities carried out to prevent and control injury, damage or loss. When measured and monitored effectively, they provide data to enable effective intervention to address or reverse a negative trend before it results in injury, damage or loss.

A guideline document and presentation have been developed to help increase knowledge, create discussion and promote the wider use of leading indicators as a driver of safety improvement across the Company.

Injury statistics or other lagging indicators provide an overall estimate of the progress required to achieve our vision of Zero Harm, but they do not measure the effective implementation of safety programs, proactive action plans and preventive activities in place. If lagging indicators are used as the only index of safety achievement (or failure), they can do more harm than good, as people are not empowered to take control of safety and to develop an effective organisational safety climate. It is important that we use a mix of leading and lagging indicators to measure overall safety effectiveness and performance.

The diagram below provides an indicative breakdown of leading and lagging indicators being promoted at various levels of the organisation. The ratios are illustrative only and can be modified to suit circumstances.



The use of a greater proportion of leading indicators at individual and department levels reinforces personal involvement and improves the perceptions individuals and work teams have about their control and management of injuries. Key to this has been our introduction of near miss reporting. Read more: [Safety>Our Performance>Near Miss and Significant Incident Reporting](#).

Breakdown of Lead and Lag Indicators Being Promoted Across the Company

Examples of Leading Indicators used by BHP Billiton:

- field visits conducted
- observations/audits/inspections conducted versus planned
- face time in field versus planned
- number of safety contacts
- safety communications conducted
- implementation of site safety action plan
- implementation of Fatal Risk Control Protocols
- implementation of action plans resulting from HSEC audit findings
- percentage of Incidents investigated
- number of positive rewards and recognition given
- number of near misses reported

- number of repeat incidents
- percentage of Job Safety Analyses completed for critical activities
- percentage of safe behaviours observed
- percentage of actions implemented from observations
- percentage of significant incidents reviewed and closed out from circulation lists
- percentage of hazards rectified
- ratio of near misses to accidents reported.

Near Miss and Significant Incident Reporting

Our approach to near miss and significant incident reporting was founded following a comprehensive review of our past fatal incidents, from which four key learnings emerged:

- Low injury frequency rates do not mean low fatality rates.
- High near miss reporting often correlates with declining injuries or fatalities.
- Injury reduction programs alone will not prevent fatalities – a complementary, focused effort is required on fatal risk.
- Hazard identification and risk awareness are fundamental to success.

A key improvement is the ability to learn from near miss and significant incidents (a safety incident that had potential for an outcome rated at level 4 or above in the [BHP Billiton Consequence Severity Table](#)) and apply corrective interventions before the same underlying causes manifest as more serious incidents. We encourage the reporting of Near Miss and Significant Incidents as these provide very valuable free lessons.

When a trend of similar incidents, whether internal or external to the Company, is identified and common learning points are evident, a Repeat Significant Incident Alert is compiled. These alerts are distributed broadly across the Company and provide a succinct summary of the events and common learnings. In addition, these alerts contain links to further information and act as a catalyst for safety toolbox talks, contributing to greater safety awareness.

We have also commenced highlighting separately the close call events where key preventive barriers were breached. We call these Zero Barrier Incidents and they represent our most critical learnings. Our ability to take heed of the signals from these near miss events is crucial to our efforts in eliminating injuries and fatalities.

Read more: [Safety>Our Performance>Near Miss and Significant Incident Reporting](#).

Safety Excellence Awards

Recognition and reward form an important element of any successful safety program. This year we have introduced the Safety Excellence Awards, which recognises overall sites that have excelled in safety.

Each CSG President will award a President's Excellence Award and a President's Most Improved Award. This two-tiered approach recognises and encourages mature sites to continue improving and sites requiring improvement to accelerate their efforts. The ten recipients are then considered for the CEO's Most Improved Award, which is awarded to the site that has demonstrated the most improvement in performance and maturity across the Company.

These awards are conducted separately to, but support, the annual Company-wide HSEC Awards. The latter recognise innovation and individual/team effort in HSEC whereas the Safety Excellence Awards focus on overall site safety performance.

Safety – Our Performance

Details on our safety performance during this reporting period can be viewed at:

- [Fatalities](#) – reports on fatal incidents that occurred during the reporting period and identifies strategies to eliminate further fatalities
- [Injury Frequency Rates](#) – reports on two key measures of injuries per million work hours
- [Safety Fines](#) – outlines the safety fines for this period
- [Near Miss and Significant Incident Reporting](#) – explains our indicators and our strategy for promoting, encouraging and recognising high levels of near miss and significant incident reporting as a positive and healthy indicator of our focus on safety
- [Fatal Risk Control Protocols](#) – outlines our progress in implementing and reviewing the protocols across the organisation
- [Contractor Partnering and Engagement](#) – outlines the processes we have in place to ensure that the standards and procedures adopted by our contractors are consistent with our Standards
- [Safety Excellence Awards and Recognition](#) – these awards recognise sites that have either excelled at or made significant improvements in safety performance

Further details on our approach to safety management can be viewed at [Safety>Our Approach](#). For examples of policy in action, refer to our [Safety Case Studies](#).

Fatalities

Despite a significant improvement in our overall safety efforts, we are saddened to report that three fatal incidents occurred during the reporting period at our [controlled operations](#). This is compared to three in the previous period.

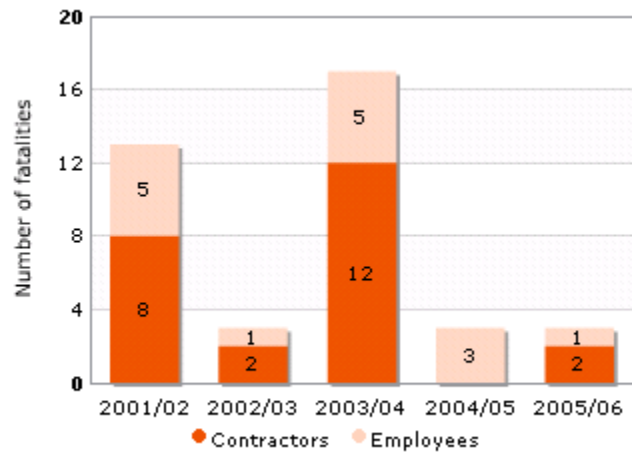
Each of these incidents has been thoroughly investigated, utilising our Incident Cause Analysis Method (ICAM), with lessons learned being shared across the organisation. A summary of fatalities that occurred during controlled operations is shown in the table below.

Fatalities at Our Controlled Operations 2005/06

Site/Customer Sector Group	Date of Incident	Nature of Incident	Learnings
Olympic Dam, Australia, Base Metals	19 July 2005	Fatal injuries were sustained when a drill from an approaching drive face triggered an unplanned detonation at the Olympic Dam underground mine.	Simultaneous operations in close proximity significantly increase the risk profile and must be explicitly managed. Assigning clear roles and responsibilities that include the context and purpose of the role - a link to how others rely on the role for their safety - is critical for safe work.
Leinster Nickel Operation, Australia, Stainless Steel Materials	3 February 2006	The unplanned detonation of a "cannon" during setup to clear blocked orepass 900 metres underground caused fatal injuries to a contract employee	Practices associated with using all explosives are to be fully risk-assessed, documented and audited. Blasting procedures are safety critical and should be included in the Critical Task Observation processes. Methods for transferring best practices between sites are to be improved as cannon procedures vary across sites.
Ingwe Rietspruit Coal Processing Plant, Ingwe, South Africa, Energy Coal	24 June 2006	A contract employee died after the accidental release of coal into the flask in which he was working.	Increased focus is required on the identification of all energy sources including mechanical and stored energy. Communication between the site, contractors and sub-contractors needs to be clear.

Fatalities at Our Controlled Operations

2001/02 to 2005/06



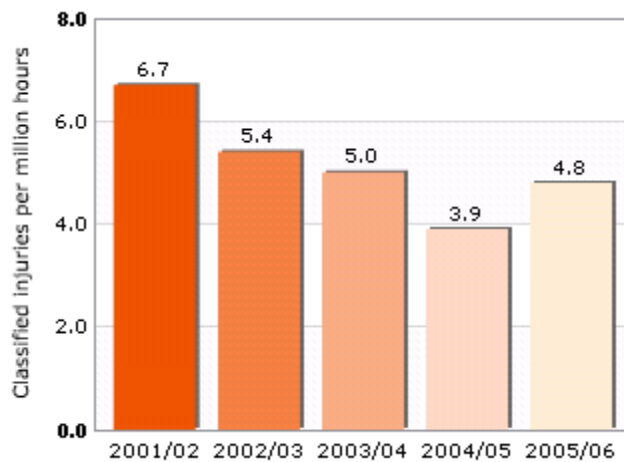
We remain determined to eliminate fatalities from our organisation and will continue to implement the strategies that we have in place, as we are confident that their thorough implementation will support the elimination of fatalities.

Injury Frequency Rates

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 was received. The Classified Injury Frequency Rate (CIFR) is the number of classified injuries per million work hours. In the current reporting year, the CIFR increased from 3.9 to 4.8, in part due to a range of acquisitions and divestments made during 2005/06. The Duration Rate, which measures the impact of injuries on people by the number of days people are away from their unrestricted duties per injury, decreased by 28 per cent.

Classified Injury Frequency Rate

2001/02 to 2005/06

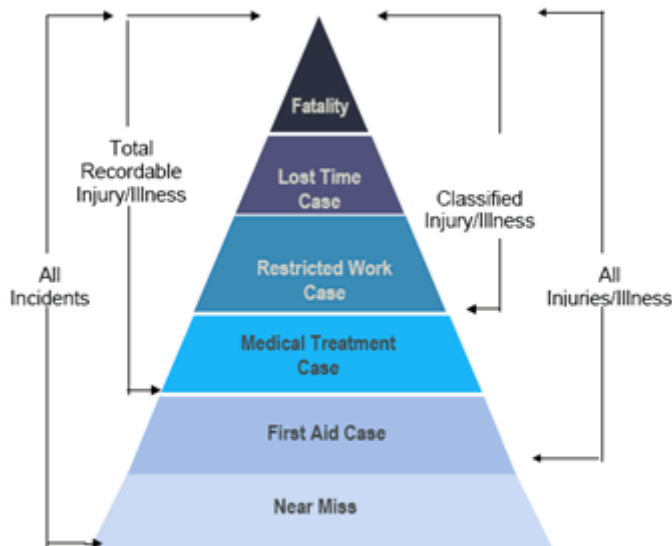


Total Recordable Injury Frequency Rate

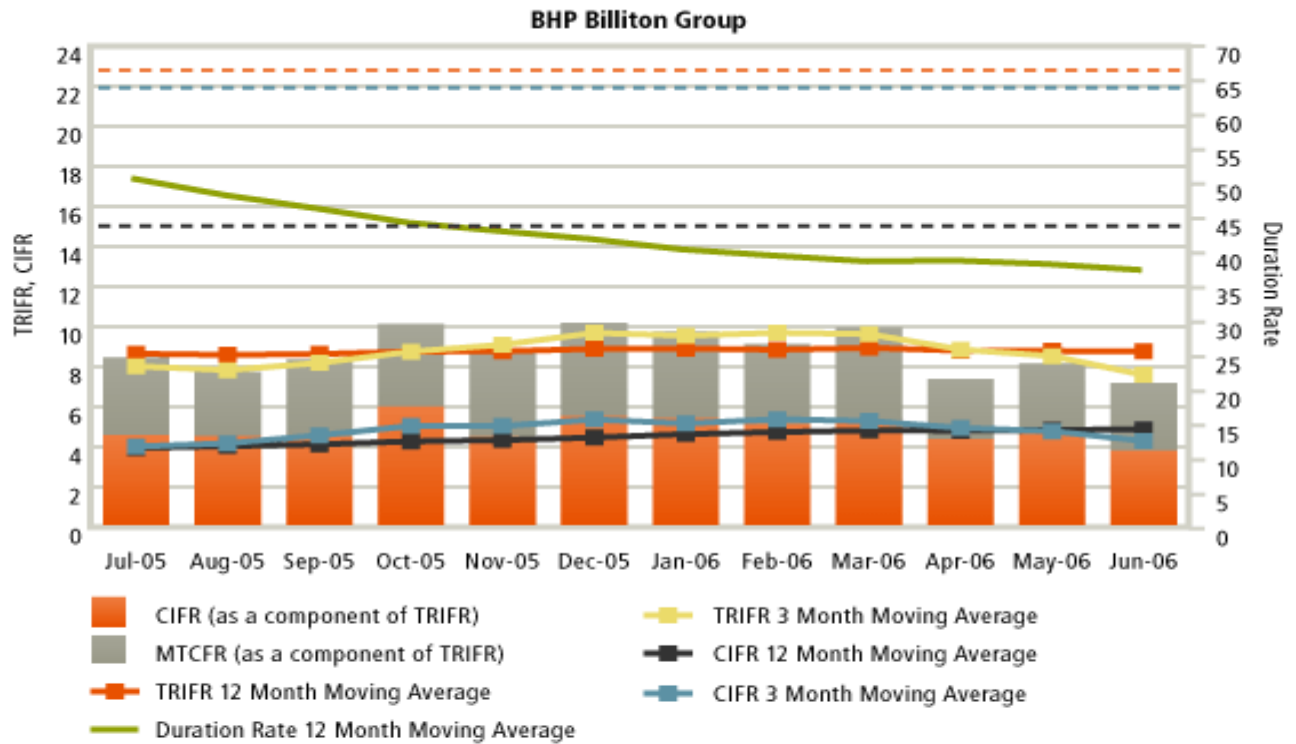
In July 2005, we started monitoring the Total Recordable Injury Frequency Rate (TRIFR) as the means to track reduction of injuries in our Company.

The Total Recordable Injury Frequency Rate represents the total number of fatalities and injuries resulting in lost time, restricted work duties or medical-treatment per million work hours.

Our previous measure, Classified Injury Frequency Rate, did not include medical treatment cases. The move to measurement of the TRIFR aims to improve the visibility of all workplace incidents. The diagram below defines the difference between the two metrics:



BHP Billiton Group monthly TRIFR and CIFR performance



In the current reporting year, the Total Recordable Injury Frequency rate (TRIFR) was 8.7. In the diagram above we have included indicative performance benchmarks relevant to our industry. However, we take no comfort from our relatively good performance and our goal remains Zero Harm.

Safety Fines

This year, we did not meet our goal of zero safety fines or prosecutions. The table below outlines the safety fines for this period. Note: Fines reported may relate to incidents that occurred in previous years.

Safety Fines 2005/06

Site	Customer Sector Group	Description	Fine (US\$)
Pinto Valley Operations, USA	Base Metals	3/1/2006 - Mine Safety and Health Administration (MSHA) citation/fine - Four one-gallon containers of gear oil not marked with the contents were found at the Miami Unit SX. The containers were removed from the site and replaced with a labeled container.	60
Escondida, Chile	Base Metals	Fine issued for overweight vehicle.	91
Boodarie Iron, Australia	Carbon Steel Materials - Iron Ore	BHP Billiton Direct Reduced Iron Pty Ltd ("BHPBDRI") was charged with three contraventions of section 9(1) of the <i>Western Australian Mines Safety and Inspection Act 1994</i> (duty to provide a safe workplace) in relation to a fatality and two serious injuries that occurred during routine maintenance at the Hot Briquetted Iron Plant in May 2004. At the hearing on 13 June 2006 BHPBDRI entered a guilty plea, with mitigating circumstances, and was fined A\$200,000 and ordered to pay the Prosecution's legal costs of A\$56,000. The fine and costs have been paid.	148,789
Navajo Coal Company, USA	Energy Coal	A total of 42 safety fines occurred during the reporting period. One (1) fine exceeded US\$1,000.	9,446
San Juan Coal Company, USA	Energy Coal	A total of 49 safety fines occurred during the reporting period. There were no fines exceeding US\$1,000.	3,652
Wallarah Colliery, Australia	Energy Coal	Fatal accident at Wallarah Colliery (Crangan Bay, NSW) 6 July 1998. This fine was received in the 2005 reporting period but was not reported last year as it was being held in trust pending appeal. The fine became payable in the 2006 reporting period.	152,372

Total 314,410

Near Miss and Significant Incident Reporting

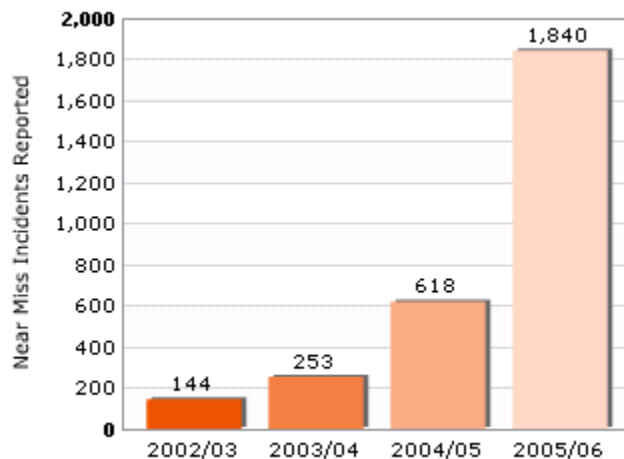
A key platform of our improvement strategy is to promote, encourage and recognise high levels of significant and near miss incident reporting as a positive and healthy indicator of:

- shortcomings in the application of our systems and procedures
- high safety awareness of potential hazards and risks in the workplace
- invaluable 'free lessons' to assist in the prevention of fatalities
- openness, trust and transparency of reporting
- increased safety maturity.

This year we had a threefold increase in the number of near misses reported, providing us with our most valuable information for improvement. These near misses are tracked and reported against the Fatal Risk Control Protocol categories. Analysis indicates that the key exposures and areas for improvement are surface mobile equipment, isolation and working at heights.

Near Miss Reporting

2002/03 to 2005/06

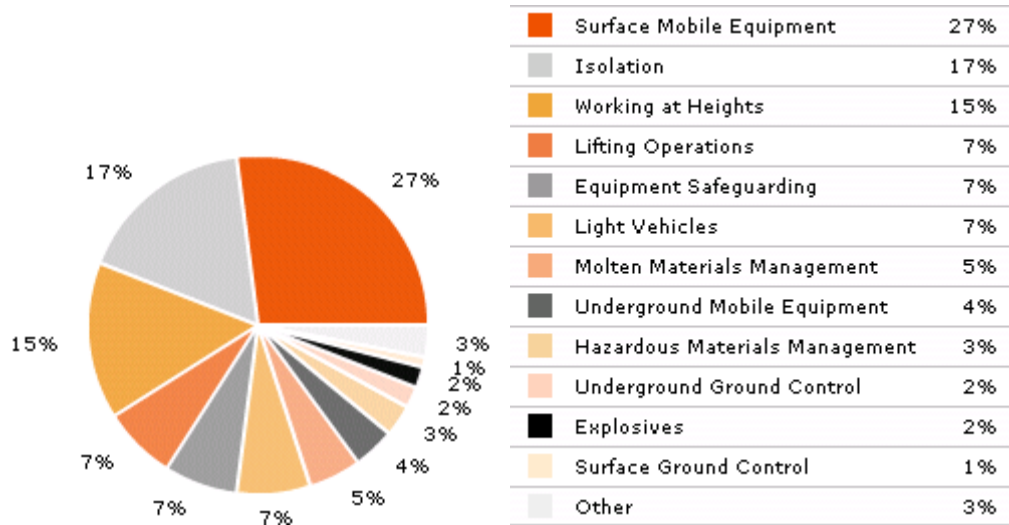


Where analysis indicates a high frequency of repeat events, we issue a Repeat Incident Alert. This Alert highlights common issues and learnings and is directed to both management and individuals involved in the activities.

This year we also commenced highlighting separately the close call events where key preventative barriers were breached. We call these Zero Barrier Incidents and they represent our most critical lessons. Our ability to take heed of the signals from these near miss incidents is crucial to our efforts in eliminating injuries and fatalities.

Near Misses and Significant Safety Incidents Reported by Fatal Risk Control Protocol Type

2005/06



Fatal Risk Control Protocols

The Fatal Risk Control Protocols (FRCPs) were developed in 2003 with the goal of establishing clear expectations for managing identified risk areas at leading-practice level. In 2005 Global FRCP Facilitators were appointed for each of the Protocols to act as a subject matter expert in assisting sites with meeting and understanding the Protocol requirements.

In the current reporting year our focus has been on ensuring continued compliance and supporting the former WMC assets in the implementation of the Protocols. Facilitators have analysed shortfalls in the implementation of the Protocols that contributed to significant incidents across the Company and presented this information to sites and management. Guidelines for the effective implementation of each Protocol and an online leading practice library have been developed. To further share knowledge, we continued our support of a dedicated FRCP intranet site and Community of Practice.

Contractor Partnering and Engagement

A key focus of our safety management systems is working closely with our contractors to ensure their safety approach and management systems align with ours. In 2005/06, contractors represented 64 per cent of our total workforce.

During the reporting year we conducted forums in Australia and South America where CEOs of our contract partners joined us to discuss our safety approach and how we can work together to drive improvement. A similar forum is also planned for southern Africa in late 2006. To complement this, we also conducted Contractor Safety Training Seminars in Australia, South America and southern Africa that targeted both Company and contractor representatives from our operations. As a result, the Contractor Safety Management Course was expanded to include health and environment. Ongoing assistance with safety training was also provided by our three regional training leaders appointed this year.

Safety Excellence Awards and Recognition

The 2006 financial year marked the inaugural year of BHP Billiton's Safety Excellence Awards. The awards recognise sites that have either excelled or made significant improvements in safety performance measured against a mixture of lead and lag indicators aligned to elements of Our Safety Future State and overall safety strategy as listed below.

Lag indicators

- Zero fatalities
- Low Total Recordable Injury Frequency Rate (TRIFR) and/or outstanding improvement trend
- Low duration or severity rate and/or outstanding improvement trend.

Lead indicators

- Effective implementation of the leadership aspects of Our Safety Future State
- Mature near miss incident action tracking and close out performance
- Successful implementation of behaviour-based safety process resulting in an enhanced safety culture
- Demonstrated use of adopting a successful idea, practice or initiative from another BHP Billiton site

President's Awards are issued within each Customer Sector Group (CSG) or business unit in the following two categories:

- President's Excellence Award (Best overall site in CSG or business unit)
- President's Most Improved Award (Most improved site in CSG or business unit)

In recognition of their excellence in safety in 2006, the President's Excellence Awards were presented to the following:

- Aluminium: Mozal (Mozambique)
- Base Metals: Escondida (Chile)
- Energy Coal: Navajo Mine (USA)
- Metallurgical Coal: Hay Point Services (Australia)
- Petroleum: Pakistan Asset (Pakistan)
- Project Development Services: Spence Copper Project (Chile)
- Stainless Steel Materials: Cerro Matoso (Colombia)

In recognition of their safety improvement in 2006 the President's Most Improved Awards were presented to the following:

- Base Metals: Olympic Dam (Australia)
- Energy Coal: Mt Arthur Coal (Australia)
- Iron Ore: Whaleback (Australia)
- Manganese: GEMCO (Australia)
- Metallurgical Coal: Peak Downs Mine (Australia)
- Non-Ferrous Materials: South West Copper Closure/Operational Projects (USA)
- Petroleum: Trinidad and Tobago Asset (Trinidad and Tobago)
- Stainless Steel Materials: Yabulu Refinery (Australia).

These sites and projects will now go forward to be considered for the BHP Billiton CEO's Excellence Award and the BHP Billiton CEO's Most Improved Award which will be announced at the HSEC Awards presentation dinner on 12 September 2006.

Safety Case Studies

The following case studies are examples of safety issues, initiatives, projects and programs across the Group that highlight some of the sustainability opportunities and challenges faced by our operations. Case studies are also presented for the areas of [health](#), [environment](#), [community](#) and [socio-economic](#).

[View](#) all case studies.

Read more:

Road Safety	Mt Arthur Coal (Australia), Minera Spence (Chile) and Mozal (Mozambique) demonstrate programs to manage risks associated with vehicles and mobile equipment.
Safety Leadership	The need to address at-risk behaviours and increase safety awareness is essential if we are to achieve Zero Harm. Minera Spence (Chile) employees SPOT the safety difference, and Mozal (Mozambique) achieves a safety breakthrough.
Confined Space Management	Our Petroleum business has developed an innovative tank cleaning system that reduces the time people spend working in confined spaces.
Learning from Fatalities	Escondida (Chile) and Mozal (Mozambique) turn the hard lessons of fatalities into substantial improvements in safety.
Heavy Equipment	Our mining operations rely on the use of heavy equipment. Illawarra Coal (Australia) has set a new standard with the design for operator's cabin in load-haul-dump equipment.
Aviation Safety	With our global spread of operations, we make extensive use of aircraft in a wide range of activities. Company-wide Aviation Standards and Guidelines address the risks associated with flying.
Safety in the Supply Chain	Our global Caterpillar alliance, deepwater drilling in the US Gulf of Mexico and integrating local contractors into site-based HSEC management systems demonstrate how we work with contractors to ensure their safety.

Safety Case Studies

Safety – Road Safety

Case Study Contributor:	Minera Spence
BHP Billiton Interest:	100%
Location:	Region II, Northern Chile
Customer Sector Group:	Base Metals
Commodity:	Copper Cathodes
Case Study Status:	New for 2006

Safety Measures in Force at Minera Spence Help Avoid Potential Fatalities When Vehicle Overturns

The Company's [Fatal Risk Control Protocols](#) (FRCPs) require the implementation of sound practices to avoid accidents and help us achieve Zero Harm. One of the ten FRCPs sets requirements for light vehicles. An incident at Minera Spence demonstrates the potential of the Protocols to avoid fatalities. A vehicle carrying four people skidded and overturned. The vehicle was badly damaged but nobody was injured. As required by the Protocols, the vehicle was fitted with rollover bars and the occupants were wearing seatbelts. These measures certainly helped save the individuals' lives.

Preparation for the journey

A driver of a Spence transport contractor was requested to travel to Calama, 50 kilometres east of the mine, to return equipment to a supplier and buy fuel for site equipment. He would be accompanied by three employees who had dealings in the city.

The vehicle selected was a late-model pick-up fitted with safety equipment in line with the FRCP for light vehicles, including double airbags, seatbelts and rollover bars. In accordance with standards and procedures, the vehicle was checked and the driver made arrangements for the journey. He attended a safety meeting to discuss risks to be taken into account while driving, obtained the necessary authorisation for his departure and with his three passengers set off on the journey.

The route taken through the desert was on an asphalted public highway with long, straight stretches. The mine is located at 1,700 metres above sea level and the road rises to Calama, which is located at 2,300 metres. The average temperature in the region is around 30°C.

Incident details

With the tedium of the journey and the warm weather, two of the passengers were dozing. About 20 kilometres from Calama, the driver also fell asleep and lost control of the vehicle, which veered across the highway. The passenger who was not dozing awakened the driver, who reacted instantly by swerving back onto the highway and slamming on the brakes. This caused the vehicle to overturn several times, eventually coming to rest about four metres off the roadway, sitting badly damaged in the dirt and facing the wrong way. The four occupants escaped unhurt.

It is frightening to consider the other possible consequences of this incident if the requirements of the Company's Fatal Risk Control Protocols for light vehicles had not been observed.



The vehicle overturned but there was no deformation of the interior and exterior rollover bars



View of the interior rollover bar showing no deformation



View of the external rollover bar showing no deformation

Safety Case Studies

Safety – Road Safety

Case Study Contributor:	Mozal Aluminium Smelter
BHP Billiton Interest:	47%
Location:	Maputo Province, Southern Mozambique
Customer Sector Group:	Aluminium
Commodity:	Aluminium
Case Study Status:	New for 2006

Mozal Safety Initiatives and Programs Reduce Road Transport Risks

The Mozal aluminium operation is located approximately 17 kilometres west of Maputo, the capital of Mozambique. Mozal's raw materials and finished products are transported on public roads through densely populated suburban areas. Unsafe driving habits and low levels of traffic law enforcement contribute to a generally poor safety culture within the community.



36-tonne interlink alumina trailer

Road safety initiatives

Our transport vehicles travel between the smelter and harbour terminal on a 24-hour basis. Drivers contend with numerous risks, many of which are beyond their direct control and include pedestrians, animals, high traffic densities, poorly maintained road infrastructure and the unsafe driving habits of many road users.

The vehicle fleet consists of 17 truck haulers and trailers that together travel an average of 148,000 kilometres per month. Despite the significant road transport risks, the fleet completed over 800,000 incident-free kilometres in the six-month period from 1 September 2005 to 28 February 2006. In addition, zero incidents were recorded over the extremely high-risk festive season in December 2005; an outstanding performance when compared to the last week of 2004, when two raw materials vehicles overturned.

This achievement is the outcome of numerous road safety initiatives and programs implemented under the Company's guidance.

Strategic partnership with specialist supplier

In February 2005, we terminated a raw materials transport agreement due to unacceptable safety performance by the supplier and entered into a long-term agreement with a specialist logistics company, Strang Rennies Mozambique Consortium (SRMC), which has an excellent record of safety performance and is an ISO9001 and OHSAS 18000 accredited company.

Andrew Strang, Director of SRMC, comments that, 'World-leading safety performance goes to the heart of our business. Our client rightly expects nothing less. Across our group we have continuous programs to embed a culture of safety excellence and to minimise risks through engineered solutions. We are very proud of the excellent safety performance thus far achieved at SRMC. The success of this venture with Mozal is the result of the ongoing commitment of our people and the mutual co-operation between both companies to achieve the common strategic objective of Zero Harm'.

Behavioural safety observations

Both SRMC and Mozal employees perform frequent behavioural and job safety observations. Rostered shifts that are considered high risk, such as weekend night shifts and 'red flag' nightshifts after pay days, are specifically targeted for in-depth behavioural safety audits by SRMC management.

Outcomes

The range of road safety initiatives that we have implemented in partnership with SRMC continue to deliver excellent results. Further initiatives that are under development or investigation include automated vehicle management and a tyre management system. Our commitment to excellence and continuous improvement in all aspects of the road transport operation is fundamental to the achievement of Zero Harm, not only to our employees but to the communities within which we operate.



Noise-reducing wall

Safety Case Studies

Safety – Road Safety

Case Study Contributor:	Hunter Valley Energy Coal (Mount Arthur Coal Mine)
BHP Billiton Interest:	100%
Location:	Hunter Valley, New South Wales, Australia
Customer Sector Group:	Energy Coal
Commodity:	Steaming Coal
Case Study Status:	New for 2006

Improving The Visibility of Mining Equipment and Vehicles at Mount Arthur Coal

Our Mount Arthur Coal operation and the diversified technology company 3M have combined resources to increase the visibility of equipment, vehicles and signs at the mine through a cooperative business improvement project.

Mount Arthur Coal produces energy coal for local power stations as well as exporting coal around the globe. 3M provides products for mining, refining and smelting applications. 3M specialisations cover vehicle, roadway and worker visibility, filtration, occupational health, safety and environmental audits, maintenance, repair and electrical solutions.

Both companies provided project teams to look into ways of improving the visibility of equipment and vehicles on site after it was found that, in the majority of near miss incidents involving equipment and vehicles, people reported not seeing the other vehicle. Twenty-two incidents were analysed, half of which occurred in daylight and half after dark.

A project group from 3M visited the mine site and surveyed truck drivers from all the crews involved in incidents, in both daylight and darkness. They asked the drivers what they thought about the visibility of vehicles and signs on site. Following the survey, trial signs were placed on one road and vehicle markings were applied to selected vehicles. A variety of different materials were trialled to find the most suitable product for continued use.

The trial ran for several weeks, after which the 3M representatives returned to the site to interview truck drivers from all crews, again in both daylight and darkness. The same scoring system was applied, and the survey results were compared to the initial score. The visibility score, which was initially 3.7 out of a possible score of 5, increased to 4.65.

The new signage and vehicle markings have been adopted as the site standard and are in the process of being fitted to all vehicles and equipment on the mine site.

Benefits for Mount Arthur Coal

- Enhanced operator focus on road safety
- Vehicle visibility solution developed
- Signage solution developed
- Increased knowledge and application of reflective materials.

Benefits for 3M

- Significant increase in understanding of Mount Arthur Coal needs
- Enhanced relationship with Mount Arthur Coal



Light vehicle with new reflective markings

- Potential for significant material sales
- Opportunities for replicating learnings at other sites
- Identified opportunities for other 3M products and services.

Mount Arthur Coal and 3M have since received numerous enquiries about the project from BHP Billiton sites and other companies, and many have shown an interest in applying similar standards for the visibility of equipment, vehicles and signs.

Safety Case Studies

Safety – Safety Leadership

Case Study Contributor:	Mozal Aluminium Smelter
BHP Billiton Interest:	47%
Location:	Maputo Province, Southern Mozambique
Customer Sector Group:	Aluminium
Commodity:	Aluminium
Case Study Status:	New for 2006

Mozal Project Enhances Safety by Separating Pedestrians and Mobile Equipment

Effective separation of pedestrians and surface mobile equipment is essential in high-risk areas. Noise, light and other environmental factors sometimes limit a vehicle operator's ability to hear and see pedestrians and the pedestrian's ability to hear and see the surface mobile equipment.

Mozal has launched a safety project to reduce the risk of pedestrian and mobile equipment interaction at the plant to as low as practically possible.



Protected walkway constructed as a safety measure

The burning platform

An analysis conducted in 2004 by the International Aluminium Institute (IAI) studied the most severe accidents (fatalities) to have occurred in the primary aluminium industry since 1997. A main conclusion from this analysis was that mobile equipment was involved in 35 per cent of the accidents.

Among the significant safety incidents involving the interaction of people and surface mobile equipment was a tragic fatal incident at Mozal on 29 June 2005. An employee of a Mozal contractor sustained fatal injuries after being struck by a seven-tonne mobile crane at the gas treatment centre. Based on the recommendations of the investigation, a review of Mozal's traffic management plan was undertaken. The review highlighted that more could be done to ensure greater separation between mobile equipment and pedestrians.

The project implementation

A project manager and project leader were assigned to the project that was aimed at minimising pedestrian and mobile equipment interaction at Mozal. Using the BHP Billiton hierarchy of controls, which includes engineering controls, the project scope included, but was not limited to:

- traffic audit
- pedestrian walkways (interior and exterior), including new paved pathways
- pedestrian crosswalks (interior and exterior)
- signage
- inward opening gates
- updated traffic management plan, including parking of vehicles.

The process began with a benchmarking exercise within BHP Billiton. The Business Excellence helpdesk and relevant Communities of Practice were extensively used and provided a lot of information. A plant-wide traffic assessment was conducted to establish a baseline and to identify potential traffic conflict situations that might affect traffic as well as possible conflicts between mobile equipment and between mobile equipment and pedestrians.

Based on the initial assessment and information received from various sites around the world, the project team defined a standard for the separation of vehicles and people and defined generic separation items for site-wide deployment. The following gaps were also identified:

- Uncertainty regarding the ability of assessment process to identify all areas needing mobile equipment/pedestrian segregation jeopardised the implementation deadline.
- Inadequate involvement by area owners or representatives.

To address these gaps, all stakeholders and interested parties were invited to comment on the proposals and to contribute suggestions to improve the level of compliance. Senior management gave high-profile support to the initiative.

Risk assessments were conducted with area owners to assess the interaction of generic separation items in each area across the plant.

To ensure rapid and effective implementation of separation initiatives, procurement time had to be minimised. To achieve this, the team identified generic items with pre-agreed rates and pre-agreed contractors, ensuring that the implementation team simply had to measure and place orders as and when required. The construction phase then began with the installation of walkways, barrier swing gates, pedestrian doors, boom gates, pedestrian crossings and platforms.

The lessons learnt

Lessons learnt from this initiative include the following:

- Effective separation of pedestrians and mobile equipment is essential in high risk areas.
- Interaction between people and mobile equipment should be minimised, effectively managed and controlled.
- Whenever possible, physical barricading should separate pedestrians and mobile equipment, using designated walkways.
- Safety breakthroughs are only possible with full management commitment.

The project is currently 95 per cent completed. There is a high level of adherence to the new walkways by the personnel on site, and practices and lessons learnt are being shared with other sites. Across BHP Billiton, the project is recognised as a leading safety practice.



Pedestrian/mobile equipment interaction before the safety project.

After the safety project.

Safety Case Studies

Safety – Safety Leadership

Case Study Contributor:	Minera Spence
BHP Billiton Interest:	100%
Location:	Region II, Northern Chile
Customer Sector Group:	Base Metals
Commodity:	Copper Cathodes
Case Study Status:	New for 2006

Behavioural Safety Program at Minera Spence

Minera Spence has implemented a Behavioural Safety Program known as SPOT, which reflects the program's principle of using observations as the basis for determining behavioural changes required for the improvement of safety standards.

The program is conducted by employees who volunteer to act as observers. With their co-workers' consent, they observe them as they undertake their roles and record both positive actions and areas that require improvement. Actions are then agreed for the correction of any unsafe behaviours which are detected.

All operational areas and contractor companies participate in the program, each having a SPOT team, a program administration structure and regular meetings to discuss the findings and required corrective actions. Following commencement of the program, 96 per cent of all observed behaviours are classified as safe behaviours.



Observers interacting with other employees

Development and implementation of the SPOT program

The program guidelines, behavioural observation processes and software specially designed for the processing of the data were developed at Spence over a period of three months. The observer training materials and the support items for the observation process were then produced, observers were recruited, and an information campaign was conducted throughout the plant.

Each SPOT team comprises a leader (or champion) and a group of volunteer observers who are provided with training on the process of visual determination of behaviour. Each observer typically undertakes the role for a period of three months. They follow the program guidelines that detail eight groups of behaviours. During an observation, the observer notes whether these behaviours are being carried out safely or unsafely.

SPOT team members are dressed in distinctive clothing and carry handouts to share with the workers being observed. To carry out an observation, a team member approaches a colleague and asks permission to observe them for five to ten minutes while they perform their task. The observer then categorises each action as being safe or unsafe. An action is considered unsafe when there is potential for a health, safety or environmental incident to arise.

The findings are then discussed. The worker being observed is congratulated for safe behaviours, and those behaviours considered unsafe are analysed and corrective actions jointly determined and agreed; the agreement being sealed with a handshake. Wherever possible, the observer and the worker take immediate corrective action. If corrective action needs to be taken by the Company, an action plan is developed and presented at the weekly SPOT meeting, which is attended by representatives from all the operational areas and contractor companies, including SPOT team members, supervisors, contract administrators, HSEC personnel and employees. Follow-up on outstanding corrective action also takes place at these weekly meetings.

Reporting and addressing issues and opportunities

Each observer carries out a minimum of two observations a day, at the end of which they deliver to the team leader a report that includes their name but does not identify the observed workers. The reports collectively provide a range of information, such as the number of people observed, specific safe and unsafe behaviours, barriers to safe behaviour, situations that encourage unsafe behaviour, body parts most exposed to potential injury and corrective actions agreed.

Line management collects the data, which is consolidated in a central database. The information is processed and reports are generated. These are presented at the weekly SPOT meeting. Employee suggestions on issues and areas of improvement are encouraged, and quarterly awards are presented for beneficial observations, safety improvements by work teams, best practice initiatives and commitment to Zero Harm.

A quarterly meeting, led by Spence's vice president and general manager, assesses the general progress of the program. Actions, initiatives and recommendations are reviewed and awards are issued for management performance.

Benefits of the program

The SPOT program directly involves all employees in identifying risky and unsafe behaviours and practices and in determining immediate actions to correct them before the occurrence of an incident. It is designed to encourage willing cooperation and instil confidence that the sharing of experiences and opinions will result in best practice, for the benefit of the whole workforce. At Minera Spence, these benefits are being realised.



SPOT observer team.

Supervisors, employees and observers at a SPOT award function.

Safety Case Studies

Safety – Confined Space Management

Case Study Contributor:	Worldwide Drilling Group
BHP Billiton Interest:	Resource Team
Location:	Houston, Texas, USA
Customer Sector Group:	Petroleum
Commodity:	Oil
Case Study Status:	New for 2006

Partnering with Contractor to Develop and Implement an Innovative Tank Cleaning System

In our Petroleum business, supply vessels transport drilling fluids to and from our offshore operations in internal tanks. The cleaning of these tanks often requires entry to confined spaces and can be hazardous, time-consuming and wasteful of water. The problems have been escalated by the expansion of our activities into the deep-water Gulf of Mexico, which has resulted in the introduction of bigger supply vessels with high-capacity tanks.

An innovative solution has been developed at our shore base in Fourchon, Louisiana, USA, resulting in a win-win situation where risks to personnel safety are significantly reduced. There are also environmental benefits and major savings in time and costs. It is estimated that, annually, there will be around 72,000 fewer confined space entry (CSE) work hours, in total nearly 100,000 work-hours will be saved, and nearly 149 ML less of waste wash-water will be generated.



Using high-pressure hydraulic jets perform significantly reduces potential safety issues

The problems with conventional tank cleaning

During CSE, personnel can potentially be exposed to explosive gases, low oxygen levels, hazards from dropped objects, slips, trips and falls. In conventional tank cleaning methods, individuals are constantly in confined spaces performing labour-intensive work to clean and prepare the tanks for the next job.

When drilling fluids are being transported in internal tanks, the solids in the fluids typically settle and can dry and harden to the consistency of concrete. An accumulation of five to seven centimetres on the interior walls and up to a metre on the floors of these tanks is often possible.

The conventional cleaning process requires several personnel inside the tanks using fire hoses or pressure washers, scrub brushes, scrapers, pick-axes and/or shovels to loosen this accumulation. This has been, and continues to be, a dirty, difficult and potentially dangerous operation for our industry. Additionally, it is a very costly process as huge volumes of waste wash-water are generated (requiring additional transportation and disposal fees).



Typical accumulation on the bottom of tanks

On average, 96 work hours of CSE are required to clean the liquid mud tanks on our vessels. Where procedures are not strictly adhered to, the conventional industry method of tank cleaning requiring personnel to manually perform tank-cleaning operations exposes our personnel to potential health hazards including:

- drilling fluid chemicals and wash fluid splashing on the operator's face and body
- handling high-pressure hoses (60 psi) while trying to maintain footing on a very slippery and uneven floor
- negotiating trip hazards
- breathing vapours that have been atomised in the air during washing operations
- heat exhaustion
- fatigue.



Typical accumulation on the bottom of tanks.

Task	Time	CSE time
Rig-up to clean tank	0.5 hours	0 hours
Enter tank (4-man) to clean	24 hours	96 hours (24 x 4)
Rig-down	0.5 hours	0 hours
Total confined space entry time		96 work hours

The high risks associated with entering a confined space are compounded by the intense manual labour being performed in the tanks.

The innovative solution

Given the potential risks associated with this marine operation, the Company partnered with Rig-Chem Services, a manufacturer of specialty oilfield chemicals, to develop a tank cleaning system that can greatly minimise the amount of time workers are spending in confined spaces.

A reduction in CSE was accomplished by replacing personnel with mechanical devices that use hydraulic jets to perform the cleaning operation. There are five components to the tank cleaning system:

- Chemistry:
 - Proprietary surfactant package (an additive that reduces the wash-water's surface tension and increases its spreading and wetting properties)
- Wash-water recycling (around 127,000 litres per minute):
 - Control centre
 - Primary/secondary solids separation
- Pressure pumps (supply)
- Slop pumps (return)
- Stationary tank cleaning machines:
 - Quad pods with magnetic feet
 - High-pressure hydraulic jets:
 - 360-degree jets for full tank coverage
 - 180-degree jets down to concentrate on the tank bottoms.



High-pressure hydraulic jets at work

After setting up the machines, personnel exit the tank and high-pressure hydraulic jets do the work. An integrated wash-water recycling system practically eliminates the requirement to send waste wash-water for disposal. The conventional tank cleaning process required an average 190,000 litres of wash-water per tank, which had to be collected and disposed of. The new method starts with around 47,000 litres of wash-water and is capable of recycling wash-water at a rate of more than 127,000 litres per minute.



Our new tank cleaning method requires 5.5 hours per tank and 3 CSE work hours per tank.

Task	Time	CSE time
Personnel enter tank (2 men) to rig-up equipment	1 hour	2 hours (1 x 2)
Turn on cleaning system to begin cleaning process	2.5 hours	0 hours
Personnel enter tank (1 man) to rig-down cleaning equipment	0.5 hours	0.5 hours
Clean sump (1-man)	0.5 hours	0.5 hours
Total confined space entry time		3 work hours

Note: The work performed within the confined space is now minimised and the additional exposure is now a much lower risk task.

Achievement

The innovative development and implementation of this tank cleaning process has drastically reduced CSE work-hours, made the work being performed a much lower risk task, reduced the overall work hours and reduced the amount of waste generated, all without sacrificing operational efficiency. In fact, with this process improvement, overall job efficiency has increased by over 70 per cent.

An individual is only capable of handling a hose that puts out 60 psi while washing. The cleaning system is capable of washing at a pressure of 200 psi or greater. This higher pressure allows for cleaning at a faster rate and the machines are not susceptible to any of the hazards listed above.

To date, 40 tanks have been cleaned utilising the tank cleaning system and realising the following achievements:

- around 3,700 fewer CSE work hours
- the same 47,000 litres of wash-water reused through the cleaning process
- around 5,000 fewer total work hours.

Yearly projection:

On average 15 tanks are cleaned weekly, equating to 780 tanks cleaned annually. Therefore the following results should be achieved each year:

- around 72,000 fewer CSE work-hours
- nearly 149 ML less of waste wash-water generated
- nearly 100,000 fewer work-hours spent cleaning tanks
- up to US\$300,000 estimated annualised savings.

This represents a significant reduction in potential risk to our personnel. Paul Hebert, Manager with Rig-Chem Services, notes, 'This result or achievement was only accomplished through BHP Billiton's commitment to find a better solution to satisfy their tank cleaning needs. Extensive resources were allocated to the project including BHP Billiton personnel; boat time for experimentation; drilling fluid personnel to try and minimise sediment; maintenance cleaning program; and solids control experts, chemical experts and supply vessel personnel. The commitment and determination was steadfast!'

Adaptability

The tank cleaning system has the potential to be effective on approximately 90 per cent of the Petroleum business's existing supply vessel fleet and could easily be adapted for other operators.

Additionally, a modified version of the tank cleaning system is being evaluated for the cleaning of drilling rig mud pits (liquid mud tanks). The system, while not completely perfected to clean the varying sizes and shapes of mud pits that currently exist throughout the large and diversified drilling fleet, has been used to clean the mud pits on a drill ship.

This test showed that the system can be effective within drilling operations to achieve similar results to those realised within the cleaning of supply vessel liquid mud tanks.

Following the success of the tank cleaning process, the team now has the goal of totally eliminating the need for personnel to enter confined spaces during tank cleaning operations.

Safety Case Studies

Safety – Learning From Fatalities

Case Study Contributor:	Minera Escondida
BHP Billiton Interest:	57.5%
Location:	Region II, Northern Chile
Customer Sector Group:	Base Metals
Commodities:	Copper Concentrates and Cathodes
Case Study Status:	New for 2006

Minera Escondida Initiative Turns the Hard Lessons Of Two Fatalities into Substantial Improvements in Commercial Diving Safety

Minera Escondida operates a mechanised wharf in the port of Coloso, with maritime and port installations that require regular underwater maintenance activities to be carried out, along with diving work required by other areas of the Company. In June 2004, two commercial divers from our contractor company, Sermar Ltda, were tragically killed while carrying out underwater work at the port.

Following the incident, we initiated a safety program aimed at empowering the contractor and its employees to take responsibility for safe work practices. The program involves all people who carry out professional underwater activities at our facilities and covers all aspects of diving work that have an impact on people's safety, equipment and the environment.



All divers undergo training in best practice procedures

A four-step safety program

International commercial diving experts were commissioned to identify and assess all contractor companies engaged in underwater work in Chile. Following the assessment, they recommended continuing the relationship with Sermar, due to their previous HSEC record, the commitment of their management and employees, and their operational experience of more than 20 years.

Implementation of the safety program then commenced, based on four steps.

Human resources– Sermar's diving team received training in industry best practice from a commercial diving school recognised by the Association of Diving Contractors International (ADCI). All members of the team have obtained international certificates.

A senior underwater operations engineer has been appointed to control our diving requirements, liaising with the Port Superintendent as the single point of accountability for all diving activities in Coloso.

Infrastructure and equipment – With advice from international diving experts, only the most modern equipment is to be used to ensure that the highest safety standards are observed.

Management system– Sermar has achieved certification to ISO9001 (quality), OHSAS18001 (health and safety) and ISO14001 (Environment).

HSEC Standard for Diving– We have developed an HSEC Standard for Diving in conjunction with a team of ADCI specialists. Strict compliance with the Standard is a contractual requirement for Sermar, overseen by our senior underwater operations engineer.

Contributing to improving diving safety nationally

The diver training program and our HSEC Standard for Diving were developed in collaboration with commercial diving specialists from the Chilean Maritime Authority. Updated diving regulations have subsequently been formulated and are being implemented throughout the country. We are also making our HSEC Standard for Diving available to other mining companies.

Sermar is planning a commercial diving school, open to all divers, that will offer training using the latest procedures and technologies and focusing on managing risks associated with underwater work activities.

The Chief of the Professional Diving Division of the Maritime Authority, Captain Alejandro Ross Urquieta, has said, 'With this initiative, Escondida not only took advantage of an unfortunate experience but also actively involved itself in the matter of professional diving, giving positive support to its contractor, Sermar Ltda, who, through improving their equipment and with suitable training, is applying the highest standards of safety, which constitutes a real landmark and example for the industry at a national level'.

The Executive Director and CEO of the Association of Diving Contractors International (ADCI), Ross Elliott Saxon, has stated that, 'Following an unfortunate accident involving the delivery of commercial diving operations in Coloso, Escondida and Sermar both realised the need to appreciably and positively increase safety for any subsequent operations that may be conducted.

'Rather than focus on placing blame or fault, both companies engaged in a concentrated program to introduce measures and standards to effect a dramatic change in the way safety could be assured. Working together, a system was developed whereby checks and balances – supported by necessary audit procedures – established the way forward.

'The ADCI has conducted two audits of Sermar; one in October 2005 and another in April 2006. During each of those audits, remarkable progress was observed to have taken place within Sermar. Most significant was the attitude of the Sermar team of personnel, who demonstrated a conscious regard for safety in all phases of their activity.

'The demonstrated degree of cooperation between Escondida and Sermar shows what can be accomplished where the client and service provider each realise the importance of working together in a constructive manner to eliminate risk. By a frank exchange of ideas and an atmosphere of mutual support, all parties benefit,' said Ross.



The most modern diving equipment is used

Safety Case Studies

Safety – Learning from Fatalities

Case Study Contributor:	Mozal Aluminium Smelter
BHP Billiton Interest:	47%
Location:	Maputo Province, Southern Mozambique
Customer Sector Group:	Aluminium
Commodity:	Aluminium
Case Study Status:	New for 2006

Learning From A Fatality: Mozal Implements A Site-Wide Safety Project

Following a fatality in June 2005 at Mozal, a safety project was immediately implemented, involving all Mozal employees and contractors. The project illustrates how commitment to safety by team leaders, staff and contractors can be re-affirmed and a positive outlook generated following a catastrophic event.

Resourcefulness and innovation

Following an investigation utilising the BHP Billiton [Incident Cause and Analysis Methodology](#) (ICAM), the recommendations of the investigating team were carefully analysed by Mozal's senior management team to determine the conditions and behaviours that the recommendations were addressing and to determine their root causes; e.g., language barriers and local cultural characteristics.

A list of actions was then compiled for each recommendation, and a senior manager was allocated responsibility for each action. A full-time [Business Excellence](#) project leader was deployed to oversee the completion of the project and the coordination of the various activities. Regular review meetings have been held to track actual progress against target and to refine the action list, thereby ensuring the completion of actions by the due date.

The project has a four-pronged approach: awareness, empowerment, discipline and visible leadership.

Awareness – There has been an intensive drive to educate employees and contractors through safety-related training modules, including risk assessment and fatigue management modules based on the Company's [Fatal Risk Control Protocols](#).

Empowerment – Employees and contractors are empowered to stop any work that they consider to be unsafe until the risks have been eliminated. This has been done through the introduction of a system of 'red cards' that are signed by the General Manager. These can be used by any employee or contractor to stop an unsafe job or act. The system has been successful several times in stopping unsafe jobs and behaviours, thereby avoiding safety incidents, and has become institutionalised.

Discipline – A set of five basic rules has been implemented that are non-negotiable. Breaking any of these rules is considered to be a dismissible offence. Further to this, more discipline and rigour has been put into incident investigation and reporting. Learnings are shared within the organisation and with contractors.



Pedestrian walkway constructed as a safety measure

Visible Leadership – There has been greater focus on leadership visibility, exemplified by the following initiatives.

- A two-hour period has been defined during which all team leaders must be on the shopfloor. This gives the leaders an opportunity to assess any unsafe behaviour and conditions that exist in the plant.
- Middle and senior management visit the plant after hours (weekends and between 10.00 pm and 6.00 am) to establish safety behaviour and ensure an understanding of operational conditions.
- The one-to-one delivery of HSEC communications by leadership. This allows team leaders to address employees and contractors on a personal level. To date, three such rounds of communications have been undertaken, covering a range of topics from the red card system to HIV management.

Challenges addressed

The primary challenge in the setting of system and rules has been to take into account the generally reticent nature of the local people to question what they have been asked to do. This was identified as a key contributor to the fatality, which tragically occurred when an employee was struck by a mobile crane. The crane operator had recognised that poor visibility constituted a risk, but as he had been instructed to complete a task he continued to drive the vehicle (read more: [Safety Case Study>Mozal Project Enhances Safety by Separating Pedestrians and Mobile Equipment](#)).

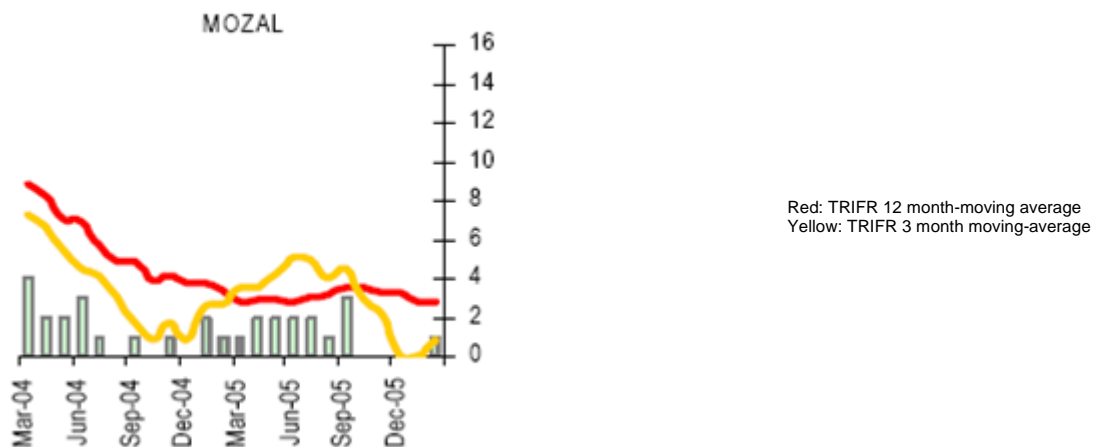
The key to addressing challenges such as this has been the implementation of the red card system. Use of the card has been widely encouraged and promoted in the plant media, to the point where all employees and contractors on site are aware of the function of the cards and carry them at all times.

Effectiveness of the project

Since the rollout of the project, there has been:

- the implementation of pedestrian/vehicle separation measures
- an improvement in incident reporting and the quality of the investigations
- greater integration of the contractors into the Mozal HSEC systems
- a marked increase in HSEC leadership visibility
- a significant decrease in the [Total Recordable Injury Frequency Rate](#) (TRIFR) 3-month moving average, from 5.13 to zero by December 2005 (see graph).

**Total Recordable Injury Frequency Rate
March 2004 to December 2005**



In summary, the project has increased the focus on safety at Mozal and has encouraged behavioural change that is improving safety performance.



Plant roadway before vehicle/pedestrian separation measures



Barriers in mobile equipment workshop for safer pedestrian movement

Safety Case Studies

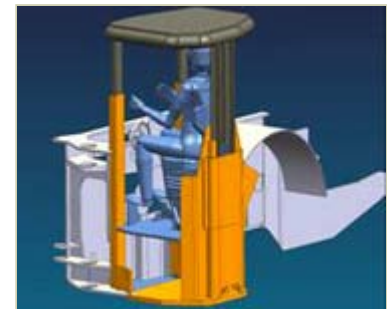
Safety – Heavy Equipment

Case Study Contributor:	Illawarra Coal
BHP Billiton Interest:	100%
Location:	Illawarra, New South Wales, Australia
Customer Sector Group:	Carbon Steel Materials
Commodity:	Metallurgical and Thermal Coal
Case Study Status:	New for 2006

Innovative Design For Operator's Cabin In Load-Haul-Dump Equipment Sets New Standards

As part of our drive to achieve the goal of Zero Harm, we are implementing our [Fatal Risk Control Protocols](#) (FRCP) across the Company. The Protocols establish minimum performance expectations for managing fatal risks. One of the key risk areas is underground mobile equipment.

In assessing this risk, it was determined that improvements could be made in roll-over and fall-on protection for load-haul-dump (LHD) equipment operators. The result is an innovative LHD cabin design that has the potential to become the new industry standard for use underground.



Concept image for load-haul-dump cabin design

LHD cabin design project

For this important safety project, a consultative process was determined as the best approach to achieve the desired outcomes. A workgroup was formed, comprising engineers and operators from various Australian coal mines at our Illawarra Coal operation in New South Wales and the BHP Billiton Mitsubishi Alliance (BMA) operation in Queensland.

Their aim was to design a cabin for all LHDs that provided rollover and fall-on protection for the operator. It would need to meet the requirements of the Company's FRCP and be capable of being utilised at mines across the organisation.

The workgroup initially evaluated all the requirements of each site. They determined that the main issues for the project were:

- current driver behaviour
- operator visibility
- ergonomics of driver seating and controls
- variable seat heights, from 1,700 mm to 2,600 mm.

Project process to achieve target

The workgroup developed a set of parameters for the project, which were provided to a number of suppliers for tender. Evaluation of the tender replies determined that only two companies had the capacity to accomplish the project requirements. These companies were invited to make a presentation to the workgroup, who selected the preferred supplier, Voest Alpine Mining and Tunnelling (VAMT), the manufacturer of the majority of our Australian LHD fleet.

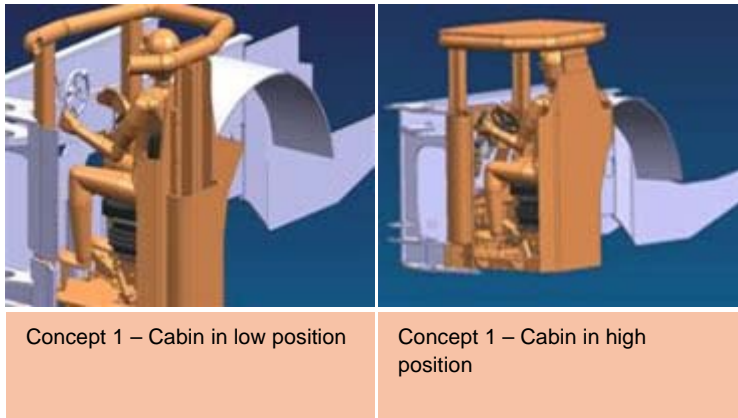
At the time, another mining company, Xstrata, was investigating with VAMT a similar approach to LHD operator protection. Discussions led to Xstrata becoming part of a joint consultative group, with a sharing of ideas, consultants and equipment. From this process, two design concepts were developed for consideration. Engineers and operators were involved in every stage of design development.

Computer images of the concepts were created. Concept 1 was developed up by Xstrata and fitted to one of their machines, and a timber mock-up was prepared of Concept 2. These were presented to the workgroup for evaluation.

Concept 1

The first concept consisted of a cabin containing a false floor and a seat and canopy that raise together. This design was not selected because:

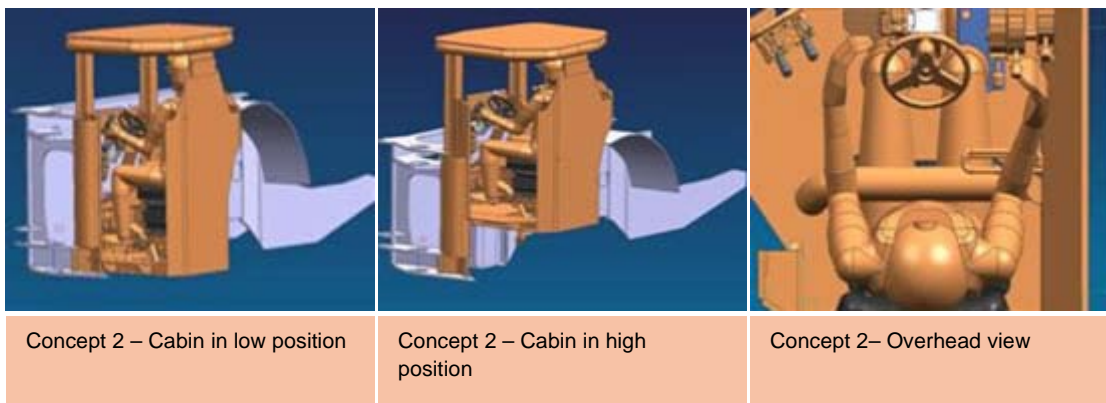
- hand controls stay stationary
- minimum height restricted due to false floor
- ergonomics for operator uncomfortable as hand controls remain in a fixed position
- operator's thighs were above the top of operator's door when cabin was at maximum height.



Concept 2 (preferred option)

The second concept consisted of an independent modular cabin on slides, which was selected as the preferred option. The main points about this option are:

- all controls raise or lower with cabin
- cabin can be interchanged between machines
- better ergonomics for operators
- operator restraint linked to machine shutdown
- slides adjusted from outside to take up wear
- cabin tested and complies with AS2294
- 95th percentile operator eyeline raised by 50 mm in fully raised, seated position versus an operator standing in a current MDG1 cabin.



Following the decision to select Concept 2, the workgroup conducted an operational risk assessment in collaboration with a certified professional ergonomist, Associate Professor Robin Burgess-Limerick from The University of Queensland, who stated, 'The results of the operational risk assessment confirmed that the new cab design improves visibility and general operator ergonomics while removing the risk of fatality from rollover or roof fall'. Recommendations made by Associate Professor Burgess-Limerick during the assessment were incorporated into the design of the operator's cabin.

On completion of the design, a contract was entered into with VAMT. Prototype cabins (patent pending) were manufactured and fitted to two 913 model LHDs for testing of the rollover and fall-on protection systems to Australian Standard AS2294. Testing was completed with all requirements passed.

The contract then required VAMT to build and fit cabins to three 913 machines at Illawarra Coal for trials to ensure that any unforeseen issues were identified and resolved, with further modifications to be made to the design on the basis of these trials.

In comparison with existing LHD cabins, the final design provides improved access and seating arrangements and an innovative cabin height adjustment control. The operator can raise or lower the entire cabin (seat, gauges and controls) from the seated position. In the raised position, the cabin allows a better view of the LHD bucket, while in the lowered position, the cabin provides a low travelling height; both features afford greater safety to the operator.

Current position

The first test machine has been on trial at Illawarra Coal's Appin mine since December 2005, and the operators have been reporting their findings for review. Some of their comments are as follows:

Ergonomics

'better than what we have'
'seat adjustment excellent'
'controls position OK'
'brake valve position to be changed'

Visibility

'in lowered position satisfactory in forward but poor in reverse'
'in highest position excellent'

Manoeuvrability

'width of machine prevents passing other machines in roadway'

The second test machine is now being built, with modifications that address the review findings. This machine is to be sent for trials at Illawarra Coal's Dendrobium mine. The first machine is to be released from Appin mine, modified and then sent to Illawarra Coal's West Cliff mine for trial. If the trials conclude successfully, it will then be assessed for further implementation.

Details of the new cabin design have been made available to other mining companies, the New South Wales Department of Primary Industries and to major contract hire companies. This new-generation cabin has the potential to become a new industry standard for future underground LHDs.



Operator's current driving position



Operator's new driving position

Safety Case Studies

Safety – Aviation Safety

Case Study Contributor:	Corporate Safety
BHP Billiton Interest:	Corporate Function
Location:	Global
Customer Sector Group:	All Customer Sector Groups
Commodity:	All Commodities
Case Study Status:	New for 2006

Aviation Standards and Guidelines Developed to Improve Safety in the Air

The extent of our reliance on aviation comes as a surprise to many; however, without aircraft support, access to many of our sites would be arduous if not impossible for day-to-day operations.

For many of our people, travelling in a helicopter over open seas hundreds of kilometres from shore or landing on an ice-covered runway in a modified Boeing 737 at minus 40°C is just part of the routine.

A key component of our approach to aviation safety management is the operational and safety auditing of the more than 100 aircraft operators we use around the world to support our operations. Along with the careful selection of our contracted aircraft operators, we look at the aircraft types that will be best suited for the specific roles undertaken.



The Sikorsky S92 helicopter

With high capital costs, regulatory constraints and long development lead times, the adoption of innovation in aircraft systems is challenging. Despite this, we are moving ahead of regulatory authorities and the general aviation industry in requiring higher levels of aircraft equipment, training and systems management.

Offshore helicopter safety

Safety statistics from the offshore oil industry show that passenger risks when flying in a helicopter are significantly greater than when flying on a commercial airline. Data from the USA shows that in the Gulf of Mexico, which has the world's greatest concentration of offshore installations and the largest offshore helicopter fleet, there is an upward trend in the helicopter accident rate.

The reasons for the high and increasing helicopter accident rate are varied; however, the current accident rate is at a similar level to that of commercial airlines 30 years ago. Over the past 30 years, large improvements have been made in commercial airline safety. While some improvements in overall helicopter safety have also been seen, they have generally lagged behind, resulting in the current gap.

Within the Company's offshore helicopter operations, risk controls have resulted in excellent safety performance. Our approach starts with contractor selection and includes implementing operational procedures and training requirements to limit exposure to potentially unsafe conditions; selecting appropriate helicopters for the operational environment; and fitment of instrumentation and diagnostic equipment that enhance flight safety. Much of what we require in our contracted offshore helicopters exceeds the minimum regulatory requirements, which adds to the cost. This can be considerable; however, the investment allows us to reduce the likelihood of an incident and, should one occur, helps to lessen the adverse outcomes.

We operate in an evolving operational environment and look for ways to improve our performance. Looking beyond our current controls has led us to ask what has enabled commercial airlines to make such a dramatic improvement in safety over the past 30 years. The findings indicate the key initiatives that have contributed to the lowering of airline passenger risks include new design criteria, system redundancy, improved reliability, use of modern simulators, engine and airframe electronic monitoring systems, terrain warning systems,; flight operations and data monitoring, enhanced operating procedures, and the implementation of safety management systems.

Current generation helicopters, and those in development, are able to take advantage of the safety and reliability initiatives successfully implemented in the airline industry. Such suitably equipped newer helicopters, along with supporting operational and safety management systems, represent the best potential for improving offshore helicopter safety.

Our Gulf of Mexico experience

In the Gulf of Mexico, flight operations within 50 nautical miles of shore are dominated by single-engine helicopters, while operations further out into the Gulf usually involve older, medium-sized, twin-engine helicopters. With our deepwater commitments in the Gulf involving activities more than 150 nautical miles offshore, a decision was made to replace our contracted helicopters with ones incorporating the safety systems and initiatives that are commonplace in the airline industry but considered leading edge in the helicopter world.

A multi-discipline Company team worked with our Houston-based aviation advisor to develop an appropriate solution to our Gulf of Mexico air transport needs. Our drilling team recognised the need for the review and took a leadership role in it. Supply and logistics personnel also put in a lot of work to construct a bid contract that detailed the safety aspects to be provided in the new equipment and services, and the HSEC group contributed to the process to ensure that the Company's HSEC standards would be met.

As a result of these collaborative efforts, we are one of the first users of a helicopter designed and built to the latest safety certification standards. During 2005, a 19-seat Sikorsky S92 helicopter was introduced to our Gulf of Mexico operations. Our contracted S92, delivered brand new and operated by Petroleum Helicopters Inc, is fitted with the additional safety, flight data and technical warning and monitoring systems called for in our Aviation Standards for Offshore Operations.

This is the first time a helicopter manufacturer has provided offshore safety enhancements that are factory installed and supported (typically it is left to the helicopter operator and third-party vendors to design and install safety modifications). The net result is a helicopter with improved performance, enhanced operational and safety equipment, and monitoring systems that warn of impending technical failures, reduce pilot workload and address at-risk behaviours.

The new 12-seat Sikorsky S76C++ (the latest version of the S76, which has been used for some time) has the same safety enhancements as the S92 and we have contracted one of these to complement our S92.

The involvement and support of both the helicopter manufacturer and the operator has allowed us to achieve our risk-minimisation objectives. In effect, the process represented a partnership rather than the more traditional contractor-client relationship and provides us with a framework to help ensure ongoing safety in our offshore helicopter activities. Our operational environment is changing as we move into deeper and deeper waters further offshore. The new aircraft, which individually may cost around US\$17 million, are a substantial leap forward to new, higher, safer and more secure standards for operating in the Gulf of Mexico – and their safety and performance attributes represent the basis of our future worldwide offshore helicopter contracts.



Sikorsky S92 cabin



The Sikorsky S76C++ under construction

Safety Case Studies

Safety – Safety in The Supply Chain

Case Study Contributor:	Mozal Aluminium Smelter
BHP Billiton Interest:	47%
Location:	Maputo Province, Southern Mozambique
Customer Sector Group:	Aluminium
Commodity:	Aluminium
Case Study Status:	New for 2006

Incorporating Contractors into the Mozal Business

The Aluminium Southern Africa (ASA) group of smelters has developed an HSE strategic framework for contractors to reinforce efforts to achieve Zero Harm in our contractor activities, an area that has been shown to be vulnerable to HSE-related incidents. The initiative has realised a number of benefits, including improved integration of contractors into the HSE management system of the Mozal aluminium operation.

Contractor safety management is seen as an essential component of Mozal's overall health, safety and environmental performance. The strategic framework has been designed to ensure that Mozal's expectations and aspirations for contractors' HSE performance are clearly identified and that all contractors are aware of their contribution to the overall health, safety and environmental performance on site.

The strategic framework is divided into two risk profiles (Risk Profiling and Risk Management) and has five basic components: pre-qualification, tender and award selection, access and activation, execution and control, and performance management.

Each of the components in turn is broken down into specific objectives, the method of achieving the objectives, and the measures to establish whether the objectives are attained. The risk profiles ensure a single point of accountability, safe work execution and stable industrial relation climates and, at the same time, promote lower turnover of vendors and lower-risk vendor selection. The entire framework underpins the development of long-term relationships and facilitates the sharing of learnings and completion of projects.

Achievements from the strategic framework

Contractor forum– A contractor forum has been established to officially represent contractor companies in formal communications with Mozal. It is responsible for ensuring that members' issues are raised and addressed in a timely fashion through a collective process. Topics range from contractual issues to HSEC matters.

Uniform contractor medicals – Prior to working at the Mozal plant, each prospective contractor employee is required to undergo a pre-employment medical examination to ascertain their fitness for work. To ensure a uniform approach, the decision as to whether a person is fit or unfit is made by the on-site medical practitioner.

Mentoring training for contractor leaders and HSE professionals – A mentoring and coaching program for all contractor employees in leadership roles has been established.



Establishment of contractor recognition

All contractor employees are also integrated into the Mozal training systems. This has raised their awareness of employee responsibilities and helped motivate interest and pride in their day-to-day activities.

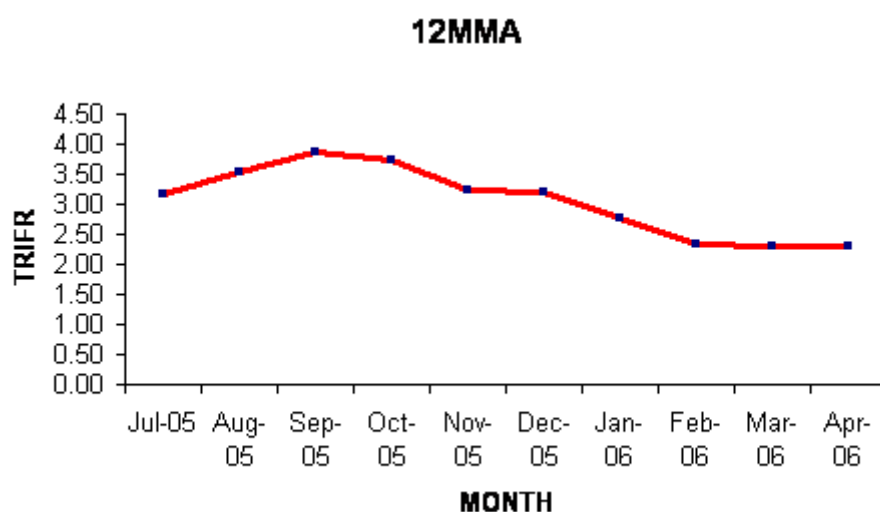
Establishment of contractor recognition

Contractor recognition programs are held annually. They are divided into four groups, namely:

- HSE Strategic Partner
- Best Mozlink Award
- HSEC Improvement Award
- Best SME Award.

Lagging indicator – measuring success

The positive impact of the strategic framework is reflected in the lagging indicator **Total Recordable Injury Frequency Rate** (TRIFR) for contractors. At 30 April 2006, the TRIFR (12-month moving average) had shown a 27 per cent improvement. This in itself has contributed to the improvement in Mozal’s overall safety performance.



Future initiatives and challenges

Future initiatives and challenges include the New Employee Development program and contractor sponsored appraisals.

New Employee Development program – The strategic framework provides guidelines for a mandatory new-hire identification program, the New Employee Development (NED) program, which is designed to help new employees to avoid incidents and injuries and to enhance their acclimatisation to Mozal’s HSEC Culture.

Workplace injury trends indicate that approximately 40 per cent of injuries occur to new-hire employees with less than three months on the job. Early identification and correction of unsafe work habits will help to promote a safe and healthy workplace. Each newly hired and newly assigned field personnel will have assigned to them, for 30 days, an experienced area HSE coordinator or allocated owner/sponsor as a mentor. Mentor training will be available to promote ownership and accountability of this key initiative. The new employee will have an NED sticker attached to their hard hat for the 30-day period.

New Employee Development (NED) sticker



The intent is to assist area managers, supervisors and others to identify new employees and facilitate intervention when a new employee's behaviour or environment puts them at risk. The outer ring of the sticker will be perforated. After the 30 days, given the employee has demonstrated the ability to safely perform their work, and with approval of their mentor, the outer ring will be removed.

Contractor sponsor appraisals – Mozal aims to implement sponsor appraisals, where the sponsor must stipulate the current status of their safety performance and future challenges. This initiative is to take place on a six-monthly basis and will highlight best practices and ensure learnings are shared across the Company and its contractors.

Safety Case Studies

Safety – Safety in the Supply Chain

Case Study Contributor:	Global Supply
BHP Billiton Interest:	Corporate Function
Location:	Global
Customer Sector Group:	All Customer Sector Groups
Commodity:	All Commodities
Case Study Status:	New for 2006

Alliance with Caterpillar is Enabling Attainment of Our Common Sustainability Goals

BHP Billiton and Caterpillar formed a Strategic Alliance in 2003. From its inception, the Alliance has enabled our two companies to align our interests and work towards common sustainability goals. In particular, the Alliance is investing in opportunities to better understand technologies that could address the long-term needs of our Company and other users of Caterpillar machinery through an increasingly integrated research and development program.

Key areas of focus include:

- safe access and egress for operators
- reducing greenhouse gas emissions
- developing fatigue management technologies.



Project team members investigate FRCP gaps (step 3 of gap analysis)

Focus area: safe access and egress for operators

Numerous representatives from BHP Billiton, Caterpillar and the Caterpillar dealer network have been involved in a project aimed at improving the level of standardisation of compliance with [Fatal Risk Control Protocols](#) (FRCP) on Caterpillar equipment.

A high-level FRCP gap analysis has been performed on a selection of Caterpillar mining equipment in the form in which it leaves the factory before sites modify it to meet their requirements.

The intent is to harness the highly professional and competent engineering resources of Caterpillar to find high-quality and sustainable solutions to issues that are currently dealt with by adding components ex-factory.

The analysis was conducted in steps as follows:

- briefing of each Caterpillar product group on the BHP Billiton FRCP
- Caterpillar explanation of machine features (see images below)
- collaborative, systematic review of FRCP requirements and gap analysis of machines, supported by a photographic record of observations
- agreement on a score for the gap analysis.



Caterpillar representative explains machine features (step 2 of the gap analysis)



Project team members investigate FRCP gaps (step 3 of gap analysis)

Debriefing meetings were held at Caterpillar's headquarters in Peoria, Illinois, USA. Larger groups of Caterpillar product group personnel were on hand to explain and discuss the results of the gap analysis. High-level Caterpillar personnel attended these sessions, at which there were good exchanges of information and ideas.

Focus area: reducing greenhouse gas emissions

The use of alternative fuels in large earthmoving equipment engines is another area that the Alliance is investigating. Alternatives to diesel include liquid natural gas, biodiesel, bioethanol, plant oils, biomass to liquid, biogas and hydrogen.

In addition, a trial is being conducted at our BMA coal operations in Queensland, Australia, using Diesohol (diesel and ethanol blended using a newly developed process by APACE Technology). This fuel could potentially utilise ethanol produced from sugar cane biomass grown in the North Queensland region.

Focus area: developing fatigue management technologies

Through the Alliance, a Fatigue Technology Forum has been formed and a Caterpillar research and development team is currently conducting a review of available fatigue management technologies. Elements of the study include:

- a review of technology patents
- attendance at industry conferences
- a review of past and present trials at BHP Billiton and other mine sites (e.g., trials of ASTiD and Optalert technologies)
- development of a criteria matrix to compare technologies against agreed criteria.

David Hudson, HSE Manager for Caterpillar Global Mining, believes that the Alliance provides a unique opportunity for Caterpillar to gain access to customer insight on HSE issues. He says, 'The Alliance's Fatigue Technology Forum is a great example of cross-functional, cross-asset and cross-organisation teamwork developing solutions to our common sustainability challenges. We're in this together – developing technologies that help keep people safe is important to all of us'.



Optalert glasses that use infrared technology to measure blink rate and speed



ASTiD technology that analyses driver/vehicle interactions to ascertain fatigue (e.g., steering corrections)



ASTiD Advisory System for tired drivers

Safety Case Studies

Safety - Safety in The Supply Chain

Case Study Contributor:	Worldwide Drilling Group
BHP Billiton Interest:	Resource Team
Location:	Houston, Texas, USA
Customer Sector Group:	Petroleum
Commodity:	Oil
Case Study Status:	New for 2006

Deepwater Drillship *C R Luigs* Wins Award for Safety Excellence

At our oil and gas operations in the Gulf of Mexico, our aim is to achieve 'best in class' operational capabilities with outstanding safety performance.

That aim is being realised, as reflected in the 2005 Safety Award for Excellence received from the Minerals Management Service (MMS) of the US Department of the Interior. The award was presented to GlobalSantaFe (GSF), our drilling contractor in the region, and their ultra-deepwater drillship, the *CR Luigs*, which has been operating under contract to us since April 2000.

The MMS is the primary regulator of the industry and performs periodic, unannounced inspections of all offshore facilities. The results of these inspections provide the basis for selecting award winners in recognition of outstanding performance and compliance with regulations.

We have played a key role in the design and operation of the *CR Luigs* since 1998, when construction of the drillship was in the planning stages.

Operational efficiency and good safety performance

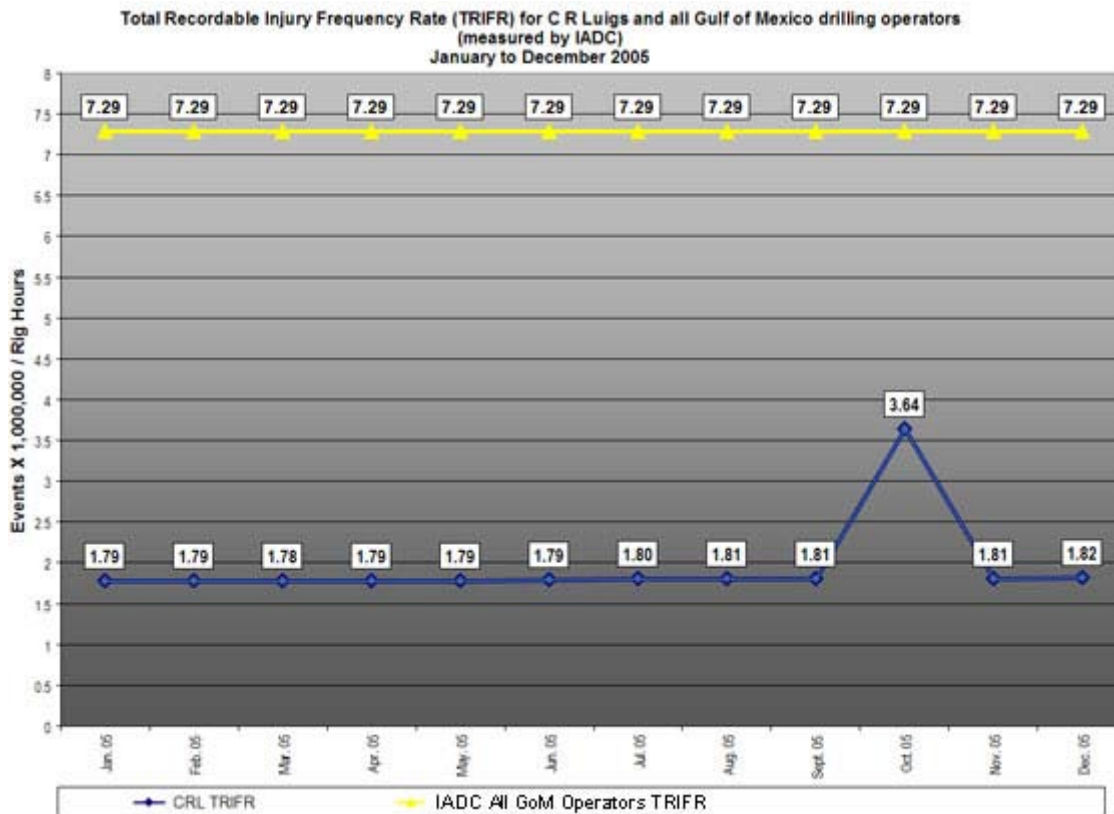
The MMS Safety Award for Excellence citation stated that, throughout 2005, nine complete inspections of the *CR Luigs* had been conducted without an incident of non-compliance being noted. There were no lost time accidents reported; all records were kept up-to-date, accurate and accessible; and the rig and equipment were well-maintained by highly motivated personnel.

When compared with similar ultra-deepwater drilling rigs operating in the Gulf of Mexico, the operational performance of the *CR Luigs* is in the highest percentiles. To put its performance into perspective, from July 2001 to January 2006, the *CR Luigs* worked on 23 drilling projects involving over 1,500 workdays and 2.64 million work-hours. The average measured depth of the wells was 21,284 feet, and the average measured depth below the seafloor was 14,918 feet, exceptional depths by industry standards.

Overall safety performance has also been impressive, as can be seen from the graph below, which shows the [Total Recordable Injury Frequency Rate](#) (TRIFR) 12-month moving average for the period from January to December 2005. The *CR Luigs* performance is compared with that of all Gulf of Mexico drilling contractors, as measured by the International Association of Drilling Contractors (IADC). At December 2005, the *CR Luigs* TRIFR of 1.82 compared very favourably with the rate of 7.29 for all contractors.



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



The monthly figures for the *CR Luigs* reflect the carryover of a recorded injury from November 2004. In October 2005, the average rose due to a recorded injury and then dropped again when the November 2004 incident was removed from the data.

The 2005 incident occurred when a crewmember sustained a thumb injury, which the medical check-up revealed to be bruising only, and no time off work was required. In summary, there was one minor recordable injury in the year, during which the number of work hours averaged 50,000 per month.

Major factors in the excellent safety and operational performance of the *CR Luigs* are that:

- GSF has an outstanding HSEC management system
- behavioural-based safety is a key component of the system
- our [Fatal Risk Control Protocols](#) have been incorporated into their system
- we work with GSF to eliminate high-risk activities covered in the protocols
- we assist GSF with team building and implementing the system
- GSF personnel are motivated to act safely and productively
- we conduct frequent audits of HSEC procedures on the rig
- the teamwork and attitude of the crews are recognised as the best in the industry.

Working together to achieve agreed goals

In offshore operations, the vast majority of personnel are employed by the drilling contractor. At any one time on the *CR Luigs* there are 130 crewmembers and of these only four or so are BHP Billiton personnel. A key to the excellent safety performance has been our close working relationship. From day one, we have made a concerted effort to work as a team, setting out to achieve Zero Harm to people and the environment and to outperform the industry in drilling efficiency.

Our approach is based on setting expectations, being fair, and doing what we say we will do. While this sounds simple, to get it right takes a lot of effort on the part of many people. Getting it right on the *CR Luigs* has meant focusing on excellence in all operational, safety and environmental aspects of the rig.



(L to R) Mike Saucier, MMS regional supervisor; Wayne Kelly, C R Luigs master with the Safety Award for Excellence; Owen King, *CR Luigs* rig-based superintendent with the award citation; and Darrell Griffon, MMS regional supervisory inspector

Environment



[Our Approach](#)

[Our Performance](#)

[Case Studies](#)

'Looking ahead, the organisational risks and opportunities facing us are both numerous and exciting.'

Message from the Vice President Environment

During the 2005/2006 financial year, we continued to demonstrate our commitment to the sound environmental management of our business activities. Our achievements were however lessened by three environmental incidents that had the potential to cause significant environmental harm.

Closure planning continued to be integrated into the organisation's business planning processes. All operating sites are reviewing their closure plans to ensure alignment with our Closure Standard. Excellent closure planning activities at some of our closed sites resulted in the achievement of a number of rehabilitation awards over the past year. I believe we are in excellent shape to meet our internal target of the full implementation of our Closure Standard by June 2007.

Other successes included reducing the intensities of greenhouse gas emissions, high-quality water use and general waste during the year and establishing additional internal Communities of Practice to share knowledge and leading practices on water management and biodiversity, both of which are key sustainability challenges for the Company.

Feedback from a stakeholder dialogue workshop suggested that while stakeholders are satisfied with the efforts that our sites are doing on the ground related to biodiversity, there are opportunities to expand our influence on regional biodiversity issues.

Looking ahead, the organisational risks and opportunities facing us are both numerous and exciting.

Access to water is one of our key sustainability challenges. In the year ahead we will focus on further sharing of leading water efficiency practices and establishing a new water efficiency target to drive better performance and improve our understanding of the risks, opportunities and values associated with water.

We are improving our knowledge of biodiversity issues at early exploration stages to ensure biodiversity risks and opportunities are identified and managed during the assessment, design and development of new projects.

We will continue to build upon existing energy efficiency and greenhouse gas reduction programs; this makes good business and environmental sense. In addition we will be looking to establish a new greenhouse gas reduction target along with an energy reduction target in the coming year. Climate change is a global issue, and we will continue to support research into technologies to assist in mitigating our impact in this area.



Charles Taylor
Vice President Environment

Our established materials stewardship program has been expanded to include uranium in the light of the acquisition of the Olympic Dam mine in Australia. The importance of a robust product stewardship model for uranium was recognised in a recent stakeholder dialogue workshop where a range of views on effective uranium stewardship were expressed. We are committed to understanding and addressing those views.

We have significantly upgraded our environmental information collection and analysis system as part of our commitment to continuous improvement and to provide reliable data. These improvements allowed us to efficiently incorporate data from the former WMC sites into the BHP Billiton information management system.

We have also developed an improved environmental incident classification and reporting system. We continue to encourage the reporting and analysis of low-level environmental incidents and near misses to reduce the risk of higher-level incidents occurring.

Our businesses, by the diversity of their activities and location in different countries and ecosystems around the world, have the potential to affect the environment. We are proud of the results we have achieved in minimising our impact on the environment and acknowledge that there are still many opportunities to improve our performance.

Charles G Taylor

Vice President, Environment

Read more:

- [Environment>Our Approach](#)
- [Environment>Our Performance](#)
- [Environment Case Studies](#).

Environment – Our Approach

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 [Sustainable Development Policy](#), which states that we will:

- strive to achieve leading industry practice
- meet or, where less stringent than our standards, exceed applicable legal and other requirements
- set and achieve targets that promote efficient use of resources and include reducing and preventing pollution
- enhance biodiversity protection by assessing and considering ecological values and land-use in our activities.

In addition, we adhere to the [HSEC Management Standards](#) that form the basis for our management systems at all levels. They cover the entire life cycle of operations, including exploration, project development, operations, decommissioning, closure and rehabilitation.

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

- emissions of greenhouse gases and other gases and particulates, 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
- water usage and reductions in water quality as a result of salinity or acid rock drainage due to the particular orebody characteristics at some of our sites or from the handling, use and production of hazardous materials
- 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.

Refer to the following for details on our approach to environmental management:

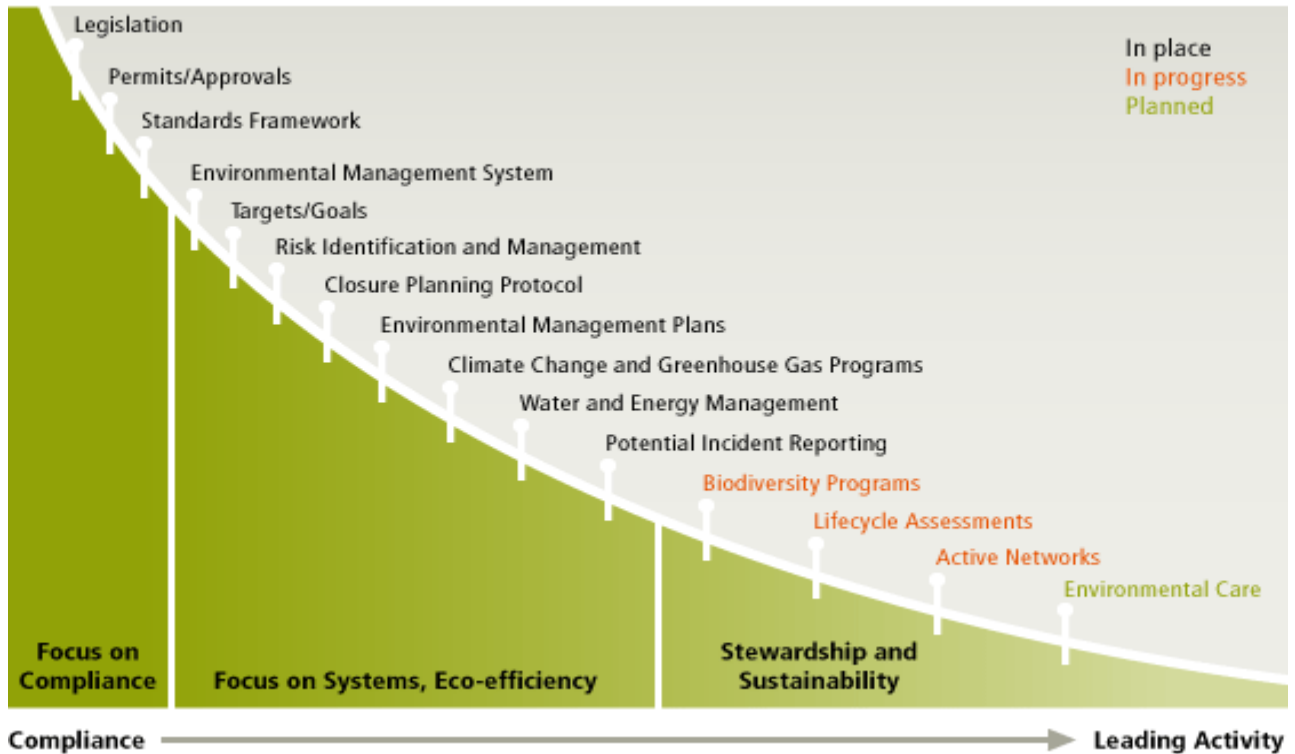
- [Environmental Management](#)
- [Closure Planning](#)
- [Climate Change](#)
- [Biodiversity](#)
- [Resource Conservation](#)
- [Waste Rock and Tailings](#)
- [Emissions Management](#)

See [Environment>Our Performance](#) for a summary of our performance over the reporting period.

Environmental Management

In line with our [Sustainable Development Policy](#) objectives, we strive for continual improvement in our practices and performance, with the key driver for environmental management being our aspirational goal of Zero Harm to the environment. Supporting this aspiration, the [HSEC Management Standards](#) have been established to provide the direction and the basis for environmental management system implementation across the company. The strategy we have developed to meet our environmental goals and objectives is illustrated in the diagram below.

STRATEGIC IMPROVEMENT ROADMAP: ENVIRONMENT



Embedding environmental considerations in our businesses through the appropriate evaluation of environmental costs and benefits is fundamental to this environmental strategy. We seek to raise the organisation's awareness and understanding of the economic and competitive opportunities presented by good environmental performance. Improvements in eco-efficiency and product stewardship are equally important in the way forward.

The environment strategic improvement road map illustrates that, as we move up the curve, our environmental footprint is reduced, allowing for competitive advantage through the establishment of responsible entrepreneurship. This may involve engaging our customers and suppliers in ways to reduce their environmental footprint, thereby strengthening our business partnerships and consequently improving business performance across our value chain.

A key component in understanding the potential impacts is to systematically assess significant environmental risks and issues. Potential environmental risks and issues are taken into full consideration in our [Investment Processes](#) for approving new ventures and expansion of current operations. An [Enterprise-wide Risk Management Strategy](#) ensures that risks are systematically identified and managed, backed by HSEC Risk Management Guidelines.

Environmental Management Systems

Our overall environmental objectives are defined within our Sustainable Development Policy. These include ensuring that we:

- set and achieve targets that promote efficient use of resources and include reducing and preventing pollution
- enhance biodiversity protection by assessing and considering ecological values and land-use aspects in investment, operational and closure activities.

The HSEC Management Standards form the basis for our approach to environmental management systems and meeting the aspirations of our Policy. The Standards have been designed to be aligned to the requirements of the International Standard ISO 14001 and consequently provide a risk-based approach to environmental management.

In addition to the HSEC Management Standards, we require our operational sites to have an Environmental Management System certified to ISO 14001. While we generally do not require certification at exploration and development projects, sites being divested, closed sites or Corporate offices, a number of these sites have chosen to seek certification.

Emergency Preparedness and Response

In line with HSEC Management Standard 14, Crisis and Emergency Management, all our businesses and sites have emergency response procedures in place to deal with a wide range of possible crisis and emergency events, such as oil and chemical spills, failure of water or tailings containment structures, fires, explosion and other potential incidents. The procedures describe the actions to be taken and the allocation of responsibilities. They typically contain communication protocols, control procedures, and media and stakeholder management procedures, including escalation communication requirements. These procedures are backed by a global Crisis and Emergency Management Program, including a London-based Emergency Communications Centre.

Sites and businesses periodically conduct emergency simulations and drills. Emergency preparedness and response activities are coordinated and maintained at a Company-wide level through our Crisis Management Group (read more: [Business Continuity](#)).

Environment Network

An Environment Network of environmental professionals and other interested employees within the Company is in place, committed to the sharing and learning of information and leading practices. To further facilitate professional exchange of information, online Communities of Practice have been established to improve our Company-wide approach to environmental management and include tailings, water, greenhouse gas, closure and rehabilitation, HSEC data reporting and biodiversity management.

Closure Planning

Closing an operation poses risks and opportunities that need to be identified, assessed and managed. To this end we have a Company-wide Closure Standard that applies to all BHP Billiton investment opportunities and controlled operations. The [Closure Standard](#) seeks to ensure our operations leave a lasting positive legacy that outlives the operation and ensures a positive future for our host communities.

The Closure Standard mandates compliance with relevant legislative and regulatory requirements and goes the additional step to tie closure planning to a set of objectives which support our [Sustainable Development Policy](#) in aspiring to:

- protect and enhance the reputation of BHP Billiton as a responsible corporate citizen
- ensure that stakeholders' needs, concerns and aspirations are taken into account when considering closure
- limit or mitigate adverse environmental effects, including taking into account biodiversity
- help protect indigenous values
- avoid or minimise costs and long-term liabilities to BHP Billiton and our stakeholders including the government and host communities.

Many of our operations have existing closure plans that have been developed to satisfy regulatory or internal needs. Under the Closure Standard, however, each asset is reviewing existing plans and making adjustments as required to meet the new requirements. This review includes a rigorous assessment of site specific closure risks and opportunities, identification of risk management actions and development of reasonable and accurate closure cost estimates.

Training and information sharing is a key component to improving closure planning across the Company. Networks, both internal and external to the Company, have been set up to share information and discuss common and leading closure practices.

A fundamental aspect of the planning process is the development of a post-mining plan. Understanding stakeholder needs, aspirations and concerns, particularly those of regulators and local communities, is a critical dimension to this process. Whether or not a property will require ongoing care, maintenance and monitoring will also feature in the long-term closure plan and the ultimate end land-use. It is anticipated that, as we better understand closure issues, closure planning will be discussed more regularly with our stakeholders.

Closure planning occurs throughout the life cycle of the operation, starting with exploration and development of a property and continuing through the operation, decommissioning and closure phases. There is value in commencing closure planning from the earliest stages of project inception, and to achieve this closure requirements are integrated into our business systems. Additionally, there is value in the timely and efficient execution of closure according to well-considered plans and schedules.

Climate Change

We are working on activities related to climate change risks and opportunities in a number of ways. These include reducing the greenhouse gas intensity of our operations in line with a target, requiring sites to develop greenhouse gas management and energy conservation plans, pricing carbon in investment decision-making, funding research and development activities and collaborating with customers.

Our target is to have greenhouse gas management programs and energy conservation plans at all of our sites with annual emissions greater than 100,000 tonnes of carbon dioxide equivalent.

In 1995, we were one of the first participants in the Australian Greenhouse Challenge program, which was designed to encourage reductions in greenhouse gas emissions. We started measuring our greenhouse gas emissions in 1993 and have publicly reported our greenhouse gas emissions data since then.

We exceeded our original target of 10 per cent reduction in greenhouse gas intensity between 1995 and 2000, and have again exceeded our current target of a further five per cent reduction between 2002 and 2007. Greenhouse gas intensity is measured by emissions per unit of production, including the purchase of electricity, at operated sites.

We capture energy consumption and costs at our operations to track the total financial and carbon impact of our current energy use. Together, these measures drive the business case for improved energy efficiency and greenhouse gas mitigation.

We have developed expertise in emissions trading in Europe to offer support to our customers in meeting their obligations arising from the European Union Emission Trading Scheme (EU ETS). From a strategic perspective this is also helping us to understand better the market dynamics of the emerging carbon market and how it interacts with markets for energy.

We are working with our customers to improve energy efficiency in the downstream consumption of our Energy Coal products, as well as promoting activities to help deliver low or zero-emission coal technologies. These activities include capture of methane in ventilation air, as well as support for external research such as the US [FutureGen](#) project, and the Australian [COAL21, Cooperative Research Centre for Greenhouse Gas Technologies](#) and the [Cooperative Research Centre for Coal in Sustainable Development](#).

Carbon pricing sensitivity analysis is considered in our decisions on new projects and investments that would emit more than 100,000 tonnes of carbon dioxide equivalent per annum. This analysis includes a range of prices for developed and developing countries over an extended period of time. Our price series for carbon are revised annually and have appropriately high and low ranges to reflect the uncertainty associated with forecasting the price of carbon credits. The price series are also intended for use in strategy development.

In addition to controlling emissions associated with production at our sites and evaluating the potential impact of future regulation of carbon, we also undertake activities to address the current and future needs of our customers in regards to greenhouse gas emissions associated with the consumption of our products.

We have identified emissions trading as an area of opportunity. Our Energy Marketing group has commenced selling coal bundled with Certified Emission Reduction units (raised via clean development mechanism projects) to our coal customers in Europe. This is allowing us to develop knowledge and skills in emissions trading and is enabling us to continue to better package the fuel supply requirements of our customers. Our Energy Coal Customer Sector Group has also included the potential implications of greenhouse gas emissions regulation in its base case supply and demand forecasts and in its business strategy. This is due to the importance of such regulation in relation to the future demand for coal.

Read more:

- [BHP Billiton Climate Change Position Statement](#) for an overview of our climate change policy
- [Climate Change Related Activities and Priorities](#)
- [Our Sustainability Challenge>Greenhouse Gas Emissions](#).
- [Carbon Disclosure Project](#)
- [Address by Ian Wood, VP Sustainable Development, to the Greenhouse Challenge Plus Conference, 15 September 2005 Canberra, Australia.](#)

Climate Change

BHP Billiton Climate Change Related Activities and Priorities for 2006/07

Business	General Activities include:	R&D Activities include:	Priorities for FY07 include:	
Corporate	<p>A new Company target related to energy and greenhouse gas is being designed and will be effective starting FY2007. Carbon Pricing Protocol (used to shadow price carbon in investment analysis) is revised regularly in light of international developments in the carbon market and government policy</p>	<p>Assistance provided to Government of Australia in developing an energy efficiency opportunities assessment tool using business excellence model and approach.</p> <p>Greenhouse gas inventory, energy consumption and cost data collection and analysis.</p> <p>Monitoring greenhouse gas intensity target</p>	<p>Participation in the Energy Futures Forum - a 2-year multi-stakeholder project led by the CSIRO to develop 50-year energy scenarios for Australia and the world.</p>	<p>Agreement and approval of a new energy/greenhouse gas target.</p> <p>Monitoring global developments in climate change policy and science including promoting the understanding of strategic implications of greenhouse gas emissions.</p>
Aluminum	<p>Focus has been on improving the GHG efficiency of operations including anode effects, unit power consumption, power efficiency and anode consumption management GHG benchmarking with International Aluminium Institute Investigation into viability of higher accuracy monitoring of perfluorocarbons (PFCs).</p>	<p>Examination of internal Clean Development Mechanism (CDM) opportunities.</p>	<p>Industry life cycle research and analysis Participation in development of best practice module.</p>	<p>Understand Clean Development Mechanism (CDM)/ trading opportunities.</p> <p>Continue research into closed loop concept model including role of recycling Identify projects to improve energy efficiency and GHG in support of Corporate targets.</p> <p>Work with International Aluminium Institute to identify sectoral opportunities to address climate change.</p>

Business	General Activities include:	R&D Activities include:	Priorities for FY07 include:	
Carbon Steel Materials	Monitoring policy and market-related developments Focus is on improving energy efficiency of operations to reduce greenhouse gas emissions.	<p>Australian Coal Association's COAL 21 Program – an internationally recognised program to facilitate reductions in greenhouse gas emissions from coal-based electricity generation.</p> <p>Illawarra Coal, Australia - Coal Seam Gas Utilisation Project - continues to abate 2-3 Mt CO₂-e per annum Research at Illawarra Coal for the capture of methane in mine ventilation air.</p> <p>World Coal Institute (WCI) promotes sustainable coal mining and use on behalf of its international membership of coal producers and associations.</p> <p>Coal Industry Advisory Board membership.</p>	<p>Participation in 'COAL21 Fund' voluntary levy that will collect up to AU \$300M over five years from Australian producers to support research and demonstration of low emissions coal technologies.</p> <p>Participation in Australian Coal Association Research Program's 'Low Emissions Coal Use' program of funding grants to research providers.</p> <p>Participation in Australian Cooperative Research Centre for Coal in Sustainable Development 'Diesohol' - a biodiesel consisting of a blend of diesel and sugar based alcohol has undergone engine trials for use in earth moving equipment by BMA, Australia</p> <p>Continuing involvement in the Greenhouse Gas Mitigation research program managed by Australian Coal Association Research Program (ACARP)</p> <p>Chair of the Greenhouse Gas Mitigation committee of ACARP</p>	<p>Continue to monitor climate change risk.</p> <p>Continue to improve energy efficiency of operations and advance the evaluation of 'Diesohol'. Commissioning of Illawarra methane capture project.</p>

Business	General Activities include:	R&D Activities include:	Priorities for FY07 include:
<p>Energy Coal</p>	<p>Our marketing function is selling coal bundled with Certified Emission Reduction units (raised via CDM credits [internally/externally])/ European Union Allowances; this activity involves developing expertise and knowledge of emerging carbon markets including risks and opportunities in both developed and developing country contexts.</p> <p>Climate change scenarios considered in long-term supply demand model used for price assumptions as well as in strategy development work.</p>	<p>Policy and Advisory work: COAL21 - See above in Carbon Steel Materials</p> <p>Carbon Sequestration Leadership Forum (CSLF) - BHP Billiton has participated in the Australian delegation to this US-led forum for international coordination of carbon capture and storage policy and research development.</p> <p>World Coal Institute – see above.</p> <p>Coal Industry Advisory Board (CIAB) advises the International Energy Agency on coal issues, including Zero Emission Coal Technologies.</p>	<p>COAL21 funding supports research & technology in Zero Emission Coal Technology</p> <p>Participation in FutureGen project, a \$US1.0B 10-year project to build a first-of-a-kind coal-based, zero emission electricity and hydrogen plant with sequestration</p> <p>Centre for Low Emissions Technologies and Australian Cooperative Research Centres for Coal in Sustainable Development & Greenhouse Gas Technologies</p> <p>Maximise the value-add potential of credits trading position.</p> <p>Invest further in clean coal technologies research.</p> <p>Continue strategy work, mitigating risk and seeking opportunities.</p>
<p>Petroleum</p>	<p>Broad assessment of biofuels underway with a focus on biodiesel. The study examines biodiesel production, markets, issues and benefits, and seeks to determine the role for biodiesel within BHP Billiton.</p>	<p>Strategy has been put into place to effectively manage Petroleum's obligations under the UK national greenhouse gas allocation plan as per obligations under the European Union Emissions Trading System.</p> <p>Development of Coal Bed Methane business projects underway in Australia, China and North America</p>	<p>Advanced planning for Australia's first CO2 injection and storage pilot project led by the Cooperative Research Centre for Greenhouse Gas Technologies (CRC CO2)</p> <p>Follow through on ongoing strategic work and CO2 injection and storage pilot project.</p> <p>Energy Coal/Petroleum Group seeking to develop an 8 MW trial project to test zero emissions power from coal bed methane in Australia.</p>

Business	General Activities include:	R&D Activities include:	Priorities for FY07 include:
Stainless Steel Materials	<p>Monitoring global policy and market-related developments.</p> <p>Monitoring activities of EU industry bodies concerned with climate change and related policies.</p> <p>Energy efficiency and other greenhouse gas reducing measures including switching from coal to gas at the Yabulu Refinery in Queensland, Australia.</p>	<p>Research into product life cycle profile of nickel and cobalt products (CSIRO) including: life cycle analysis of nickel and stainless steel including end product use comparisons.</p> <p>Research into nickel extraction technologies with reduced greenhouse profiles</p> <p>Research into Rotary Kiln and slag heat capture at Cerro Matoso</p> <p>Participation in the University of Queensland Sustainable Minerals Institute.</p>	<p>Implementation of energy efficiency programs.</p> <p>Continue life cycle analysis</p> <p>Gain better understanding of the opportunities presented by climate change for the business (including Clean Development Mechanism (CDM), life cycle opportunities and influence of policy formation)</p>

Biodiversity

Biodiversity loss due to competing land use is an issue of global concern, and we are committed to actively enhancing our contribution to biodiversity protection.

In conjunction with the [International Council on Mining and Metals](#) (ICMM) and the [World Conservation Union](#) (IUCN), we have made an undertaking not to explore or mine in World Heritage listed properties. We have also made a commitment to take all possible steps to ensure that the effects of operations adjacent to these areas are not incompatible with the outstanding universal values of World Heritage properties.

We seek to recognise and manage the values of biodiversity that may be adversely affected by our direct or indirect activities. A number of our sites operate in or near areas that have high biodiversity values, including internationally recognised Biodiversity Hotspots, underscoring the importance of our biodiversity assessment and management programs. Further internal guidance is being developed to support the implementation of these programs. In the longer term, we see an opportunity beyond our site-specific activities to engage in regional biodiversity issues. We will continue to work with the communities in which we operate and with other stakeholders to develop our approach to biodiversity offsets but with our primary aim being to avoid or minimise any harm to biodiversity.

Without systematic assessment and management, from exploration through to post-closure land use, there are potential risks that biodiversity values and impacts will not be recognised. The majority of our sites have embedded biodiversity considerations into their overall environmental management system, and many are actively engaged in biodiversity-related programs.

Read more: [Environment Case Studies>Arid Recovery Program](#) and [Wildlife Study in Suriname](#).

For details on our performance during the reporting period, see [Environment>Our Performance>Biodiversity](#).

Resource Conservation

Beyond the extraction of ore and petroleum resources, the major resource requirements of our businesses are land, energy and water.

We clear land for access to resources, construction of waste rock dumps, tailings facilities and associated refining and processing infrastructure. We also manage significant tracts of land for exploration leases, for future development and as a buffer from neighbouring land uses.

BHP Billiton exploration activities are required to meet our [HSEC Management Standards](#), as well as internal exploration standards. These standards require exploration teams to undertake environmental assessment and impact analysis for target areas and to develop an Environmental Management Plan that describes the planned activities and the controls to ensure land disturbance is minimised. The methods of exploration depend on the resource target and the level of investigation required. Where disturbance to land is necessary to provide safe access for equipment and drilling activities, rehabilitation plans are required that include the sealing of all drill holes and reclamation of drill pads and access tracks to the satisfaction of regulatory authorities and local stakeholders.

A number of energy sources are used to operate mobile and fixed plant at mining and petroleum operations; to operate milling, smelting and refining operations; to generate electricity; and to transport product. We require energy management plans at our operations to optimise energy efficiency. Where opportunities exist, our sites look for cleaner sources of fuel as part of their energy mix.

We use water in mining, smelting, refining and petroleum processes. Access to clean water is an issue of growing international importance and a key challenge for sustainable development. Our activities are often located in remote, arid environments where access to high-quality water is limited. We continue to identify business risks and opportunities for water access, reuse or recycling, efficient use and responsible wastewater disposal. Information sharing across the group is assisted by an internal Community of Practice for water. We have set a target for all sites with high-quality water consumption greater than 500 megalitres per year to have water management plans.

We similarly have a focus on waste reduction, requiring waste minimisation programs to be in place at our operations.

Targets for the reduction of fresh water usage and waste generation have also been set; and performance against these, and our broader performance with regards to resource use, can be read in [Environment>Our Performance>Resource Use](#).

Waste Rock and Tailings

Large quantities of waste rock and tailings are generated in mining and processing operations. Waste rock is the material moved to obtain access to the economic ore resources. Tailings are the non-economic material (coarse and fine) produced after the ore has been processed. These materials are either placed back into open pits or underground workings where they originated or into engineered stockpiles, waste rock dumps or storage dam facilities.

Our HSEC Management Standards require strict controls on tailings management, heap leach residues and waste rock stockpile construction with the aims of minimising the disturbance of land, ensuring their physical stability and managing potential impacts to soil, surface and ground water. For the design of new tailings facilities we utilise a range of international standards, such as those developed by the International Commission on Large Dams (ICOLD), as well as internal guidelines and procedures.

We will not commit to a new mining project that disposes of waste rock or tailings into a river. This position does not apply to the disposal of waste rock and tailings materials in conventional waste rock dumps or tailings dams, which may be constructed within the catchments of a river system where such structures are designed to retain and store the waste materials. It also does not apply to the discharge of water from tailings dams or waste rock dumps that are of a quality acceptable for downstream beneficial uses.

In addition, we have decided not to pursue Deep Sea Tailing Placement (DSTP) as a potential tailing disposal option for any of our current prospects. We also believe that, given the very specific circumstances where DSTP could be considered appropriate, it is unlikely that the technology will be pursued in any of our future developments.

A summary of the activities relating to tailings and waste rock for the reporting period can be read in [Environment>Our Performance>Resource Use](#).

Emissions Management

The key air emissions generated by the Company's activities include greenhouse gas emissions, oxides of sulphur and nitrogen, ozone-depleting substances and fluoride.

Primary greenhouse gases of concern to us are carbon dioxide (CO₂) (a product of energy use and the use of fluxes) and methane (which occurs at coal mines and from oil and gas production facilities). Less significant are emissions of perfluorocarbons associated with our Aluminium CSG.

Oxides of sulphur (SO_x) and fluoride emissions are generated chiefly from smelting operations and can have an adverse effect on human health. The latter can also affect vegetation and thus enter the food chain.

Oxides of nitrogen (NO_x) emissions are produced by the combustion of fuels and potentially can have an adverse impact on the environment.

Dust can typically be generated by such activities as earthworks, excavation, blasting, transportation and product processing and can be exacerbated by dry climatic conditions and winds. Measures to control dust are important aspects of both operational and environmental management systems at our sites.

We are committed to reducing our air emissions by putting in place sound engineering and operating practices. Greenhouse gas management programs are required at all sites with emissions greater than 100,000 tonnes per year of carbon dioxide equivalent.

See the following for details on our environmental emissions performance:

- [Greenhouse Gases](#)
- [Ozone-Depleting Substances](#)
- [Oxides of Sulphur](#)
- [Oxides of Nitrogen](#)
- [Fluoride](#).

Environment – Our Performance

Refer to the following sections for details on our environmental performance over the reporting period:

- [Environmental Management Systems](#)
- [Environmental Incidents](#)
- [Environmental Fines](#)
- [Environmental Spending](#)
- [Closure](#)
- [Biodiversity](#)
- [Resource Use](#) – covering land, energy, water and waste
- [Emissions](#) – covering greenhouse gases, ozone-depleting substances, oxides of sulphur and nitrogen, and fluoride.

The following should be noted when reviewing the environmental data from the current reporting period:

- We sold our Peruvian Tintaya copper mine, effective 1 June 2006; and announced the sale of Southern Cross Fertilizers (Australia). Environmental performance for these businesses is included to the point of divestment and will not be reported in next year's data set.
- Environmental data from operations of the former WMC Resources Ltd (WMC) acquired in June 2005 has been included. Read [About this Report>Report Parameters](#) for the explanation of how this data is being reported.
- The closure of the Boodarie Iron facility (Australia) was announced in August 2005 and detailed decommissioning plans are being developed; HSEC data continues to be collected.

Read [Environment>Our Approach](#) for further details on environmental management. For examples of policy in action, read [Environment Case Studies](#).

Environmental Management Systems

During the reporting period, we continued to strengthen environmental management systems across our operations. All of our operations required to be certified to the international standard ISO 14001 for Environmental Management Systems, are certified with one exception. The exception was a site that was certified but as a result of changing certifying bodies, certification lapsed. Recertification is planned to be achieved by the end of 2006. While we generally do not require certification at exploration and development projects, sites being divested, closed sites or Corporate offices, a number of such sites have chosen to seek certification, including our technology laboratories in Newcastle and Johannesburg.

During the year, we reviewed and improved our environmental incident reporting process, enabling better capture of incident information. We encourage reporting of all incidents, including low-level incidents, as they are an opportunity to share lessons across the Group to help prevent recurrence. Reporting of potential significant incidents through our Significant Incident Reporting system more than doubled from the previous year.

Environmental Incidents

The reporting and follow up of significant HSEC incidents is a crucial part of our approach to HSEC management. The [BHP Billiton HSEC Consequence Severity Table](#) is used to determine the significance of actual or potential incidents. A significant environmental incident is an occurrence that has resulted in or had the potential to cause significant environmental harm. Our definition of 'significance' is conservative to ensure all learnings are captured from relevant HSEC incidents. Such an incident is rated at level 3 or above on the BHP Billiton HSEC Consequence Severity Table.

Read more: [Incident Reporting and Investigation](#).

Three significant environmental incidents occurred during the reporting period. The incident details and key lessons are described below.

Tintaya copper mine, Peru

An environmental incident occurred at the Tintaya copper mine on 9 December 2005, when a decrease in the pH of a small creek caused the death of fish in a local trout farm connected with the creek. The creek is a tributary of the Tintaya River, and the fish farm is used as a [bioindicator](#) of the quality of the local waterways.

The source of the acidity that led to the decrease in pH was found to be drainage from Tintaya's oxide plant facilities that had reached the rainwater diversion system. Basic causes were identified as inadequate effluent and rainwater drainage systems and insufficient risk assessment in the plant's design and change management processes.

Read more: [Environmental Case Studies>Incident Management](#).

Optimum Colliery, South Africa

At the Optimum Colliery, approximately 4,500 ML of mine-impacted water overflowed from a containment dam into the Klein Olifant River and ultimately into the Middelburg Dam. Corrective measures included the installation of berm walls, early warning devices on pumps and an irrigation system. Improvements are being made to the water management system, and changes have been made to risk assessment and inspection programs.

Liverpool Bay, United Kingdom

At the Liverpool Bay Lennox Platform an environmental incident occurred that resulted in a small spill of approximately 0.8 cubic metres of oil. The incident is currently under investigation.

Accidental Discharges

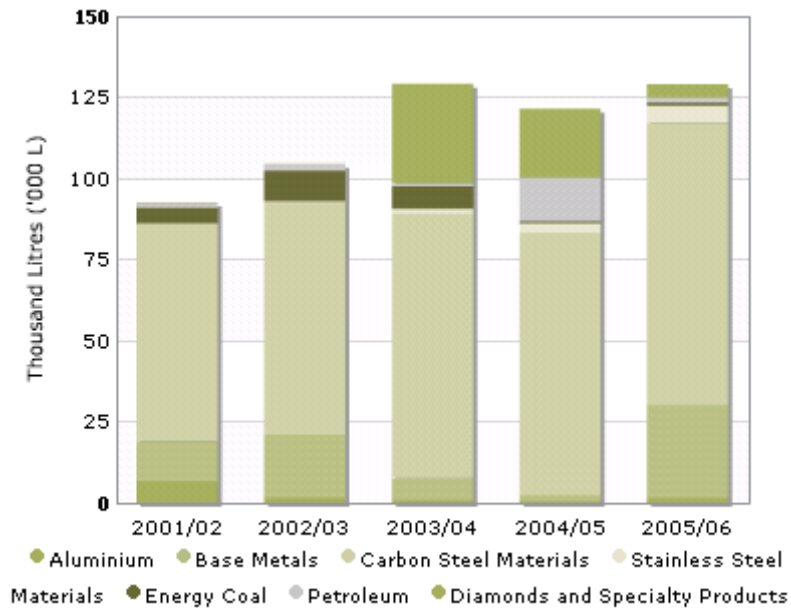
Accidental discharges of hydrocarbons to either land or water totalled 128,940 litres for the reporting period, an increase from 121,440 litres reported in the previous year.

The majority of accidental hydrocarbon discharges were to land, with the main cause of the accidental discharges being failure of hydraulic and oil hoses on machinery. An increase for the Base Metals CSG was attributable to a 20,000 litre diesel spill from a delivery truck rollover. The accident did not result in any significant environmental impact.

Read more: [Environmental Case Studies>Incident Management>Spill Response Training](#).

Accidental Discharges of Hydrocarbons

2001/02 to 2005/06



Environmental Fines

We did not meet our target of zero fines and prosecutions. Environmental fines totalled US\$91,526, an increase from the previous year's total of US\$1,100. Where a fine occurs our sites are required to ensure a full investigation is undertaken in line with our Incident Cause and Analysis Methodology (ICAM) tool for incident investigation. Our fines are summarised in the table below. Note: Fines reported may relate to incidents that occurred in previous years.

Environmental Fines 2005/06

Site	Customer Sector Group	Description	Fine (US\$)
Western Australia Iron Ore Port and Rail	Carbon Steel Materials	Late payment for an environmental licence fee.	456
Tintaya, Peru	Base Metals	<p>As a result of an environmental incident at the Tintaya copper mine, the regulating authority imposed a fine of 170,000 Peruvian Soles (approximately US\$50,000). The fine was based on:</p> <ul style="list-style-type: none"> ● Inadequate control of rainfall runoff; and ● Affecting the quality of the water in the Yanamayo Creek. <p>Read More: Environment Case Study</p>	50,000
Cerro Colorado, Chile	Base Metals	<p>As a result of a leach solution incident from a previous reporting period, Cerro Colorado was fined by the regional authority (COREMA). The fine was based on:</p> <ul style="list-style-type: none"> ● lack of timely notification of the environmental incursion ● lack of timely submission of an action plan ● non-compliance with Environmental Impact Assessment for the management of leaks or spills of process solution. 	91,070

Total 141,526

Environmental Spending

Over the reporting period environmental expenditure for the Group totalled US\$309 million. This compares with US\$267 million spent in the previous year.

The table below summarises the environmental spending of our CSGs, allocated to the categories of Research and Development, Site Rehabilitation, Environmental Monitoring, and Other Expenditure, such as environmental impact assessment and training. Research and Development spending includes collaborative work undertaken with academic institutions to improve environmental management at our operations, as well as product improvement initiatives.

These costs exclude expenditures associated with the capital cost, operation and maintenance of pollution control equipment and the like.

Table 1: Environmental Spending Estimates 2005/06

	Aluminium	Base Metals	Carbon Steel Materials	Stainless Steel Materials	Energy Coal	Petroleum	Diamonds and Specialty Products	BHP Billiton Total ⁴
Research and Development	1,690	1,370	3,885	49	705	65	4,485	12,249
Site Rehabilitation¹	2,448	93,371	21,713	3,261	67,414	571	38	189,281
Environmental Monitoring²	3,347	4,383	6,265	2,561	1,795	465	10,476	29,535
Others³	2,810	10,911	30,425	3,135	15,399	5,317	10,052	78,368
Total	10,296	110,033	62,288	9,006	85,313	6,418	25,050	309,433

Unit: Thousand US Dollars (\$US '000)

1. Spending associated with ongoing current or progressive rehabilitation, excluding provisions for closure.
2. Spending associated with environmental monitoring activities, such as air and water monitoring.
3. Other spending includes costs related to environmental management, such as environmental impact assessment and training
4. The BHP Billiton Total figure is inclusive of data from our closed Beenup site in Western Australia.

Closure

Comprehensive planning for closure and beyond is an important aspect in the life cycle of our operations. The cost of implementing closure plans in the future has the potential to affect cash flow for assets and incremental investments, accounting provisions, residual liabilities and access to future resources. Our [Closure Standard](#) has been developed in response to these issues.

The Closure Standard contains mandatory requirements including estimating expected cost and financial provisioning for closure. Provision is made for reclamation and closure of the Group's mining and processing facilities along with decommissioning of offshore oil platforms and infrastructure associated with petroleum activities. Read [Closure Standard Update](#) for specific information on our implementation progress.

Read our [2006 Annual Review](#) for specific information on closure cost provisions.

Closure Standard Update

Many BHP Billiton operations have existing closure plans that have been developed to satisfy regulatory or internal needs. Under the Closure Standard, however, each asset is reviewing existing plans and making adjustments to meet the new requirements. This review will be finalised during the next year and includes a rigorous assessment of site-specific closure risks, identification of risk management actions and development of reasonable and accurate closure cost estimates.

Over the reporting period, a number of actions were taken in support of improved closure planning:

- Web-based networks, both internal and external to the Company, have been active in sharing information and discussing common and leading closure practices. This included a Closure and Rehabilitation Community of Practice created to share information on closure and implementation of the Closure Standard.
- Thirteen closure planning training workshops were held across the company to build understanding and capacity with regards to the requirements of the Closure Standard.

For further background on the Closure Standard, see [Environment>Our Approach>Closure Planning](#).

For further background on the Closure Standard, see [Environment>Our Approach>Closure Planning](#) and see [Environmental Case Studies>Rehabilitation and Closure](#) for specific closure case studies.

Biodiversity

Our Sustainable Development Policy states that we will 'enhance biodiversity protection by assessing and considering ecological values and land-use aspects in investment, operational and closure activities'.

Over the reporting period:

- Eighteen sites reported having biodiversity plans in place.
- Ten sites reported operating adjacent to areas designated as protected areas by government authorities or national legislation. These sites include Coermotibo operations at Billiton Maatschappij Suriname (Wane Reserve, Suriname) and the Point of Ayr Terminal (Liverpool Bay petroleum asset, UK), which lies at the outer reaches of the Dee Estuary, recognised nationally as a Site of Special Scientific Interest, at European level as a Special Protection Area for birds, and internationally as an important wetland (Ramsar).
- Forty-eight sites reported engaging in biodiversity-related activities (in addition to our ongoing rehabilitation). For example, at our Ravensthorpe operation (Australia), regional survey work is being conducted for locally endemic species, and rare flora recovery activities are being undertaken. At Liverpool Bay (UK), a program is underway to re-establish Natterjack toads on the Talacre Dunes, and land enhancement works are progressing to encourage flora and fauna biodiversity and conservation. At the EKATI diamond operation (Canada), ongoing monitoring and research programs, including bird surveys, fish monitoring, wildlife programs and native seed collection, are in progress to determine the impact of mining on the biodiversity of the mining lease area.
- Thirty-one sites contributed to biodiversity-related research and development with expenditure totalling US\$2.68 million. For example, at Worsley Alumina (Australia) a number of research and development projects are underway, related to techniques to promote species reintroduction, dieback disease management and ecosystem function. Mt Arthur Coal (Australia) supports research into river ecology and biodiversity as part of the Upper Hunter River Rehabilitation Initiative. At Cerro Colorado (Colombia), research and management tool development are being conducted into Lagunillas lacustrine systems. Exploration and Appraisal Australia/Asia supports research programs for cetacean monitoring and the monitoring of impacts of noise on whales.
- Substantial funds were also contributed to other biodiversity initiatives, including contributions to the Revive our Wetlands program with Conservation Volunteers Australia and a Panda project in China. The *Growing Together* Giant Panda conservation initiative in partnership with the China Conservation and Research Centre in south-west China was launched to assist panda habitat preservation, breeding, care and education programs. The primary focus of the partnership will be providing life-long care for twin panda cubs that were born at the Wolong Nature Reserve in 2006, as well as the creation of Panda education programs for local schools in the Pilbara region of Western Australia.

For further examples of policy in action, read [Environmental Case Studies>Biodiversity](#)

Resource Use

Our Sustainable Development Policy states that we will 'set and achieve targets that promote efficient use of resources'. The following discusses our performance with regards to this commitment in the areas of:

- [Land](#)
- [Energy](#)
- [Water](#)
- [Waste](#)

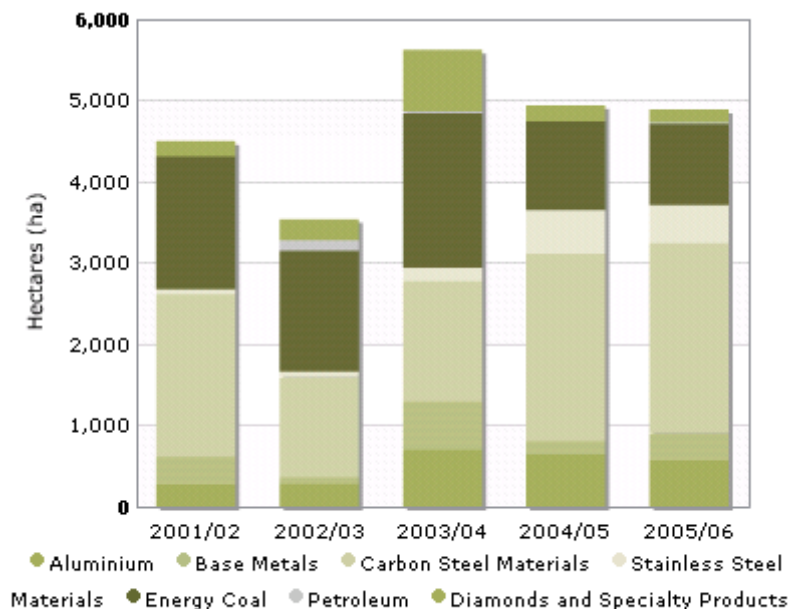
Resource Use – Land

Our sites are required to have land management plans in place to guide decisions on land use in order to protect and manage the land to meet agreed beneficial uses. For the reporting period, 97 per cent of sites reported land management plans in place. A broad range of issues are addressed in these plans, such as ecosystem and biodiversity management, erosion control, feral animals, weeds and fire management. In addition, our sites are actively seeking the best options for rehabilitating disturbed land and determining post-closure land use, consistent with agreed closure criteria.

As demonstrated in the graph below, the amount of land newly disturbed over the reporting period remained at similar levels compared to the previous period. Land rehabilitated increased by 30 per cent to 2,410 hectares, largely due to additional rehabilitation at closed sites in the [Base Metals](#) Customer Sector Group. The amount of land requiring rehabilitation increased over the reporting period. Of the land requiring rehabilitation, 13 per cent is currently available with the remainder comprising open pits, infrastructure and the like which can only be rehabilitated at closure.

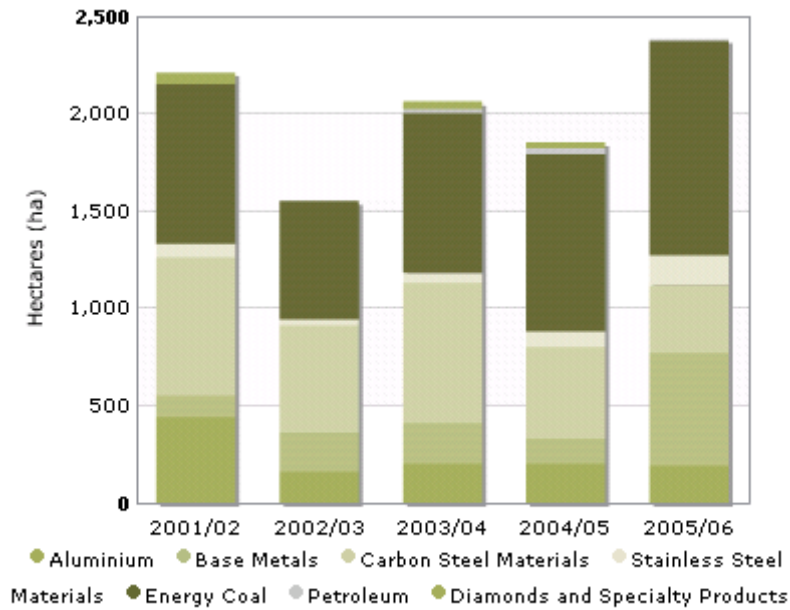
Land Disturbed in the Reporting Period

2001/02 to 2005/06



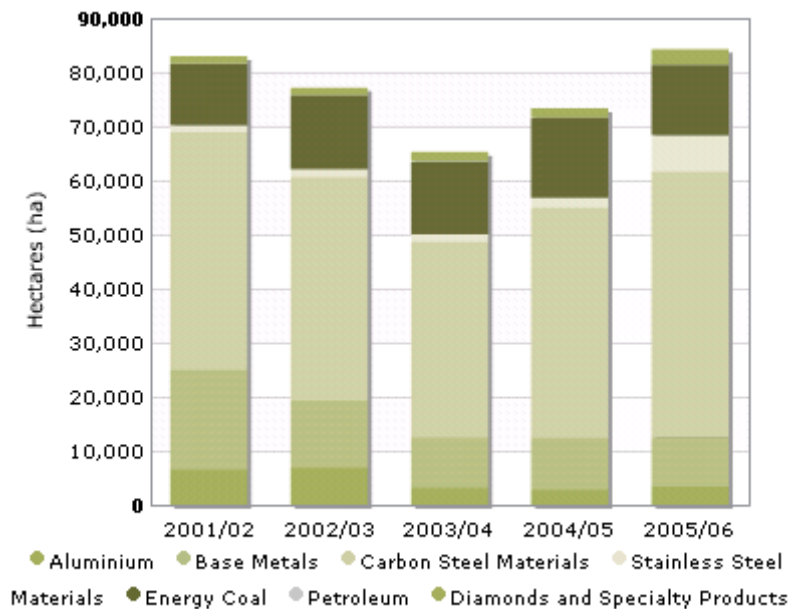
Note: Steel and Transport included in FY2002 BHP Billiton Total.

Land Rehabilitated in the Reporting Period 2001/02 to 2005/06



Note: Steel and Transport included in FY2002 BHP Billiton Total.

Land Requiring Rehabilitation 2001/02 to 2005/06



Note: Steel and Transport included in FY2002 BHP Billiton Total.

The total footprint of land owned, leased or managed by our operations was 3.2 million hectares, of which 4 per cent was for infrastructure, mining and support facilities and 12 per cent for ongoing exploration. Approximately 6 per cent of land is intended for future operation or expansion, 75 per cent is designated as buffer zones and areas not intended or planned for operation, and the remaining 3 per cent is for other purposes. In addition, our Exploration group holds approximately 42 million hectares of exploration rights, leases and permits.

Our footprint increased compared to the previous reporting period (1.73 million hectares) due to the acquisition of WMC interests.

Details of land use performance by CSGs are presented in the [Environmental Data Summary](#).

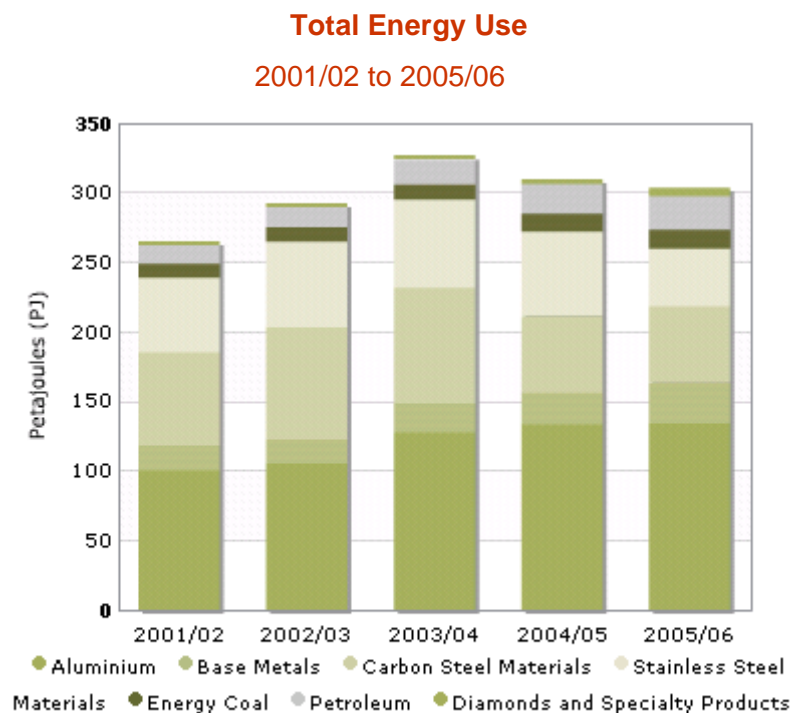
Read more: [Environmental Case Studies>Rehabilitation and Closure](#).

Resource Use – Energy

Our target was for all sites with greenhouse gas emissions greater than 100,000 tonnes of carbon dioxide equivalent per annum to have energy conservation plans with specific targets. This was achieved with the exception of one site. It should be noted that 48 sites had emissions greater than this figure, which accounted for 98 per cent of the Group's greenhouse gas emissions.

Our energy consumption decreased slightly from 309 petajoules in the previous reporting period to 304 petajoules. The Aluminium, Carbon Steel Materials and Stainless Steel Materials CSGs are the major consumers of energy, as presented in the graph below.

Details of energy performance by the CSGs are presented in the [Environmental Data Summary](#).

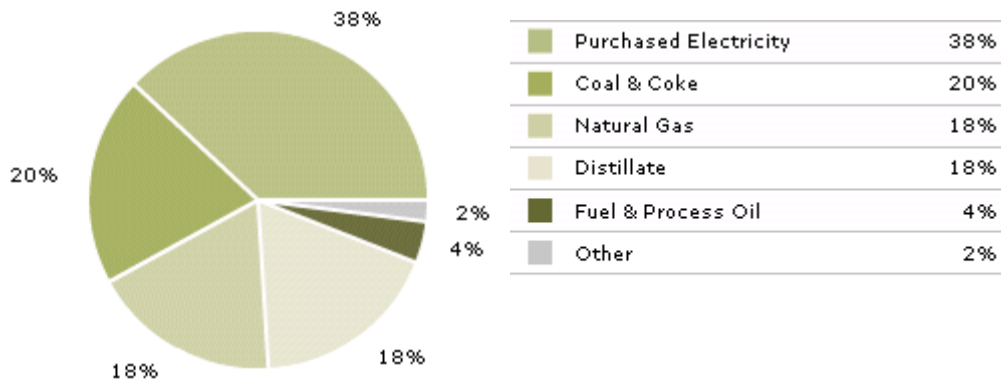


Note: Steel and Transport included in FY2002 BHP Billiton Total.

The Company's energy use by fuel type is presented below. Purchased electricity and coal and coke were the two major energy types used, followed by distillate and natural gas. Renewable energy from hydroelectricity accounted for approximately one per cent of total energy and is included in the purchased electricity category.

Energy Use by Type

2005/06



The [energy intensity index](#) is used to track our energy consumption performance.

During the year, our energy intensity index increased by three per cent, placing our energy intensity slightly above the baseline, as shown in the graph below. The increase was primarily due to increased energy intensities in our Carbon Steel Materials and Energy Coal CSGs.

Initiatives reported by operations to improve energy efficiency included process improvements, optimisation studies, auditing programs, improved metering, and monitoring and awareness programs.

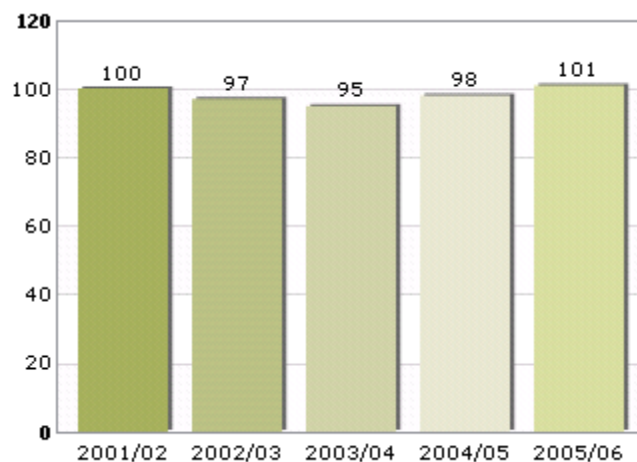
During the reporting year, our Business Excellence Team completed the development of an energy assessment process and trialled it at our Metalloys site in South Africa. This process incorporated a Strategic Planning Workshop with senior site staff to align the improvement initiatives with the site business plan. The key lessons from the completed energy assessments to date are now being used in the development of a Global Energy Awareness Strategy.

We have also experienced a significant increase in the cost of energy in South America and there is an emerging energy shortage in South Africa. In the coming year we plan to introduce Site-Based Energy Management Teams as an aid to dealing with these issues, as well as assisting us to comply with newly introduced legislative energy efficiency requirements in Australia.

Read more: [Environmental Case Studies>Energy Efficiency](#).

Energy Intensity Index

2001/02 to 2005/06



Note: Index excludes Chrome in all years, including the base year, since it was divested in June 2005.

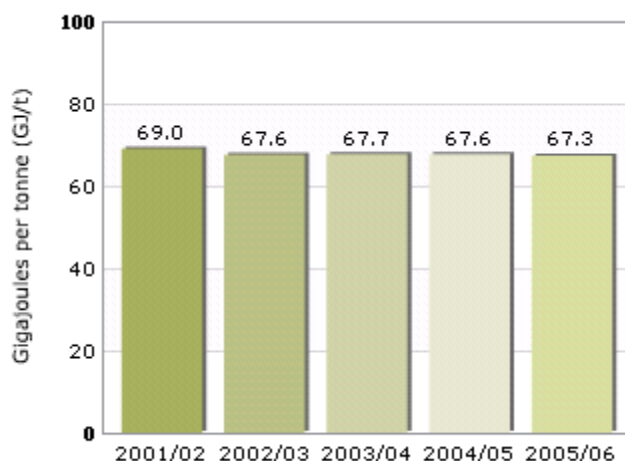
For details on energy consumption of some of our products, read [Energy Intensity of Selected Products](#).

Energy Intensity of Selected Products

Energy intensities of selected products are shown in the graphs below. Energy intensity in our Queensland open pit coal operations has continued to increase as a result of coal seams becoming progressively deeper and more energy per unit of production being required to remove overburden and transport coal. At Queensland Nickel, the energy intensity increased due to the combination of lower production with expansion activities.

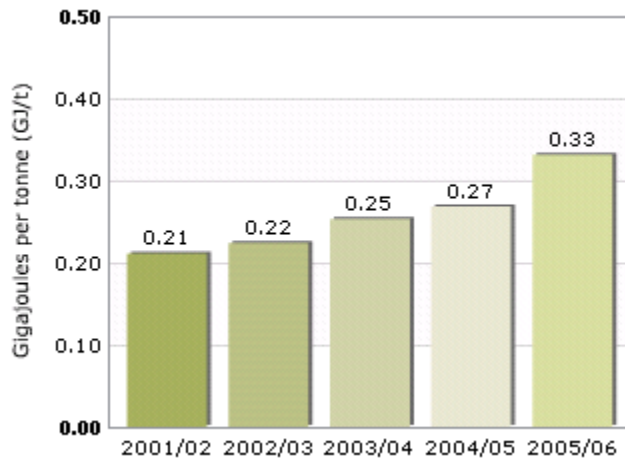
Energy Intensity - Aluminium Smelting

2001/02 to 2005/06



Energy Intensity - BMA Coal

2001/02 to 2005/06



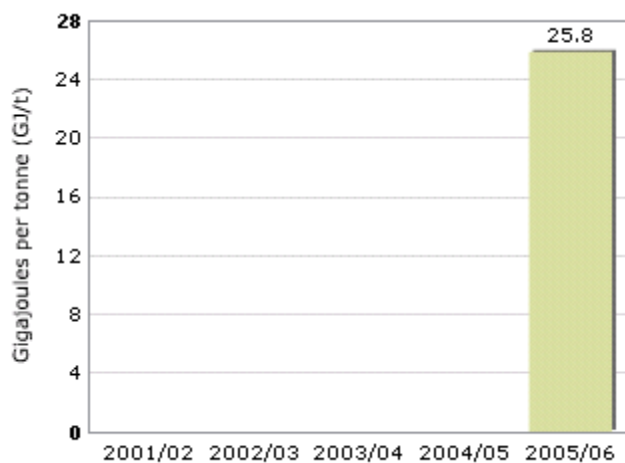
Energy Intensity - Copper (America)

2001/02 to 2005/06



Energy Intensity - Copper (Australia)

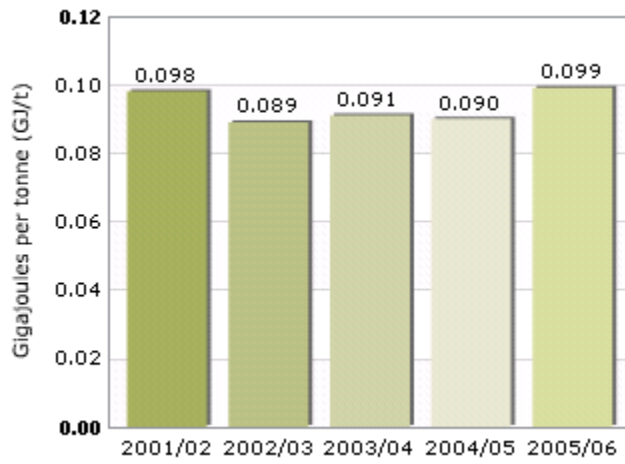
2001/02 to 2005/06



As a result of acquisitions, this is the first year we have reported Energy Intensity - Copper (Australia).

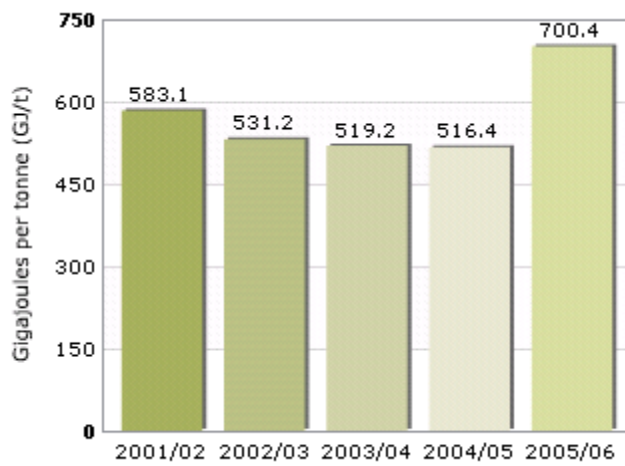
Energy Intensity - Western Australian Iron Ore

2001/02 to 2005/06



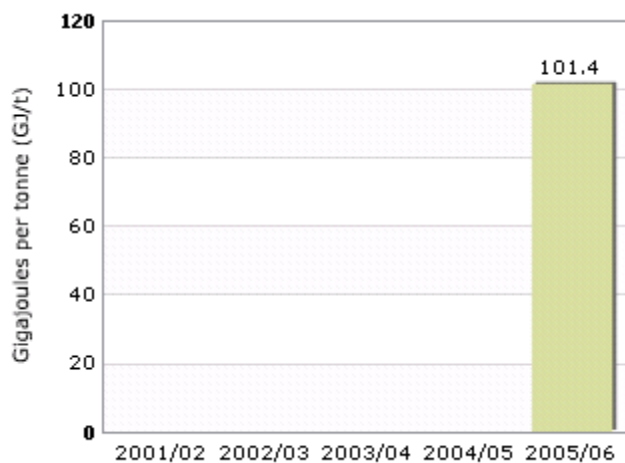
Energy Intensity - Queensland Nickel

2001/02 to 2005/06



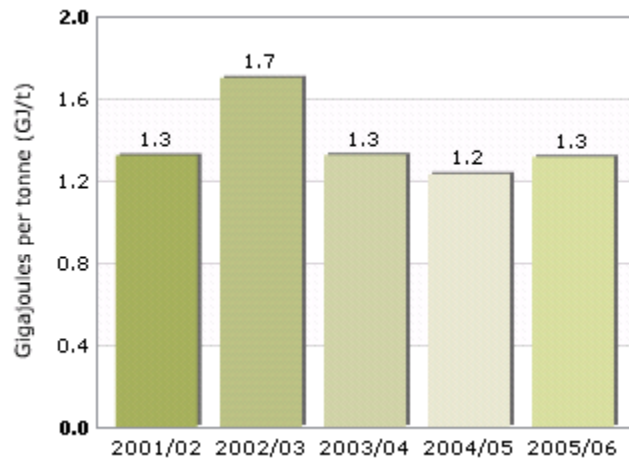
Energy Intensity - Nickel West

2001/02 to 2005/06



Energy Intensity - Petroleum Products

2001/02 to 2005/06



Resource Use - Water

For this reporting period we have expanded our reporting of water use to differentiate between high-quality and low-quality water. High-quality water (referred to as 'fresh water' in previous reports) has been defined as having total dissolved solids (TDS) less than 5,000 mg/L and low-quality having a TDS greater than 5,000 mg/L.

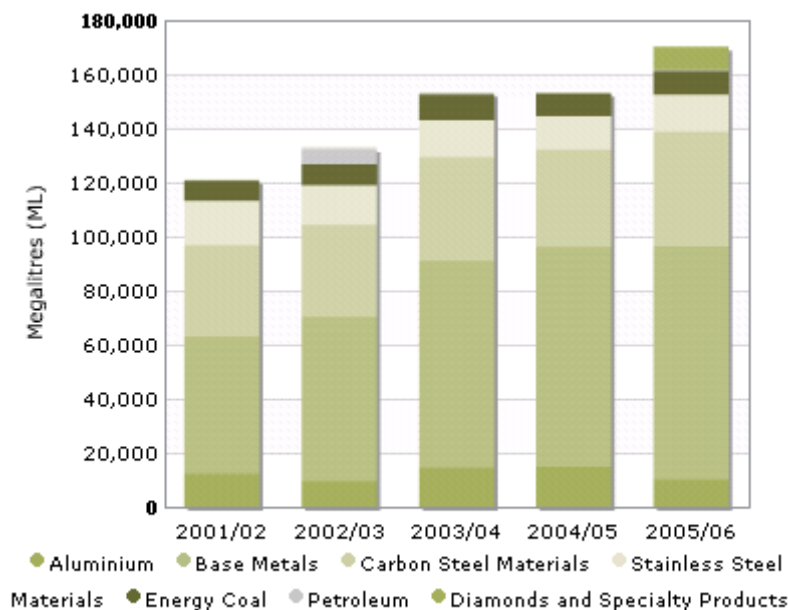
Water management plans are required and are in place at all of our sites with high-quality water consumption greater than 500 megalitres (ML) per annum, with the exception of one operation. Twenty-seven sites with high-quality water consumption below this threshold also reported having water management plans in place. Initiatives to reduce high-quality water consumption included water balance and water management system assessments; increased recycling and reuse of stormwater, mine water and grey water; and implementing training and awareness programs.

Total high-quality water consumption amounted to 170,250 ML, an increase over the 153,170 ML reported in the previous reporting period, as shown in the following graph. This was primarily due to increases in the Carbon Steel Materials, Base Metals (acquisition of Olympic Dam) and Diamonds and Specialty Pproducts (acquisition of Southern Cross) CSGs. Stainless Steel Materials and Carbon Steel Materials CSGs continue to be the major consumers of high-quality water.

High-quality water consumed by the CSGs is presented in the [Environmental Data Summary](#).

High-Quality Water Use

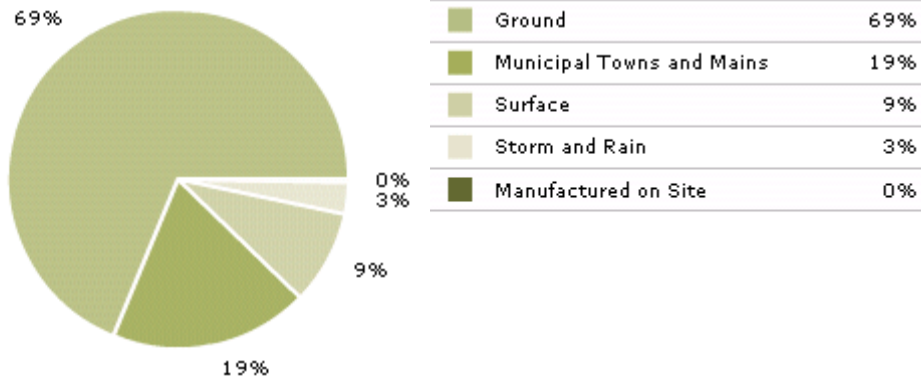
2001/02 to 2005/06



Sources of high-quality water for our operations are mainly ground and municipal water, as shown in the following graph.

High-Quality Water Use by Type

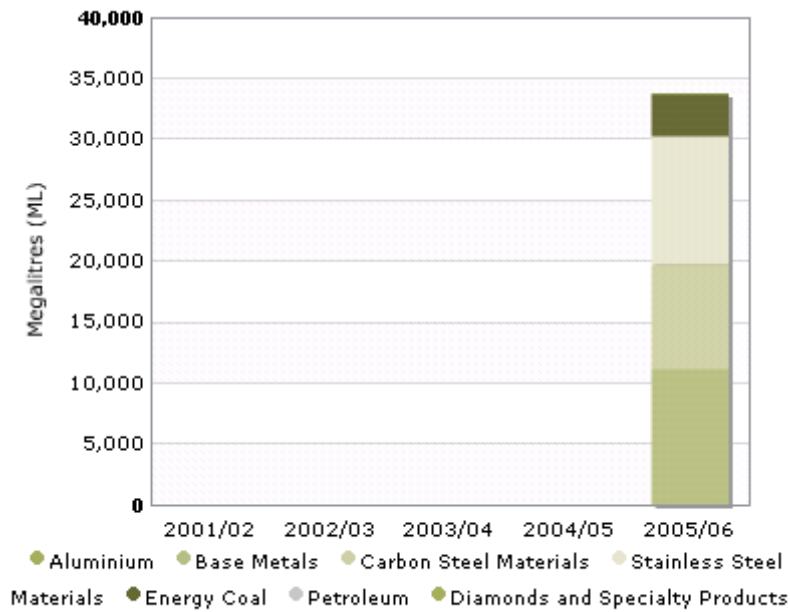
2005/06



Low-quality water use is shown in the following graph. Base Metals and Stainless Steel Materials CSGs were the key users of low-quality water.

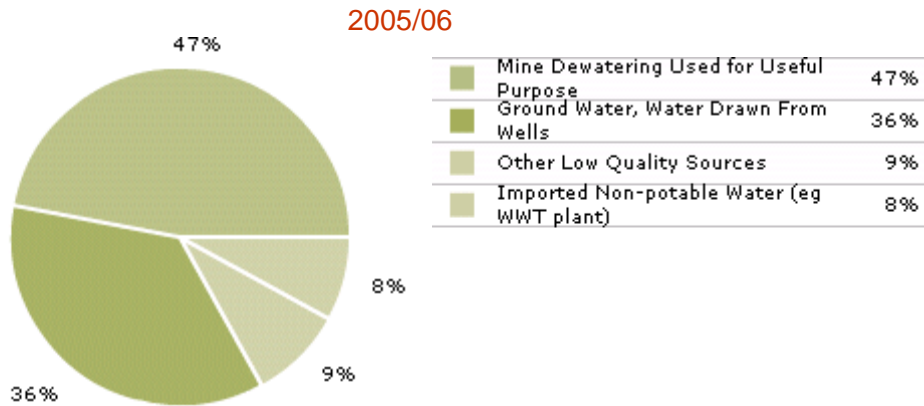
Low-Quality Water Use

2001/02 to 2005/06



Low-quality water was primarily derived from mine dewatering and ground water drawn from bores as shown below.

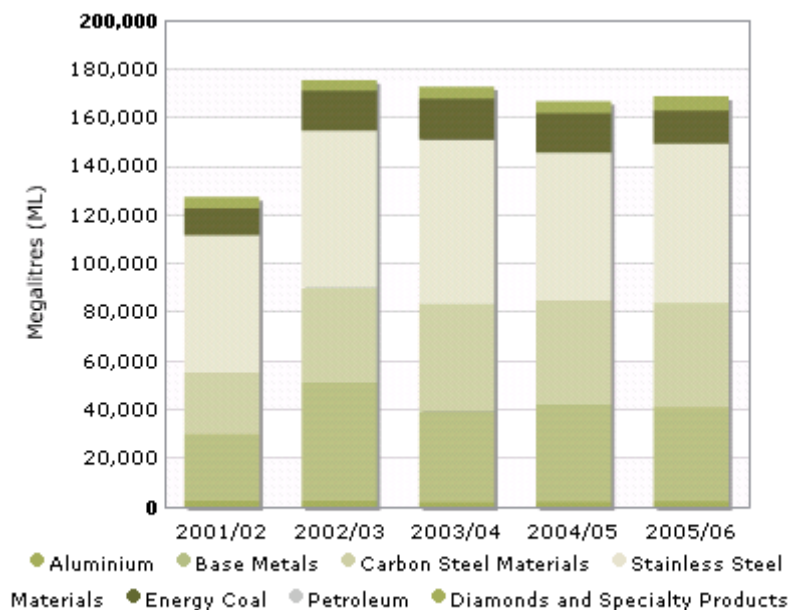
Low-Quality Water Use by Type



The use of recycled water remained at similar levels compared to last year, as presented in the following graph. For an example of our policy in action, read our case study [Emalahleni Water Reclamation Project](#).

Recycled Water Use

2001/02 to 2005/06

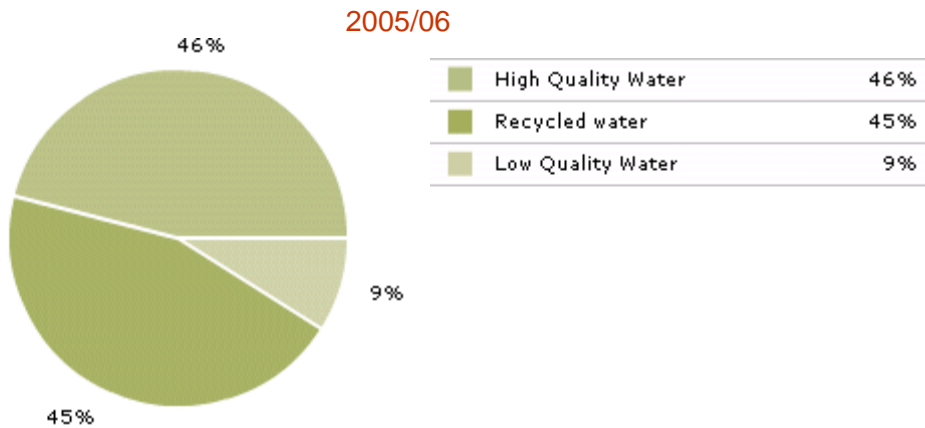


Note: Steel and Transport included in FY2002 BHP Billiton Total.

Major contributors to the use of recycled water are Stainless Steel Materials, Carbon Steel Materials and Base Metals CSGs.

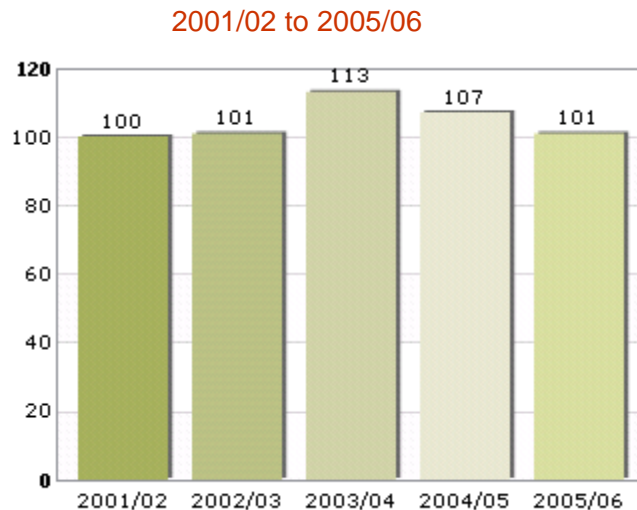
The ratio of combined high-quality and low-quality water to recycled water used during the reporting period was 55 per cent to 45 per cent, as shown in the following graph.

Water Use by Classification



Our high-quality water intensity index **1** is shown in the following graph. For the reporting period, our high-quality water intensity decreased when compared to the previous period; there is, however, an overall increase to date of one per cent against the 2001/02 baseline.

High-Quality Water Intensity Index



Note: Index excludes Chrome in all years, including the base year, since it was divested in June 2005.

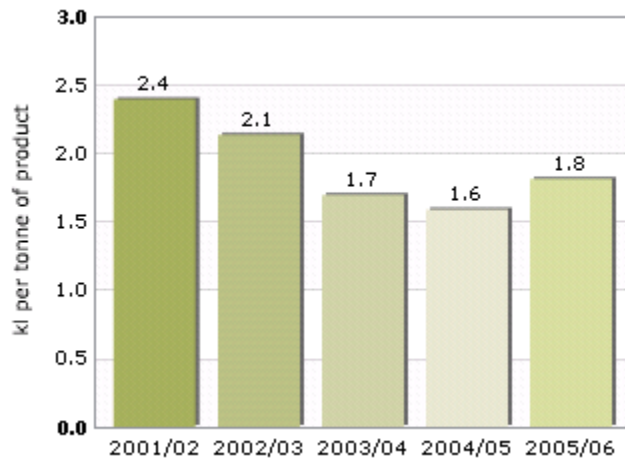
Further details on water intensity by product type are provided below.

Water Intensity of Selected Products

As the following graphs show, CSGs showed an increase in water intensities with the exception of Copper (America), which improved water recoveries.

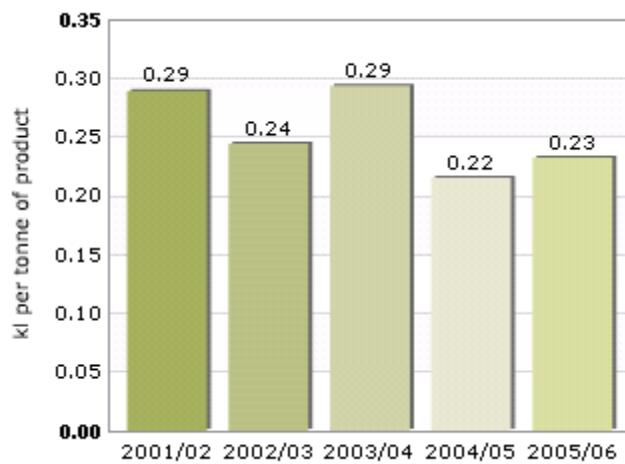
Fresh Water Intensity - Aluminium Smelting

2001/02 to 2005/06



Fresh Water Intensity - BMA Coal

2001/02 to 2005/06

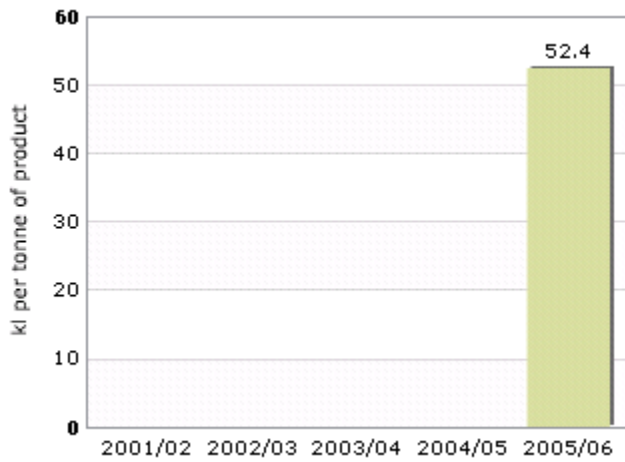


Fresh Water Intensity - Copper (America)

2001/02 to 2005/06

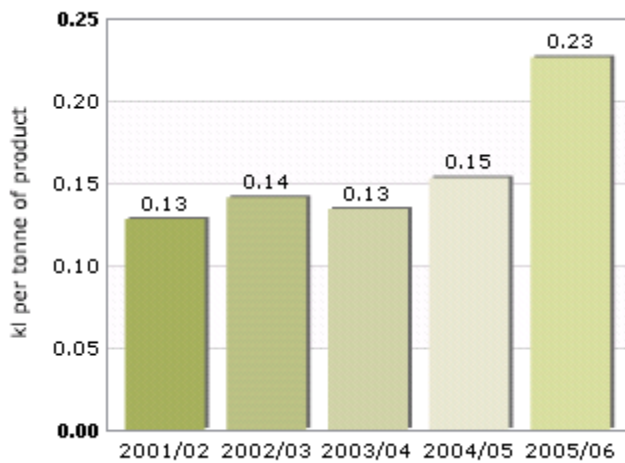


Fresh Water Intensity - Copper (Australia)
2001/02 to 2005/06

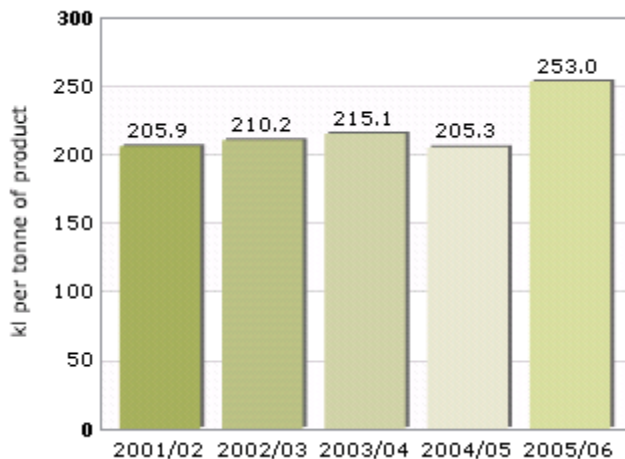


As a result of acquisitions, this is the first year we have reported Water Intensity - Copper (Australia).

Fresh Water Intensity - Western Australian Iron Ore
2001/02 to 2005/06

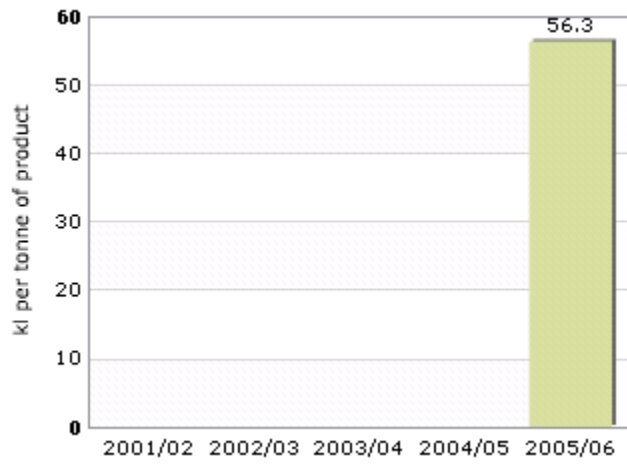


Fresh Water Intensity - Queensland Nickel
2001/02 to 2005/06



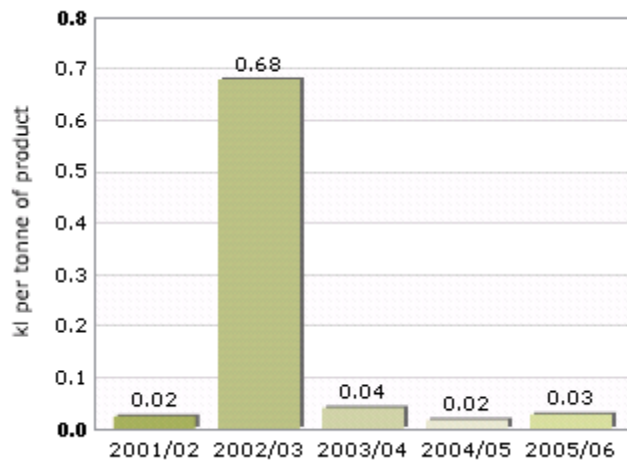
Fresh Water Intensity - Nickel West

2001/02 to 2005/06



Fresh Water Intensity - Petroleum Products

2001/02 to 2005/06



Resource Use – Waste

Waste management practices continued to improve across our operations. Waste minimisation programs are in place at 97 per cent of required sites.

Wastes are generated at various stages throughout resource extraction and processing. Wastes include those associated with mineral and petroleum extraction, such as waste rock, tailings and drilling muds, processing wastes of a hazardous nature; general or domestic wastes; and wastewater and effluent discharge. These waste types are described in the following sections.

A requirement of the [Global Reporting Initiative](#) Pilot Mining and Metals Sector Supplement is the reporting of the percentage of products derived from secondary materials, excluding internal recycling. Most of our activities relate to resource extraction and primary processing, and during the reporting period no sites reported using post consumer material as feed. For further details on our waste management performance, see:

- [Overburden, Waste Rock and Mineral Residues](#)
- [Hazardous Waste](#)
- [General Waste](#)
- [Wastewater and Effluent Discharge](#).

Read more: [Environmental Case Studies>Waste Recycling and Reuse](#).

Overburden, Waste Rock and Mineral Residues

In mining processes, 1246 million bank cubic metres (bcms) of overburden and 113 million bcms of waste rock were moved over the period.

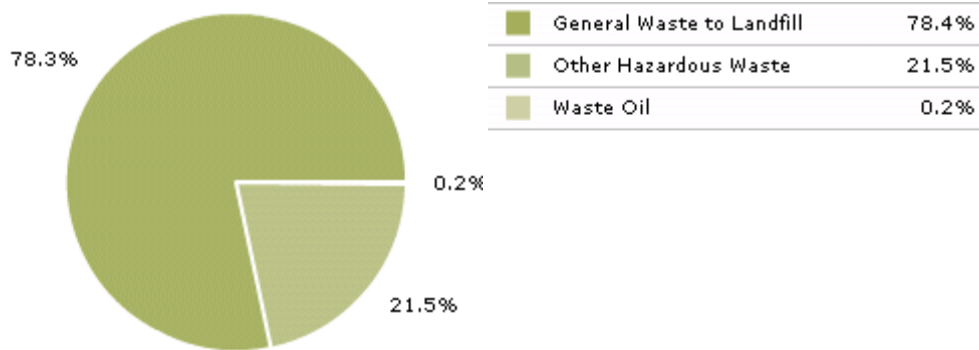
Mineral residues include tailings, sludges and slags from mineral processing, and also drilling muds and cuttings from petroleum operations. During the year 171 million tonnes of non-hazardous mineral residue and 44 million tonnes of hazardous mineral residue were disposed of. Hazardous mineral residue includes those mineral residues classified as hazardous in some regulatory jurisdictions or due to their leaching characteristics and includes certain tailings, sludges and slags. Mineral residues are placed in engineered structures, providing both physical and chemical stability.

Hazardous Waste

Hazardous waste is categorised into waste oil and other hazardous waste but excludes hazardous mineral residue. Hazardous waste includes materials contaminated with hydrocarbons, chemical waste, spent pot linings and hazardous baghouse dust, which is generally consistent with the classifications for hazardous waste under the [Basel Convention](#). Hazardous wastes comprise around 22 per cent of total waste disposed of, as shown in the following chart .

Waste Disposed (excluding mineral processing waste)

2005/06



Note: Waste oil is measured in kL and has been converted to tonnes using a conversion factor of 0.9 tonnes/kL.

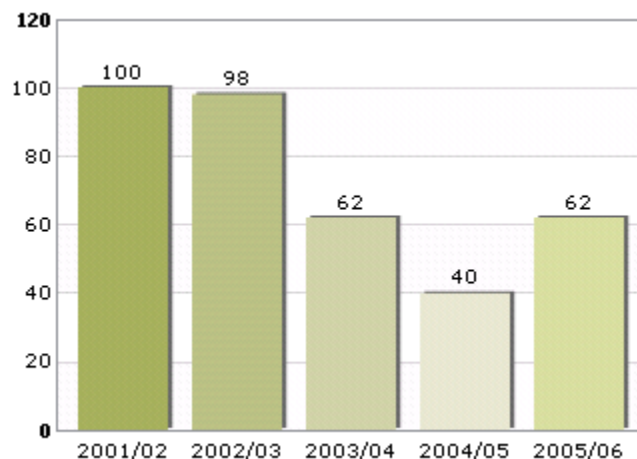
Of the waste oil generated, the majority was either reused as fuel for energy recovery on site or sent for recycling, reuse or energy recovery off site.

During the period 43,530 tonnes of hazardous waste were disposed to landfill. This compares with 68,110 tonnes for 2004/5. The decrease is largely due to the divestment of some Stainless Steel Materials CSG interests

Our hazardous waste intensity index ¹ increased over the reporting period, resulting in an overall reduction of our intensity index to date of 38 per cent against our baseline. The increase was due to a program of refurbishment of underground infrastructure at the Cannington mine. The intensity index excludes exploration and development projects, sites being divested, closed sites and offices.

Hazardous Waste Intensity Index

2001/02 to 2005/06



Note: Index excludes Chrome in all years, including the base year, since it was divested in June 2005.

Operations continue to implement programs to improve hazardous waste management:

- At Hotazel (South Africa), the operation is working with the Northern Cape Mine Managers Association in an initiative to reduce hazardous wastes in the province.
- A hazardous waste management plan has been implemented at the Cerro Matoso site (Colombia).

General Waste

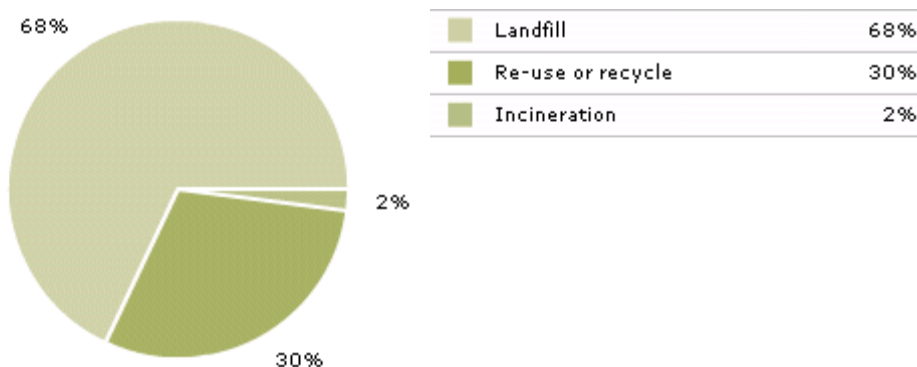
General waste or domestic waste types include paper, cardboard, and building and construction material. Our operations generated 235,460 tonnes of general waste in the reporting period, of which 30 per cent was recycled, reused, or composted; 68 per cent was disposed to landfill; and 2 per cent was incinerated. The graph below shows the methods of general waste disposal.

Examples of improved waste management include:

- At Olympic Dam (Australia) a review of waste reuse and recycling opportunities was undertaken, and a program to colour-code waste bins and recycling bins was completed. The bins are strategically placed to maximise diversion of wastes, and their placement was based on user survey information.
- At the San Juan Coal Company (US) a numbered container waste tracking system has been implemented.

General Waste Disposal Methods

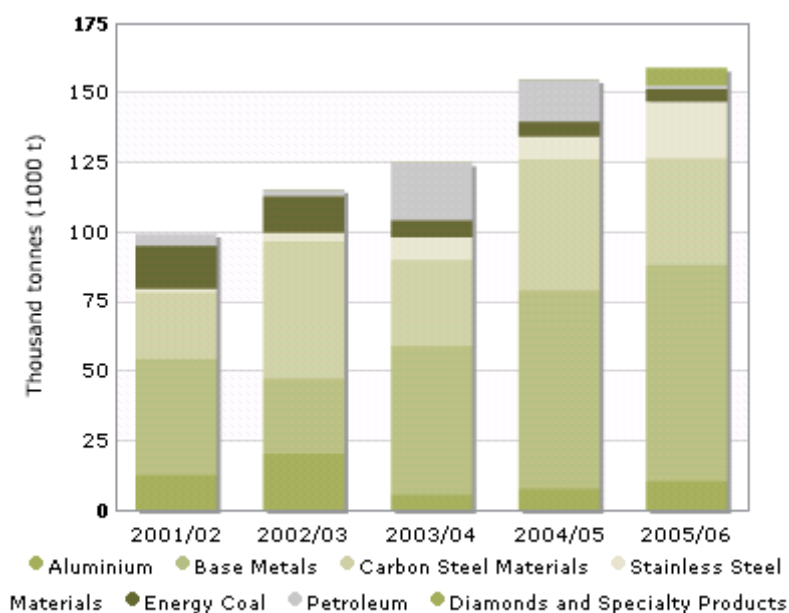
2005/06



Our general waste disposed of to landfill increased slightly from 154,820 tonnes in the previous reporting period to 158,970 tonnes, as illustrated in the following graph. This increase was primarily due to the acquisition of WMC operations and development projects.

General Waste Disposed to Landfill

2001/02 to 2005/06



Note: Steel and Transport not shown in FY2002. Waste: Does not include recycled materials, overburden, tailings, sludges and slag.

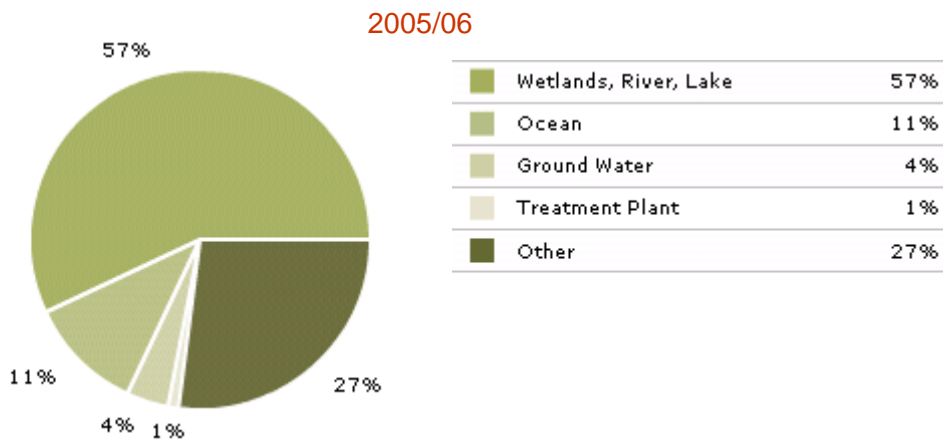
Our general waste intensity index 1 decreased, resulting in an overall decrease of our intensity index (not shown) to date of 24 per cent against the baseline.

Wastewater and Effluent Discharge

The quantity of wastewater and effluent discharged by the CSGs is presented in the following chart and in the Environmental Data Summary. The total amount of wastewater and effluent discharged to various end points was 88,180 mega litres (ML) compared to 64,090 ML in the previous reporting period. This increase is due to greater outputs from Base Metals closed sites.

While most wastewater and effluent was discharged to rivers, lakes and wetlands as shown in the chart, in line with our [Sustainable Development Policy](#) commitments we seek to ensure that any potential impacts resulting from this discharge are managed and minimised over time. The 'Other' category includes evaporation, seepage, irrigation, and wastewater sent off-site for other uses.

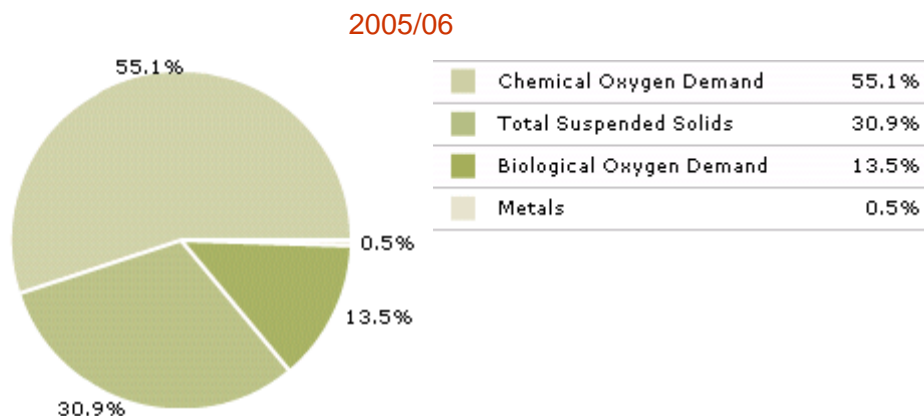
Wastewater and Effluent Discharged by Destination



In addition to reporting quantity, we also require our sites to report on key constituents of discharged wastewater and effluent.

The reportable key constituents include biological oxygen demand, chemical oxygen demand, total suspended solids and key metals discharged. Key constituents in the wastewater and effluent discharge totalled 1,440 tonnes and are presented in the following graph. The quantities of these key constituents were derived by estimation, calculation, measurement, or a combination of the three methods. It should be noted that any potential environmental impacts associated with these data can only be inferred when considered in relation to the specific receiving environment and associated mass and concentration discharge levels.

Key Constituents in the Wastewater and Effluent Discharged by Mass



Other Consumables

Due to the diversity of our operations, we seek to report only consumables of significant quantities. Over the reporting period we consumed the following (excluding fuels, which are reported in Energy):

Consumable Item	Amount (Tonnes)
Acid	2,564,580
Caustic soda	423,760
Explosives	610,650
Purchased gas other than natural gas (i.e. ammonia, oxygen, hydrogen and nitrogen gas)	534,520
Limestone and dolomite	52,590

Emissions

Environmental emissions are a part of our operations; however, in line with our commitment to continual improvement we require our sites to ensure that emissions are identified and managed to reduce potential impacts over time.

The following details our performance with regards to the significant environmental emissions across our businesses of:

- [Greenhouse Gases](#)
- [Ozone-Depleting Substances](#)
- [Oxides of Sulphur](#)
- [Oxides of Nitrogen](#)
- [Fluoride](#).

Read more: [Environmental Case Studies>Energy Efficiency](#)

Emissions – Greenhouse Gases

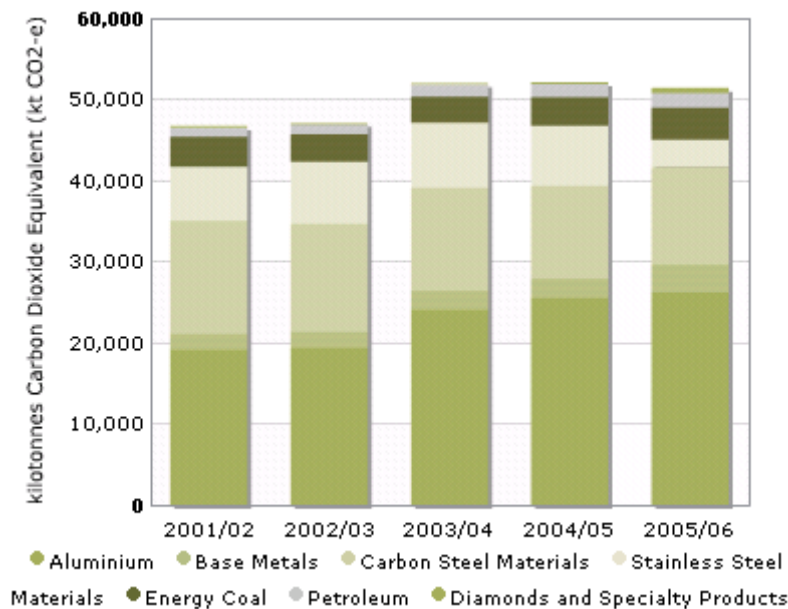
We achieved our target for all sites with greenhouse gas emissions greater than 100,000 tonnes of carbon dioxide equivalent per annum to have greenhouse gas management programs except for one operation. It should be noted that 48 sites had emissions greater than 100,000 tonnes per annum, accounting for 98 per cent of the Group's greenhouse gas emissions.

Our total greenhouse gas emissions amounted to 51 million tonnes of carbon dioxide equivalent, a similar level to that reported in the previous reporting period. Major contributions were from aluminium smelters and Carbon Steel Materials CSG operations.

The graph below shows the Company's greenhouse gas emissions trend over five years by CSG. The sources of these emissions are presented in the subsequent graph.

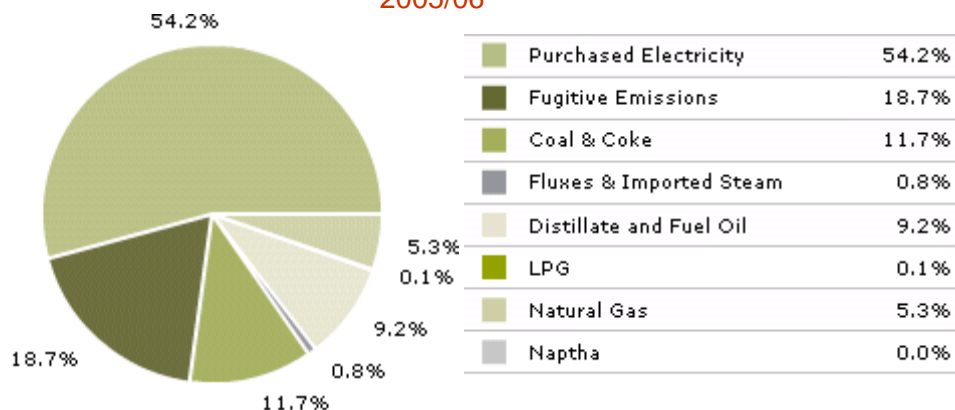
Greenhouse Gas Emissions

2001/02 to 2005/06



Sources of Greenhouse Gas Emissions

2005/06

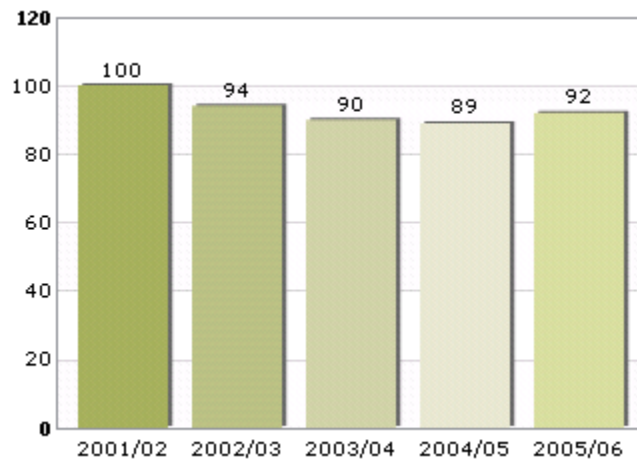


The greenhouse gas intensity index ¹ is used to monitor our performance against our target. The graph below shows our greenhouse gas intensity index for the past five years. During the year our greenhouse gas intensity increased, resulting in an overall reduction of our intensity index to date of 8 per cent against the 2001/02 baseline. Our performance is ahead of schedule to achieve our greenhouse gas target of an aggregate Group reduction in greenhouse gas emissions per unit of production of five per cent by 30 June 2007.

An estimated 370 million tonnes (320 million tonnes on an equity basis) of carbon dioxide equivalent were emitted as a result of our products being used. This figure is estimated based on standard conversion rates for 2005/06 production levels. Several parameters are estimates from our purchasers, and this figure is thus not verifiable.

Greenhouse Gas Intensity Index

2001/02 to 2005/06



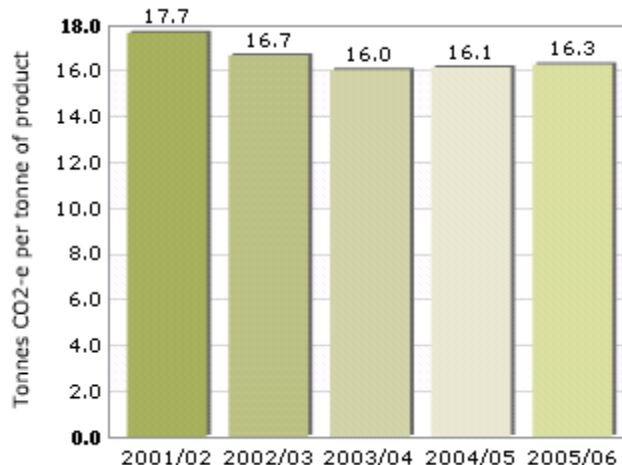
Note: Index excludes Chrome in all years, including the base year, since it was divested in June 2005.

Greenhouse Gas Intensity of Selected Products

The graphs below show that there have been increases in greenhouse gas intensities except for Copper (America). At Queensland Nickel, lower production affected greenhouse gas intensities. The greenhouse gas intensity of BMA Coal continues to increase as the coal seams are getting progressively deeper and more energy per unit of production is required to remove overburden and transport coal.

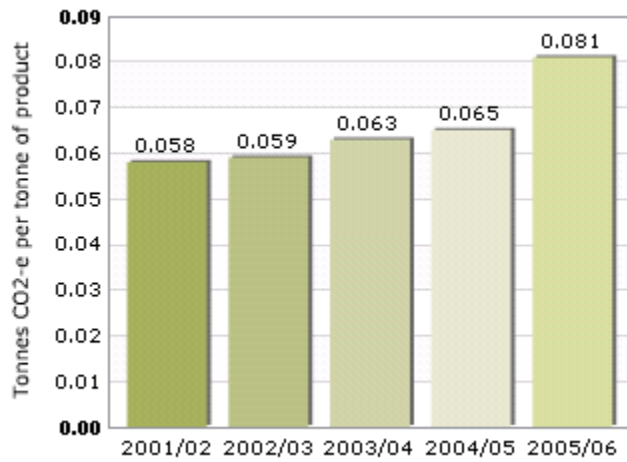
Greenhouse Gas Intensity - Aluminium Smelting

2001/02 to 2005/06



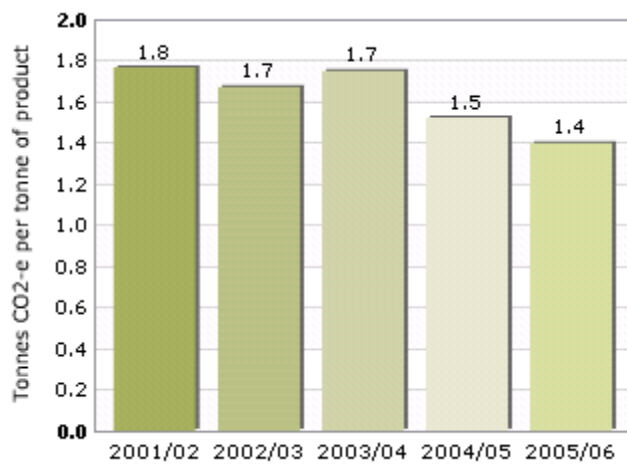
Greenhouse Gas Intensity - BMA Coal

2001/02 to 2005/06



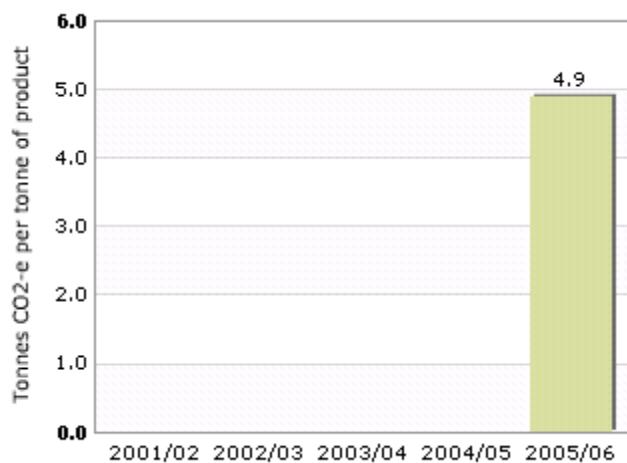
Greenhouse Gas Intensity - Copper (America)

2001/02 to 2005/06



Greenhouse Gas Intensity - Copper (Australia)

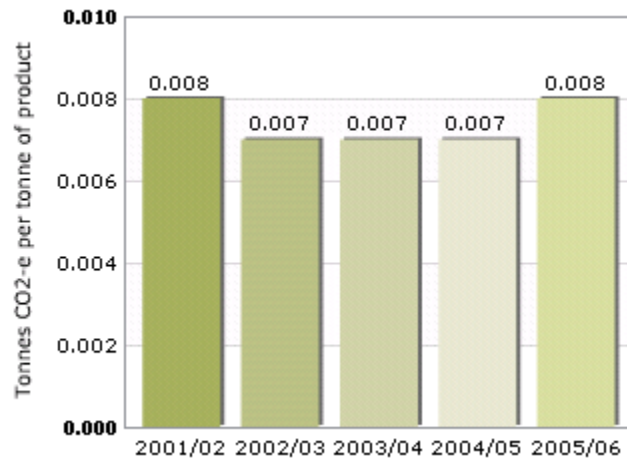
2001/02 to 2005/06



As a result of acquisitions, this is the first year we have reported Greenhouse Gas Intensity - Copper

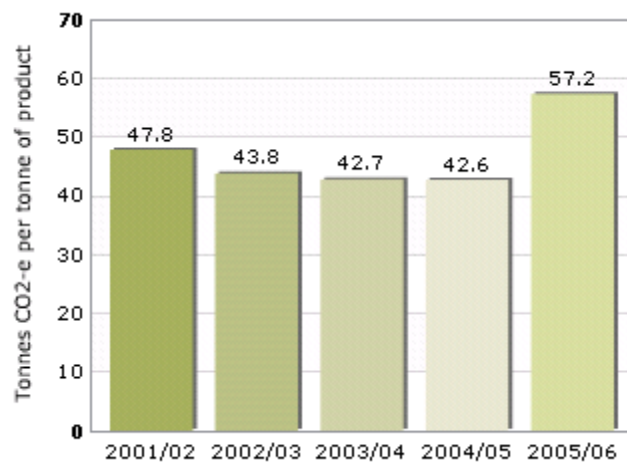
Greenhouse Gas Intensity - Western Australian Iron Ore

2001/02 to 2005/06



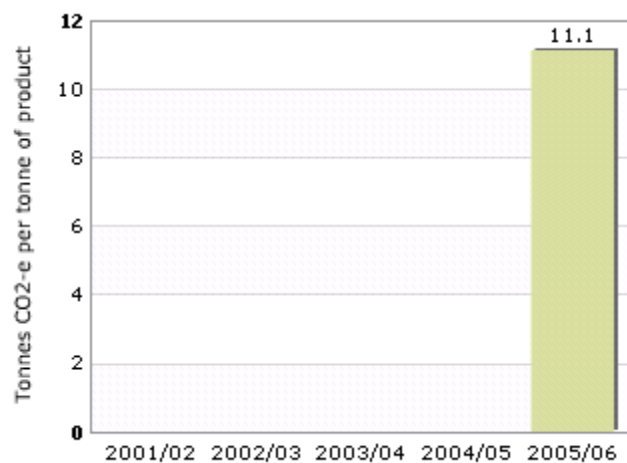
Greenhouse Gas Intensity - Queensland Nickel

2001/02 to 2005/06



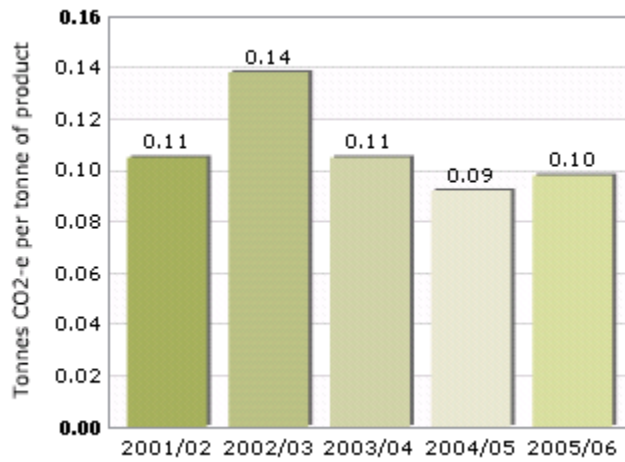
Greenhouse Gas Intensity - Nickel West

2001/02 to 2005/06



Greenhouse Gas Intensity - Petroleum Products

2001/02 to 2005/06



1. Intensity Index - The intensity index has been developed as a Company-wide performance indicator on environmental parameters, such as energy use, greenhouse gas emissions and high-quality 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 year for the intensity indices is BHP Billiton's Fiscal Year 2001/02 and, as such, has a value of 100.

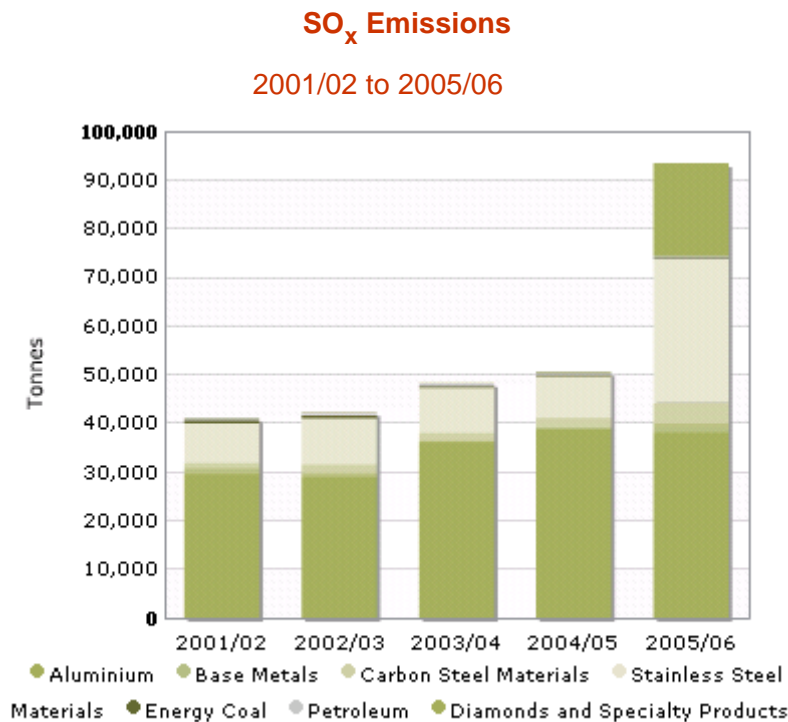
Emissions – Ozone-Depleting Substances

The amount of ozone-depleting substances discharged or leaked to air increased from 0.42 tonne of chlorofluorocarbon (CFC) equivalent in the previous reporting period to 1.74 tonne CFC equivalent in the current reporting period. We continue to phase out the use of ozone-depleting substances across our operations in compliance with legislative requirements.

Emissions – Oxides of Sulphur

Emissions of oxides of sulphur (SOx) to air increased from 50,530 tonnes in the previous reporting period to 93,390 tonnes as shown in the graph below. The increase was largely due to the inclusion of WMC interests. Major emission sources of SOx reported similar emission levels per unit of production compared to the previous reporting period.

A breakdown of SOx emissions by the CSGs is presented in the [Environmental Data Summary](#).

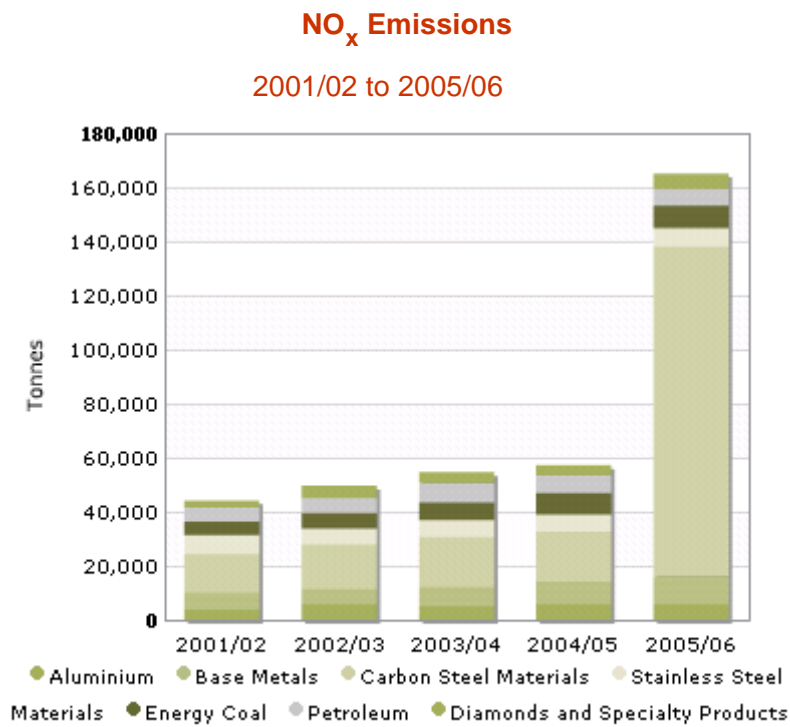


Note: Steel and Transport included in FY2002 BHP Billiton Total.

Emissions – Oxides of Nitrogen

As shown in the chart below, oxides of nitrogen (NO_x) emissions increased from 57,130 tonnes in the previous reporting period to 165,100 tonnes. The majority of the increase was due to a one-off purge at Boodarie Iron as part of the decommissioning process.

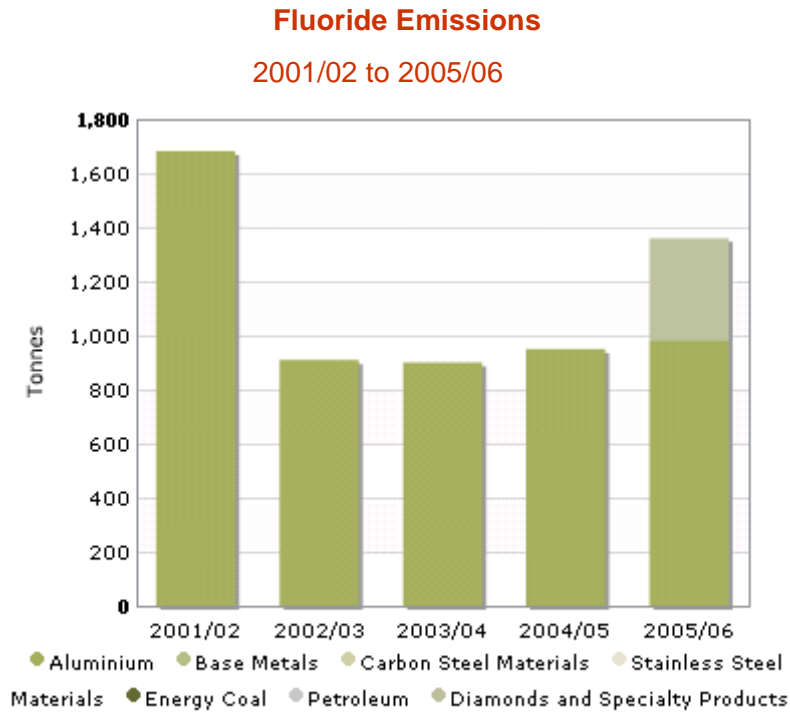
A breakdown of NO_x emissions by the CSGs is presented in the [Environmental Data Summary](#).



Note: Steel and Transport included in FY2002 BHP Billiton Total.

Emissions - Fluoride

Fluoride emissions increased from 950 tonnes in the previous reporting period to 1,360 tonnes, as shown in the graph below. This increase was primarily due to the inclusion of former WMC fertiliser operations. The aluminium smelters reported similar emission levels per unit of production to the previous reporting period. These operations continue to seek opportunities to reduce these emissions.



Environment Case Studies

The following case studies are examples of environmental issues, initiatives, projects and programs across the Group that highlight some of the sustainability opportunities and challenges faced by our operations. Case studies are also presented for the areas of [health](#), [safety](#), [community](#) and [socio-economic](#).

[View](#) all case studies.

Read more:

<p>Stewardship</p>	<p>Efforts by BMA Coal (Australia) to minimise coal loss during the mining process, supporting responsible jewellery practices and researching the feasibility of third-party certification of mining's environmental and social performance demonstrate how we have embraced the principle of stewardship.</p>
<p>Waste Recycling and Reuse</p>	<p>We consider waste management to be a fundamental part of the mining operation. Read how Alumar (Brazil) uses coal fines as a substitute for the coke burned at a cement plant in the region.</p>
<p>Rehabilitation and Closure</p>	<p>Petangis (Indonesia), San Juan (US) and San Manuel (US) are testimony to our approach to closure planning.</p>
<p>Biodiversity</p>	<p>We are committed to actively enhancing our contribution to biodiversity protection. Our Arid Recovery Program (Australia), camera trapping program in Suriname and approach to managing pastoral leases in Australia are examples of how we put this commitment into action.</p>
<p>Incident Management</p>	<p>Angostura (Trinidad and Tobago) helps a local community to safeguard their environment in the event of an oil spill, and we respond to an environmental incident at Tintaya (Peru).</p>
<p>Water Management</p>	<p>Our operations use water in their processes, and they are often located in remote, arid environments where there can be limited access to fresh water. Ingwe's Emalahleni Water Reclamation Project (South Africa) is a sustainable solution to a critical water issue.</p>
<p>Energy Efficiency</p>	<p>All our operations are working towards achieving our energy and greenhouse targets. EKATI Diamond Mine (Canada) shows how we can all reduce greenhouse gas emissions and help mitigate climate change.</p>
<p>Environmental Management</p>	<p>EKATI (Canada) and Olympic Dam (Australia) show how we engage our stakeholders in ways to reduce our environmental footprint.</p>

Environment Case Studies

Environment – Stewardship

Case Study Contributor:	BHP Billiton Mitsubishi Alliance (BMA) (Peak Downs Mine)
BHP Billiton Interest:	50%
Location:	Central Queensland, Australia
Customer Sector Group:	Carbon Steel Materials
Commodity:	Metallurgical and Thermal Coal
Case Study Status:	New for 2006

Peak Downs Mine Initiates the Last Drop Project to Minimise Coal Loss During the Mining Process

Peak Downs is one of a number of mines operated by BMA in the Bowen Basin producing hard coking coal (HCC). There are limited HCC resources in the world, which puts Peak Downs in a privileged position with strong demand and good prices for its products.

An issue faced by BMA has been the amount of coal lost during the waste stripping and mining process. Studies had shown that the loss can be as high as 13 per cent. Initial work indicated that it is possible to reduce this loss by 5 to 8 per cent, but new work practices and significant process changes are required.

The BMA Business Improvement and Optimisation Group and Peak Downs management initiated a project to look at options and seek a solution. The result is a new process that has been shown to not only reduce coal loss by approximately 9 per cent but also deliver other benefits that can contribute significantly to BMA's sustainability performance.



Every 'last drop' helps to meet the global demand for hard coking coal

The challenge

A project team was formed comprising personnel from the Peak Downs mining and technical services departments, BMA Business Improvement staff and consultants from the strategic services firm Global Mining Corporation. The team set out to gain an understanding of the current level of coal loss suffered during waste stripping and mining at Peak Downs, identify the causes of this loss and develop a new core process for the mining operation. As the goal is to mine every 'last drop' of coal from the deposit, the initiative was named the Last Drop Project.

The process

Last Drop concept, pre-feasibility and field trials

The current level of coal loss in the mining processes was measured at 11.5 per cent. Causes of coal loss were found to include direct blast damage to the top of the coal seam, digging off the coal by large waste-stripping equipment diggers such as draglines, blast shear to the front edge of the coal seam, and general damage from trucks and diggers running on coal.

A loss minimisation concept study delivered several options, one of which showed clear economic potential. A pre-feasibility study followed, with extensive participation by Peak Downs operations and technical personnel to test the practicality of the option and refine the solution. The result is an innovative concept based on leaving a 'hardcap' of waste (approximately 1.5 metres thick) on top of the coal, so that blasting does not 'damage' the coal and major equipment never touches it. Precision is the key:

- in drilling and blasting of the waste overlying the coal
- in the new mining process used to remove the hardcap without losing coal.

Approval was received to conduct a program of full-scale field trials to test this solution and determine the likely reduction in coal loss. Extensive field trials over 15 months showed that using the hardcap mining process can reduce coal loss to 3 per cent (i.e., a reduction of 8.5 per cent) without compromising safety or production.

Last Drop feasibility study

A feasibility study is being undertaken to define the resultant benefits of adopting this new process at Peak Downs. As part of this study, an implementation plan is being developed by the project team in consultation with site management. This plan covers the resources, new work process and organisational change required to realise the value that the Last Drop Project can deliver.

The changes necessary to make the Last Drop initiative work do not involve advanced technology nor is any major capital required. What is necessary is a much more disciplined approach to operations and different types of work from operations and technical staff. This includes providing high-quality, detailed information to engineers, efficient working relationships between different departments based on well-designed systems and processes, and a rigorous planning and reconciliation process. The aim is to produce a routine and predictable work flow.

The successful implementation of the Last Drop project is based on the involvement of key operational, technical and managerial personnel in the organisational design, including the systems, processes, work design, culture and structure.

The outcomes

As well as reducing current coal loss by approximately 9 per cent and mine site cash costs by around 8 per cent, the Last Drop process delivers a number of other benefits that contribute significantly to BMA's sustainability performance. These include (relative to the current plan for the same sales):

- conserving the coal resource by adding approximately three years to the current 30-year mine plan
- reducing the area disturbed by mining by 50 hectares per annum
- reducing truck or shovel stripping by approximately 13 million bank cubic metres annually, a 20 per cent reduction across the site (note: a bank cubic metre represents one cubic metre of material measured prior to disturbance)
- reducing explosives consumption by approximately 18 per cent, with consequent greenhouse gas benefits
- reducing annual diesel fuel consumption by 9 million litres and the usage of large earthmoving tyres by approximately 40 tyres each year, also with consequent greenhouse gas benefits
- reducing waste taken to the plant each year by 600,000 tonnes, with a corresponding reduction in plant rejects
- assisting to achieve the BHP Billiton Group target of a reduction in greenhouse gas emissions per unit of production of 5 per cent by 30 June 2007.

Overall, the benefits delivered by the Last Drop Project demonstrate that it is possible to enhance the sustainability of the business while also increasing economic value.



Coal loss after typical mining process measured 353 mm, July 2004



Coal loss after Last Drop process measured 82 mm, August 2005

Environment Case Studies

Environment – Stewardship

Case Study Contributor:	BHP Billiton Diamonds
BHP Billiton Interest:	Corporate Function
Location:	Global
Customer Sector Group:	Diamonds and Specialty Products
Commodity:	Diamonds
Case Study Status:	New for 2006

Council Established to Promote Responsible Business Practices within the Diamond and Gold Jewellery Supply Chain

The Council for Responsible Jewellery Practices was founded in May 2005 with members from a cross-section of the global diamond and gold jewellery supply chain, from mine to retail. The Council's mission is to promote responsible ethical, social, human rights and environmental performance throughout the industry supply chain.

BHP Billiton was a founding member of the Council, which is a not-for-profit organisation. Consultation has been initiated with stakeholders interested in ethical, social, human rights and environmental issues within the diamond and gold jewellery supply chain. Since its inception, membership of the Council has grown to more than 30 organisations from different parts of the supply chain. All members are committed to promoting responsible business practices in a transparent and accountable manner.



Council for Responsible Jewellery Practices logo

Addressing ethical, social, human rights and environmental challenges

The role of the Council is to enable the industry to work together to improve standards of practice and reduce duplication of efforts as a result. Council members believe that a coordinated worldwide approach to addressing ethical, social, human rights and environmental challenges will drive continuous improvement throughout the jewellery industry, to the benefit of industry stakeholders everywhere. This will, in turn, maintain and promote consumer confidence in the industry.

The initiative is unique because it aims to cover ethical, social, human rights and environmental issues across every step of the diamond and gold supply chain, no matter how large or small the business, in all geographies. It will assist the industry to deal with a range of issues, including major concerns that attract public protest such as 'conflict' or 'blood' diamonds, which involves the illicit trade of rough diamonds to fund conflicts in countries torn by civil unrest.

Reinforcing confidence in the supply chain

Specifically, the Council will endeavour to reinforce confidence in the diamond and gold jewellery supply chain by actions that include:

- developing in consultation with key stakeholder groups a Responsible Practices Framework that will define ethical, social, human rights and environmental standards to which all members commit to conduct their businesses
- making it a condition of membership that members apply the Responsible Practices Framework through a credible implementation process that will include self-assessments, evidenced through a system of independent third-party monitoring

- promoting awareness and understanding of key ethical, social, human rights and environmental business responsibility issues by working with all stakeholders including (but not limited to) industry participants, trade organisations, governments and civil society representatives
- working with stakeholders and industry participants to continuously improve upon the standards and processes referred to above to ensure that they are relevant, achievable and address key ethical, social, human rights and environmental challenges with due regard to the business objectives of the industry
- encouraging members to promote the adoption of the Responsible Practices Framework among their business partners
- seeking to be inclusive and extending the membership opportunity throughout the industry.

More information about the Council for Responsible Jewellery Practices can be found on their website: <http://www.responsiblejewellery.com>.



BHP Billiton is major shareholder and operator of the EKATI Diamond Mine in the Northwest Territories of Canada and markets rough and polished diamonds through a marketing office in Antwerp, Belgium

Environment Case Studies

Environment – Stewardship

Case Study Contributor:	Corporate Product Stewardship
BHP Billiton Interest:	Corporate Function
Location:	Global
Customer Sector Group:	All Customer Sector Groups
Commodities:	All Commodities
Case Study Status:	Follow-up to 2004 Case Study

Mining Certification Evaluation Project Moves Closer to its Objectives

As reported in our 2004 Report, we have been contributors to the funding of the [Mining Certification Evaluation Project](#) (MCEP) in conjunction with other Australian-based companies and organisations. The MCEP, which commenced in 2002, was a three-year research project established to investigate the feasibility of third-party certification of the environmental and social performance of mine sites. Overall management of the project was the responsibility of WWF–Australia.

The three fundamentals on which the research was centred were those relating to governance, setting standards, and assessment and assurance. During the course of the research project, the MCEP Working Group (with additional input from several of our personnel) developed standards and an assessment tool that was initially field-tested at our Cannington operation in north-west Queensland. For further background detail, refer to our 2004 case study: [Mining Certification Evaluation Project adopts draft criteria for certification and protocol for mine audits](#).

The MCEP report was released in January 2006. Since then, we have been engaged in ongoing discussions with other global mining companies, retailers, NGOs and industry associations to further develop the findings of the MCEP and other initiatives.

The Vancouver Dialogue

These discussions culminated in the Vancouver Dialogue, held in June 2006, at which representatives from more than 30 companies, NGOs and associations progressed the development of a mine verification system by:

- better understanding the interests and perspectives of each of the participants
- considering how similar systems have worked in other sectors
- sharing knowledge of existing initiatives, processes and proposals in the mining sector
- considering existing research and areas where further research might be needed, including research on key issues, criteria and methods
- considering principles that might guide a verification system
- understanding how a system of mine site or company verification would relate to the rest of the chain of custody for products such as jewellery
- exploring the potential objectives for, and benefits of, a verification system
- determining whether it is possible to build upon current initiatives, studies, and processes, rather than creating an entirely new process or system.



Cannington mine participated in the three-year research project

This dialogue led to the establishment of the Responsible Mining Assurance Initiative to further develop options for independent third-party assurance in the mining sector. Under the Initiative, a coordinating committee drawn from the dialogue participants is facilitating a process for identifying responsible mining standards and a governance model for the assurance system.

Environment Case Studies

Environment – Waste Recycling and Reuse

Case Study Contributor:	Alumar Aluminium Smelter and Refinery
BHP Billiton Interest:	Smelter 40%; Refinery 36%
Location:	Sao Luis, Maranhao, Brazil
Customer Sector Group:	Aluminium
Commodity:	Aluminium
Case Study Status:	New for 2006

Alumar Waste Recycling Project Enables Reuse of Coal Fines in Cement Plants

At the Alumar aluminium operation, a waste recycling project has led to coal fines from the refinery boilers being used as a substitute for the coke burned in the kilns at a cement plant in the region.

The innovative recycling concept has the potential to produce significant environmental and socio-economic benefits, including:

- reducing storage of coal fines at the plant by 18,000 tonnes per year
- developing a highly efficient recycling technology at low cost
- reducing fugitive emissions, with subsequent health, environmental and visual benefits
- saving US\$400,000 by avoiding the need for a new coal fines disposal area
- increasing awareness of our endeavours to provide leadership in environmental management.



The coal fines disposal area at Alumar

Background

The Alumar aluminium operation, which commenced in 1984, comprises a port, refinery and smelter. Their design and construction incorporate advanced concepts for economic and environmental development. Innovative equipment and technologies have been used to meet the most stringent environmental, health and safety requirements.

Alumar is now among the world's largest producers of alumina and aluminium. The refinery produces 1.4 million tonnes of alumina per year, which is almost three times higher than its original design capacity. This output has been achieved with minor modifications to the installed equipment. After three major expansions added to the single potline started in 1984, the smelter's aluminium production has increased four-fold to 440,000 tonnes per year.

High levels of process control and efficiency support the operation's certification to international standards ISO 9001, ISO 14001, OHSAS 18001 and SA 8000.

The coal fines reuse project

The refinery employs a steam-based process to produce the alumina. Most of the steam is produced by three coal-fired boilers, which generate ash as a waste product. Since the facility began operating, coal ash (including coal fines, which are the finest of the ashes) has been stored in a purpose-designed area that occupies 1.3 hectares of land and cost US\$400,000 to construct.

Coal fines are generated by the refinery at an annual rate of 26,400 tonnes. By January 2005, all of the stored ash had been removed for use in the rehabilitation of bauxite residue storage areas. Coal ash improves the physical properties of soil and acts as a source of nutrients for plants.

Since that January, approximately 24,000 tonnes have been stored in the ash disposal area. They could be used for further rehabilitation of the surfaces of the bauxite residue storage areas; however, such rehabilitation projects occur about every six years.

In October 2005, Alumar initiated a project with the aim of finding a reuse for all the coal fines generated by the refinery. Coal fines have a heat value of approximately 5,000 kcal/kg. They are not corrosive and are not a hazardous waste. These properties make them suitable for use in cement plants as a partial replacement for the coke burned in the kilns.

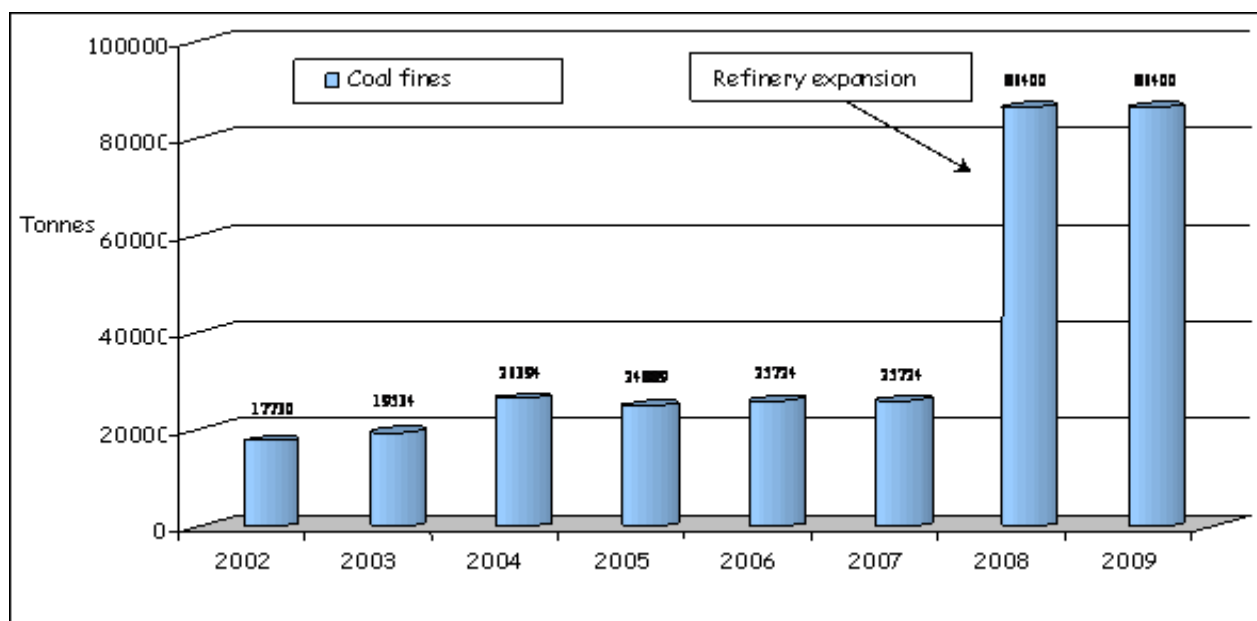
In partnership with a cement production company located in the state of Ceará, we have been testing the concept. This has been done with the approval of the environmental authorities in both Maranhão and Ceará. In the initial stages of the project, from October 2005 to February 2006, a total of 1,950 tonnes of coal fines was sent to the cement plant. As the project develops, the volume shipped is expected to increase to a steady rate of 1,500 tonnes per month.

At that rate, up to 18,000 tonnes of ash per year will not require storage. The balance of the coal fines being generated by the refinery will be used as required for the rehabilitation of the bauxite residue disposal areas. Other potential applications are also being explored. This means a new storage area for coal fines will not need to be constructed.

Refinery expansion

The refinery is currently undergoing an expansion project. As shown in the graph, when this is completed in 2008, the generation of coal ash will increase from 2,200 tonnes per month (26,400 tonnes per year) to 7,200 tonnes per month (86,400 tonnes per year).

Estimated generation of coal fines



In response to the projected increase in ash production, other avenues for use of coal fines are currently being explored. The reuse project shows that coal fines have the properties (good heat value, non-corrosive, non-hazardous) to successfully replace coke in cement-producing kilns. Following the success with our project partner, there is potential to gain additional customers in the cement industry.

The project results also indicate that coal fines could be used as a partial replacement for coal in steel plants and for charcoal in pig-iron plants. This provides scope for the trade of our coal fines to these industries as well.

Project benefits

This reuse of coal fines can create significant environmental and economic benefits, in line with our Sustainable Development Policy.

In summary, the reuse project has produced a feasible method for using coal fines in cement-producing kilns, which has successfully been adopted. There are several environmental benefits. A waste product will be recycled in a productive way and replace the use of a fossil fuel (coke). The use of large amounts of land for ash storage will no longer be required. With no need for new storage areas, impacts on flora and fauna will be avoided.

Fugitive emissions generated during ash handling will also be eliminated, mitigating risks to human health and the environment and improving visual amenity at the plant. Furthermore, significant costs associated with the construction, operation and maintenance of ash storage will be saved.

The outlook for further adoption of the reuse concept is positive, with potential for additional customers in the cement industry and use in the steel and pig-iron industries.

Environment Case Studies

Environment – Rehabilitation and Closure

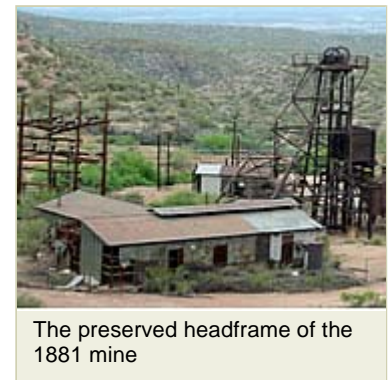
Case Study Contributor:	Southwest Copper (San Manuel Mine)
BHP Billiton Interest:	100%
Location:	Lower Kalamazoo, Tucson, Arizona
Customer Sector Group:	Base Metals
Commodity:	Copper
Case Study Status:	New for 2006

San Manuel Project Sets Precedents for Mine Site Closures

The closure and rehabilitation of the San Manuel mine is the first operator-led, full-scale closure of a mining operation of its size and complexity under present-day environmental regulation in the US.

San Manuel was constructed in 1952 as an underground mine. Open pit mining commenced in 1985 and ceased in 1999. Formal closure of the mine site, which covers nearly 1,800 hectares, was announced in January 2002.

Surface reclamation activities were completed in May 2006, eighteen months ahead of the original closure project schedule. The final cost was approximately US\$59 million, considerably less than the original budget of US\$72 million. Most importantly, the entire project, which totalled more than one million work-hours, was accomplished with just one recordable injury.



The preserved headframe of the 1881 mine

Applying Company principles and values

Principles from our Company [Charter](#) and [Sustainable Development Policy](#) were integrated into the closure project, including our commitment to:

- meet or, where less stringent than our standards, exceed applicable legal and other requirements
- set and achieve targets that include reducing and preventing pollution
- care for the environment and value cultural heritage
- advise on the responsible use of our products
- work with communities to contribute to social infrastructure needs through the development and use of appropriate skills and technologies
- develop partnerships that focus on creating sustainable value for everyone
- build relationships based on honesty, openness, mutual trust and involvement.

The project also set goals of reducing long-term risk, minimising maintenance costs and addressing community concerns.

Rehabilitating the site

Rehabilitation commenced in September 2004 with the demolition and removal of facilities from the site, control and management of hazardous materials, and preparations for the reclamation activities, which would include recontouring the overburden stockpiles, heap leach, mine slopes and internal drainage areas.

Overburden stockpiles

The stockpiles were recontoured to an overall 3:1 (horizontal to vertical) slope to improve both the aesthetics of the area and to provide a base to support successful revegetation.

The ridgeline stockpile was stabilised and potential acid-generating materials were relocated to internal areas of the property where contaminated stormwater runoff would not discharge from the site.

Heap leach

To promote stability and provide slopes that would be conducive to plant growth, reclamation activities for the mine heap included recontouring of the heap to achieve an overall 3:1 (horizontal to vertical) slope. In accomplishing this slope change, the overall footprint of the heap was considerably extended with a high-density polyethylene (HDPE) liner. This was done in accordance with the mine's Aquifer Protection Permit.

Stormwater drainage channels were engineered and constructed on the surface of the recontoured heap to control and limit erosion, and a cap was put in place that was then seeded with a pre-designated seed mixture to promote long-term revegetation.

Mine slopes

The closure team originated a 'topographic-based design' by which the reclaimed areas could be recontoured as landforms that blend into the natural landscape. In time, when revegetation is fully established, the reclaimed areas will be almost indistinguishable from the existing topography in the area.

Project scope

The scope of the reclamation project ranged from engineering studies, environmental surveys and sampling to active remediation of the site. World-renowned contractors and experts from a variety of disciplines were involved in designing and undertaking the project, which included the following major undertakings:

- Developing engineering controls to manage acid-generating material and control runoff on the site.
- Designing special channelling to protect slopes and manage stormwater.
- Applying best-practice storm water controls to manage runoff and sediment on the gradient of the facility.
- Engineering a closure design that reduces and manages erosion.
- Recontouring steep slopes.
- Developing strategies for the long-term management of more than 13 billion litres of heap leach solution.
- Developing a method to expand the footprint of the heap containment area without compromising existing conditions.
- Removing and managing regulated underground materials prior to the cessation of pumping.
- Safely managing large numbers of contractors on an extensive site while conducting closure activities 24 hours a day.

The site, like many in Arizona, has a history of mining activities that goes back more than 100 years. The closure project paid homage to the historic town site and the heritage of the district by leaving in place the headframe from an early mine that had been built in 1881.

Consulting and engaging the community

The closure project has been embraced by employees, contractors and stakeholders who have worked together with a sense of openness, sharing, trust and teamwork.

One of the key stakeholders has been the San Manuel community who have been engaged in the project through a consultative process that has included:

- formation of a Community Advisory Group
- community meetings

- involvement and support of local mining historical societies
- joint regulatory meetings (State Mine Inspector and the Arizona Department of Environmental Quality)
- published news articles
- tours (external and internal)
- publications and information regarding the closure
- extensive photo documentation and record keeping.

Our commitment to stakeholder consultation and involvement in the closure project was established in 1999, well before the formal closure announcement. Formation of the Community Advisory Group in 2002 established a vehicle for transparency and engagement that has been a consistent part of the closure process. The group grew from an initial membership of 16 to well over 100. Members have regularly toured the site and provided feedback and ideas to help shape the closure and measure our integrity in 'doing what we said we would do'.

By earning the trust of the community, we countered concerns that we would close the site and abandon the community without living up to our environmental and closure obligations.

Sharing the learnings

Considering the long history of mining in Arizona and the precedents set at San Manuel, the closure project is of importance not only to the Company and the community but to mining operations throughout the US.

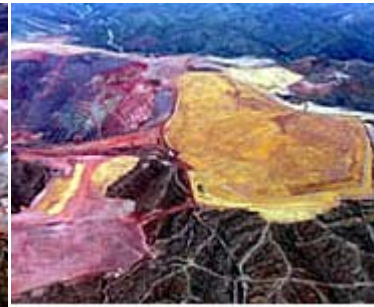
Our closure team has made every effort to ensure that the challenges, innovative strategies and successes of this benchmark project can be analysed by other mining companies as a basis for developing their own closure and rehabilitation projects.



The San Manuel site in 2004



Reclamation under way in 2005



Reclamation progress in 2006

Environment Case Studies

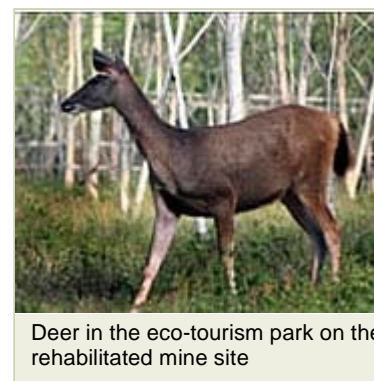
Environment – Rehabilitation and Closure

Case Study Contributor:	PT Kendilo Coal Indonesia
BHP Billiton Interest:	100%
Location:	East Kalimantan, Indonesia
Customer Sector Group:	Energy Coal
Commodity:	Steaming Coal
Case Study Status:	New for 2006

Petangis Mine Closure and Rehabilitation Program Receives Environmental Awards

The closure project team at PT Kendilo Coal Indonesia has been responsible for overseeing the rehabilitation of the Petangis mine site, which received a closure certificate from the Indonesian Government in June 2005, just three years after operations ceased. The site has received several 'Gold Flag' environmental awards from the Governor of East Kalimantan. *Kabupaten* (local government) representatives have classified the area as a *Taman Hutan Raya* (Great Forest Park), which is an acknowledgment that from an environmental perspective the site is now in better condition than it was prior to mining.

When exploration commenced in 1979, the Petangis site was not virgin forest but '*hutan sekunder, alang alang*' (secondary forest and grasses that spring up once farmers have moved on after converting forest to farm land using slash-and-burn methods). Over the years, more than 600,000 trees have been planted. Today, following completion of the rehabilitation process, people fish in man-made lakes, deer and monkeys roam, and the rare hornbill is often seen flying about in the trees.



Deer in the eco-tourism park on the rehabilitated mine site

One of the reasons for this success is that rehabilitation, replanting and associated activities were an integral part of operations from the commencement of mining in 1993. A 'contemporaneous rehabilitation' system was utilised, with land being rehabilitated upon the closure of each mining pit. Following the end of production, this meant that land rehabilitation could be completed in the relatively short period of three years, as only 13 of the total 613 hectares that remained to be reclaimed.

The closure process

Having been a major employer in the region for more than a decade, our aim was to leave the community with a lasting positive legacy following closure of the mine. A key aspect of closure planning was consultation with community stakeholders, and an extensive consultative process commenced in 1997 as part of our community development activities.

After the cessation of mining, an innovative joint venture allowed operations to continue for a further year. Raw coal was purchased from a small neighbouring mine, washed through the Kendilo wash-plant and marketed through BHP Billiton's global sales network. This enabled a gradual downsizing of the Petangis workforce, from its peak of 700 when the mine was at full production.

During discussions about how the post-mine area could be of use to the local villages, the concept of a tourism facility was conceived. Based on community meetings and the Environmental Impact Assessment of the site, plans were formulated with the assistance of a local NGO; the site would be developed as an eco-tourism park with lakes for fishing, a camping area, educational forest, children's playground, native deer park, jogging track and supporting facilities such as picnic shelters, places for eateries serving local foods, a parking area and access roads. A clean water supply would be provided for the park and for three neighbouring villages.

A formal closure plan was then drawn up for sign-off by all stakeholders. The process included building topographic models of the planned eco-tourism park, including lakes and trees where mining pits had been. A review of the plan and inspection of the site was carried out by a special government team comprising representatives from the Ministry of Energy and Mineral Resources, Ministry of Forestry, Indonesian Research Institute, Geological Research Institute and local government. Central government approval to the plan was granted in September 2002.

Implementing the closure plan

Post-mine rehabilitation was undertaken according to BHP Billiton policy, standards, procedures and protocols. The Indonesian Government also issued technical directives on rehabilitation through the Ministry of Energy and Mineral Resources, Ministry of Environment and Ministry of Forestry; however, higher standards than required were often adopted to meet community aspirations and Company standards, particularly in regard to technical aspects such as erosion potential, topography, drainage, maintenance of roads and recycling. It was also essential to ensure that buried tailings could not leach or oxidise to become acidic.

Through the BHP Billiton HSEC audit process, visiting auditors from within the Company not only checked that standards were being applied but also contributed specialist expertise based on learnings from other sites. An external environmental engineering consultancy also inspected the site and closure plan, issued action items and, after these were implemented, issued an independent environmental opinion, providing a final assurance of standards.

The value of partnering

During implementation of the closure plan, partnerships with local NGOs were integral to our aims to look beyond environmental rehabilitation and promote sustainable development of the local community. Programs were put in place to provide employees and local people with new skills, in anticipation of the time when PT Kendilo would no longer be the economic engine of the community.

Training focused on the setting up of mechanical workshops for cars and motorcycles, sewing services, small trading shops and various farming endeavours. The NGOs also provided training in improved agricultural practices (beyond slash and burn) including growing cash crops for trading such as snake beans, chilli, eggplant, tomatoes, beans, peanuts and soybeans for making the Indonesian specialty dishes 'tahu' and 'tempe'.

PT Kendilo received a certificate of mine closure from the Ministry of Energy and Mineral Resources in June 2005 and approval of forest rehabilitation was granted by the Ministry of Forestry. Responsibility for the site has reverted to the *Kabupaten* (local government).

The eco-tourism park was formally opened by the *Bupati* (district head) in November 2005 as part of the *Idul Fitri* celebrations following Ramadhan, the traditional month of fasting. More than 10,000 people attended – a good indication of the park's potential as a community resource and tourist destination.



Petangis mining pit prior to reclamation



Mining pit following reclamation



Fishing lake following completion of the rehabilitation program, 2005

Environment Case Studies

Environment – Rehabilitation and Closure

Case Study Contributor:	New Mexico Coal (San Juan Coal Company)
BHP Billiton Interest:	100%
Location:	North-west New Mexico, USA
Customer Sector Group:	Energy Coal
Commodity:	Steaming Coal
Case Study Status:	New for 2006

New Mexico Coal Applies Award-Winning Process to the Reclamation of Mined Areas

San Juan Coal Company (SJCC) operates the San Juan mine and La Plata mine. The Company's nationally recognised mine surface reclamation program applies a process developed by SJCC that is based on fluvial geomorphic principles. This involves contouring reclaimed surfaces and simulating stream configurations to create a landscape similar to that which would naturally have formed over time.

The reclamation program received two national awards for excellence from the US Department of Interior's Office of Surface Mining (OSM) in 2004, which stated that, 'The grading techniques and channel design used at the San Juan Mine have represented the most innovative reclamation technology that has been developed for western coal mining during the past 25 years'. The second award recognised SJCC's technique as the 'Best of the Best' for OSM's award year of 2004. OSM congratulated SJCC for showing 'foresight, initiative, and creative implementation, attributes that make them a model in both the coal industry and government regulatory environment'.

The process was developed by SJCC in 2001 in response to issues arising with conventional reclamation techniques. These techniques use terracing to control erosion and were demonstrating problems that require continued, long-term maintenance. Regulators were concerned that if reclamation required long-term maintenance it was not sustainable and they were eager to do away with such techniques.

The two SJCC mines are more than 1,500 metres above sea level, in a region that is semi arid with extremes of precipitation and temperature. Almost half the annual rainfall occurs from July to October as thunderstorms, and temperatures can range from -17°C to 37°C .

Applying fluvial geomorphic principles

The fluvial geomorphic principles were first adopted for reclamation of the Cottonwood Pit at the San Juan mine. A primary step was to define the drainage density of a landform that would blend in with the natural terrain. Drainage density is defined as the stream length divided by the area of the watershed contributing to the stream. A certain soil type and slope angle that is exposed to certain weather conditions will erode to a certain drainage density. That drainage density establishes a stable landform that will convey precipitation without excessive erosion.

The next step was to construct the detailed design using existing mining equipment. Operator Larry Tsosie was the first to succeed. 'If a picture is worth a thousand words, the reclaimed landscape is Larry's canvas and his dozer is his paintbrush', said SJCC HSEC superintendent Jim Luther. 'He really created a masterpiece out there'.



Within one of year of seeding, with revegetation not fully established, the reclamation was severely tested when over seven centimetres of rain fell in one week. It performed very well, with limited scouring and deposition occurring, as predicted. Since then, other regionally extreme precipitation events have occurred and results have been beyond expectations.

In addition to creating stable landforms, the reclamation program has created a diversity of topographic forms and plant types, through variations in slope aspects, water availability and plantings. A close approximation to the pre-mined landscape has been achieved.



Start of reclamation of Cottonwood Pit at San Juan Mine



Reclamation of Cottonwood Pit prior to topsoil

Environment Case Studies

Environment – Biodiversity

Case Study Contributor:	Olympic Dam, Australia
BHP Billiton Interest:	100%
Location:	South Australia
Customer Sector Group:	Base Metals
Commodity:	Copper Cathodes, Uranium Oxide, Gold and Silver Bullion
Case Study Status:	New for 2006

Protecting Australia's Threatened Animals and Ecosystems Through Collaboration, Innovation and Persistence

The combined impacts of feral species and unsustainable farming have devastated Australian ecosystems since European settlement. Over 60 per cent of desert mammals have been driven to total or regional extinction, and many other animals and plants remain threatened. However, a unique partnership in which we are involved – Arid Recovery – has started reversing these trends.

Located near our Olympic Dam mine in South Australia, Arid Recovery is the largest fenced reserve in Australia from which all feral cats, foxes and rabbits have been removed. The reserve straddles the mine lease and sections of four other pastoral properties, two of which are leased by the Company. Native animals and plants are now thriving within the 86-square-kilometre enclave, which has become both a centre for ecological research and the site of a nationally significant conservation program.

Arid Recovery was initiated in 1987 by a partnership comprising the Olympic Dam mine, the South Australian Department for Environment and Heritage, the University of Adelaide and a community group, Friends of Arid Recovery. The partnership's mission is to 'facilitate restoration of arid zone ecosystems through on-ground works, applied research and industry, community and government partnerships'.

Following our acquisition of the Olympic Dam operation in 2005, we have confirmed our support of these goals by increasing the resourcing of this award-winning initiative. Together with other Arid Recovery partners and collaborators, we are committed to ensuring maintenance of the existing reserve and the sustainability of research and public education programs. A key future objective is to leverage broad-scale benefits to the environment and to the perception of resource industries by re-establishing threatened species outside the reserve, on both the Olympic Dam mine lease and surrounding pastoral properties.

Eradicating feral animals and restoring flora and fauna

Thousands of feral animals have been removed from the Arid Recovery reserve, which is surrounded by an innovative fence design that was developed and trialled on site. Arid Recovery now provides opportunities for staff, university students, visiting scientists and volunteer teams to study the responses of plants and animals to the removal of feral animals and reintroduction of native species.

Hugh McGregor, an environmental graduate who has been employed at Arid Recovery during his vacation, says, 'It has been a fantastic opportunity to work on such an exciting project. Every day offers a different experience, from hosting tours to tracking bilbies. The projects I've been involved in, the skills I've learned and the friends I've made have been incredible'.



An Arid Recovery team installs fencing to keep feral animals from the reserve

Within the reserve, five threatened mammal species have been reintroduced; the most successful being the greater bilby (*Macrotis lagotis*) and the burrowing bettong (*Bettongia lesueur*), with each group now numbering in excess of 600. Other native mammals, such as the spinifex hopping mouse (*Notomys alexis*), are ten times as abundant in the reserve as outside, where they continue to be preyed upon by cats and foxes.

Arid Recovery's aim of improving awareness of the plight of Australian arid lands and increasing capacity for their sustainable management is also being fulfilled, as reflected in the growing number of visits to the reserve by people from all walks of life and the popularity of the project's.

Arid Recovery's co-founder and research coordinator, Katherine Moseby, says, 'BHP Billiton's long-term partnership with other stakeholders, coupled with the dedication and passion of staff and volunteers, has enabled Arid Recovery to achieve unparalleled environmental restoration and research'. Such rewarding outcomes show that resources companies, particularly in collaboration with relevant partners, can make valuable contributions to significant conservation initiatives.

Read more: [Arid Recovery](#)



The burrowing bettong is one of the threatened mammal species reintroduced within the reserve

Environment Case Studies

Environment – Biodiversity

Case Study Contributor:	BHP Billiton Maatschappij Suriname (BMS)
BHP Billiton Interest:	76%
Location:	Suriname
Customer Sector Group:	Aluminium
Commodity:	Bauxite
Case Study Status:	New for 2006

Wildlife Study in the Bakhuis Exploration Concession Area

In November 2003, BMS commenced a two-year exploration program to define bauxite resources in its Bakhuis concession in western Suriname. The concession covers 2,800 square kilometres and comprises a largely undisturbed tract of tropical rainforest. It also lies adjacent to the Central Suriname Nature Reserve, a designated World Heritage site and rainforest wilderness that encompasses 10 per cent of the land area of Suriname.

The Bakhuis field staff recognised early in the exploration program that the concession hosted very diverse and abundant fauna and therefore decided to implement a camera trapping program to record the wildlife of the concession. An approach was made to Conservation International (CI), an international not-for-profit organisation focused on conserving biodiversity, to provide guidance in setting up and operating the camera network to best effect. The first pictures were obtained in July 2004 and immediately rewarded the investment with good images of a wide range of animal and bird species.



Steve Chin a Foeng,
Environmental Field Coordinator,
checking a camera trap

Environmental and social impact assessment

During 2005, an environmental and social impact assessment of possible future mining at Bakhuis was launched. Under the guidance of Dr Jim Sanderson, a renowned cat specialist with CI's [Center for Applied Biodiversity Science](#), the camera network was expanded and improved, and the results were spectacular. Together with other field observations, the team has identified 34 medium and large terrestrial mammals to date, and further species are anticipated. Four cat species were observed, and the images demonstrated that jaguar and puma are locally abundant.

According to Dr Sanderson, 'The wildlife throughout Suriname is extremely biologically rich and diverse. Through this project with BMS, rare cat species and other large mammals are being photo-trapped at high rates and at many sites. CI believes private sector partnerships like this are critical to achieving our global biodiversity conservation outcomes.'

Andy Witcomb, Environmental Manager Projects of BMS, adds: 'The camera trapping program has added immensely to our understanding of the species richness and abundance of the Bakhuis fauna and expands existing ecological knowledge in Suriname.

'It also allows us to compare Bakhuis with other locations in the Guianas and Amazonia and provides a sound basis for prediction of potential impacts of any future mining at Bakhuis, together with responsible management of those operations.'

'The technical expertise, guidance and spirit of cooperation of CI have been critical factors in the success of the camera trapping program. Partly as a result of this partnership, BMS and CI have since worked together on other ecological assessment programs elsewhere in Suriname.'



A camera trap in place



A jaguar photographed during the study

Environment Case Studies

Environment – Biodiversity

Case Study Contributor:	Nickel West
BHP Billiton Interest:	100%
Location:	Northern Goldfields, Western Australia
Customer Sector Group:	Stainless Steel Materials
Commodities:	Nickel and Cobalt
Case Study Status:	New for 2006

Nickel West Applies Sustainable Practices to its Pastoral Holdings

Nickel West is a major landowner in the northern Goldfields; pastoral leases surrounding our Mount Keith and Leinster nickel operations cover approximately 1.2 million hectares. These holdings are managed by a team of 12, who are undertaking a variety of pastoral activities, including sheep and beef herding and horticulture.

In aiming to manage the rangelands in a sustainable manner, the team faces several challenges, including the remoteness of the holdings, historical overgrazing, impacts of previous exploration and mining activity, and changing pastoral methods and land use. To assist their endeavours, they participate in the Ecosystem Management Understanding (EMU) process. This initiative was developed under the auspices of the Ecologically Sustainable Rangeland Management project coordinated by Western Australia's Curtin University of Technology and the Centre for the Management of Arid Environments (CMAE).



Intervention to address erosion, April 2006

The EMU process was originated in 2003 by CMAE in collaboration with the Western Australian Department of Agriculture. It is designed to help land managers understand the complexity and interconnectedness of rangeland biodiversity. The process provides a learning framework based on ecological patterns and processes, with a focus on drainage systems and critical eco-junctions. Integrated EMU projects have been established for all our pastoral holdings, targeting areas identified as significant in terms of biodiversity values and sustainability.

The Jones Creek rehabilitation project

An early EMU exercise identified the Jones Creek drainage system, which is on one of our leases, as being in critical need of remedial action to prevent further degradation of 500 hectares of valuable floodplain country.

Due to overgrazing, the drainage system had suffered loss of vegetation, an invasion of woody weeds and some canalisation. In heavy rainfall, water flows faster than previously, increasing erosion and reducing landscape resilience and water filtration ability. There has been considerable scouring on the lower reaches, and water bypasses previously viable claypan areas. The whole system could canalise and flow straight through into an adjacent lake, taking sediment with it and causing the loss of a large area of native vegetation reliant on washout from the creek.

Recognising that ongoing deterioration of soil surface conditions could result in large-scale alteration of the local ecosystem, in 2004 we initiated the Jones Creek rehabilitation project, based on methods considered most appropriate for this type of country and being of a sufficient scale to make a difference. Fencing of areas to control pastoral use has commenced, and we have been undertaking seasonal kangaroo control and a flora monitoring program.

Other projects include reinforcing the lower reaches of ephemeral claypans with scrub packing, which has already resulted in water retention and ponding and an increase in plant species. We are trialling interventions to slow the water flow to prevent further formation of gully heads, and plan to install rock-bars in the main channels to reduce downstream canalisation and redistribute flow onto the floodplains.

Dr Hugh Pringle of the CMAE at Curtin University of Technology helped develop the EMU process. He says, 'The major creek systems of the north-eastern Goldfields feeding into salt lakes are analogous to the big river systems of the north-west and are usually stripped of topsoil and ecological resilience. But with the Jones Creek system there is the opportunity to restore substantial ecological integrity and, in so doing, learn much about landscape and catchment rehabilitation in this region. This project has the capacity to be a beacon for progressive land managers'.

Our pastoralism strategy is being implemented in partnership with our mining operations and key stakeholders. The Jones Creek rehabilitation project is one of many aimed at helping us effectively manage our pastoral holdings and achieve sustainability of the environments in which we operate.



Claypan in 2003 prior to rehabilitation project



Claypan in 2005 showing benefit of scrub packing



Intervention to address washaways, April 2006

Environment Case Studies

Environment – Incident Management

Case Study Contributor:	Angostura Integrated Oil and Gas Development
BHP Billiton Interest:	45%
Location:	Trinidad and Tobago
Customer Sector Group:	Petroleum
Commodity:	Oil
Case Study Status:	New for 2006

Spill Response Training for Residents on The North-East Coast of Trinidad

Our Angostura integrated oil and gas development commenced production in 2005. The Greater Angostura Field is located offshore due south of Tobago and due east of the Toco District in north-east Trinidad. The oil is transported via pipeline from the offshore facilities to onshore storage and marine loading facilities in south-east Trinidad, for export to market.

Toco, being the closest community to our offshore facilities, is most at risk in the event of an environmental emergency. A decision was made to conduct shoreline response basic training, in an attempt to equip the community with the necessary skills with which to help safeguard their environment in the event of an oil spill.



Trainees in full personal protective equipment deploying a disc skimmer and containment boom

Toco

The Toco District is a rural community that has historically been largely neglected politically and economically. It consists of 14 villages in the Matura to Matelotes region on the north-eastern tip of the island of Trinidad and has a population of approximately 8,000.

It is an ideal eco-tourism destination, with the small and fascinating villages each having its own charm and attraction. Exotic rivers (such as the Tompire), waterfalls, beaches, birds, plants, mammals, reptiles, flowers, fruits, butterflies, insects and trees abound in this area. Toco is also home to Matura beach, the world's second-largest nesting ground for the leatherback turtle (*Dermochelys coriacea*).

For the past few years, the community has objected to the proposed development of the port by the government and has wanted the area declared a national park. Their hopes were realised in January 2005, when the Salybia area was declared a national park. As far as community projects are concerned, therefore, eco-tourism, agriculture and preservation of the environment are a natural fit for Toco. From the Company's perspective, community relations strategies in this area are vital for several reasons.

- This is the community closest to the Company's offshore facilities.
- The community is known as the 'green corner' of Trinidad; its members are dependent upon a pristine environment for many aspects of their livelihood, such as fishing, tourism activities and recreation. It is therefore critical that the Company associates itself with the sustainability of the community, and by extension, its environment.
- It is part of our global [Sustainable Development Policy](#) to value and engage the communities in which we operate.

Oil spill response training objectives and target group

The objective of the training exercise was to develop an awareness of oil spill response requirements and to equip members of the community with appropriate skills. It targeted people who could be trained to act as foremen in the spill response team hierarchy.

Background

Kaizen Environmental Services was contracted as the Company's emergency response provider in Trinidad and Tobago. Their role is to provide shoreline response in the event of an oil spill that may impact or be about to impact land.

One of Kaizen's contractual obligations is to maintain a trained and ready spill response team, consisting of 10 supervisors, 30 foremen and 300 responders. Under this obligation, Kaizen was required to develop a training matrix for the response team.

The supervisors were sourced from existing staff members of Kaizen who were already trained in oil spill response. The foremen and responders were selected from the communities likely to be impacted by an oil spill from our offshore operations.

Methodology

Members of our External Affairs Department met with community leaders and discussed the objectives of the training and the importance of such training to environmental sustainability in the area. Based on these discussions, and with the cooperation of the community leaders, 20 people who were deemed capable were selected for training.

A training program was conducted on 14 and 15 October 2005 at the Toco Community Centre. Over the two-day period, the group was exposed to both theoretical and practical aspects of shoreline response.

Among the areas of importance that were covered by the BHP Billiton and Kaizen Environmental Services training team were:

- general orientation to our operations and their potential impacts and the mitigation measures we have in place
- spill terminology
- future prospects for oil
- equipment used in typical oil spill response procedures
- types of booms and their deployment
- sorbents and their use
- shoreline cleaning techniques
- waste management
- decontamination techniques
- demobilisation
- general safety and the need for personal protective equipment (PPE)
- water safety.

Training techniques

Training covered a combination of theory lessons and practical assignments, ensuring that the sharing of information with the community was comprehensive and effective, as the group was previously unacquainted with oil spill response terminology and practices. A mix of instruction methods was used, as follows.

- A PowerPoint presentation, which was printed and given to the trainees as a manual.
- A demonstration of some of the equipment used in oil spill response. Trainees were instructed in the use, handling and deployment of the various pieces of equipment. They were also, in some cases, given information on the design of the equipment and materials used in its development.
- An interactive question and answer session for both facilitators and trainees, allowing for vital communication that served as an effective method of gauging understanding.
- An actual equipment deployment exercise, which took place on the Tompire beach where the Tompire River empties into the Atlantic Ocean. Some of the equipment used included:

- sorbent booms
- snare booms
- containment booms
- a near-shore disc skimmer
- a pop-up pool for decontamination

During the equipment deployment exercise, trainees were outfitted with full PPE to facilitate the simulation of a real-life shoreline response event.

Exercise completion

At the end of the two-day training program, we organised a forum at which the trainees were recognised for their achievement and each presented with a Certificate of Participation.

The community of Toco is a key stakeholder in the execution of our operations in Trinidad and Tobago. We recognise that the environment of Toco is an important part of the community, and we will continue to work towards safeguarding this 'green corner' of the island. The participants in the oil spill response training program will receive periodic refresher training to ensure complete response readiness at all times.



Section of Toco shoreline



Upstream Tompire River



Trainees attend a presentation on PPE by a Kaizen facilitator

Environment Case Studies

Environment – Incident Management

Case Study Contributor:	Tintaya
BHP Billiton Interest:	Sold in June 2006
Location:	Espinar Province, Peru
Customer Sector Group:	Base Metals
Commodities:	Copper Concentrates and Cathodes
Case Study Status:	New for 2006

Using Bioindicators and Community Communication Systems for a Rapid Response to an Environmental Incident

An environmental incident occurred at the Tintaya copper mine on 9 December 2005, when a decrease in the pH of a small creek caused the death of fish in a local trout farm connected with the creek. The creek is a tributary of the Tintaya River, and the fish farm is used as a [bioindicator](#) of the quality of the local waterways. As a result of the incident, a fine of US\$50,000 was received from the Ministry of Energy and Mines.

The source of the acidity that led to the decrease in pH was found to be drainage from Tintaya's oxide plant facilities that had reached the rainwater diversion system. Heavy rainfall on the day of the incident caused erosion of leached material from the area of the leach pad. A containment berm was rapidly constructed in the local creek to contain runoff. Modifications to the effluent and rainwater drainage systems, and a comprehensive review of the risk assessment and change management processes for the facility were implemented in the following weeks. Following corrective actions, inspections by authorities showed that water quality in the Tintaya River met the standards of Peruvian water laws within days of the occurrence.

Other key learnings from the incident are the benefits of having in place the bioindicator and a community group that monitors environmental activities. Both of these facilitated rapid detection and response to the incident. Additionally, there have been subsequent benefits in expanding the review of the environmental incident to a more comprehensive plant review aimed at continuous improvement of operations.

Background

The Yanamayo, a small creek, is dry during most of the year and has an average flow of 15 litres per second (L/s) in the rainy season. It is a tributary of the Tintaya River, which has an average flow of 15 L/s during the dry season and 500 L/s during the rainy season. Neighbouring communities use water from the Tintaya River for irrigation and the watering of animals.

As part of the mine's Social Development Program, in 2003 a small trout farm was developed in the creek in collaboration with members of the local community. The objective of the project was to provide the community with income from the sale of fish and also for the facility to serve as a bioindicator for the early detection of any problem in the quality of the local waterways, particularly the Tintaya River.

At the time of the incident, during the heavy rainfall, the rainwater diversion system flowed directly to the Yanamayo Creek. It was discovered that this flow included some runoff from the drainage system of the crushing and the leaching operation of the oxide plant.



Tintaya's Environment and Community personnel taking water samples following the incident

Response to the incident

Problems with trout at the fish farm were identified at 8.30 am on 9 December. The communication protocol was immediately implemented through the Community Watch group, the social and environment coordinators and security guards. The Community Watch was a BHP Billiton Tintaya program to train and employ community members, on a rotating basis, to provide an environmental monitoring and warning system for the operation.

When field observations and water sampling identified that the source of acidic water was the Yanamayo Creek, the mine's incident response procedure was activated. A number of corrective actions were undertaken. Within hours of the first report, flow from the Yanamayo Creek to the Tintaya River was blocked by a containment dyke and neutralised with lime. A berm of waste rock that separates the rainwater diversion channel from the main road around the leaching pads was reinforced.

Drainage trenches from the leaching pads were cleaned. Notifications about the incident went out to communities, authorities and corporate officers.

As a result of the immediate response, the pH level in the Tintaya River was controlled by the end of the day. Over the following two days, local, regional and central authorities undertook two inspections, with active participation from the community. Water samples taken at the time of the inspections showed that water quality in the Tintaya River met the standards of Peruvian Water Law for Irrigation and Livestock Consumption (Class III).

The incident was investigated in depth using the Company's [Incident Cause and Analysis Methodology](#). Immediate and root causes were identified, and an action plan was implemented to prevent a reoccurrence. The drainage system was improved to keep runoff water separate from waters potentially affected by the process. Operating procedures were reviewed. Staff retraining and awareness-raising were undertaken, and a more extensive monitoring program was implemented for the rainy season.



Tintaya personnel and community representatives at the fish farm

Environment Case Studies

Environment – Water Management

Case Study Contributor:	South Witbank Colliery (closed), Ingwe
BHP Billiton Interest:	100%
Location:	Mpumalanga, South Africa
Customer Sector Group:	Energy Coal
Commodity:	Coal
Case Study Status:	New for 2006

The Emalahleni Water Reclamation Project — a Sustainable Solution to a Critical Water Issue

Ingwe Collieries Limited is responsible for the closed South Witbank Colliery, which is located in the Emalahleni municipality in the Mpumalanga Highveld coalfields of South Africa. The Department of Water Affairs has, for some years, been concerned with the problem of contaminated water at mines in the area. Ingwe is involved in a major water reclamation project that not only addresses the potential environmental threat but will also contribute to the revival of the local aquatic ecosystem and deliver benefits to the community of Witbank Town, in which the closed colliery is located.

Background

When coal mining started in the area more than 100 years ago, no consideration was given to or required for long-term environmental impacts. Over the years, mining activities have disturbed the natural water cycle, and there has been a steady accumulation of water in the mine workings through the interception of ground and surface water. The water has become contaminated by contact with coal in the old underground workings (it is typically rich in sulphates and low in pH), which poses a threat to the local Olifants River catchment should the water enter the surrounding environment. Environmental legislation passed in the late 1990's has now placed the onus on mining companies to mine responsibly and minimize the effects of mining activities.

At South Witbank Colliery, underground mining began around 1890 and ceased in 1969. A total area of 1695 hectares was mined during this period. In addition, approximately 10 hectares was mined by opencast methods in 1989 and 1991, after which the operation was closed. The mine has subsequently filled with seepage water, which started to decant in 1995.

Addressing environmental and community issues

Numerous water management options were investigated, resulting in the Emalahleni Water Reclamation Project, a collaborative venture between Ingwe Collieries and Anglo Coal, which also has mines in the region. Ingwe has a 15 per cent stake in the project, which will convert contaminated mine water into high-quality potable water at the rate of 20 megalitres per day.

The project infrastructure elements are shown in the area plan below. Water will be taken from three mines, South Witbank, Kleinkopje and Greenside, treated to potable quality and transported to a reservoir in Witbank Town where it will be blended with the existing water supply and distributed.



Sampling treated water at the demonstration plant are (L to R) Daniel Ngwepe, Senior Division Manager – Media, Anglo Coal; Lindela Twshete, representing the Emalahleni municipality; Wendy Mey, Project Engineer, BHP Billiton; Peter Gunther, Project Manager, Anglo Coal; Kevin Nash, Demonstration Plant Subordinate Manager, Keyplan (plant technology supplier); Adrian Viljoen, Director, Keyplan

The town relies on the Witbank Reservoir for its water supply. Since 2002, the municipality has exceeded their water allocation from the reservoir, relative to its safe long-term yield. The Emalahleni project will supplement the overstretched reservoir supply with water from the mines. Without the project, it would have been necessary to transfer water from the adjacent Vaal River catchment to satisfy the town's domestic, industrial and commercial users. As well as having to utilise water from a non-local resource, this inter-basin transfer would have negatively affected other water users.

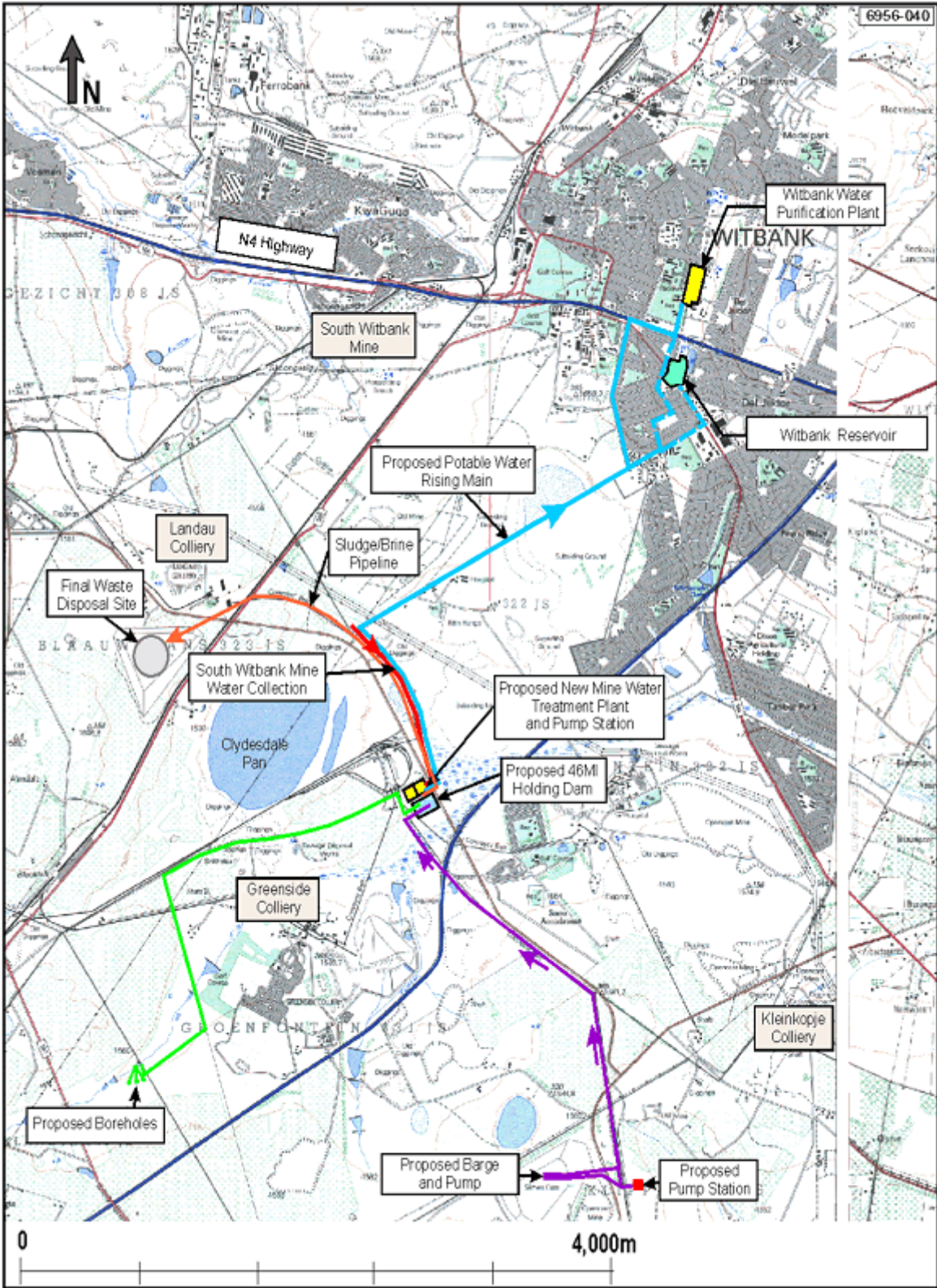
An additional environmental benefit from the project is that some of the treated water will be discharged into Naauwpoort Spruit, a major watercourse, to maintain a minimum base flow in the local streams. This will compensate for flow losses resulting from coal mining activities and help revive the local aquatic ecosystem.

Results through collaboration

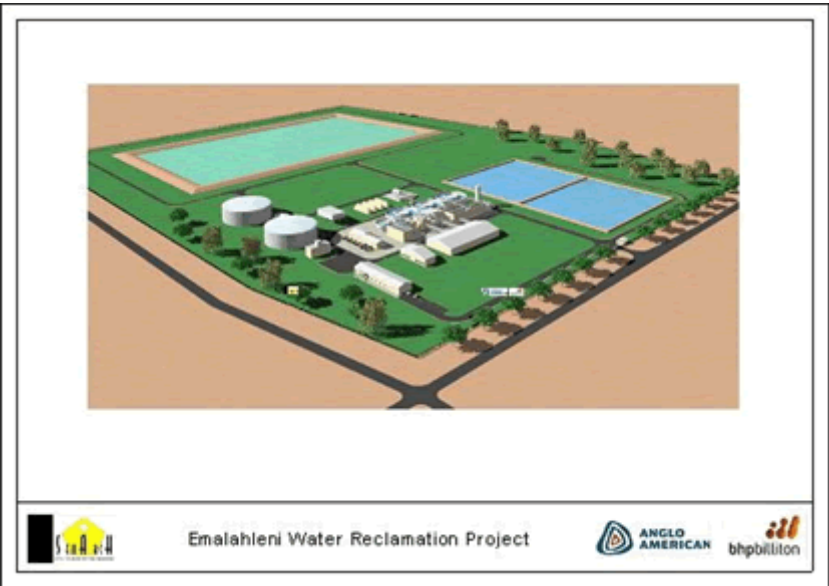
The Emalahleni Water Reclamation Project has been developed by Anglo Coal and Ingwe Collieries in line with the sustainable development principles of both companies and those stated in the National Environmental Management Act.

The project was approved by the Mpumalanga Department of Agriculture and Land Affairs in September 2005, and the following month a demonstration plant was constructed. Other regulatory authorities have publicly expressed support for the project. The completed water treatment facility is expected to be operational in early 2007.

The Emalahleni Water Reclamation Project demonstrates that public-private cooperation can produce long-term sustainable projects that benefit the local community and economy. It shows that, when projects are planned and executed with vision, innovative solutions can be developed to address mining legacy issues.



Emalahleni Water Reclamation Project – area plan showing main physical components and infrastructure



Layout of water treatment facility including feed water dams and brine pond

Environment Case Studies

Environment – Energy Efficiency

Case Study Contributor:	EKATI Diamond Mine
BHP Billiton Interest:	80%
Location:	Lac de Gras Region, Northwest Territories, Canada
Customer Sector Group:	Diamonds and Specialty Products
Commodity:	Diamonds
Case Study Status:	Follow-up to 2003 Case Study

Energy Smart Program at EKATI Yields Results

At the EKATI Diamond Mine in 2002, a team of highly motivated employees founded an energy conservation initiative they called the Energy Smart Program. In the year to June 2006, the program saved approximately 1.5 megalitres of diesel fuel, which saved the greenhouse gas equivalent of removing 1,600 cars from the road. Since the program's inception, it has saved the equivalent of three megalitres of fuel in total.

The program has reduced the environmental impact of the site, raised the consciousness of employees about energy efficiency, and reduced costs. It demonstrates that by raising energy efficiency awareness we can all contribute to cost savings, reduce greenhouse gas emissions and help mitigate climate change.

Implementing the Energy Smart Program

The development of the Energy Smart Program was reported in our 2003 Report in a case study: [Energy Smart Program exceeds target at EKATI Diamond Mine](#). The initial idea for an energy-saving program gained the support of a small group of people from a variety of disciplines across EKATI, including electrical engineering, information technology and human resource development/training. They formed a voluntary Operating Excellence Team on Energy Conservation. In planning the program, the team established that, for every kilowatt hour of power used, 0.25 litres of fuel were consumed in the powerhouse. The group set an initial goal of saving one megalitre of fuel per annum, equivalent to about 12 per cent of the mine's annual power generation consumption in 2002. An accompanying goal was to engage employees in making the mine an energy-conscious operation.

Since the start, the team has fostered involvement by actively promoting the Energy Smart approach and asking for employee suggestions. Ideas are sent by email or placed in suggestion boxes that are located around the site. Every person who provides a suggestion is given an Energy Smart T-shirt and their names go into a monthly draw for golf shirts and other prizes.

Over the years, hundreds of suggestions have been offered. Many have been acted upon, including the installation of waterless urinals, low-flush toilets and low-flow shower heads. As well as the installation of energy-saving devices, a key outcome has been a change in the culture at the mine, whereby employees have come to automatically make energy-conscious decisions. For example:

- Employees switch off lights and light vehicles when not in use, and they remind each other to save energy. This is done in the spirit of the Company's safety culture, where we look out for ourselves as well as our workmates.
- In offices, motion sensor light switches have been installed and liquid crystal display (LCD) monitors are used instead of the less-efficient models.
- Employees continue to submit suggestions and to volunteer for the Energy Smart team.

Focusing on the big fuel consumers

Over the past two years, we have been focusing our energy-saving endeavours on activities at the site that consume large amounts of fuel. The following are some of the initiatives that are having an impact.

Upgrading the powerhouse – The piping on three of the powerhouse generators has been upgraded, with the result that between November 2005 and April 2006 approximately 500,000 litres less fuel was burned in the boilers than in the previous corresponding period.

Installing new incinerators – Six incinerators used to burn garbage and other types of waste are being replaced by two new incinerators that are safer, use less fuel and have lower emission levels.

Using waste oil for heating – Since the inception of the Energy Smart program, we have been promoting the use of waste oil for heating. As a result, many waste-oil heaters are now in use. During the winter of 2006, approximately 600,000 litres of waste oil were recycled for heating the underground mine alone. In addition, we have collected waste oil from one mine in the vicinity to use for heating. As well as cutting down the amount of fuel purchased, we make extra savings by not having to pay for having the waste oil to be removed from site.

Using a powerhouse glycol system to heat air in the new underground mine – We are currently developing a second underground mine. Due to weather conditions, the temperature of the air that is forced into the mine is too cold and must be heated. Mine air heaters that burn diesel fuel are being installed. These will consume 1.6 megalitres of fuel each year. One of the mine air heaters is close to the powerhouse. We are in the final design stages of connecting this heater to the powerhouse heat transfer system to take advantage of spare heat from the vapour phase units. The mine air will be pre-warmed by powerhouse-heated glycol running through a radiator.

Avoiding the purchase of a new generator – Inefficiencies in the original design of the powerhouse meant the engines could not be run at their maximum output. Rather than allow this situation to continue, it was decided to apply an engineering solution and the issue has now been resolved. Had the powerhouse continued to operate without the changes, it would have been necessary to have a standby generator running approximately 50 per cent of the time. This would have consumed additional fuel, increased emissions and required extra maintenance. The powerhouse engines are now running more efficiently than in the past, and we have avoided the purchase of a standby generator.

Utilising wind power – In 2004, a project was developed to determine the feasibility of harnessing the wind to supplement the power at the mine. For a viable wind farm, an average wind rate of seven metres per second is required. At EKATI, the average wind rate is ten metres per second, which means it is an excellent site for wind-power generation. The first phase of the project has commenced with the installation of a 30-metre high test tower. The mine is now registered with the government as a proposed wind farm site. Support from the Government of Canada will enable 50 per cent of the capital required in the first year to be written down. For ten years, we will also obtain a rebate of approximately 0.01 cents per kilowatt hour of power produced.

Ongoing initiatives and challenges

In addition to these site-based energy-saving initiatives, we have been conducting annual Energy Smart information days and expositions and working closely with the federal government and the energy task force of the Mining Association of Canada to promote energy efficiency.

Our efforts have been recognised with a Canadian Industry Program for Energy Conservation award for energy conservation. In presenting the award, the then Minister of Natural Resources Canada, Herb Dhaliwal, noted, 'Although the mine is energy efficient by design and the Company has an eight-year track record of investing in energy savings, Operating Excellence has taken earlier efforts to a new level by instilling a relentless commitment to seizing every available opportunity to reduce waste'.

Our energy-saving endeavours are ongoing, and so are the challenges. For example, all diesel fuel for the mine is brought in during the winter months via an 'ice road' over the frozen tundra lakes. The winter of 2006 was unusually mild, and the warm weather led to an early closing of the winter road and left us with a shortage of approximately twenty three million litres of fuel.

We have been holding brainstorming sessions with individual departments to develop more ways to conserve fuel, and many excellent suggestions have been received. The Energy Smart Program and its fuel reduction projects have put us in a strong position to face the fuel shortage, reduce costs and contribute to environmental sustainability.

Environment Case Studies

Environment – Environmental Management

Case Study Contributor:	EKATI Diamond Mine
BHP Billiton Interest:	80%
Location:	Lac de Gras Region, Northwest Territories, Canada
Customer Sector Group:	Diamonds and Specialty Products
Commodity:	Diamonds
Case Study Status:	New for 2006

EKATI Collaborates with Inuit People to Integrate Traditional Knowledge into Environmental Management

The EKATI Diamond Mine is located 300 kilometres north-east of Yellowknife and 200 kilometres south of the Arctic Circle. When the mine went through its initial environmental review (1994 to 1996), the Government of Canada instructed us to give as full and equal consideration to traditional Aboriginal knowledge that would be given to scientific and engineering studies.

In response, we undertook a range of studies with the Inuit, Dogrib, Yellowknives Dene, Chipewyan of Lutsel K'e and the North Slave Métis Alliance, all of whom are traditional users of the upper Coppermine River drainage area, where the mine is located. These studies have contributed significantly to the diversity of Aboriginal knowledge that has been brought into the review and management of development not only at EKATI but also in the Arctic generally.



Donald Havioyak (L), Kitikmeot Inuit Association President, and Sean Brennan, EKATI President, with a copy of the placenames atlas

The Naonayaotit Traditional Knowledge Project

One of the studies is the Naonayaotit Traditional Knowledge Project (NTKP), which we developed jointly with the Inuit of the Kitikmeot Inuit Association for the purpose of integrating Aboriginal traditional knowledge into environmental management at the mine.

Major outcomes of the NTKP to date include:

- a placenames atlas
- a series of illustrated reports on topics ranging from heritage and culture to Inuit opinion of exploration, research and development
- a geographic information system (GIS) database for use by Inuit land managers.

The project, which commenced in 1996, is built around interviews with 51 Inuit elders and senior land users who come from the communities of Kugluktuk, Cambridge Bay, Omingmuktuk and Bathurst Inlet, all of which are in the Kitikmeot region of the Nunavut Territory in Arctic Canada.

The interviews followed guidelines developed by the Hunters and Trappers Association in Kugluktuk in conjunction with the Kitikmeot Hunters and Trappers Association and ourselves. Lasting between two and 20 hours, the interviews are based on hand tracings on topographic maps that show seasonal and life-long movements of people and animals in the region. The information collected covers an extensive range of topics including human heritage, caribou behaviour, carnivore behaviour, fisheries, birds and marine mammals.

Translating the several hundred hours of recordings was a challenge. Most professional Inuit translators are more familiar with medical, legal and educational terminology and not the older language that describes the land. Gerry Atatahak from Kugluktuk took on and completed this daunting task; his efforts being recognised with a Highly Commended nomination in the BHP Billiton HSEC Awards.

An innovative information management system

To organise the immense amount of information collected, a GIS database was built. It contains the ecological knowledge of the Inuit of the western Kitikmeot region of the Slave Geological Province, an area that encompasses 720,000 square kilometres of Arctic tundra. Development of the system was not straightforward. The normal tabular database associated with GIS systems was inadequate, so to maintain the integrity of the elders' narratives a database designed to manage unsorted text was integrated into the system.

The innovative solution combines the capabilities of the GIS with a textual database designed to sort and organise unstructured text. When this work began in 1998, it posed considerable computer programming challenges, overcome by innovative system development, which has been continuously led by our external project consultants.

The NTKP computer program facilitates the organisation of Inuit oral knowledge into a written format that can be searched using modern graphical mapping systems. This represents an enormous leap in communications methodology, from unilingual, traditional hunters sharing their knowledge by word of mouth to the development of electronic literature that can be applied to modern land-use planning. We have shared the system technology with Chipewyan people from Lutsel K'e who wanted to use an integrated GIS methodology to organise their traditional land-use information.

Major outcomes of the project

The word 'Naonayaotit' in the NTKP name is an Inuit word that can be translated as 'seeking knowledge'. The information we sought to collect was to meet dual needs: to incorporate Inuit traditional ecological knowledge into the environmental screening of proposed developments on Inuit lands in the Kitikmeot region and also into site-specific environmental management at EKATI.

Once the information management issues began to be solved, it became possible to use the new tools to create products to facilitate application of the information by the Inuit and ourselves. Vivian Banci, a consultant biologist who had worked on the original environmental baseline for EKATI, accepted the challenge of presenting the Inuit information in a manner that would be useful to western scientists while maintaining its traditional context.

After four years of development, in 2004 the first major product of the NTKP was realised: a placenames atlas. The next significant outcome was a series of 13 reports on specific topics that include heritage and culture, wildlife and land use, water quality, and the Inuit opinion of exploration, research and development. Each report is illustrated in colour. The third major product is the GIS database, which is a 'living' tool for use by Inuit land managers.

To date, the reports have been distributed to NTKP participants, and it is planned to make the reports more widely available over time. The GIS database will remain with the Kitikmeot Inuit Association, as it contains proprietary and confidential information. It will enable the Inuit to conduct preliminary environmental screenings of proposed development activities. When fully implemented as a land-use planning tool, the NTKP will provide another means to help the Inuit bring their perspectives forward in an informed and timely manner.

Recognition and empowerment for the Inuit people

The NTKP, which has now been active for a decade, has been a collaborative effort by EKATI, the Kitikmeot Inuit Association, project consultants, governments and many other organisations that have contributed financial or in-kind support. The significance of the project and its outcomes was recognised with the Excellence Award (Environment) at the 2005 BHP Billiton HSEC Awards.

On 29 March 2006, the President of EKATI, Sean Brennan, and the President of the Kitikmeot Inuit Association, Donald Havioyak, met with the Inuit elders who had so freely contributed their knowledge, together with the EKATI project team and our consultants. The meeting was held to celebrate the winning of the Company HSEC award and, more importantly, to sign an agreement transferring the intellectual property rights associated with the NTKP from the Company to the Inuit. This significant moment marked the end of one phase of the project, which saw the creation of an electronic literature from oral knowledge, and the beginning of a new one, in which the Inuit and EKATI will work together to continuously improve environmental management at the mine.

Sean Brennan and Chris Hanks, the former Chief Environmental Officer at EKATI who oversaw the development of the NTKP, presented the financial prize associated with the HSEC Environmental Award to the Kugluktuk Search and Rescue Association, whose dedication to saving life reflects and reinforces the values of HSEC.

Continuing collaboration to further improve environmental management

Our successful collaboration with the Inuit on the NTKP has led to a close association on other initiatives. Over the past ten years, the Inuit have worked with us on a number of environmental management issues at EKATI. The first was when we needed to safely remove fish from lakes that had to be drained prior to mining. The Inuit helped us develop effective methods that were acceptable to Aboriginal groups and the government. As part of our Wildlife Effects Monitoring Program, Inuit hunters developed a wolverine tracking system that determines the presence or absence of wolverine near the mine.

Over more recent years, the Inuit have been evaluating how caribou move in and around the mine site. The result has been the construction of a series of experimental 'fences' consisting of *Inuksuit* (stone men) that help steer larger groups of caribou around the site. The Inuit will continue to be involved in the monitoring of the effectiveness of the Inuksuit project in the years to come – yet another positive consequence of the Naonayaotit Traditional Knowledge Project.



The NTKP team, recipients of the BHP Billiton 2005 HSEC Excellence Award (Environment)

Environment Case Studies

Environment – Environmental Management

Case Study Contributor:	Olympic Dam
BHP Billiton Interest:	100%
Location:	Roxby Downs, South Australia
Customer Sector Group:	Base Metals
Commodities:	Copper Cathodes; Uranium Oxide; Gold and Silver Bullion
Case Study Status:	New for 2006

Preparing an Environmental Impact Statement for a Major Expansion of Olympic Dam

Olympic Dam, in South Australia, is Australia's largest underground mine and has been producing copper, uranium, gold and silver since 1988. We are presently investigating a major expansion of the operations. Annual copper production could increase from the current 200,000 tonnes to about 500,000 tonnes, while annual uranium production could increase from 4,500 tonnes to around 15,000 tonnes.

To secure the required Australian and South Australian government approvals for the expansion, an [Environmental Impact Statement](#) (EIS) is being prepared that will address key environmental and social issues including ground disturbance, dust and air emissions, radiation protection, water and energy supply to the operation and impacts on local and regional communities including Indigenous groups. A feature of the environmental assessment process in Australia is extensive public consultation.



Aerial view of Olympic Dam operation with the mine in the foreground and the processing plant and tailings storage facility in the background

Environmental Impact Statement

An EIS is a detailed description and analysis of the potential impacts of a proposed activity on the social, natural, cultural and economic environment. It explains how the Company proposes to manage these impacts. The Australian and South Australian governments set the scope of the Olympic Dam EIS in early 2006 after first releasing draft guidelines for public comment.

Consultant firms have been appointed by the Company to independently prepare the EIS. They have established a large professional team that will undertake extensive public consultation with key stakeholder groups and the wider community, and coordinate detailed scientific and technical studies. These studies will be reviewed by a worldwide network of scientific specialists before the results are incorporated into the EIS.

Expansion components to be addressed

The principal components of the proposed expansion to be addressed by the EIS will include:

- increasing the amount of ore mined from 10 million tonnes per annum to about 40 million tonnes per annum (at the time of writing, technical studies indicate that the preferred option would be an open pit in the undeveloped southern portion of the orebody)
- establishing a new plant for processing the ore
- sourcing and supplying additional water, possibly from a coastal desalination plant
- sourcing and supplying additional energy
- constructing, relocating or upgrading transport infrastructure

- providing additional infrastructure and services associated with an increased workforce, including expansion of the local Roxby Downs township.

Olympic Dam currently sources water from the Great Artesian Basin and recognises the potential for environmental impact on the mound springs and the concerns of stakeholders regarding increased extraction rates for the expansion project. The EIS will fully evaluate this option, as well as the primary alternative of sea water desalination. We will not proceed with any project that has environmental and social consequences that are inconsistent with the Company's [Charter](#) and [Sustainable Development Policy](#).

It is expected that the EIS will be published in draft form in early 2007. This draft will be put on public exhibition for a period of eight weeks, during which government agencies and members of the public will be able to comment, either in writing or through further public consultation.

Supplementary EIS

Based on the comments received, a Supplementary EIS will be prepared that will respond to public and government submissions. The Supplementary EIS will be presented to the Australian and South Australian governments for the preparation of assessment reports prior to final ministerial decisions on the proposed expansion. Those assessment reports will be made public.

If government and ultimately BHP Billiton Board approvals are received, it is planned to begin the expansion in 2009, with construction and commissioning expected to take about four years.

Community



[Our Approach](#)

[Our Performance](#)

[Case Studies](#)

'The year past has unfortunately seen a number of communities close to our operations affected by natural disasters...'

Message from the Manager Social Responsibility

The Community Function has been busy during 2006 in an effort to improve knowledge sharing and identify business improvement opportunities.

A Global Community Network has been formalised and is making major progress in this area. A full-time coordinator, executive sponsor and leadership team have been appointed, and the leadership team has developed four key social drivers that will direct business improvement opportunities in the coming year. These drivers are community development, human rights, socio-economic contribution and stakeholder relationships.

Pleasingly, at the time of writing, the Network has over 260 members.

Skilled people underpin the success of any function or organisation; and during the year, a project to assess current community relations capacity within BHP Billiton was completed. The results have assisted in identifying skill gaps and will inform future professional development requirements.

Following the pilot Community Development Techniques Practice course run in Chile in 2005, Oxfam Australia delivered two more regional techniques courses – one in southern Africa and the second in Pakistan for community practitioners from the Asian region.

A Social and Environmental Impact Assessment Guideline has been completed to assist assets to identify potential impacts of their business and plan to mitigate or manage them. The reporting requirements for community-based significant incidents have also been strengthened to ensure these incidents are captured and become fully integrated into the HSEC Incident Reporting system.

We continue to recognise that our activities have the potential to impact human rights in many ways. Our Human Rights Self-Assessment has been revised to align with our Enterprise-Wide Risk Management process and the Company's spheres of influence, and a project to improve understanding and adherence to the US-UK Voluntary Principles on Security and Human Rights is underway. As a result, we expect that a number of implementation tools will be available to assets in the next year.

Measuring the effectiveness of our community programs continues to be a challenge; and although some progress has been made, it is an area in which we intend to do further work in 2007.



Melinda Buckland
Manager Social Responsibility

A new Global Community Programs Panel was established to oversee the achievement of our target to spend one per cent of our pre-tax profits on community programs. The Panel will ensure that any gap between the asset and regional expenditure and the target is met through Corporate expenditure on programs that are relevant to all our businesses. It is anticipated that these programs will be of international significance and in countries where the company is keen to develop relationships with the community sector.

During 2005/06, our voluntary contributions to community programs totalled US\$81.3 million, an increase of US\$23.9 million from the previous year. In the coming year, responsibility for collecting data around our target to spend one per cent of our pre-tax profits (on a three-year rolling average) will move to the finance function to improve accountability.

The year past has unfortunately seen a number of communities close to our operations affected by natural disasters. These included an earthquake in Pakistan, Cyclone Larry in far north Queensland, and Cyclone Katrina in the Gulf of Mexico. The effects of these disasters have been devastating; and through our community development programs, we have been involved in disaster planning, response initiatives and relief programs locally. Where appropriate, these activities have received additional Corporate funding and support. Many of our employees have also assisted through donations, volunteer work and fundraising, the value of their contribution being matched by the Company through our Matched Giving Program, which was expanded in the past year to include all managed operations.

Finally, while we are driven by outcomes and not awards, it was pleasing to note the recognition received after winning the UK Business in the Community's 2005 Company of the Year Award. The Award has enhanced our social performance credentials, which is important for new business opportunities. During the year, we were also awarded the Australian Prime Minister's Award for Excellence in Business and Community Partnerships – Impact on Society Award for our community programs in indigenous leadership and governance.

Melinda Buckland
Manager Social Responsibility

Read more:

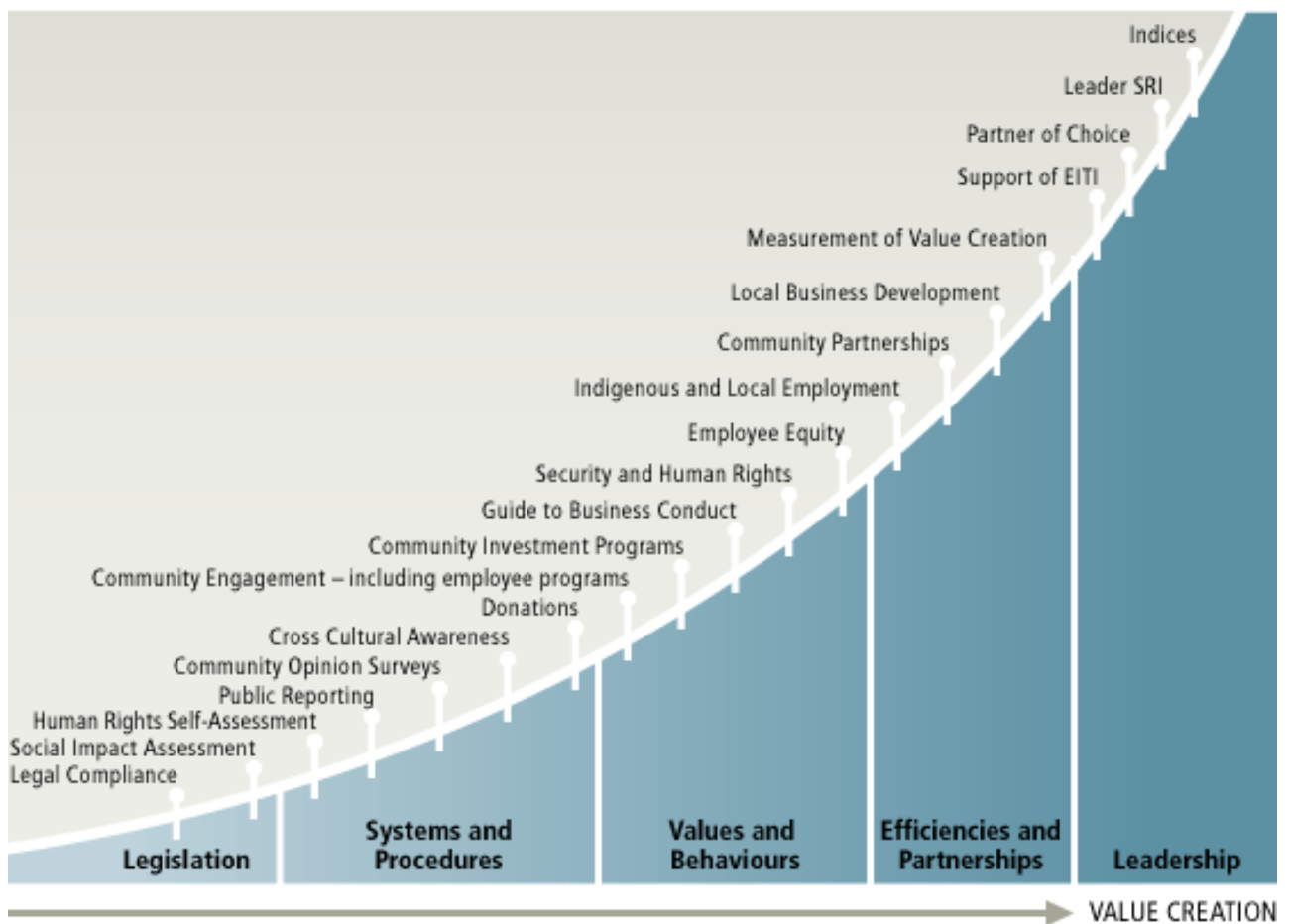
- [Community>Our Approach](#)
- [Community>Our Performance](#)
- [Community>Case Studies](#).

Community – Our Approach

The importance of establishing positive relationships with people from our host communities continues to grow, particularly in countries where external factors outside the Company's control have the potential to impact on our operations. The diversity of locations, languages and cultures that frame our interactions with communities also adds a further layer of complexity, which presents ongoing challenges.

Our Community Road Map (below) illustrates the key steps to effectively implement our Community Strategy.

COMMUNITY – BUILDING ON ZERO HARM



The role of community practitioners within our businesses continues to expand to ensure

- communication is open, transparent and inclusive
- appropriate channels are provided for stakeholders to have opportunities to express their views and opinions and to participate in decision-making in aspects of our business that relate to them.

Greater expectations are also being placed on practitioners to take a role in community development and planning processes, to monitor our social impacts.

Priority community relations activities are:

- upholding the human rights of our employees and contractors, our suppliers and the people in the communities in which we operate
- conducting our business ethically, including interactions with governments, communities and business partners, as well as issues of workplace behaviour, equal employment opportunity, conflict of interest, financial inducements and bribery, insider trading and political contributions (read more: [Governance>Our Approach](#))

- acknowledging and respecting all communities that are potentially impacted by our operations or live nearby, and ensuring they have access to employment opportunities within the Company
- empowering people by implementing participatory and sustainable community development, where the challenge is to assist them to achieve an enhanced quality of life without compromising their values, culture or heritage and without creating dependency on our activities
- measuring the effectiveness of our community programs from the perspectives of all key stakeholders.

The Mining Industry and the Resource Curse Hypothesis

The recent profitability of the minerals industry is often used by opponents of mining to promote the resource curse hypothesis – that local communities bear all the environmental and social costs of mining and see relatively little benefit while company shareholders derive large profits.

We believe our commitment to spend one per cent of our pre-tax profit on a three-year rolling average on community programs is a demonstration of our commitment to share our success: while our shareholders benefit from our current profit levels, our host communities around the world also benefit.

We are also aware of our responsibility to ensure our financial resources are used effectively to secure real, long-term value for our communities.

Although the majority of our community expenditure will continue to be budgeted and managed by the businesses at a local or regional level, we have also established a Global Community Programs Panel to approve projects of global significance and a small number of projects in countries where we have new business opportunities.

Read more for our approach to:

- [Community Relations](#)
- [Community Programs](#)
- [Human Rights](#).

Community Relations

The [HSEC Management Standards](#) provide the overall framework for consideration of the community aspects at our operations.

HSEC Management Standard 7 forms the basis of our approach to communication, consultation and participation with stakeholders, with the intent being 'effective, transparent and open communication and consultation is maintained with stakeholders associated with Company activities. Stakeholders are encouraged to participate in and contribute to sustainable development through HSEC performance improvement initiatives.' Read more: [Engaging Stakeholders](#).

All sites are required to have community relations plans in place to address the social and community elements of the HSEC Management Standards, although each operation will have a different emphasis, depending on their site-specific circumstances. For example, one operation may emphasise community consultation, another operation human rights and another community risk assessment.

Other elements outside the HSEC Management Standards – for example, media relations plans – may also be included in the plan, depending on the situation. An HSEC Guideline is in place to provide direction for sites in the preparation of a community relations plan.

Indigenous Culture and Heritage

The Company recognises and respects the importance of Indigenous peoples' culture, heritage and traditional rights and supports the identification, recording, management and protection of indigenous cultural heritage sites.

Indigenous cultural heritage is broadly defined to include matters that are significant to either Indigenous peoples or under legislation, such as dreaming, ceremonial, sacred and burial sites; archaeological sites where evidence of the past occupation and use by Indigenous peoples can be found; more contemporary historic sites; and traditional knowledge.

We recognise that Indigenous peoples have a vital role to play in identifying and properly managing cultural heritage, especially where it could be affected by our activities.

At our operations and projects we undertake early consultations and assessments with Indigenous peoples to ascertain whether our proposed activities are likely to impact cultural heritage values and, in conjunction with Indigenous peoples and relevant authorities, how best to plan and undertake those activities to avoid or minimise such impacts.

Our preference, wherever possible, is to avoid disturbance to significant sites as well as to ensure that Indigenous people have access to them. We also actively seek to utilise traditional knowledge in the development of site-based practices, such as environmental management plans.

Global Community Network

BHP Billiton's Global Community Network was formally launched in 2005/06 and it is providing an effective vehicle to improve knowledge sharing across the business and identify business improvement opportunities within the Community Function.

The Network currently comprises over 260 members globally, including asset leaders, community relations site practitioners and corporate employees.

A Leadership Team of senior community professionals from Australia, South Africa, India, Pakistan, the US, the UK, and South America and the Executive Sponsor, Robert Kirkby, provide the direction and strategy for Network activities. It is administered by a full-time Network Coordinator.

The Leadership Team has set goals and performance indicators for the Network, and these will be reviewed on an annual basis.

The Network identified four social drivers as key motivators for activities in the first 12 months. These areas are considered to be the most critical areas for the Company in improving its social performance and ensuring we are meeting expectations of our key stakeholders. Our four social drivers are:

- Human Rights – we need to ensure our employees and key contractors understand their obligations in relation to human rights and that we have the systems in place to identify and manage risks.
- Stakeholder Relationships – one of our key activities in the Community Relations Function is developing relationships with people who are impacted by or have an interest in our business.
- Social and Economic Impact – developing indicators to measure our socio-economic contribution will help us to understand the impact we have on communities and enable us to better assess different strategies for community investment.
- Community Development – with an increased expectation for large companies to be actively involved in the development of host communities, it is important that we are aware of best practice development methodologies and that we are able to measure progress.

The Network has established four workgroups to focus on activities that address these drivers. The workgroups are committed to leveraging existing systems within the Company wherever possible, while addressing critical gaps and building our knowledge base.

A range of communication tools is employed to facilitate knowledge sharing. These include an electronic newsletter featuring the latest Corporate Social Responsibility (CSR) news and resources from around the world, global teleconferences, face-to-face regional meetings, a Community of Practice website and an online knowledge warehouse.

Community Programs

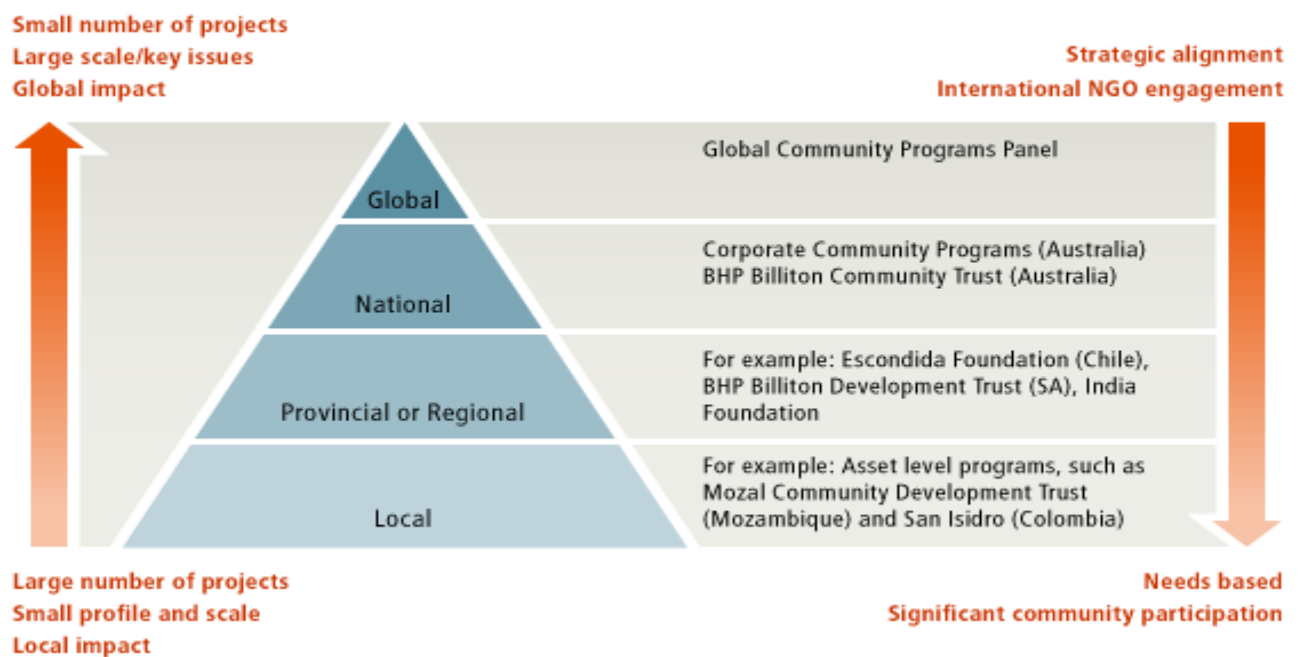
Community programs are operated at four levels across the Company – local, provincial or regional, national and global.

The majority of our efforts occur locally at our operations where our businesses implement programs to develop and support the communities close to us.

At our operations, the asset manager and/or local community relations professionals are responsible for managing their community support programs, operating within the parameters of our Charter, Guide to Business Conduct and the HSEC Management Standards. Sites around the world operate their local community programs in different ways. Most sites have a formal decision-making group to receive proposals from community organisations and determine which of these is appropriate to support. These committees generally comprise employees and management and often involve community representation.

The Corporate Function of the Company also operates on a provincial and national level in countries where we have a number of businesses and play a major role in the resources sector of that country – examples include South Africa, Australia and Chile. These programs generally focus on a small number of larger-scale projects that are of interest to the broader community within the country of interest.

BHP BILLITON COMMUNITY PROGRAMS FRAMEWORK



Further details on our community programs are included in our biannual [Community Programs Report, 'Yesterday, Today, Tomorrow'](#).

Corporate Foundations

Where BHP Billiton's presence in a country is significant, we often provide support for provincial or national programs in addition to local activities. In many of these instances, community foundations have been established. These foundations include external representation to ensure a full understanding of the community's needs and an ability to identify appropriate projects to address the issues.

Examples of foundations include:

- **The Minera Escondida Foundation** in Chile has a founding mission to contribute to improving the quality of life of low-income groups, principally in Antofagasta and the Second Region but also nationally.
- **The Tintaya Foundation** in Peru is an independent non-profit organisation created with the support of our Tintaya copper operation. The main purpose of the Foundation is to promote and improve self-management and participation processes in the communities within Tintaya's area of influence, thus contributing to their sustainable development.
- **The San Isidro Foundation** in Colombia is an independent body supported by our Cerro Matoso nickel operation. The Foundation aims to improve the quality of life of the communities within the business's area of influence by focusing its efforts on building a robust local economy that will continue to develop and thrive beyond the life of the Cerro Matoso operation.
- **The Montelíbano Educational Foundation** in Colombia focuses on education provision for Cerro Matoso employees and their families and also provides places for students from the surrounding communities.
- **The BHP Billiton Development Trust** in South Africa implements, coordinates and manages the Company's corporate sustainable development initiatives and those of our operations, such as Samancor Manganese, Ingwe Coal and BHP Billiton Aluminium, which participate in the Trust.
- **The BHP Billiton Community Trust** focuses on national programs in Australia in the areas of community development, education, health and environment. Programs are generally supported for up to three year periods.
- **The Mozal Community Development Trust** in Mozambique was created in August 2002 by the shareholders of Mozal to fulfil the corporate social responsibilities of the Mozal smelter. Support focuses on five key development areas defined by the Board of Trustees, namely small business development, education and training, health and environment, sport and culture, and community infrastructure.
- **The BHP Billiton SEWA Society** (referred to as the BHP Billiton India Development Foundation) was established in early 2005 to invest in the development of human and social capabilities in India. While the first projects are in Orissa, attention will be given to Andhra Pradesh, Chhattisgarh and Jharkhand in the coming year. Areas of focus include education, health, rural development and integration of indigenous peoples in development and respecting and preserving indigenous peoples' cultural and natural heritage.

Because the Company operates in many different countries and cultures, we do not administer our community programs under one set of guidelines. Consideration is generally given, however, to the following principles:

- **Sustainability.** Initiatives that will be sustainable beyond the life of the project are preferred, and we are careful to avoid creating dependency on our support. For example, by building an organisation's capacity through training and development, the community benefit can be long lasting and have flow-on benefits long after the program has been completed.
- **Community participation and engagement.** It is critical that the selection and delivery of community programs is a participative process. Community ownership of development programs is one of the keys to their success.
- **Long-term relationships.** We are aware that any good working relationship takes time, so rather than getting involved in one-off commitments we generally look to develop longer-term relationships with not-for-profit organisations. This enables a rapport to be established between the organisations and provides an opportunity to explore creative opportunities for the organisations to assist each other, such as through the sharing of skills and knowledge.
- **Specific projects.** We try to avoid providing general funding where there is no clear identification of how the money is to be spent. Specific projects with agreed objectives assist evaluation and enable the success of the project to be measured.
- **Leverage.** Projects that leverage our support by attracting additional resources such as government funding are considered favourably. In many cases, capacity building projects or start-up projects will fall into this category.

- **Employee involvement.** The involvement of our employees in the delivery of community programs adds another important dimension. It enables them to gain a better understanding of the contribution the Company is making to the community, giving them a sense of pride.
- **Reporting and evaluation.** It is essential that not-for-profit partners are transparent, have good governance structures in place, can develop indicators that clearly demonstrate the outcomes of their programs and are open to independent evaluation of their programs. In this way, we can measure the success of individual programs and convey the value of our involvement to our shareholders and other community stakeholders.

Although not-for-profit organisations require cash to deliver their programs, we recognise that other forms of assistance are highly valued and that many of these can be provided at a relatively small cost to the Company. Where we can, we offer in-kind assistance such as the use of meeting facilities, access to communication networks and business-related expertise and skills.

Employee Matched Giving Program

The Employee Matched Giving Program aims to strengthen local communities by supporting and encouraging employees who volunteer, fundraise or donate to not-for-profit organisations. Through the program we are able to support those not-for-profit community organisations our employees support through their volunteering efforts, fundraising or personal cash donations. The BHP Billiton Matched Giving Program means that BHP Billiton increases employee community contributions, by giving a 'matching' amount to the not-for-profit organisations its employees support.

Read more: [Community Programs>Our Performance>Employee Matched Giving Program](#).

Human Rights

Human rights are the basic standards of treatment to which all people are entitled, regardless of nationality, gender, race, economic status or religion. The United Nations Universal Declaration of Human Rights (UDHR) recognises that the inherent dignity and the equal and inalienable rights of all individuals is the foundation of freedom, justice and peace throughout the world.

Our Public Commitments

We recognise that our activities have the potential to impact human rights in many ways, including labour conditions, activities of security forces, scope of local community programs, and being complicit in the abusive activities of others with whom we interact.

The BHP Billiton Sustainable Development Policy states that 'wherever we operate we will...ensure...we understand, promote and uphold fundamental human rights within our sphere of influence, respecting the traditional rights of Indigenous peoples and valuing cultural heritage'.

In addition we have made a number of voluntary public commitments to human rights including:

- [UN Universal Declaration on Human Rights](#)
- [UN Global Compact](#)
- [World Bank Operational Directive on Involuntary Resettlement](#)
- [US-UK Voluntary Principles on Security and Human Rights](#).

UN Global Compact Sphere of Influence

BHP Billiton manages human rights across our various relationships according to the UN Global Compact's 'Sphere of Influence' model.

HUMAN RIGHTS 'SPHERE OF INFLUENCE' MANAGEMENT MODEL



At the centre of our sphere of influence are our employees and contractors, for whom we play an important role in the protection of their rights. This is demonstrated through our commitment to providing a safe and secure workplace.

When engaging with our local host communities, we have a responsibility to protect those human rights directly affected by our activities. These include the right to a clean environment by minimising the impact of environmental pollution from our operations, and the promotion of other basic human rights, such as access to clean water and basic health services.

When engaging security forces we seek to ensure that human rights principles are upheld through addressing contractual requirements, establishing guidelines on the use of force and identifying relevant training needs.

When engaging suppliers and business partners, we endeavour to avoid being complicit in or encouraging any activities that may result in human rights abuses. Where possible, we also seek to influence the behaviour of our suppliers and business partners by drawing attention to human rights issues, such as safety in the workplace.

While recognising the national sovereignty of host governments, we have a responsibility to promote human rights by contributing to public debate, supporting international agreements and commitments, and identifying opportunities to constructively engage government on human rights issues relevant to our business in the host country.

Self-Assessment and Management

Integral to meeting these commitments are our [HSEC Management Standards](#), which require that human rights aspects (encompassed by the 'C' component) are considered on a risk basis by our operations and integrated into business planning and review processes as appropriate. In particular, HSEC Management Standard 3 outlines our approach to HSEC risk identification and management across our businesses, while Standard 8 directs the considerations that need to be made with regards to human rights. Our operations are required to demonstrate:

- the assessment and prioritisation of human rights issues as they apply to our sphere of influence
- training of employees and contractors with regards to our human rights commitments
- systems to abide by the [US-UK Voluntary Principles on Security and Human Rights](#)
- resettlement plans, where required, consistent with the [World Bank Operational Directive on Involuntary Resettlement](#).

Our HSEC Guideline on Human Rights and a Human Rights Self-Assessment toolkit supports our sites in understanding these requirements.

The toolkit is intended to assist sites in appraising their human rights exposures and developing plans to manage these risks as appropriate. Furthermore, the toolkit aims to ensure that we achieve our Company's target of no Company transgressions of the principles contained within the [UN Universal Declaration of Human Rights](#). The toolkit is aligned with the Company's Enterprise-Wide Risk Management approach to ensure that human rights issues are readily identifiable and comparable along with the spectrum of Company social, environmental and financial risks. Read more: [Governance>Risk Management](#).

A guide to, and supporting presentation on, human rights is available to our sites to assist in educating our people about their roles and responsibilities in this area. The BHP Billiton Global Community Network, a group of community relations professionals and interested employees, has been established to define leading practice and support capacity building in areas such as human rights.

Land Compensation

Our approach to land compensation is undertaken on a case-by-case basis.

Firstly, consideration is given to what land we need; our possible impacts on that land, both short- and long-term; the present and past use of the land; and the effects that our use may have on existing land owners and occupiers.

We include consideration for peoples with recognised legal interests in land, as well as those that do not have such an interest. For example, Indigenous peoples may not have a recognised legal interest but nonetheless are connected to the land by tradition and custom. These peoples may also be leading a traditional lifestyle and be dependent, to a greater or lesser extent, on the land for their existence.

Secondly, our approach takes into account relevant legislative requirements, industry practices, standards or norms that may exist within a country or region, and special circumstances that may apply.

In some countries and jurisdictions, legislation prescribes in some detail who has to be paid land compensation, the amount, what it is for and how it is calculated. In other jurisdictions, compensation may be by negotiation with the affected parties, for example, in Australia where Native Title rights and interests may be impacted by a resource project. In this situation legislation also provides, if required by any party, mediation and arbitration processes to achieve an outcome.

Finally, consideration is given to the views of land owners and occupiers as to the form that compensation may take, for example, whether cash, in-kind or a mix of both.

Our strong preference is to have a substantial portion of any compensation payments dedicated to sustainable socio-economic projects or programs that will leave tangible and long-term benefits for the community or peoples receiving the compensation. In this situation we also try to ensure that benefits are provided to as many people as possible who may be entitled to them. Where substantial sums of money are involved we work to put in place appropriate governance structures so that these monies are managed in a responsible, transparent and accountable manner.

Read more: [Community Case Studies>Community Consultation and Engagement](#).

Complaints and Grievances

Our Business Conduct governance procedures consider complaints and grievances filed by customers, employees, and communities concerning human rights, including provisions for non-retaliation.

Read more:

- [Governance>Our Approach>Key Management Processes](#)
- [Governance>Our Performance>Business Conduct](#).

Community – Our Performance

Details on our community performance during the 2005/06 reporting period can be viewed at:

- [Community Relations](#) – how we have performed with regards to community planning, public reporting and stakeholder engagement
- [Community Programs](#) – our community programs and contributions for the reporting period
- [Human Rights](#) – how we have progressed in implementing our commitments to uphold fundamental human rights.

For details on the management of community aspects refer to [Community>Our Approach](#). For examples of policy in action refer to our [Community Case Studies](#).

Community Relations

Our HSEC Management Standard 7 forms the basis of our approach to communication, consultation and participation with stakeholders. The intent is 'Effective, transparent and open communication and consultation is maintained with stakeholders associated with Company activities. Stakeholders are encouraged to participate in and contribute to sustainable development through HSEC performance improvement initiatives.' Read more: [Our Approach>Community Relations](#).

Community Planning

In line with our HSEC Target, 98 per cent of sites required to have community relations plans have operational plans in place or are covered by a regional plan developed by the business group. This is the same result as for the last reporting period, with one site yet to formalise its community relations plan. The former WMC operations acquired in June 2005 have not been included in this target for 2005/06 but will be expected to have completed plans in the next financial year.

Following the review of the HSEC Management Standards, the requirement for community relations plans has now become an integral requirement of HSEC Management Standard 7.

Stakeholder Engagement

A total of 81 of our sites have a formal stakeholder consultation process in place, three more than in the previous reporting period. These processes range from site visits and open public meetings to the involvement of representatives on advisory groups.

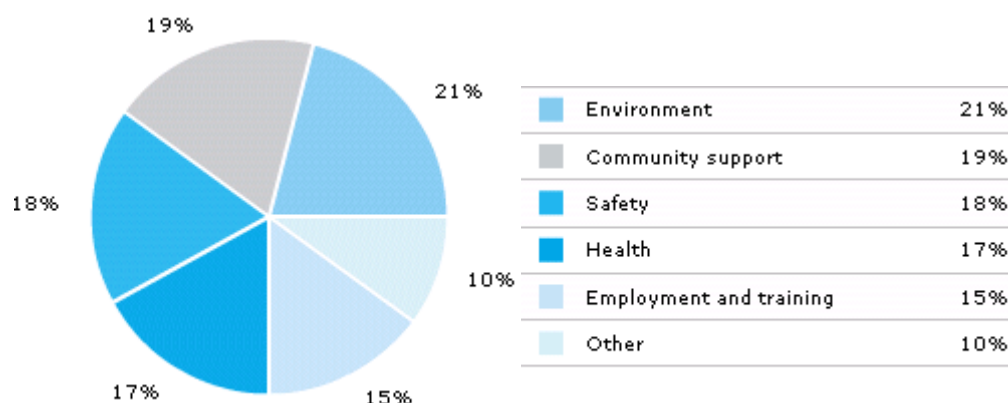
Examples of formalised consultative groups that are operated by our businesses include:

Business	Country	Consultation	Frequency of meeting
Worsley Alumina	Australia	Refinery Community Liaison Committee	Monthly
Hillside Aluminium	South Africa	Environmental Forum	Six-monthly
Mozaal	Mozambique	Interested and Affected Parties Public Meeting	Bi-annual
Tintaya	Peru	Dialogue Table with five neighbouring communities	Fortnightly
Cerro Colorado	Chile	Work meetings with Cancosa, Coyacagua, Lirima, Parca, Macaya, Mamina, Quipisca, Iquiuca, Pozo Almonte, La Tirana communities	Three-monthly
Western Australia Iron Ore	Australia	Community Consultative Group forum (CCG)	Bi-monthly
Spence	Chile	Meetings with communities from the Gorda and Baquedano mountain ranges	Monthly
Dendrobium Colliery	Australia	Community Representatives, Wollongong City Council	Monthly - two monthly
GEMCO	Australia	Anindilyakwa Land Council	Three weekly
Metalloys	South Africa	Vaal Triangle Parties affected by air emissions	Three-monthly
Cerro Matoso	Colombia	Zonal Leaders' Assembly	Annual
Optimum Colliery	South Africa	Community members meeting on Greenhouse Project	Monthly
Navajo Coal Company	United States	District 13 - Local Navajo Communities	Quarterly
EKATI Diamond Mine	Canada	Meeting with indigenous groups about Impact and Benefit Agreements (IBA), environmental agencies and Yellowknife residents	Annual

The range of topics discussed during these stakeholder consultation processes covers all areas of sustainable development – health, safety, environment and community issues – as shown in the graph below.

Topics Discussed During Stakeholder Consultations

2005/06



Note: Data only includes those sites with a formal process.

Issues discussed in the 'Other' category (illustrated in the above graph) include mine planning, growth projects and site closure plans, security, human rights and land issues, use of traditional knowledge in environmental monitoring, communication, general sustainable development discussions, and social and cultural development.

During the year, 23 operations undertook general stakeholder perception surveys to better understand their performance from their stakeholders' perspective, and 25 operations undertook employee satisfaction surveys.

Global Community Network

BHP Billiton's Global Community Network was formally launched in 2005/06 and is providing an effective vehicle to improve knowledge sharing across the business and to identify business improvement opportunities within the function.

Project workgroups have been established to identify opportunities to improve our performance. These workgroups are committed to leveraging existing systems within the Company wherever possible, while addressing critical gaps and building our knowledge base.

During 2006 four workgroups were established focusing on the following areas:

- Community Development Project Evaluation and Assessment – this group is tasked with developing consistent methodologies to assess and evaluate community development opportunities. The group has developed a guideline outlining the process to establish a corporate community foundation and is reviewing existing guidelines on community planning and management of community programs. The group is also furthering the development of a community program evaluation toolkit.
- Measuring Socio-Economic Contributions – this group is investigating how we can better understand and measure the socio-economic contributions from our assets. Using the International Council on Metals and Mining document 'Mineral Resource Endowment to Foster Sustainable Development' as a basis, the group is developing a suitable measurement process and toolkit for our operations and are then planning to trial implementation with a small number of operations.
- Social Requirements in Project Toll-gating – this group has been reviewing the company's social requirements for project approvals and assessing where additional information would assist our assets. It is currently producing a toolkit to support operationalisation of the US-UK Voluntary Principles on Security and Human Rights, a concise social risk checklist for projects in the exploration/concept phase and a new guideline that outlines the process for conducting Environmental and Social Impact Assessments.

- Internal Capacity Building – the focus of this group is to assist community relations professionals to operate effectively in their roles by understanding and identifying professional development needs and building skills and competencies. The group is currently developing a community competency framework for the function that outlines the knowledge, skills and experience required for different levels of positions within BHP Billiton.

The work of the Internal Capacity Building group is being informed by a report on BHP Billiton's current internal community relations capacity, using data collected from questionnaire responses by 93 of our practitioners. Some of the key findings of this report were:

- the majority of employees in community relations roles have a wide range of responsibilities, with most time being spent on community consultation and engagement, public relations activities and implementing community programs.
- 41 per cent of the survey respondents worked solely in community relations, but the remaining majority undertook other activities as part of their job description. Other activities ranged from environment, technical and production responsibilities to management or administration. Environment professionals were the single largest group also involved in community relations.
- 76 per cent of respondents had prior professional experience in community relations; however, 63 per cent had also previously worked in other roles within the resources industry.
- 94 per cent of survey respondents held formal professional qualifications; however, only 15 per cent of these respondents had distinctly social science qualifications.
- 56 per cent of respondents have been in their current positions for less than two year and a further 28 per cent have been in their roles for three to four years.

This information will assist in understanding the current level of competence within the function and in developing appropriate professional development activities for our community relations practitioners.

Public Reporting

This year, 95 per cent of sites required to prepare public HSEC or sustainability reports have produced them or they are included in business level reports, which meets our target. This compares to 100 per cent of sites last reporting period. Of the three sites that did not produce reports, two are existing operations that had produced reports in the previous period and one is a site that has been in operation for about a year. The former WMC operations have not been included in this target for 2005/06 but will be expected to complete reports in the next financial year.

In line with the review of our HSEC Management Standards, the requirement for sites to produce annual public sustainability reports is integrated into the Standards.

[View](#) our operations' reports.

Community Complaints

All sites are required to have community complaints registers in place to record and track the management of community concerns.

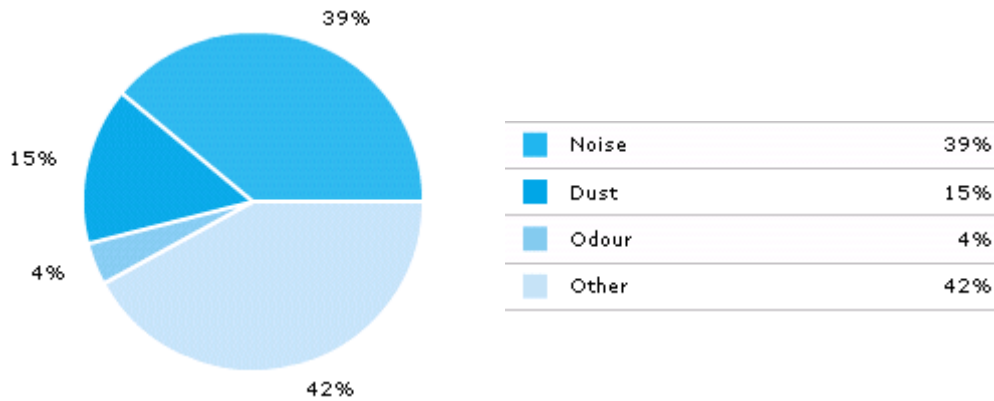
During the year, 49 of our sites received a total of 603 complaints, an increase from 509 in 2005. The number of dust-related complaints dropped for the third year from 182 and 104 in the previous two years to 88 in 2006. There was, however, an increase in the proportion of noise-related issues from 111 and 170 in the previous two years to 233 in 2006.

Illawarra Coal in New South Wales, Australia, received 197 noise-related complaints and 38 traffic-related complaints (captured in the 'Other' category) associated with rail-traffic movements. Illawarra Coal engaged the services of an internationally recognised rail noise expert, Dr Stephen Marich, to recommend ways to reduce noise emission, and the Company has scheduled a A\$1.5 million rail infrastructure improvement program for January-February 2007 to implement recommendations of the Marich Report. Illawarra Coal continues to work collaboratively with the community to address stakeholder concerns through the Community Consultative Committee, the Rail Noise Focus Group, and regular meetings with complainants.

The other significant increase in complaints this year in the 'Other' category has occurred in the vicinity of one of our Algerian exploration blocks where there were 94 complaints from local Bedouin who have been impacted as a result of the seismic data acquisition program. Given the semi-nomadic nature of the population, the business employed a Permit Agent to proactively seek and engage with locals with the specific stipulation to log all concerns and complaints. This heightened awareness in the area resulted in more interaction with local people and consequently more complaints. A compensation system has been established and all complaints were investigated and resolved, with final payments due in early September 2006.

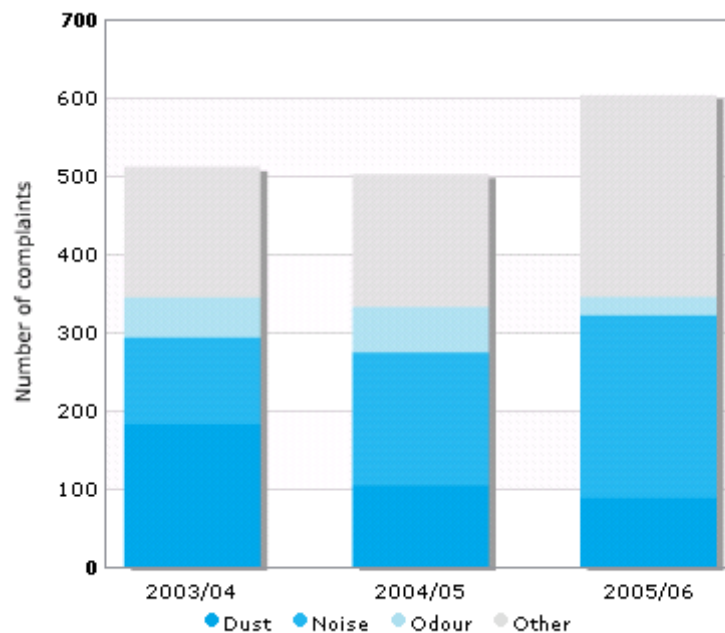
Community Complaints by Category

2005/06



Community Complaints Over Time

2003/04 to 2005/06



Community Relations Capacity Building

We continue to look for opportunities to build the capacity of the community relations professionals in the function.

We are currently developing a framework of key community-related competencies to provide aspirational direction to our current and future community relations employees. These competencies will not only assist in supporting current recruitment practices to ensure that we attract the right people to the right jobs, but will also provide the basis for development planning for current employees to ensure that our people are adequately equipped with appropriate community-related skills.

During 2005/06 we ran two more regional techniques courses focusing on community development techniques for our community relations practitioners, and the feedback from these activities continues to be extremely positive. Oxfam Australia formulated and delivered the course, taking into account some of the specific needs identified by participants. The courses catered for practitioners from southern Africa and the Asian region.

In 2005/06 we also undertook an extensive overhaul of our internal communication tools to improve the availability of key guidelines, tools and information. This project included the relaunch of a bi-monthly Global Community Network information e-newsletter; a revamp of the Company's Community Function intranet site; and planning for an online knowledge warehouse designed to store key community-related references, best practice examples and links to external resources.

Community Programs

Community programs are operated locally at our operations and also provincially or regionally, and nationally by the Corporate Function of the Company. Read more: [Our Approach>Community Programs](#).

Community Contributions

The Company supports community initiatives in the locations where it operates. During the 2006 review of the Company's community targets, the Company's executive management and the HSEC Function reaffirmed their commitment to our target to contribute one per cent of pre-tax profit to community programs. However, it was also acknowledged that the current methodology used to calculate the one per cent target has been problematic in its implementation.

For the past three years, our target to spend one per cent of our pre-tax profits has been calculated using an average of the pre-tax profit from the current financial year and the previous two years. Using the current financial year's profit in the calculation has proved to be problematic because the actual target amount is not known until the end of the financial year, after the profit has been determined. It has therefore been difficult to track our performance against this target during the year.

From the 2005/06 financial year onwards, the calculation will use the pre-tax profit from the previous three years. The target will be known at the beginning of the Company's budgeting cycle so it will be better integrated into business planning, and we will be able to monitor progress against the target more accurately during the year and plan our community development activities accordingly.

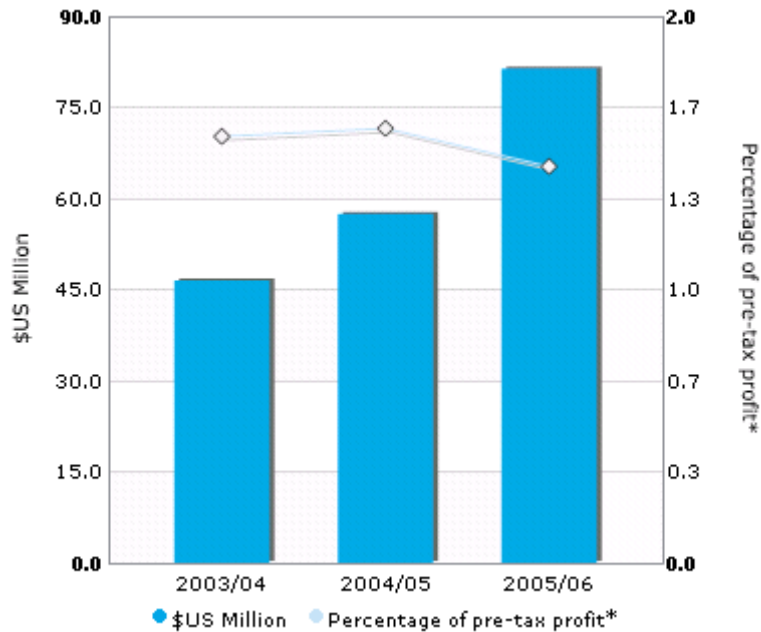
Using the methodology described above, our voluntary contributions to community programs during 2005/06 totalled US\$81.3 million, comprising cash contributions, in-kind support and administration costs. This amount equates to 1.45 per cent of pre-tax profit (three-year historic rolling average), which meets our target of one per cent. This compares to contributions of US\$57.4 million, or 1.59 per cent of pre-tax profit, over our last reporting period.

The amount includes the BHP Billiton component of our voluntary contribution to community programs at joint venture operations but does not include payments to communities that form part of mandatory licensing agreements.

Our voluntary contributions have been steadily increasing in line with profits over the past three years, and in this way our host communities have been sharing in the financial success of the Company.

Community Contributions

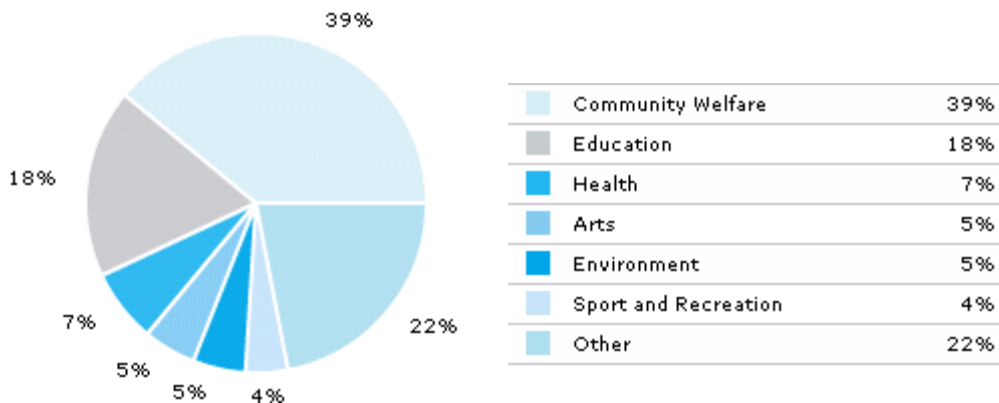
2003/04 to 2005/06



The distribution of our funding by category, by geographic region and by locality, is presented in the graphs below.

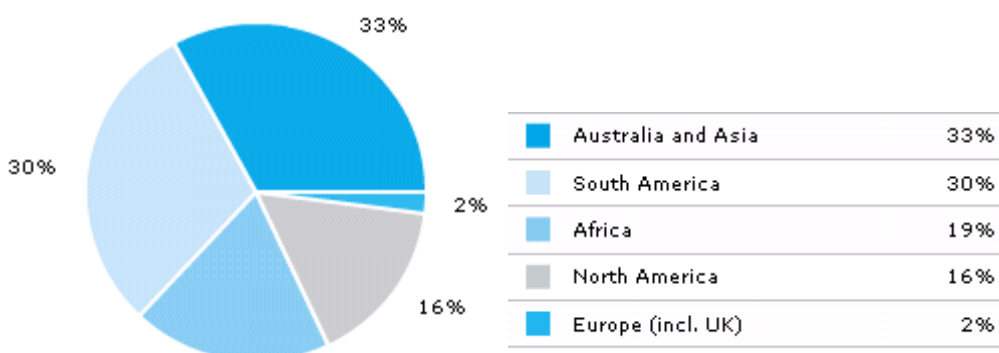
Community Contributions by Program Category

2005/06



Community Contributions by Geographic Region

2005/06



Employee Matched Giving Program

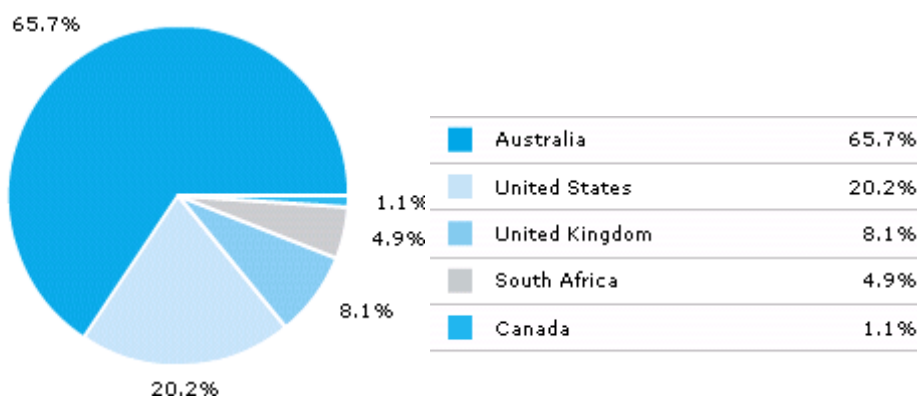
The Employee Matched Giving Program aims to strengthen local communities by supporting and encouraging employees who volunteer, fundraise or donate to not-for-profit organisations. Through the program we are able to support those not-for-profit community organisations our employees support through their volunteering efforts, fundraising or personal cash donations. The BHP Billiton Matched Giving Program means that BHP Billiton increases employee community contributions, by giving a 'matching' amount to the not-for-profit organisations its employees support.

During 2005/06, the BHP Billiton Employee Matched Giving Program was rolled out globally to all BHP Billiton managed sites. BHP Billiton contributed US\$824,230 to around 400 not-for-profit organisations through this program to match its employees' cash, volunteering and fundraising activities. The program matched over 39,000 hours of volunteering by employees in their own personal time.

In addition, three assets continued matching programs that they had established locally. Through these programs an additional US\$252,500 of employee contributions was matched, bringing the total contribution across the company to match employee donations to over US\$1 million.

Matching Contributions by Country

2005/06



Matching Contributions by Category

2005/06

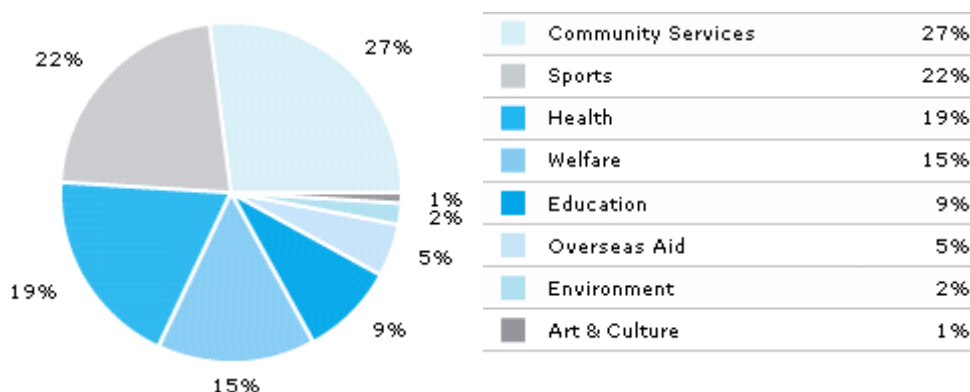


Table 1: Matched Giving Program: Breakdown of cash, fundraising and volunteering

	US\$	%
Cash Donations (US\$)	505,030	46.9%
Fund Raising	271,558	25.2%
Volunteering	300,142	27.9%

Assistance for Natural Disasters

In response to the devastating earthquake in Pakistan in October 2005, we joined with the Government of Pakistan and local and international NGOs to support relief efforts through a financial contribution of US\$310,000. With the help of local and worldwide employees, and matched donations from our Matched Giving Program, the Company's total contribution reached more than US\$600,000. This contribution was used for urgent humanitarian programs, the reconstruction of houses, medical supplies and mobile medical units.

Mapping our Contribution to the UN Millennium Development Goals

This year we commenced mapping our [Community Contributions](#) spend against the [United Nations Millennium Development Goals](#), recognising that the intent of the Goals align with our sustainability values and presents a consistent global framework for measuring tangible progress. We aim to further enhance our approach to reporting in the next reporting period.

Human Rights

The [BHP Billiton Sustainable Development Policy](#) states that 'Wherever we operate we will...ensure we ...understand, promote and uphold fundamental human rights within our sphere of influence, respecting the traditional rights of Indigenous peoples and valuing cultural heritage'. See further details at [Our Approach>Human Rights](#).

No transgressions within the Group's activities of the principles embodied within the UN Universal Declaration of Human Rights were identified in the reporting period.

Training and Development

During the reporting year the Company established the BHP Billiton [Global Community Network](#), a group of community professionals and other interested employees committed to achieving excellent community relations and sharing community development practices so that the communities where we operate value our presence. One of the key social drivers for this Network is to improve employee understanding of and commitment to universal human rights.

During 2005/06, 17 sites reported that they had undertaken some form of human rights training. The training was delivered to 6,300 employees and 9,270 contractors. Thirty-one sites currently have cultural awareness programs in place and twenty-five sites have conducted employee satisfaction surveys in 2006.

Twenty-nine of our sites report that they have security forces operating, and 17 of these sites have advised that these forces have undertaken human rights training.

Read more: [Socio-Economic Case Studies>Human Rights](#).

In 2004/05 we reported a significant community incident at our Tintaya operation in Peru. Some 2,000 people from the Province of Espinar invaded the mine site, causing the operation to shutdown for 25 days. Policemen defended the Company's private property. Some minor injuries were sustained by both community members and police, and these were treated at the Tintaya hospital.

In 2006 the dialogue progress has advanced significantly. Consensus has been reached on procedures used to identify, prioritise and implement Framework Agreement development projects, and a participative process has been implemented to select an independent team of professionals, trusted by all parties, to conduct a thorough environmental study of Tintaya and its impact on the environment.

Read more: [Community Case Studies>Community Consultation and Engagement](#)

Human Rights Self-Assessment

A Human Rights Self-Assessment toolkit is available to assist sites in appraising their potential exposure to human rights issues.

In the current reporting year, the toolkit was revised to ensure it aligned with the Company's Enterprise-Wide Risk Management approach. This ensures that human rights issues are readily identifiable and comparable, together with the Company's social, environmental and financial risks.

Read more: [Governance>Risk Management](#).

In 2006, thirty-five sites reported completing the Human Rights Self-Assessment, comparable to last year's results. We continue to recognise that this is a key area requiring improvement, and it will be addressed as a key priority of the [Global Community Network](#).

In the next year, we will commence the development of a toolkit to assist operations to implement the US-UK Voluntary Principles on Security and Human Rights. Further opportunities for educational and awareness activities in relation to human rights will be investigated.

Resettlements

Three sites have reported resettlements in the past year, mainly due to expansions of the operations and land acquisition: Tintaya (Peru) – ten families were resettled; Klipspruit (South Africa) two families; Middelburg (South Africa) – two families. Our resettlement activities are conducted in a manner consistent with our commitment to the World Bank Operational Directive on Involuntary Resettlement.

Traditional Rights

The Company recognises and respects the importance of Indigenous peoples' culture, heritage and traditional rights and supports the identification, recording, management and protection of indigenous cultural heritage sites. We believe we have not violated these rights during the reporting period.

Read more: [Our Performance>Employee Relations](#).

Community Case Studies

The following case studies are examples of community issues, initiatives, projects and programs across the Group that highlight some of the sustainability opportunities and challenges faced by our operations. Case studies are also presented for the areas of [health](#), [safety](#), [environment](#), and [socio-economic](#).

[View](#) all case studies.

Read more:

Education	Partnering with government in Western Australia, supporting South African Community Early Learning Centres and funding the Australian Tools for Change Program are just some of the ways we support education.
Disaster Relief	Where host communities are prone to natural disasters – such as Pakistan, Chile, Trinidad and Tobago, and the US Gulf States – we help them with both disaster planning and relief.
Alcohol Management	GEMCO (Australia) and Western Australia Iron Ore are helping communities address the problems associated with higher than average rates of alcohol consumption.
Community Partnerships	Illawarra Coal (Australia) and Minera Escondida (Chile) show the value associated with having community ownership of community programs.
Community Development	Improving sanitation and providing clean water are enhancing living standards in Pakistan.
Community Consultation and Engagement	We employ a range of techniques to ensure different communities, such as local Peruvians and semi-nomadic Bedouin people in Algeria, are informed about our operations and how they have opportunities to express their views and opinions and engage in decision-making in the aspects of our business that relate to them.
Indigenous Governance	The Indigenous Governance Awards, a partnership between Reconciliation Australia and BHP Billiton, are providing important lessons about how to overturn disadvantage in Indigenous communities.
Cultural Heritage	Petroelum's Pilbara liquefied natural gas (LNG) project is undertaking an extensive heritage study of the region in which an LNG plant is proposed to be built, providing local Indigenous people with archaeological field skills and recording valuable information for a Western Australian heritage database.

Community Case Studies

Community – Education

Case Study Contributor:	BHP Billiton Iron Ore
BHP Billiton Interest:	80 – 100%
Location:	Pilbara Region, Western Australia
Customer Sector Group:	Carbon Steel Materials
Commodity:	Iron Ore
Case Study Status:	New for 2006

Partnering with Government to Raise Education Standards in Our Pilbara Host Communities

In August 2005, BHP Billiton Iron Ore joined with the Western Australian Government in one of the largest partnerships of its type to improve educational opportunities available to students in our host communities of Port Hedland and Newman in the remote Pilbara region. Over three years, the Company and the State Government will each inject A\$3 million into a range of initiatives designed to address some of the education challenges faced by the region, such as attendance and achievement rates, quality of facilities, information and communication technologies and training opportunities.

The Pilbara Education Partnership will support the delivery of:

- information and communication technologies
- videoconferencing to allow new subjects to be taught
- an education and community sports program
- a new training facility
- tertiary entrance exam revision seminars
- new after-hours tutoring services
- assistance in gaining university entrances
- performing arts programs
- increased chaplaincy services
- new literacy strategies
- local scholarships
- academic extension programs
- professional development programs for teachers
- 'Kicking Goals', Australia's most educationally integrated sports education program.



Champion footballer Dean Cox mentors young fans in the Kicking Goals program

Based on community needs

The decision to support such an expansive educational initiative was made as part of our employee attraction and retention program, following extensive social research that identified education as a priority issue.

The Principal of Newman Senior High School, Dick Hunter, says the partnership will help ensure students in the remote towns of Port Hedland and Newman receive the same educational opportunities as students in the State's capital city of Perth, through tailored learning programs, state-of-the-art facilities and strategies to improve retention rates. 'I'm delighted with the positive working relationship our school has had with BHP Billiton Iron Ore,' says Mr Hunter. 'There is a real sense of partnership to enhance education and training opportunities for the young people in our town'.

State Education Minister Ljiljana Ravlich says that with the important resource developments taking place in the Pilbara, everything possible must be done to ensure young people take advantage of the opportunities these developments provide. 'The range of programs and activities supported through this Pilbara Education Partnership is very extensive and means that all students will benefit, from very bright students who are encouraged to excel academically, to students who may need additional support and mentoring'.

Outcomes

The benefits are already being realised. Since the Pilbara Education Partnership commenced, six student scholarships have been awarded, more teachers have been employed to help struggling students with secondary-level literacy and numeracy, nine students are aiming for tertiary entrance and are receiving specialised assistance through the academic talent program, 370 students have taken up online tuition and two students have enrolled in first-year university studies while still completing Year 12. Additionally, apprenticeship students are using the new training facility, sister schooling has been established with a school in Perth and increased access to chaplaincy services has provided significant support to students who are at educational risk in Port Hedland and Newman.

The 'Kicking Goals' sports education program, in which the West Coast Eagles Australian Rules Football Club is involved, has also commenced. To participate fully in the program, students are required to sign contracts based on attendance at school, behaviours and academic performance. They must also undertake a significant amount of community service activities, including umpiring local junior sport. To date, more than 120 Port Hedland students and their families have applied to participate in the program.

Community Case Studies

Community – Education

Case Study Contributor:	BHP Billiton Development Trust (BBDT)
BHP Billiton Interest:	Corporate Function
Location:	South Africa
Customer Sector Groups:	Aluminium, Carbon Steel Materials, Energy Coal
Commodities:	Aluminium, Manganese, Steaming Coal
Case Study Status:	New for 2006

Supporting the Development of Community Early Learning Centres in Rural KwaZulu-Natal

The BBDT, through the Bayside and Hillside Aluminium Smelters in Richards Bay, has committed US\$1.6 million to the construction of two community early learning centres in KwaZulu-Natal. Both communities are in the Esikhawini area of Zululand, which is a poor, high-density rural area with a large number of small children. The availability of effective early childhood facilities in this area will benefit large numbers of people.

The centre at Ndabayakhe is being designed as a model early learning centre for children from birth up to five years of age, in support of Department of Education initiatives to address the challenges of early childhood development in South Africa. A satellite crèche based on the Ndabayakhe model is to be built at Madlankala. Both these areas have high rates of unemployment, and local people will be trained and employed to work on their construction projects, in line with our community development policy. On completion of the projects, each community will have a valuable asset as well as the skills and expertise to help them rise above the scourge of poverty.



The Minister for Education, Ina Cronje, at the sod-turning ceremony, with local chief Inkosi Dube (L) and Dr Xolani Mkhwanazi, Chief Operating Officer, BHP Billiton Aluminium South Africa

Providing education and needed community resources

Early childhood development is considered by the Department of Education to be one of the most neglected areas in South African education, and it currently attracts less than 0.7 per cent of the annual education budget. As the principles of early childhood development are different to those of mainstream education, programs cannot be effectively included in the Department's mainstream activities. The new crèches will help fill this gap in education while placing no further strain on the Department budget.

Surrounded by local children as she spoke at a sod-turning ceremony to commence construction of the centres, KwaZulu-Natal's Education Minister, Ina Cronje, said, 'When you invest in these children you are making a wise investment. We understand that when you talk about early childhood education, we are touching something that is fundamental to our province and the country as a whole. As government we can only applaud what we see here today. We want to stress the importance of partnerships between government, private sector and local communities'.

The Ndabayakhe Centre has been planned in consultation with the Departments of Education, Health and Social Welfare, the Office of the Rights of the Child, the Premier's Office, amakhosi (local chiefs), community leaders, NGOs and local municipality representatives.

The centre will have a health clinic and other resources for community use, including libraries; office and communications equipment; a depot for recycled materials (to be used mainly for making teaching aids); a training venue; cooking, catering and washing facilities; and a food garden. The Madlankala crèche will have access to these resources, as will future satellite crèches.

To be designed as a safe and welcoming environment, the new centre will also be a place of support for orphaned children who are raising their siblings (a legacy of the HIV/AIDS pandemic) and a base for family facilitators who work with children in the area.



Community and stakeholder representatives attend speeches at the sod-turning ceremony.

Part of the large crowd enjoying the proceedings at the sod-turning ceremony.

Community Case Studies

Community – Education

Case Study Contributor:	Nickel West (Kalgoorlie Nickel Smelter and Concentrator)
BHP Billiton Interest:	100%
Location:	Northern Goldfields, Western Australia
Customer Sector Group:	Stainless Steel Materials
Commodities:	Nickel and Cobalt
Case Study Status:	New for 2006

Fostering Learning and Self Esteem as part of the Transition from Primary to Secondary Education

The Kalgoorlie Nickel Smelter and Concentrator provides a program for local Year 7 school students called Tools for Change. The 'tools' are life skills that students need for successful learning and career development.

When they return from summer break to begin their secondary education at high school, many of the students' familiar contacts and expectations change. Tools for Change aims to equip students with the tools to develop their communication, teamwork and lateral-thinking skills. In clarifying expectations, dispelling myths and highlighting each student's resourcefulness, the program increases the chances of success in high school.

The hands-on, interactive activities of the two-day program are designed to boost the students' self-esteem and confidence and build on their collaboration with each other and the adults around them. Goal setting, positive behaviours and recognising opportunities are emphasised – themes that underpin the program include 'Make a difference' and 'Consider yourself'.



Lateral thinking is an essential 'tool' for successful learning and career development

Interactive sessions and presentations

Tools for Change is managed by a Community Relations Coordinator who works with a Tools Officer in association with the program's community partners, the Department of Education and Training and the Western Australia Police.

Over ten days each November, a support team of 20 Nickel West staff and secondary students work with a Tools for Change team to provide interactive sessions and presentations. Presenters from the community, such as high school teachers, police, local government and Department of Sport and Recreation representatives, community Chaplains and district education staff, come together to deliver a set of useful 'tools'.

Students enjoy the positive reinforcement, get to know others outside their own circle of school friends and can look forward to the next phase of their education. Catherine Shepherd, Deputy Principal of Eastern Goldfields Senior High School, says, 'Tools for Change helps students adjust to the secondary education environment and prepares them for a different way of learning. Tools encourages interaction with others and these new friendships support students in their new school year'.

2006 marks the 10th anniversary of delivery of the Tools for Change program to school students in the Kalgoorlie district. Interestingly, three current employees of the Nickel West smelter operation were participants when they were at primary school. In 2005, a total of 560 students attended the program.



Goal setting — a tool for change



Active, healthy and fun!



Teamwork



Interacting with the community

Community Case Studies

Community – Education

Case Study Contributor:	Southern Cross Fertilisers
BHP Billiton Interest:	Divested July 2006
Location:	Northern Queensland, Australia
Customer Sector Group:	Diamonds and Specialty Products
Commodity:	Fertilisers
Case Study Status:	New for 2006

Students in the Mount Isa District Benefit from the Tools For Change Program

In northern Queensland, Australia, increasing numbers of Year 7 students in the Mount Isa district are being given the opportunity to participate in the Tools for Change program through the support of Southern Cross Fertilisers (SCF).

In 2003, the SCF funded a pilot Tools for Change program at two Mount Isa primary schools, following which Sunset State School's Tools for Change coordinator, Gaynor Bowden, noted, 'The program was additive to the normal school transition program and was breaking down the anxiety students felt about commencing secondary school and increasing school retention rates'. With such a positive response, the initiative was then expanded to involve more of the town's schools.

In 2005, continued support from SCF enabled the program to be further expanded to include all state and Catholic primary schools in Mount Isa and state primary schools in the regional towns of Dajarra, Boulia and Julia Creek. Partnering SCF in the program were Education Queensland, Catholic Education, TAFE Queensland, Queensland Police Service, and Army Reserves.



A team in the Tools for Change program about to tackle the 'spider web' challenge

A structured program of activities

Through the Tools for Change program, the students can:

- explore the nature of secondary school
- acquire critical information
- learn about appropriate and non-appropriate behaviours
- form new friendships.

Each participant joins a Tools for Change teams identified by a colour-coded shirt that the student wears to activities over the course of the program. The colour-coded team represents the class the student will be in the following year at high school. After some introductory exercises, they join in practical and fun-focused sessions about teamwork, communication, change and relationships, lateral thinking, dreams and life goals, protective behaviours, rules and the law, and setting priorities.

SCF volunteer staff assist the Tools for Change team in conducting the sessions, along with teachers, police officers and other volunteers. Throughout the program, positive input and team-focused behaviours by students are recognised and rewarded.

In 2006, Tools for Change is again being conducted in the Mount Isa district with the support of SCF. Approximately 450 students will participate in the program.

Community Case Studies

Community – Disaster Relief

Case Study Contributor:	Angostura Integrated Oil and Gas Development
BHP Billiton Interest:	45%
Location:	Trinidad and Tobago
Customer Sector Group:	Petroleum
Commodity:	Oil
Case Study Status:	New for 2006

Cardiac Life Support Training Helps Tobago Community Plan Response to Natural Disasters

The central processing platform of our Angostura integrated oil and gas development is situated approximately 35 kilometres offshore from Tobago. Because Tobago shares its waters with our offshore facilities, positive community relations are vital. Referred to as 'the capital of Paradise', Tobago has a thriving tourism industry. The community is also dependent upon a pristine environment for many aspects of their livelihood, including fishing, water sports, eco-tourism and recreation.

As Tobago in recent years has been victim to natural disasters, part of our community relations strategy for the island has focused on community empowerment programs that can equip villages to deal with events such as landslides, fires, hurricanes, flooding, earthquakes, tidal waves and diseases.



Training program participants learn life-saving skills

Training aimed at saving lives

We partnered with the Office of Disaster Preparedness and Management (formerly the National Emergency Management Agency) in an initiative to help save lives in the event of a disaster.

A basic cardiac life support training program was developed for shelter managers, shelter management teams, other community-based organisations and state agencies such as the Airport Authority of Trinidad and Tobago and the Port Authority. The objective was to ensure that the primary institutions are equipped to assist in the preservation of human life.

Training was conducted over three days in August 2005 at the Tobago Regional Hospital, with facilitators sourced from the Cardiac Life Support Training Group of the American Heart Association.

The 80 participants in the program were taught basic cardio-pulmonary resuscitation skills, including the use of the automatic external defibrillator, and first-aid skills that can be of use during natural disasters. On the final day, 30 of the participants received certificates of completion, with the top group of eight receiving special awards. Following the program, assessments were undertaken to determine its effectiveness. Of the 80 participants, 55 were rated as Excellent, 20 as Very Good and 5 as Good.

These results will go some way towards engendering peace of mind among the communities of Tobago that there can be help at almost every turn should an emergency occur.

Community Case Studies

Community – Disaster Relief

Case Study Contributor:	Zamzama Gas Project
BHP Billiton Interest:	38.5%
Location:	Dadu District, Sindh Province, Pakistan
Customer Sector Group:	Petroleum
Commodity:	Gas
Case Study Status:	New for 2006

Supporting the Relief Effort Following the Devastating Earthquake in Pakistan

On 8 October 2005 at 8.50 am in Pakistan, a powerful earthquake hit northern areas of the country. Measuring 7.6 on the Richter scale, it took more than 79,000 lives. There was extensive damage to property, resulting in injuries to another 65,000 people.

The greatest destruction occurred in Kashmir: at Muzaffarabad where entire villages were devastated and Uri where 80 per cent of the town was destroyed. There was significant impact in rural areas. In Kashmir alone, more than 30,000 buildings collapsed and many others were destroyed in the cities of Abbottabad, Gujranwala, Gujrat, Islamabad, Lahore and Rawalpindi.

The earthquake was declared by the United Nations to be the worst in recent history, and reconstruction efforts are expected to continue for years to come.



Supporting the relief effort following the devastating earthquake in Pakistan

Responding to the tragedy

Sadly, 33 of our employees and contractors were affected in the disaster, with multiple fatalities in immediate families and huge property loss. Staff working at our Pakistan operation came forward to morally and financially support our colleagues and the aid effort in general. A relief committee was formed and a relief fund established, to which employees contributed US\$20,000, an amount that doubled when matched by the Company under our [Employee Matched Giving Program](#).

As an immediate action, 20 affected employees were issued with cash support while others were provided with temporary accommodation and relief goods such as tents, blankets, food and household items. Members of staff worked around the clock on a voluntary basis to support their friends and the millions of others left homeless.

We also joined with the Government of Pakistan and local and international NGOs to provide relief to the people of the affected region. The BHP Billiton Corporate office provided the President Relief Fund and the Citizens Foundation with US\$200,000 each for the reconstruction of houses; and another US\$100,000 was contributed to a local NGO, the Sungi Development Foundation, for urgent humanitarian programs. To help with the supply of medicines and relief items, \$US10,000 was donated by our Pakistan operation to Red Crescent Pakistan.

Support from our operations around the world

Our Company colleagues threw their support behind the relief effort. The Petroleum division in Houston, USA, organised a shipment of medical supplies for local hospitals and mobile medical units; the equipment, valued at US\$500,000, was donated free of charge by Medisend International in Houston, and our Pakistan operation paid the airfreight cost of US\$50,000. In total, with the help of local staff and our colleagues worldwide, our donations reached more than US\$600,000.

The relief committee is exploring options for providing long-term relief, in both cash and kind, to our affected employees and contractors. Damage assessment to homes and livestock has been completed, and we now plan to support the rebuilding of destroyed houses.



At Muzaffarabad, Pakistan, entire villages were devastated

Community Case Studies

Community – Disaster Relief

Case Study Contributor:	Cerro Colorado
BHP Billiton Interest:	100%
Location:	Region I, Northern Chile
Customer Sector Group:	Base Metals
Commodity:	Copper Cathodes
Case Study Status:	Follow-up to 2005 Case Study

Cerro Colorado Assists with Reconstruction of the Tarapaca Region Following Earthquake

As reported in last year's Sustainability Report, on the evening of 13 June 2005 the Tarapaca region in the north of Chile was struck by an earthquake that registered 7.9 on the Richter scale. Its epicentre was 20 kilometres from our Cerro Colorado copper operation.

Tragically, the earthquake caused 11 deaths, and 68,000 people were affected in the urban areas and rural towns of the region. Nearly 500 homes were destroyed and another 1,600 sustained major damage, as did a considerable amount of community infrastructure and equipment.

Mining and processing operations were halted for 18 days so that repairs to the plant could be effected and because of isolation due to rockslides and roadblocks. Despite these difficulties, the Company and different groups of our employees and contractors have played an active part in the Plan for the Reconstruction of Tarapaca, an initiative of the national government.



The little church in Iquiuca during reconstruction

Implementation of the Plan for the Reconstruction of Tarapaca

Cerro Colorado's participation in the reconstruction plan has been carried out in two stages. In the first stage, when the earthquake struck, groups of volunteer workers from the mine immediately put into place a humanitarian aid program for those affected in nearby communities. This consisted of medical attention, foodstuffs, blankets, support and social activities for children, restoration of power, transport including air transport for the injured and officials, removal of rubble, and providing professional expertise and machinery for cleaning up the roads.

In the second stage, following the emergency response, the Company's participation in the reconstruction plan has continued through additional funding and resources. With BHP Billiton Corporate support, Cerro Colorado has contributed to a range of programs such as the national *Chile Ayuda a Chile* (Chile helping Chile) campaign, which included the construction of 200 emergency homes for earthquake victims.

Our assistance has also helped to preserve local heritage through the restoration of historic community churches that had been damaged in the nearby villages of Mamiña, Parca and Iquiuqa. Partnerships were formed with the *Fundación Ayuda a la Iglesia que Sufre* (Foundation to Aid the Suffering Church) and the *Corporación de Amigos del Patrimonio Cultural* (Friends of Cultural Heritage Foundation). Both organisations worked with expert teams to find the best approach, taking architectural, structural and heritage issues into account. Community participation has been emphasised throughout the process.

As part of the process of rebuilding people's esteem and livelihoods, we have promoted community participation in a sustainable tourism project for the area. The program, carried forward by the newly formed Tourism Committee of Mamiña, involves a systematic and participative approach to identifying tourism routes and attractions, training community members in tourism-related activities, and developing additional resources.

Cerro Colorado has also contributed to the repair of roads and has been involved in the development of a new type of home that is particularly suited to the region and less susceptible to damage from earthquakes. Through an agreement with the Foundation for Overcoming Poverty, we have contributed to the financing of a multi-disciplinary team of professionals who have worked voluntarily to implement the Plan for the Reconstruction of Tarapaca.



A helicopter was chartered to airlift the injured to hospital



Social activities were organised to comfort local children

Community Case Studies

Community – Disaster Relief

Case Study Contributor:	Petroleum — Americas Operations and Technology
BHP Billiton Interest:	Resource Team
Location:	Houston, Texas, USA
Customer Sector Group:	Petroleum
Commodity:	Oil
Case Study Status:	New for 2006

Houston Office Plans Ahead to Help Community Relief Efforts during Hurricane Season

In the Gulf of Mexico, hurricanes present a significant risk to our oil and gas operations and host communities. Before the onset of the hurricane season in 2005, a task force at our Houston office met to consider ways to proactively support communities affected by these devastating storms.

Subsequently, in May 2005, the Company partnered in an aid project with the Houston Food Bank, building on a relationship we had established over previous years. This hard-working charity collects, sorts and distributes food and supplies to local organisations that provide food services to the community. It also plays a vital role in stocking emergency shelters set up for evacuees during natural disasters. Our entire office participated in a two-week collection drive, contributing some 2,700 kilograms of food and supplies.

Every item was needed, as the 2005 hurricane season was the worst on record, with more than two dozen named storms. The Houston office was fortunate not to be in their direct path, but all staff were impacted directly or indirectly by their destructive force, particularly Hurricanes Katrina and Rita, which swept inland in August and September respectively. The Company provided meals for many employees who suddenly found themselves caring for friends and family members.

More than US\$400,000 in targeted relief was contributed to suppliers in the Louisiana area to help them and their employees recover. The Company also donated US\$500,000 to the American Red Cross and the Salvation Army to assist in their relief efforts. This was part of our Matched Giving Program, which raised an additional US\$145,000 for those charities.

Following Hurricanes Katrina and Rita, our employees contributed hundreds of hours in relief efforts, including answering phones at fund-raising telethons, staffing help desks and volunteering at the relief shelters, which accommodated thousands of evacuees who arrived in Houston after the storms.

Davis Henderson, Chief Executive Officer of the local Chapter of the Red Cross, noted, 'We are grateful to BHP Billiton and its employees for their generous contributions to the Greater Houston Area Chapter to assist Hurricane Katrina and Rita evacuees. The partnership helped the Red Cross provide shelter, meals and financial assistance for thousands of displaced families.'

The Red Cross recognised our overall contribution to local communities by awarding the Company its Circle of Humanitarian Award, given in appreciation of annual giving and ongoing support of humanitarian efforts.



BHP Billiton Employees respond to calls from hurricane evacuees at the local Houston Area Red Cross Centre

Community Case Studies

Community – Alcohol Management

Case Study Contributor:	Groote Eylandt Mining Company (GEMCO)
BHP Billiton Interest:	60%
Location:	Groote Eylandt, Gulf of Carpentaria, Northern Territory, Australia
Customer Sector Group:	Carbon Steel Materials
Commodity:	Manganese Ore
Case Study Status:	New for 2006

GEMCO Initiates Liquor Management Plan to Address Alcohol-Related Issues on Groote Eylandt

The GEMCO manganese mine is on Aboriginal land owned by the Anindilyakwa people. Under an agreement with the traditional owners, we are committed to managing the impacts of alcohol on the local people.

Over the past 40 years, GEMCO and the Indigenous community have tried various strategies to manage alcohol-related issues, with limited success. The impact of these issues has at times strained the relationship between the two parties. It was essential that a long-term solution be achieved.

In 2002, we initiated the development of a liquor management plan that would address the concerns of the Indigenous community, the non-Indigenous community, drinkers, non-drinkers, the land council, government and police. The approach was to conduct a consultation process that would take into consideration every possible scenario and ensure that all stakeholders were involved and had a voice. This strategy laid the foundation for gaining the cooperation and support of all stakeholders and was the major contributing factor in achieving the successful outcome – after three years and 13 drafts, the Groote Eylandt Liquor Management Plan was agreed.

The plan was tabled in Cabinet in May 2005 and passed as law under the *Northern Territory Liquor Act*. Implementation of the plan on Groote Eylandt took place on 1 July 2005. The impact on the Groote Eylandt community has been extremely positive, as shown by the chart containing data supplied by the Northern Territory Police Force.

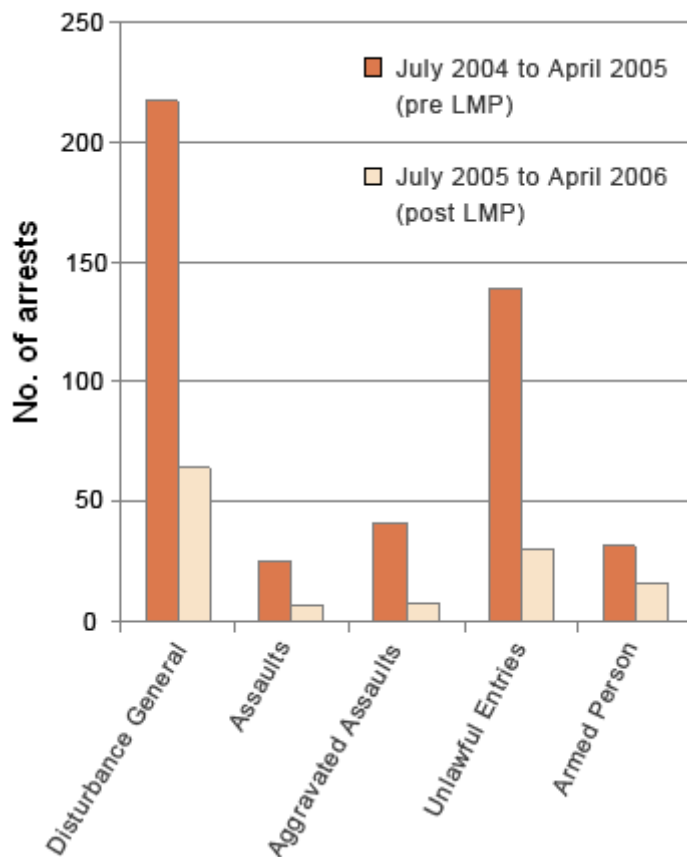
It can be assumed that these significant decreases in criminal charges will also be having a positive impact on health statistics, which are directly affected by alcohol-related issues, particularly aggravated assaults and domestic violence.

Other areas to be assisted by the introduction of the liquor management plan include our Aboriginal Employment Strategy, which has seen absenteeism decrease from an average of 9 per cent to 2.5 per cent. The local community employment program is recording similar decreases in absenteeism and now has a fully functional workforce committed to improving the quality of life of Aboriginal people on Groote Eylandt.

Tony Wurramarrba, Chairman of the Anindilyakwa Land Council, which represents the traditional owners, has acknowledged the Company's role in 'partnering the Council in championing the cause to address alcohol abuse through the Groote Archipelago'. He added that 'the resulting Groote Eylandt Liquor Management Plan has successfully addressed the problem, with a marked decrease in absenteeism and alcohol-related crime'.



The GEMCO mine rehabilitation team



Dr Alan Clough, [NHMRC](#) Postdoctoral Fellow and Senior Research Officer at the Menzies School of Health Research, was involved in the development of the liquor management plan. When he returned as an official observer of the effects of its implementation, he reported that, 'In Alyangula, generally, many of the liquor issues and associated violence, and concerns about security of residences and other property, have reduced to now be almost non-existent by all accounts. It is of interest that the community generally seems to be more aware that all access to liquor is a conditional privilege subject to the standards and expectations of the wider community.'

'In the Groote Eylandt archipelago these standards and expectations are exercised in a more immediate and direct fashion than happens in wider society, a feature of the liquor management arrangements which probably underpins much of the success of their operations to date. In this regard, the continued successful operation of the local liquor management committee is fundamental to the sustainability of this uniquely successful intervention.'

Importantly, the Groote Eylandt Liquor Management Plan has been accepted by the local people as 'this is what we do on Groote' and is seen not as the exception but the norm – a very positive sign for the long term. Such an exceptional outcome supports the sustainability not only of our business but of the community as a whole, through continuing improvement to the health and wellbeing of the people of Groote Eylandt.



GEMCO Aboriginal employees at a team building camp

Community Case Studies

Community – Alcohol Management

Case Study Contributor:	BHP Billiton Iron Ore
BHP Billiton Interest:	80 – 100%
Location:	Pilbara Region, Western Australia
Customer Sector Group:	Carbon Steel Materials
Commodity:	Iron Ore
Case Study Status:	New for 2006

Working Together to Promote Safety and Reduce Truancy in Port Hedland

BHP Billiton Iron Ore's host community of Port Hedland has long been looking for solutions to problems such as truancy and antisocial behaviour. Through collaboration between the local community and State Government, in 1992 a street patrol service – the Ngooda Gardy Community Patrol – was established to help address these issues. In 2005, we entered an agreement with the government to revamp and enhance the service, boost its profile in the community and increase the capabilities of the patrollers.

Ngooda Gardy is based on the Aboriginal word *ngurrakarti*, which means 'Go home, you mob!'. Working with council rangers, police, the ambulance service and the Port Hedland Sobering Up Centre, the Patrol looks after people in public places who pose a danger to themselves and others. This helps reduce the number of people entering the criminal justice system, assists in reducing personal injury and property damage, provides a safer environment and improves quality of life for residents.



Allan Murph, Ngooda Gardy Community Patrol supervisor

Promoting community safety and learning new skills

Following the revamp, there is now a focus on providing patrol workers with skills they can transfer to other jobs and into the private sector. Patrollers must gain community service qualifications and undergo driver education and basic first-aid training to carry out their work.

The Manager of the Port Hedland Sobering Up Centre, Ray Fischer, says, 'The increased resources provided to the Patrol are having very positive impacts upon the patrollers, providing them with a St John's Ambulance First Aid Certificate, successful completion of competency-based training in Community Services Certificate II, and further development of their skills by undertaking the Community Services Certificate III training program at Pilbara TAFE'.

The extra resourcing has also enabled a highly effective truancy service previously operated by the Patrol to be reinstated. This service works with the community and government stakeholders to develop and enforce a daytime curfew strategy and provide support for itinerant children.

According to Ray Fischer, 'Community feedback has reported that the services provided by the Patrol have reduced the incidence of antisocial behaviour in public places and reduced the need for community policing to deal with the range of problems'.

Community Case Studies

Community – Community Partnerships

Case Study Contributor:	Illawarra Coal
BHP Billiton Interest:	100%
Location:	Illawarra, New South Wales, Australia
Customer Sector Group:	Carbon Steel Materials
Commodities:	Metallurgical and Thermal Coal
Case Study Status:	New for 2006

Illawarra Coal Involves Community in Deciding The Allocation of Funds for Local Projects

Our Illawarra Coal operation has a long history of supporting local initiatives through funding, donations of land, infrastructure and related services, in-kind professional support and just lending a hand when needed. Many of our employees are active in the community, and we are proud of the voluntary work they do.

We have taken our commitment to the local community one step further by establishing the Illawarra Coal Community Partnerships Program (ICCPP) to support community projects and initiatives in the region.

A primary reason for setting up the program, which was launched in March 2005, is to enable the community to play a significant role in the allocation of funding. To this end, the ICCPP is administered by a Board comprising eight community members and two Company representatives. One of the Board's roles is to decide which projects will be supported. By structuring the Board with such a high proportion of community members, Illawarra Coal has entrusted the community with ensuring the ICCPP funds are distributed equitably. Previously, all decisions on which projects would be supported were made by the Company.



South Coast Disabled Surfers Association members testing one of the new amphibious wheelchairs

A\$1 million committed to community projects

Over the next five years, the ICCPP will inject about A\$1 million into the local community. The program has allocated base funding of A\$100,000 a year for the first two years and \$50,000 in 2007. In addition, the Company is to contribute three cents per saleable tonne of coal produced by the West Cliff mine and Appin mine.

The ICCPP Board operates with established terms of reference. To be eligible for funding, a project must:

- demonstrate innovation
- involve community partnerships
- display the ability to be sustainable beyond the life of the initial funding
- demonstrate a community need not fulfilled by other programs
- exhibit clear evaluation criteria and defined outcomes
- have the potential to benefit the broader community
- demonstrate a high level of self-help by the applicants.

Laurel Quinlan, a community representative on the ICCPP Board, has noted that, 'The Board appreciates the professional help and support given by BHP Billiton, thus giving the Board the opportunity to fund worthwhile projects in our community that ordinarily would never get off the ground due to financial constraints'.

Wide range of initiatives supported

The program has to date provided funding to 25 projects and programs that support the host communities of our Appin mine, West Cliff mine and Douglas project. Approximately A\$250,000 has been committed to funding, with allocations ranging from A\$300 to A\$40,000 according to the scope of the program or project supported.

'The partnerships that have developed through the program have had a very positive impact on the local communities it serves,' notes James McFarlane, one of the community representatives on the ICCPP Board. 'The Board will continue to fairly and actively seek projects that will be sustainable and continue well past the duration of the Board'.

The recipients have included the Appin Village Community Group, which received funding for the compilation of 'Appin – The story of a Macquarie Town', an illustrated history that includes a timeline of significant events. The book is to be the basis of another project by the group: the erection of a gazebo in Appin Park with a noticeboard displaying historical data.

One of the other recipients is the South Coast Disabled Surfers Association for the purchase of three amphibious wheelchairs, which are specially designed to give wheelchair users the freedom to enjoy the beach and the ocean with dignity.

Another community representative on the ICCPP Board, Christine Towndrow, says, 'I have gained much satisfaction in being part of ICCPP Board in assisting the many volunteer groups in their worthy projects which in turn benefits the wider community. Illawarra Coal is to be commended for its ongoing commitment to the community in which it operates'.



Left: Local member of State Parliament, Peta Seaton MP (centre), with Illawarra Coal President Colin Bloomfield (standing rear), together with ICCPP Board representatives and recipients from the first round of funding *Right:* Appin Village Community Group members present copies of 'Appin – the story of a Macquarie Town' to ICCPP Board representatives

Community Case Studies

Community – Community Partnerships

Case Study Contributor:	Minera Escondida
BHP Billiton Interest:	57.5%
Location:	Region II, Northern Chile
Customer Sector Group:	Base Metals
Commodities:	Copper Concentrates and Cathodes
Case Study Status:	New for 2006

Working Together to Improve Living Standards in a Disadvantaged Community

The city of Antofagasta is in the region where Minera Escondida is located. Within the city is the community of Villa Esperanza, which evolved in 2001 when more than 200 families who were living on a dumpsite were relocated. In mid 2003, a group of employees from Escondida's Los Colorados Concentrator Plant contacted the community to gain an understanding of their issues and aspirations.

The situation was difficult; the main problems the community was facing were job instability, low levels of schooling, alcohol and drugs. But their strong desire to move forward, and the leadership of one of the inhabitants, motivated the group to voluntarily set about helping to improve the community's living standards. Their initiative developed into a Company corporate social responsibility project with the full support of management.



Children of the El Trencito de Lulú nursery school

Building dreams

The project initially focused on refurbishing the community dining hall facilities and the local nursery school, El Trencito de Lulú (Lulu's Little Train). Food was also provided for the children's breakfasts, which allowed them to have daily nourishment and care while their mothers eked out a livelihood scavenging in the garbage dump.

At the end of 2004, after completing the work on the nursery school and dining facilities, the Escondida volunteer group decided to continue the project but with a long-term view and a focus on sustainability. They developed a strategy to motivate the Villa Esperanza community to develop their own capabilities and fulfil their dreams. With the support of social development specialists, a participative planning process was implemented, through which members of the community expressed their desires and devised a five-year work plan. The plan includes a range of projects in the areas of housing, infrastructure, personal development and the cultivation of commercial enterprises.

In developing the plan, the collaborative approach was taken so that it could be viable beyond the involvement of the Escondida employee group. The building of networks was promoted, with the objective of gaining access to benefits granted by social institutions of the Chilean Government. A demographic profile of the community and a register of property ownership and boundaries were also compiled to provide a sound basis for the community's submissions for support.

Results

The Villa Esperanza corporate social responsibility project has been built on a model of public and private sector cooperation, based on combining efforts, capabilities and resources for the achievement of the proposed objectives.

Through the project, the community has made progress in improving standards in a range of areas such as housing, primary and secondary education and literacy, including computer literacy for young people. Protective fencing and signs have been erected, a community library constructed, and sporting facilities and equipment provided. In terms of commercial projects, to date a tailoring and sewing shop and a neighbourhood store have been established.

Since the beginning of 2006, the nursery school El Trencito de Lulú has been recognised by the National Kindergarten Board, a state entity that provides grants to kindergartens throughout the country to ensure their administration is supported and maintained.

The progress achieved demonstrates the capacity of the community to develop and implement joint initiatives. At the same time, it has boosted their self-esteem and given them confidence that they can gain the support of other people and institutions.

Some dreams have materialised, while others are yet to be realised. These include the aspiration to develop more commercial activities that can generate work opportunities and, as a consequence, improve the wellbeing of the families in the community.

As the community works towards these goals, the group of employee volunteers from Escondida who initiated the project can complete their involvement with a sense of accomplishment.



Villa Esperanza community meeting

Community Case Studies

Community Development - Water and Sanitation

Case Study Contributor:	Zamzama Gas Project
BHP Billiton Interest:	38.5%
Location:	Dadu District, Sindh Province, Pakistan
Customer Sector Group:	Petroleum
Commodity:	Gas
Case Study Status:	New for 2006

Improving Sanitation to Enhance Living Standards

Johi is the *tehsil* (municipal administration) headquarters of the Dadu district and supports a growing population of approximately 18,000. While clean water is critical, so is a proper sanitation system, without which the local communities are deprived of any possibility of improving hygiene in the area. During community consultation workshops to assess the critical needs in Johi, the Zamzama community development team identified the lack or poor standard of sewerage and waste management systems in the area.

At the beginning of 2005, we partnered with a local NGO, the Kachho Foundation, to develop a plan for implementing an effective sanitation system in Johi. This initiative was undertaken in consultation with senior local government representatives.

A key to the plan was to build awareness in the communities of the importance of sanitation and to organise local committees that could represent the people in the planning and implementation process. Committee meetings identified local government as having responsibility for sanitation in the area, and subsequently the government agreed to provide funding for required infrastructure development.

Developing a model sanitation system

As part of our contribution to the project, we offered to support the Kachho Foundation in upgrading the sanitation system in Sayedabad as a model for future upgrades in the area. A concrete drainage system will be installed and pavements resurfaced. The project will immediately benefit the 50 households in the village and will provide jobs and business opportunities for local people. The project will cost approximately US\$30,000 and is expected to be completed within three months.

A health sanitation committee has been formed by the Sayedabad community to oversee the project and administer the daily work. The local people are also making land available for the storage of work materials and allowing the use of water from their pumps during the construction period. The project is a truly collaborative effort by the community, local government, NGOs and the Company to improve living standards in the area.



Before the upgrade: a local village suffering from poor sanitation conditions



After the upgrade: a local village with concrete drainage system and pavement

Community Case Studies

Community Development – Water and Sanitation

Case Study Contributor:	Zamzama Gas Project
BHP Billiton Interest:	38.5%
Location:	Dadu District, Sindh Province, Pakistan
Customer Sector Group:	Petroleum
Commodity:	Gas
Case Study Status:	New for 2006

Providing Clean Water to Village Communities in Johi

The Johi area of Pakistan, where our Zamzama gas operation is located, is severely lacking in basic physical infrastructure such as water supply systems, sewerage and waste management systems, roads and recreation facilities.

Access to clean drinking water is limited, and women of the villages have to spend a large part of their already busy day fetching water for their families. This and many other duties are also imposed upon children, depriving them of time to attend school.

Many people use water from the nearby river, which is contaminated, leading to outbreaks of illnesses such as malaria, tuberculosis, cholera, hepatitis, diarrhoea, respiratory tract infection and skin conditions.

To help improve the quality of life in the villages, in 2004 we initiated a project with a local community development NGO, the Kachho Foundation. The aim was to install hand pumps where clean underground water sources exist, in areas easily accessible by all villagers. Over time, 30 hand pumps have been installed.

As the success of the project became evident, we extended it by supporting another NGO, JORDAN, to install additional hand pumps under their local health program. Part of the funds for this initiative came from the prize money awarded to the Zamzama community development team for a winning project in the BHP Billiton HSEC Awards. As a result, another 40 pumps have been installed, making 70 in all.



The new hand pumps provide villagers with access to clean water

Empowering local people to improve community standards

The villages with pumps have each established a village health committee, which is supervised by a water and sanitation committee. The main responsibility of these committees is to monitor the use of the pumps, manage the cost of their maintenance and ensure maximum benefit is derived for the local people. The NGOs provide monthly progress reports to the Company, based on field trips every alternate month to check that the hand pumps are in working order and that the committees are carrying out their responsibilities.

An associated project with the installation of each pump is the plantation of several trees in the surrounding area. This initiative was developed by the NGO staff, who carry out the plantings during their field trips. Their aim is to help improve the local environment and promote environmental awareness in the communities. The village health committees are responsible for looking after the trees and ensuring they are not cut down.

For the communities of Johi, these projects are making a difference to the lives of the people by helping to improve their health and general standard of living. Other positive outcomes have been the active involvement of women in developing solutions to local problems and the greater opportunities provided to the children to gain an education.

Community Case Studies

Community – Community Consultation and Engagement

Case Study Contributor:	Algeria Asset
BHP Billiton Interest:	Joint Venture Partner in Two Operations
Location:	Algeria
Customer Sector Group:	Petroleum
Commodities:	Oil and Gas, Exploration
Case Study Status:	New for 2006

Developing a Process for Consulting with Semi-Nomadic Communities

The community consultation and compensation process we have developed for our Ksar Hirane exploration program in Algeria has been purpose-designed to take into account that our host communities are typically semi-nomadic Bedouin people. Land occupiers rather than land owners, the Bedouin cultivate crops and rear livestock over extensive distances, depending on seasonal factors and the availability of water.

The Ksar Hirane exploration block covers 10,719 square kilometres and is located in flat, stony desert environment between the Saharan Atlas and the M'Zab Plateau. Vegetation is generally sparse, appearing in higher density in natural water catchment areas and small valleys known as *dayas* and *wadis*. Evidence of Bedouin activity, such as small wheat crops or grazing animals, is often found along or near these *wadis* and *dayas*, although the people themselves are usually not present.



Logab Abdulkadi, Ksar Hirane compensation claimant

Mapping survey

In July 2004, the Company committed to undertake a two-dimensional seismic survey in the area and drill a minimum of one exploration well. The survey, which commenced in October 2005, is to cover approximately 1,300 kilometres over nine months.

While petroleum exploration activity is reasonably common in the Algerian Sahara, we sought to inform the local population of our intention to conduct this work. Initially, meetings were held with regional and local government officials. The local mayor, as per local custom, then posted notice of the intended work at his office, together with dual-language versions of the Environmental Impact Assessment detailing the project and contact information.

The survey is conducted by a convoy of trucks with pads that are lowered to the ground and vibrate at a range of known frequencies. These vibrations are reflected from the various rock types below the surface and are picked up by sensors, which build up a picture of the sub-surface environment so that targets for exploration drilling can be identified.

The vibrating pads on the trucks need good 'contact' with the ground and a safe route to follow, which means that some sections of the survey route must be cleared to allow safe passage. Although only used if absolutely necessary, this is usually achieved with a single cut from a four-metre-wide bulldozer blade.

Identifying environmentally and culturally sensitive areas

Prior to commencement of the survey, a local archaeologist was employed to identify any culturally significant areas along the exploration route. He also conducted cultural awareness sessions with the crew so that they would appreciate heritage sites and know how to protect them.

The survey route is typically surveyed in straight lines, although, when a proposed route runs near environmentally or culturally sensitive areas or structures, the crew can minimise the possibility of damage by offsetting the lines, reducing the vibration intensity and, in some cases, reducing the number of vibrators used.

The survey lines are typically staked out about two weeks prior to the recording crew arriving with the trucks. During this time, a local permit agent working with the crew accompanies the mapping team so they can also document any potentially sensitive areas. These are typically buildings, sunken water catchment tanks or areas of cultivation. The permit agent provides details to the crew manager, who prepares an appropriate mitigation plan for the crew.

The consultation and compensation process

During this time, the permit agent actively seeks out local Bedouins and advises them of the planned works, asks if there are any unknown sensitive areas the crew should be aware of and provides contact information for follow-up queries or complaints. Given the semi-nomadic nature of the inhabitants, some owners of buildings, crops and sunken water tanks cannot always be found prior to the survey. Consequently, once the recording crew has passed, it is important for the permit agent to return to the lines and make himself available should anyone raise a concern.

The project's consultation process requires every complaint to be logged. Due to low literacy levels in the region, complaint forms are often completed by the permit agent on behalf of stakeholders. A Company HSEC advisor is on site at all times to oversee the process. Various local government officials are then engaged to investigate claims and determine if there is a need for compensation. To date, we have received a mix of valid, hard-to-determine and obviously fraudulent claims. When a claim is difficult to determine, stakeholders are generally given the benefit of the doubt. If a claim is deemed to be valid, a specialist in agriculture, water or construction, according to the type of claim, is appointed by the local administration to determine an appropriate level of compensation.

The compensation agreement is then provided to the claimant for signing. The contents are typically explained orally and the signature is often an ink thumbprint. In line with regulations, the money is wired to the nearest post office for collection by the claimant, who is identified by their copy of the agreement.

In one compensation case, our trucks had to unavoidably pass through a wheat crop. This was discussed with Logab Abdulkadi (pictured) and his family, as they had sown the crop, and a claim for compensation for the damaged area was subsequently raised. Logab said he had 'no problem' with the consultation process or the amount of compensation his family received, but pointed out that 'the process is a bit slow'.

We are addressing and seeking solutions to this and other issues, which are a consequence of the need to engage a diverse range of stakeholders in the process, the long distances involved, and the fact that we are in the early stages of this groundbreaking new process, established in recognition of local culture and customs of the semi-nomadic Bedouins in our host communities.



Seismic survey trucks on the Ksar Hirane exploration block



A Bedouin checks for water near his small crop

Community Case Studies

Community Consultation and Engagement

Case Study Contributor:	Tintaya
BHP Billiton Interest:	Divested in June 2006
Location:	Espinar Province, Peru
Customer Sector Group:	Base Metals
Commodities:	Copper Concentrates and Cathodes
Case Study Status:	Follow-up of 2005 Case Study

After Periods of Unrest, Tintaya Has a Strong Social Licence Firmly in Place

The Tintaya copper mine has experienced recurring community unrest over the past ten years, rooted in issues that date back many years prior to ownership by BHP Billiton. In the last five years, however, Tintaya had increasingly found ways to build trust and dialogue with its neighbouring communities, with stakeholders in the province, and with the NGOs and organisations that support them. As reported in last year's Sustainability Report, this was not sufficient to prevent an outbreak of violence in May 2005, when protestors invaded the property demanding a massive increase in Tintaya's financial support to the province. The relationships fostered by this trust and dialogue did, however, allow Tintaya to recover quickly from the incident, to restart and strengthen participative processes with the community, and to maintain and enhance its reputation and its social licence to operate.



In January 2006, members of the community of Bajo Huancane gather to participate in an update on the progress of the Dialogue Table

Restarting and strengthening the Dialogue

Case studies in previous reports have explained how – between 2001 and 2004 – Tintaya and its five nearest neighbour communities, supported by institutions including Oxfam America, CooperAccion, Conacami and Corecami Cusco, established and nurtured a dialogue process known as the Dialogue Table, which was formalised in an agreement signed in 2004. They also related how a Framework Agreement was developed in 2003 between Tintaya, the municipal government of the province of Espinar, and provincial community organisations.

These processes and agreements were put at risk on May 24, 2005, when more than 1,000 demonstrators forced their way into the property, looting and setting fires, and causing the mine to shut down temporarily and evacuate its workers. The 2005 Sustainability Report told how, in the weeks and months following, a broad range of groups including the neighbouring communities, workers, contractors, and Peruvian and international NGOs, spoke out strongly in favour of the dialogue processes and against the use of violence. The Peruvian government, with the cooperation of Tintaya, local authorities, and NGOs, put mechanisms in place to address the parts of the protestors' demands that had some legitimacy – which were their concern about delays in implementing promised development projects under the Framework Agreement and uncertainty about Tintaya's environmental impact.

This has had two direct outcomes and one important indirect outcome. The direct outcomes were a consensus to streamline the procedures used to identify, prioritise and implement Framework Agreement development projects, and a participative process to select an independent team of professionals, trusted by all parties, to conduct a thorough environmental study of Tintaya and its impact on the environment.

The indirect outcome was that the few community leaders who had promoted the use of violence found their public support base severely eroded. Given the willingness of Tintaya, the central government and local authorities to address legitimate concerns, and increasing public awareness of how much had already been accomplished through peaceful dialogue, it appeared to many in the province and the country that the protest organisers had lost, rather than won, political ground with their tactics based on violent demonstrations.

Tintaya is sold

In February 2006, for reasons unrelated to the May 2005 event, BHP Billiton announced its intention to seek a buyer for Tintaya. By this time the Management Committee of the Framework Agreement – made up of local authorities and representatives from community organisations and Tintaya – had accelerated its rate of approval of development projects, and agreement had been reached to use a significant part of the fund to construct a new hospital in Espinar. The selection process for the independent environmental study was well advanced, and development activities of the Dialogue Table had resumed and moved forward considerably.

As potential buyers began to evaluate Tintaya, and community leaders and members began to contemplate the potential impact of a change of owners, the value of the strong relationship between mine and communities became even more apparent than it had been before. Potential buyers, some initially concerned about future social conflict in view of the May 2005 violence, were reassured when they heard first-hand from community members about their relationship with Tintaya. Community leaders expressed their concern that Tintaya might abandon its participative approach after the sale and were reassured when the new owner publicly committed itself to maintain the dialogue processes and to honour the community agreements.

When the sale of Tintaya was completed in June 2006, the new owner received it with a strong social licence firmly in place.



In February of 2006, Enrique Velarde of Tintaya and Alejandro Huilca, president of the community of Pumahuasi inaugurate a much-needed community irrigation project

Community Case Studies

Community – Indigenous Governance in Australia

Case Study Contributor:	Corporate Community
BHP Billiton Interest:	Corporate Function
Location:	Global
Customer Sector Group:	All Customer Sector Groups
Commodity:	All Commodities
Case Study Status:	New for 2006

Indigenous Governance Awards: a Catalyst for Good Governance

Studies around the world clearly show that the main ingredient in overturning disadvantage in Indigenous communities is good governance. The research also reveals that the turnaround only comes about when Indigenous people are given real power to make decisions about policies affecting their communities.

The findings were introduced to Australia at a Reconciliation Australia Governance Conference in 2002, following which we formed a partnership with Reconciliation Australia to develop the work to suit the Australian context. A major initiative that has emerged from our partnership is the Indigenous Governance Awards.

The Awards were conceived primarily to identify, encourage and celebrate good governance in Indigenous organisations. The desired flow-on effect is that other organisations will be stimulated to follow the lead of the high achievers by examining and improving their own structures. Financial prizes are offered for the winner and runners-up and it is hoped that ongoing publicity through Australia's Indigenous and mainstream media will promote the benefits of good governance.



Left to Right: Gningala Yarran-Clanton, Fred Spring, Karen Brisbane and Lynette Narkle, members of the Board of Yirra Yaakin Aboriginal Corporation, located in Perth, Western Australia, a finalist in the 2006 Indigenous Governance Awards

Our partner

Reconciliation Australia is a non-government, not-for-profit organisation providing leadership in the movement for reconciliation between Indigenous and non-Indigenous Australians. Its primary objective is to eliminate the 17-year gap in life expectancy between Indigenous and non-Indigenous citizens living in this affluent nation. Effective governance, with its main features of leadership, capacity development, accountability, and legitimacy among stakeholders, is fundamental to achieving this overarching objective.

Our partnership with Reconciliation Australia has provided the Company with a range of significant opportunities, including:

- important insights into how best to support communities in which we work for the long-term benefit of all parties
- association with an organisation and a project that has credibility with Indigenous Australians with whom we interact
- kudos from government and other sectors involved in Indigenous affairs.

Community background

Of the Australian population of 20 million, about 2.5 per cent (one in every 40) are Indigenous. Most people live in the cities located along the coast or in smaller towns within 200 kilometres of the sea. While the majority of Indigenous people are urban, hundreds live in remote communities in central and western Australia, some with only 30 or 40 residents and without basic facilities such as housing, health services and schools.

Increasing numbers of Indigenous communities are facing significant challenges as they become involved in negotiating exploration and resource development agreements, securing Native Title and land rights determinations and developing business enterprises.

The challenges include managing major land and natural resource endowments and trying to generate and sustain local employment and economic development. Faced with this combination of challenges and potential opportunities, Indigenous Australians and their leaders know it is essential to design and exercise strong and legitimate governing arrangements within their communities.

The Indigenous Governance Awards are one way of encouraging good governance and recognising the organisations that employ sound management practices.

The genesis

Following the 2002 conference, our partnership with Reconciliation Australia began with the scoping of an applied research project into good Indigenous governance. The project involves the Australian Government, the governments of the Northern Territory and Western Australia, and the Australian National University looking at different models of governance in 12 Indigenous communities around Australia.

A report of the preliminary findings of the Indigenous Community Governance Research Project, and a shorter summary report, are available on Reconciliation Australia's website at <http://www.reconciliation.org.au>.

The findings and their policy implications for government and communities have been shared with project partners, including Indigenous organisations and Commonwealth, State and Territory governments, and the International Advisory Group, which includes members from the USA and Canada. Workshops are being planned for later in 2006 at which these early findings will be discussed with policy makers.

In time, Australia stands to learn a great deal from the research project and other studies about what constitutes good Indigenous governance, but in the meantime the project partners are uncovering important insights that are being shared with communities and policy makers. 'The project is all about building healthy communities from the ground up,' says Jackie Huggins, Co-Chair of Reconciliation Australia. 'It's about making Indigenous communities genuinely accountable by giving us real power to set priorities and make decisions'.

We are equally enthusiastic about the partnership project, as our experience shows that good governance in Indigenous communities has a positive influence on everyday business interactions. It instils a sense of confidence that commitments made by Indigenous organisations with which we work will be delivered and that outcomes and benefits for both parties can be maximised.

Through good governance, organisations can make the best possible use of the financial and non-financial resources available to them – often through the presence of nearby mining operations – and this can result in stronger, more sustainable communities.

The Awards

The research project was the impetus for development of the Indigenous Governance Awards. Entry is open to incorporated Indigenous organisations around Australia that are at least 51 per cent Indigenous owned. In the 2006 Awards, there will be two award categories: organisations that have been in existence since January 1996 and organisations that have been in existence prior to January 1996. The prize money has been increased, with the national winner in each category receiving A\$10,000 and each highly commended organisation receiving A\$5,000.

We are the sole sponsor of the Awards; and our investment is managed by Reconciliation Australia, which administers the Awards Secretariat and is responsible for the promotion and publicity, the entries, the judges, site visits and the arrangements for the presentation events.

The key aims of the Indigenous Governance Awards are to:

- increase the understanding of the significance and benefits of good governance
- recognise and acknowledge best practice in Indigenous governance
- inspire people to begin investing in good governance
- encourage organisations that are just getting started by creating a competitive atmosphere
- provide struggling organisations with an incentive to continue
- promote innovative models and practices
- share and transfer information
- educate the wider community about good Indigenous governance
- generate positive media coverage.

The first round of the Awards, which were held in 2005, exceeded all expectations in both the quality and quantity of applications received from around Australia. From 57 applications, eight organisations were selected as finalists by a panel of eminent judges led by Professor Mick Dodson, who is a Director of Reconciliation Australia.

The judges made site visits to each of the finalists to see first-hand how the governance program of each organisation operated.

The achievements of the applicants, finalists and winners were widely reported in Australia's Indigenous and mainstream media. The winner, the Koorie Heritage Trust, located in Melbourne, Victoria, received the A\$10,000 first prize; and the two runners-up, the Central Australian Aboriginal Congress and Sunrise Health Service, both located in the Northern Territory, each received A\$5,000.

Speaking after the 2005 Awards, Professor Mick Dodson said, 'This has been a great opportunity for our organisations and communities to stand up and be proud of their achievements. It's not all about winning though, it's about being involved in charting a way forward and having the courage to take the first steps in what can be a difficult but ultimately rewarding process'.

Our CEO, Chip Goodyear, concurred, saying, 'Those of us who work alongside Indigenous organisations know what a difference good governance makes to a community's health, pride and prosperity. BHP Billiton is proud to be associated with a program that promotes success stories'.

The finalists for the second year of the Awards have just been selected, and the winners will be announced later this year.



Language workers Eleonora Deak (*Left*) and Hazel Walgar of the Wangka Maya Pilbara Aboriginal Language Centre, located in South Hedland, Western Australia, a finalist in the 2006 Indigenous Governance Awards

Community Case Studies

Community – Cultural Heritage

Case Study Contributor:	Pilbara Liquefied Natural Gas Project
Location:	Pilbara Region, Western Australia
Customer Sector Group:	Petroleum
Commodity:	Gas
Case Study Status:	New for 2006

Heritage Study of Proposed Gas Plant Site is Revealing Indigenous Past

The Pilbara liquefied natural gas (LNG) project is undertaking an extensive heritage study of the region in which an LNG plant is proposed to be built, providing local indigenous people with archaeological field skills and recording valuable information for a Western Australian heritage database.

'We're working closely with the local Thalanyji people, who are recognised historically as the native title custodians and traditional owners of the land in the region,' says the project's Environmental Advisor, Anthony McMullen.

'Only a few of the Thalanyji people had been involved in something like this before, so it's been a very worthwhile learning exchange between them and the archaeologists, as well as an opportunity for us to establish a strong relationship between the project team and the Thalanyji.'

The Pilbara LNG project, which is in the pre-feasibility phase, comprises an LNG plant capable of producing six million tonnes of LNG a year and export facilities. Located approximately 4.5 kilometres south-west of Onslow the plant will receive and process natural gas from the Scarborough field in the Carnarvon Basin, approximately 280 kilometres north-west of the Pilbara coastal town.

Combining archaeology and ethnography

The region being surveyed is about 1,750 hectares (4,324 acres). Early in 2005, a team of archaeologists and several representatives of the Thalanyji group identified a number of previously undiscovered heritage sites and found stone artefacts and remnants of edible shell species.

The initial archaeological work was followed up with an ethnographic survey. Ethnography is a branch of anthropology concerned with the description of ethnic groups.

'With an archaeological survey, you're really looking for the presence of artefacts or physical remnants that demonstrate that there was use of the area,' says Anthony.

'The ethnographic survey ties in things like the stories associated with the area and helps identify whether the site was important for, say, ceremonial purposes or whether it was just a camp site.'

'We didn't find any sites with ethnographic value within the area where we're looking to locate the LNG plant, but the survey reinforced the presence of significant ethnographic values within the region as a whole.'

More recently, the archaeological team and Thalanyji representatives began revisiting the archaeological sites to undertake a more detailed assessment of them.



Heritage survey work being undertaken near Onslow, Western Australia

Anthony says the surveys have provided Thalanyji representatives with valuable education and training that they can use in the future.

Overall, about 20 Thalanyji people have been involved in the work.

'A couple of the younger people hadn't been exposed to these sorts of sites before. We took some of the elders during the ethnographic survey to the area who were able to say, "this is a site that was likely to have been used for this or that", so it was also an opportunity for them to teach the younger generation about their history.'

A film crew accompanied the team doing the latest survey work so that the Pilbara experience can be used for future induction and cultural awareness training.

The findings of the surveys will be submitted to the Western Australian Department of Indigenous Affairs and stored within its database of registered sites.

The next steps for the Pilbara LNG project are to complete the detailed assessment of all sites, which will include carbon dating of shell remnants to identify the likely age of the sites.

The results of the heritage surveys now allow the Pilbara LNG project to understand the heritage values at the proposed plant site and place these values in a regional context. Additionally, the identification of heritage sites will feed into any constraints assessment for the proposed LNG plant and associated infrastructure.

Socio Economic



[Our Approach](#)

[Our Performance](#)

[Case Studies](#)

'In recent years there has been increasing scrutiny of the socio-economic implications of the mining, minerals and petroleum sectors.'

Message from the Vice Presidents

Socio-Economic Development

The socio-economic impact of extractive industries can be significant, and in recent years there has been increasing scrutiny of the broad sustainable development and socio-economic implications of the mining, minerals and petroleum sectors.

Over the past twelve months we have been participating in a major study by the International Council on Mining and Metals (ICMM) to understand how large-scale mining activity can enhance the socio-economic development of host countries.

The case study on the impact of our Escondida mine in Chile and Antamina mine in Peru demonstrates some of the ICMM's key recommendations for companies and host governments on how to induce better socio-economic outcomes on the ground.

BHP Billiton continues to support the Extractive Industries Transparency Initiative and, while we did not progress to reporting on a country basis this year, we are committed to working with our host governments that participate in this process and develop systems to report these payments.



Ian Wood
Vice President, Sustainable Development and Community Relations

Employee Relations

The resources industry is experiencing skills shortages that will extend well into the future. While BHP Billiton is an employer of choice in the resources industry we too are currently having difficulties attracting skills we require from the market. Our labour turnover is lower than most of our competitors, and we aim to have available skills that will match our growth aspirations by leveraging our brand and career opportunities.

We have developed a human resources strategy to connect our values, culture and business objectives to the way we manage our people. Effectively, we are seeking to establish a common BHP Billiton culture and set of business behaviours across a global and very diverse organisation.



Colyn Louw
Vice President, Organisational Effectiveness

Recognising this challenge, and that people are the foundation on which all activities rely, we must and are in the process of developing strategies to identify, recruit, train, develop and retain a talented, diverse, mobile and motivated workforce.

To improve our responsiveness to shifting trends in the external environment we have several strategic initiatives underway. These include recruitment from countries in which we expect our future development to occur, collaborating with educational institutions on training programs and ensuring the industry is attractive to new generations. Equally important is the ongoing development of our talent pipelines to ensure we are ready to meet future challenges and opportunities.

Global Supply

Working closely with our suppliers and contractors continues to be a major focus for us. Some 64 per cent of our workforce are contractors and it is essential that our values and standards are aligned. As our Charter states we encourage relationships which focus on the creation of value for all parties and to this end we are constantly seeking ways to learn from each other and work together to achieve mutual benefit.

As we further develop our interests in developing countries, we recognise the opportunity to assist in the socio-economic development of certain regions by increasing our local supply spend. It has been very pleasing to note the willingness of many suppliers in these markets to work towards a similar approach to sustainability as our own.



Betsy Harrington
Vice President, Global Supply

Economic Contributions

During the year, we have transitioned the Group's reporting framework onto International Financial Reporting Standards and initiated projects to comply with the requirements of the Sarbanes Oxley legislation and to overhaul the processes and systems through which our reporting data is collated and consolidated within the Group. These initiatives will ultimately improve the quality of financial data within the Group, the efficiency of production and the internal control over financial reporting.

This year, despite definitional inconsistencies, we have attempted to report our economic contribution using the Economic Value Generated and Distributed model proposed in the draft 2006 Global Reporting Initiative (GRI) Guidelines. Where possible, data has been extracted from our audited financial statements.



Nigel Chadwick
Vice President, Group Accounting
and Controller

Read more:

- [Socio-Economic>Our Approach](#)
- [Socio-Economic>Our Performance](#)
- [Socio-Economic Case Studies.](#)

Socio-Economic - Our Approach

The socio-economic aspects of our operations relate to how we manage our people and contribute to the economies within which we operate. Our priorities are:

- Our relationships with our employees and contractors: development of our leaders; diversity, including indigenous employment; training; remuneration and other benefits of our employees.
- Our economic contribution to society: the payments we make to governments, including taxes and royalties, and the added value we provide as a result of our operations and their broader contributions through aspects such as payments to suppliers and employees.

For details on our approach to the management of these aspects, see:

- [Employee Relations](#)
- [Supply](#)
- [Economic Contributions](#).

See [Socio-Economic>Our Performance](#) for details on our performance over the reporting period.

Employee Relations

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

- implement employment arrangements that deliver outcomes consistent with the BHP Billiton Charter, Sustainable Development Policy and Guide to Business Conduct
- build open and productive relationships with employees and provide processes to address workplace issues in an equitable manner
- ensure that employees have the opportunity to develop skills that allow them to contribute to business success and are recognised and rewarded for those results
- support fundamental human rights and freedom of association and ensure legal requirements governing employment are fully met
- respect local legislative requirements and other local standards and circumstances.

See [Our Employment Principles](#), [Freedom of Association](#), [Child and Forced Labour](#), [Work/Life Balance](#), [Grievance Mechanisms](#) and [Managing Transition](#) for further details.

Our Employment Principles

Our Employment Principles outline our approach to employment and our policies with regard to equality, recruitment, remuneration, performance management and employee development. These are detailed below:

- [Equality in Employment](#)
- [Remuneration and Rewards](#)
- [Performance Management](#)
- [Career and Employee Development](#).

Equality in Employment

BHP Billiton recognises the benefits of diversity and regards diversity management as a sound business practice. BHP Billiton is committed to providing a workplace in which individual differences are valued and all employees have the opportunity to realise their potential and contribute to the achievement of business objectives. By effectively managing diversity, BHP Billiton aims to increase organisational efficiency and enhance the Company's competitive position.

BHP Billiton is committed to developing a diverse workforce and to providing a work environment in which everyone is treated fairly and with respect.

Employment with BHP Billiton must be offered and provided based on merit. While the Company hires locally where possible, all employees and applicants for employment should be treated and evaluated according to their job-related skills, qualifications, abilities, and aptitudes only.

Decisions based on attributes unrelated to job performance (for example, race, colour, sex, national origin, age, disability, personal associations, religion, political beliefs, union involvement, marital status, sexual orientation, pregnancy, family responsibilities) may constitute discrimination and are prohibited. Decisions relating to suppliers, customers, and other stakeholders should also be based on merit.

Harassment in any form is unacceptable. BHP Billiton regards actions that constitute harassment as serious misconduct.

Equality in employment issues is addressed in the [BHP Billiton Guide to Business Conduct](#).

We recognise, however, that affirmative action may be required to address historical imbalances and past discrimination. For further details see [Employment Equity in South Africa](#) and [Indigenous Employment and Training](#).

Remuneration and Rewards

When developing and reviewing remuneration and rewards policies and practices, we recognise the need to ensure that:

- our total remuneration practices are aligned with the market conditions in the industries, countries and regions in which we operate
- our practices comply with any relevant law and the Company's standards of business conduct
- distinguishable differences in remuneration are aligned to the relative performance of the business, assets and individuals
- our employees see the link between the results they produce and the level of reward they achieve.

Notwithstanding this, our entry level wage is always subject to local minimum wage requirements and further governed by market conditions and relevant experience. Read more: [Our Employment Principles](#).

Superannuation and Pension Plans

The BHP Billiton Group operates or participates in a number of defined benefit pension plans throughout the world. The more significant schemes relate to businesses in Australia, South Africa, the US, Canada and Europe. The majority of these plans are closed to new participants. Read more: [Our Performance>Superannuation and Pension Plans](#)

Performance Management

Performance Review is the process at BHP Billiton of reviewing an employee's performance during the preceding review period against agreed job goals. It is our goal to allow all employees to participate in at least one Performance Review per financial year. The review is typically conducted by the employee's immediate manager or supervisor.

The process is intended to:

- encourage two-way communication about job performance
- provide a method of evaluating overall job performance for input to remuneration
- identify factors that have affected performance and areas that need further development
- increase self-understanding and the ability to monitor and improve performance
- establish job goals for the next review period that are consistent with the overall business direction.

Career and Employee Development

BHP Billiton is committed to working with employees to develop career paths that will enable them to reach their full potential, achieve job satisfaction, and maximise their contribution to the Company. As part of this process, BHP Billiton provides employees with on-the-job experience and supports employees in advancing their education and training.

We are committed to providing competency-based learning and development solutions that are designed to assist employees to develop their technical, non-technical, leadership and management skills. The solutions may be delivered via internal or external training programs, or both.

Learning and development needs are identified from on-the-job performance and the specific needs of the business unit. In addition, needs are also identified from Career Review and Performance Review processes. Specific technical skills training (for example, for operators, trades or engineering employees, administrative or professional employees) and HSEC training are managed within the businesses. We are also implementing regional leadership development programs.

BHP Billiton also supports employee attendance at conferences, seminars, and the like, if such attendance will enhance the employee's job skills or otherwise benefit the Company.

Furthermore, BHP Billiton provides formal opportunities for employees to create career development plans, and employees may discuss career or job concerns with their supervisor or manager at any time.

BHP Billiton Group Graduate Development Program

The Group Graduate Development Program is a three-year program run at a global level. In the first year, graduates attend a one-week Orientation Program in their region that focuses on the principles that guide the Company. In the second year, they attend a two-week Business Awareness Program to gain an in-depth knowledge of how the CSGs operate. In the final year, graduates attend a Global Awareness Program, which is designed to promote awareness and understanding of the global strategic and commercial environment within which BHP Billiton operates. This program is held in an emerging or developing market for the Company.

Freedom of Association

We fully recognise 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 individually regulated employment arrangements, but this does not affect the rights of those employees to choose to belong to trade unions. Prospective employees are made aware of employment arrangements prior to joining the Company.

The Company's policy is to consult with employees on major organisational changes and ensure processes are in place at all locations to address any issues.

In line with our [Policy](#), wherever we operate we will 'meet, or where less stringent than our standards, exceed all applicable legal and other requirements' and work within the values of our [Charter](#). Hence we will 'continue the drive towards a high performance organisation in which every individual accepts responsibility and is rewarded for results' in order to create value for all our stakeholders.

Our [HSEC Management Standard 7](#): Communication, Consultation and Participation, requires effective, transparent and open communication with Company stakeholders. In particular, Performance Requirement 7.3 requires that employees and contractors participate (or have representation) in the development, implementation, review and improvement of HSEC initiatives and programs, the establishment of HSEC goals and targets, and the review and verification of HSEC performance.

Child and Forced Labour

In line with our Policy commitment to the [UN Universal Declaration of Human Rights](#), we exclude the use of child labour and prohibit the use of forced labour at our operations. All sites are required to report the age of their youngest worker and the corresponding minimum working age in their jurisdiction.

Work/Life Balance

Particular challenges arise from the global nature of our operations, which span all major time zones. Several options are available to assist employees in balancing the competing demands of their work and personal lives. By implementing policies and practices that help employees to balance these demands, we aim to achieve the goals of:

- increased productivity
- improved employee morale
- enhanced corporate image and positive public relations
- heightened employee commitment to work and to the organisation
- increased ability to attract and recruit the best employees
- achievement of workforce diversity objectives
- improved health and safety record due to fewer work-related incidents or accidents
- reductions in tardiness and absenteeism
- decreased turnover and, as a result, increased return on training and development investments.

BHP Billiton respects and supports employees' commitment to their families and recognises that employees have a wide range of personal obligations and that these obligations can have an impact on the ability to balance work and personal life demands.

Employee Assistance Program

BHP Billiton's Employee Assistance Programs (EAP) offer staff assistance with personal and work-related problems that can arise from time to time.

Employees have direct access to professional, independent counselling, through a service that is free, voluntary and confidential.

Counselling provides objective, skilled assistance with problem solving. Just talking through a problem with an independent person can help or provide a referral if specialist advice is needed.

The types of problems BHP Billiton staff have accessed counselling support for include:

- marriage, family and relationships
- work situations
- changes in life
- alcohol and other drugs issues
- gambling issues.

The program is also available for consultation by managers and supervisors with respect to staff who could benefit from the program.

Grievance Mechanisms

Our [Guide to Business Conduct](#) provides the overall framework if employees think a decision or action may be inconsistent with our Charter, policies or standards.

Wherever possible we encourage employees to first discuss issues with their immediate manager or supervisor. If an employee feels unable to do this, there are a number of other avenues for raising queries. These include:

- the next level of management
- the Human Resource, Legal or Group Audit Services representative for the business unit
- the manager responsible for the policy area concerned
- the regional BHP Billiton Business Conduct Helpline
- a member of the BHP Billiton Global Ethics Panel.

The course of action required to resolve a concern will depend on the nature of the issue and its severity. It may be possible to resolve a matter by involving only one person or the Helpline. However, some situations may require advice and input from additional sources, such as legal advisors or auditors. In all cases, confidentiality will be maintained to the highest degree possible.

Employees who raise genuine concerns will not be subject to retribution or disciplinary action.

Managing Transition

From time to time it is inevitable that, in a company such as BHP Billiton, as a result of economic, technological, or structural changes redundancies may be required.

To be lawful, redundancies must not be harsh, unjust, or unreasonable. BHP Billiton must be able to demonstrate that such action is supported by a valid reason. All reasonable alternatives to redundancy should be considered. Options include retraining employees to assume new roles and providing opportunities for transfer to different business units.

Redundancies will always be managed consistent with the requirements of local legislation. In addition, BHP Billiton will generally provide further support in the form of monetary payment, counselling and ongoing career management.

Supply

We recognise that our supply chain can make a significant contribution to our sustainability and that our supply relationships can add or detract from our reputation. As such, we endeavour to support and engage our suppliers and contractors in the importance of meeting the requirements of BHP Billiton's Sustainable Development Policy.

Governance

Our approach to the management of HSEC aspects within the supply chain is specified within [HSEC Management Standard 11](#), Suppliers, Contractors and Business Partners. We seek to ensure that '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.'

Selection Process

BHP Billiton operates a fair and equitable procurement process. Our selection process aims to clearly inform potential suppliers of our expectations, our policies and processes, and our requirements of them in relation to HSEC.

Prior to entering a particular market or region we conduct a broad assessment of supplier capability and performance standards, including sustainability performance. Based on our broad assessment, contractual agreements with specific suppliers require them to adhere to all applicable laws, regulations and industrial awards and agreements, including all applicable health, safety, environment and community laws and regulations.

Suppliers and contractors are provided with our HSEC Management Standards before work commences, with the expectation that the Standards will be met and key HSEC compliance requirements noted in contractual agreements. Our HSEC Management Standards require our contracted suppliers to adhere to Standard 8, Business Conduct, Human Rights and Community Development, including specific requirements to demonstrate compliance with the UN Universal Declaration of Human Rights and our Guide to Business Conduct.

This process is our way of assessing whether our standards for environmental performance, occupational health and safety, product and service quality and human rights standards are understood.

Monitoring Performance

Performance monitoring of our suppliers and contractors is an important aspect of our ongoing relationships. Managing contractors and suppliers more effectively at our operations has been identified as an improvement opportunity for the Company. Our objective is to ensure that standards and procedures adopted by suppliers and contractors are consistent with our standards. Steps to ensure improved consistency in this area include:

- The contract work is to be assigned a BHP Billiton manager or supervisor as the single point of reference.
- BHP Billiton line management is to allocate adequate time and resources to manage the day-to-day activities of the contract.
- Line management is to sign off on the work standards and how they are to be carried out and shall ensure via timely workplace inspections that the work is being carried out according to the agreed standards.
- Line management is to ensure that BHP Billiton's expectations are clearly and effectively communicated to all contractors and their respective organisation's leadership.
- Line management is to ensure that each contractor's on-site manager is introduced to the responsible BHP Billiton supervisor who has single-point accountability and that effective systems of communication are in place.

Fostering Local Suppliers

We recognise the value to local economies that can be delivered through our activities and, wherever possible, encourage the development and the use of local suppliers and contractors. We define a "local" supplier as either from the community where the mine is located, or where operation is fly-in/fly-out, from the nearest appropriate regional centre.

Read more:

- [Socio-Economic Case Studies>Supporting Local Suppliers](#)
- [Socio-Economic Case Studies>Mining Impact Analysis.](#)

Another facet of our approach is the flexibility to recognise site- and region-specific procurement needs and adapt accordingly. This is exemplified by the Black Economic Empowerment (BEE) Procurement Policy for BHP Billiton in South Africa. The Policy identifies, develops and promotes the sustainability of BEE businesses through procurement, with the ultimate purpose of fostering entrepreneurship in black communities and increasing the participation of BEE suppliers in the mainstream of the sources industry.

Read more:

- [BHP Billiton BEE Procurement Policy](#)
- [Socio- Economic Case Study \(2005\)>Black Economic Empowerment Procurement Policy implemented](#)

Seeking Supplier Views

Some 64 per cent of our workforce are contractors, engaged on a casual, ongoing or project-specific basis.

During the reporting year we conducted two engagement sessions with some 150 key contractor providers in South America and Australia. The sessions were designed to seek feedback on the strengths and opportunities for improving our current approach to contractor management, recognising the importance of effective alignment between ourselves and our contractors.

As an outcome, a project team has been established to address the feedback, facilitate ongoing discussions and seek improved shareholder value and alignment with our Sustainable Development Policy. We also intend to conduct a similar session in South Africa in the 2006/07 reporting period.

Emerging Markets

We consider there is an increasing opportunity to apply our approach in dealings with potential suppliers from emerging markets.

An emerging market is one that has a relative economic advantage due to a combination of market conditions of growth-oriented regulatory or industrial frameworks, low cost labour markets and proximity to low cost materials, energy and labour.

An emerging market supplier is a supplier that, as a result of operating in a relatively low-cost business environment, is able to offer goods and services more competitively than suppliers operating within more mature markets. An emerging market supplier must be operating within an emerging market in order to take advantage of relatively low factor costs and other financial or non-financial advantages.

In November 2005 the Company created the Supply Optimisation in Emerging Markets (SOiEM) Team with the brief to identify potential suppliers exhibiting high-capability credentials.

The SOiEM program is a long-term strategy. The Company does not intend to source all products and services from emerging markets. We recognise that certain commodities and categories are better candidates for emerging market sourcing than others. The SOiEM program also presents an opportunity to seek greater transparency from current suppliers. Where current suppliers can demonstrate that they are buying from emerging markets; we can use this to demonstrate to relevant governments that we are supporting local economies.

Our SOiEM focus is on developing resources, systems and processes that will enhance our ability to screen the sustainability performance of potential suppliers in emerging markets, enabling us to effectively engage with these suppliers.

Building on a broad supplier screening process, we are further developing our approach to business conduct and human rights screening of suppliers in emerging markets.

The application of our HSEC Management Standards when identifying suppliers from emerging markets is critical. Our approach demonstrates we select suppliers after careful consideration of both commercial factors and observed sustainability performance.

The initial supplier identification process seeks evidence of dedicated management and systematic attention to human resources, safety and environmental issues before proceeding to site visits. Where our assessment of supplier performance in emerging markets indicates an elevated level of human rights risk, we conduct further proactive screening in accordance with our HSEC Management Standard 8, Business Conduct, Human Rights and Community Development.

Read more: [Socio-Economic Case Study>Working in Emerging Markets](#).

Economic Contributions

The socio-economic impact of the extractive industries sector can be significant; and in recent years, there has been an increasingly intense debate on and scrutiny of the broad sustainable development and socio-economic implications of the mining, minerals and petroleum sectors.

The [Mining, Minerals, and Sustainable Development \(MMSD\) Project](#) was the first in-depth review of the mining and minerals sector sustainability performance by a broad range of stakeholders. Extensive attention was given to socio-economic issues such as mineral wealth capture, distribution of mineral wealth, corruption, and social issues regarding local communities and mines. Completed in 2002, the project resulted in a 'vision for the future' of the sector in which mineral wealth would be spent transparently to support social and economic goals. From an industry perspective, a key outcome was the establishment of the [International Council on Mining and Metals \(ICMM\)](#), whose aim is to help enable the industry to make a positive contribution to sustainable development.

The MMSD project was followed by the World Bank Group's [Extractive Industries Review \(EIR\)](#) of the both the petroleum and minerals/mining sector. The aim of the EIR was to produce a set of recommendations that would guide the World Bank Group in revising their performance benchmark standards for the oil, gas and mining sectors. The EIR published its [findings](#) in 2003, and the World Bank Group provided a formal [Management Response](#), which indicated a number of priorities, including actions to ensure that extractive industry benefits reach the poor and that social risks are mitigated in the sector.

As a result of the MMSD and EIR projects, ICMM launched the multi-stakeholder [Resource Endowment Initiative](#) in 2004 in partnership with the United Nations (UNCTAD) and the World Bank. The Initiative aims to enhance industry's socio-economic contribution to the countries and communities where companies like BHP Billiton operate by better understanding the factors that either inhibit or promote social and economic development linked to large-scale mining projects.

Five reports have been produced to summarise the findings of the first 18 months of the Resource Endowment Initiative, including a full socio-economic impact assessment for two of our mines in Chile (Escondida) and Peru (Antamina). Read more [Socio-Economic Case Studies>Mining Impact Analysis](#).

BHP Billiton recognises that our activities have significant socio-economic impacts. For further information on our activities to understand, measure and promote responsible and positive outcomes, read [Our Performance> Economic Contributions](#).

Socio-Economic – Our Performance

See the following for details on our socio-economic performance over the reporting period:

- [Employee Relations](#)
- [Supply](#)
- [Economic Contributions](#).

For details on how we managed the socio-economic aspects of our business, read [Socio-Economic>Our Approach](#). For examples of policy in action read [Socio-Economic Case Studies](#).

Employee Relations

Refer to the following for detail on our employee relations performance over the reporting period:

- [Employee Profile](#)
- [Diversity](#)
- [Remuneration](#)
- [Superannuation and Pension Plans](#)
- [Freedom of Association](#)
- [Child and Forced Labour.](#)

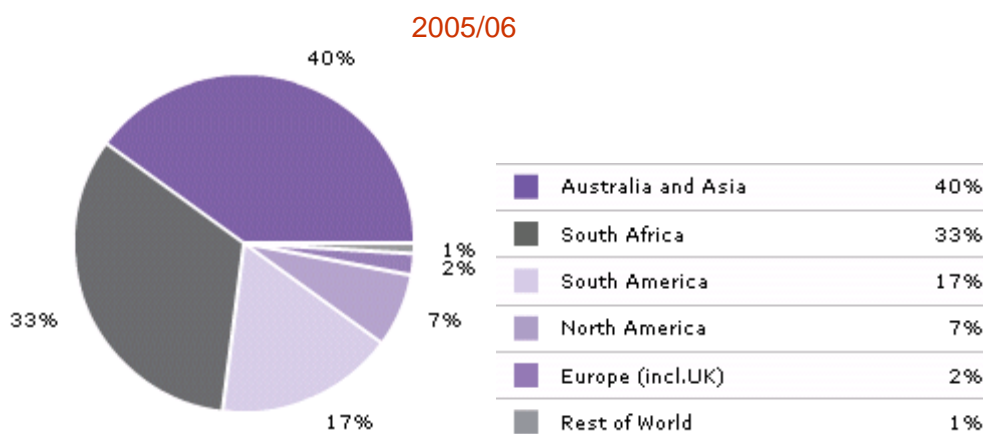
For further detail on how we manage employee relations aspects, refer to [Socio-Economic>Our Approach](#).

Employee Profile

During the year, the average number of permanent employees across the Company (including our owned and operated facilities as well as our share of unincorporated joint ventures) was 37,762 compared to 36,470 reported in the previous period.

A breakdown of employee numbers by region is presented in the graph below.

Regional Geographic Breakdown of Total Number of Employees



Approximately one per cent of employees were engaged on a part-time basis.

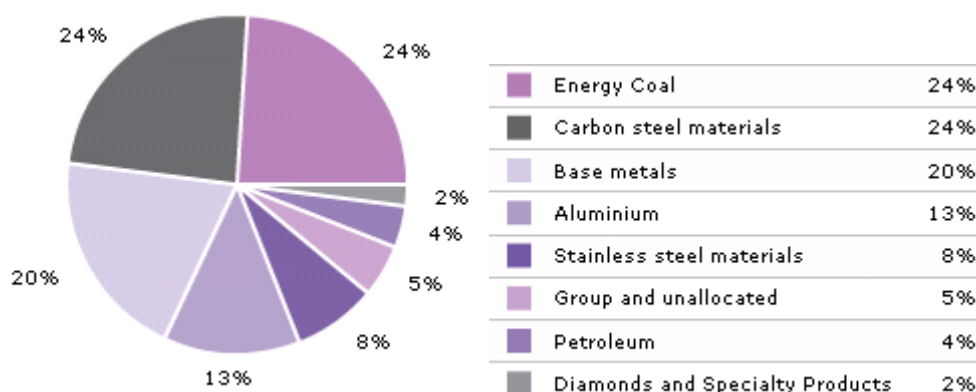
The average involuntary turnover rate of employees who were engaged at operated sites and corporate offices was approximately one per cent compared with two per cent last year. Total turnover is approximately 7.3 per cent compared with 10 per cent last year.

A total of around 66,000 contractors were engaged at operated sites compared with some 50,000 in the previous reporting period. This increase is primarily due to our construction activities at a number of our new projects.

A breakdown of employment by Customer Sector Group is presented below.

Employment by CSG (Average)

2005/06



Note Group and Unallocated includes Shared Services, Exploration and Technology. During the previous year, Exploration and Technology were included in Diamonds and Specialty Products

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.

Approximately eight per cent of our Company's management are women compared with seven per cent last year. In the year ending 30 June 2006, about 13 per cent of full-time employees at operated sites and offices were women. This figure was the same in 2005. There were significant regional differences, with women representing about 11 per cent of full-time employees in Africa, 14 per cent in Australia, 21 per cent in North America and 6 per cent in South America. In our Corporate offices, women represented 48 per cent of full-time employees. During the financial year a woman joined the BHP Billiton Board and Karen Wood was appointed to the Office of the Chief Executive, our senior leadership body in the Company. Read more: [Socio-Economic Case Studies>Diversity>Women in Mining](#).

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 [Employment Equity in South Africa](#), which ultimately aims to achieve representation at all levels in our businesses consistent with the demographic profile of South Africa, 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). Further detail on our indigenous employment strategies is provided in [Indigenous Employment and Training](#).

Employment Equity in South Africa

To address historical issues of South Africa, which resulted in the majority of South Africans being excluded from participating in the mainstream economy, BHP Billiton South Africa adopted an empowerment strategy of change. This empowerment strategy covers transformation at the levels of ownership, management, sustainable socio-economic development, procurement and employment equity. As part of this strategy, the Employment Equity Policy is aimed at redressing previous disadvantages, disempowerment and employment imbalances through accelerated development, training and education programs.

We have set targets to increase representation of those people who are included in what are classified as 'designated groups' by the South African Employment Equity Act. Designated groups include African, Coloured, Indian and disabled males and females, and white females. Our target is to have 40 per cent representation of designated groups in positions ranging from Chief Operating Officer down to middle management level.

Current designated group representation across our South African management levels is as follows:

- 40 per cent representation at top management level (FY05: 57 per cent)
- 27 per cent representation at senior management level (FY05: 21 per cent)
- 40 per cent representation at middle management level (FY05: 32 per cent).

While we have made significant progress in transforming the management structures within our businesses, the external pool of skilled and experienced executives in our industry is fairly small. Our focus, therefore, is geared towards developing the pipeline of talent into the organisation. In this regard we have launched a number of initiatives to support our focus on the people development imperative.

All operations have learnership (or apprenticeship) programs that provide for technical and personal training for tradespeople (artisans) and technical university ('technikon') students. These courses are generally one to two years in duration, depending on a student's individual project. Tailored programs are designed at the assets, and there is no standard approach across the Customer Sector Groups.

Indigenous Employment and Training

We recognise indigenous employment and training as an important issue and, as has been reported in previous years, undertake a number of initiatives in this regard. Some of the key initiatives in place across the organisation include:

- BHP Billiton Iron Ore is committed to achieving 12 per cent Indigenous employment by 2010. A range of programs has been developed to assist in achieving this target, including education partnerships to support local Indigenous students, support for local Indigenous business partnerships and targeted selection for entry level positions including traineeships and apprenticeships. Contractors and service providers are also required to commit to achieving the 12 per cent goal, and Indigenous contracting guidelines have been developed to further identify and assess business opportunities for Indigenous contracting businesses. Currently the organisation has 7.2 per cent Indigenous employment.
- Groote Eylandt Mining Company has approximately 20 per cent of its permanent workforce from indigenous descent. A specific employment strategy is in place in the Rehabilitation and Mine Services department which combines employment and training activities. Read more: [Socio-Economic Case Studies>Indigenous Skills Development and Employment> Improving Aboriginal Employment And Development Through Consultative And Performance Management Tools](#)
- EKATI, Northwest Territories of Canada, has a number of initiatives related to indigenous employment and training. The operation has exceeded its target for 31 per cent of Northern Aboriginal people employed within its workforce, with 57 per cent in skilled or professional employment. For further information refer to our 2005 case study [EKATI training program promotes sustainable new careers in the emerging Canadian underground diamond mining industry](#).
- New Mexico Coal operation in the United States has a legal obligation to ensure that positions at our Navajo mine are filled with Navajo people, where a suitably qualified candidate is available. The operation has voluntarily extended this practice across the San Juan Coal Company and also for any New Mexico support services.

Remuneration

Our approach to remuneration seeks to ensure that remuneration is aligned to market conditions relevant to the industry and country where we are operating and enables individuals to see the link between their performance and the level of reward they receive.

During the reporting period, all Company employees earned greater than the stipulated minimum wage in the countries where they worked.

Superannuation and Pension Plans

The BHP Billiton Group has closed all defined benefit schemes to new entrants. Existing defined benefit pension schemes remain operating in Australia, Canada, the US, Europe, South Africa and South America. Full actuarial valuations are prepared and updated annually to 30 June by local actuaries for all schemes. The Projected Unit Credit valuation method was used. The Group operates final salary schemes that provide final salary benefits only, non-salary related schemes that provide flat dollar benefits and mixed benefit schemes that consist of a final salary defined benefit portion and a defined contribution portion. The following sets out details in respect of the Group's defined benefit pension schemes.

The amounts recognised in the balance sheet as at 30 June 2006 are as follows:

	Australia	Canada	US	Europe	South Africa	South America	Total
	US\$M	US\$M	US\$M	US\$M	US\$M	US\$M	US\$M
Present value of funded defined benefit obligation	437	132	477	362	213	79	1,700
Present value of unfunded defined benefit obligation	4	23	32	-	-	-	59
(Fair value of defined benefit scheme assets)	(414)	(151)	(396)	(283)	(250)	(91)	(1,585)
(Surplus)/deficit	27	4	113	79	(37)	(12)	174
Unrecognised surplus	-	28	-	-	11	14	53
Adjustment for employer contributions tax	4	-	-	-	-	-	4
Net liability recognised in the balance sheet	31	32	113	79	(26)	2	231

Although not all of these plans are fully funded, they all comply with local regulations pertaining to minimum funding levels. BHP Billiton has conducted reviews on funding levels and investment strategies of each plan to address existing plan deficits.

The aggregate deficit of these plans are less than 0.5 per cent of the Group's market capitalisation, and BHP Billiton is systematically reducing this deficit through a combination of additional contributions and investment performance. This strategy is applied on a fund-by-fund basis and incorporates an appropriate investment philosophy to achieve liability matching for each fund.

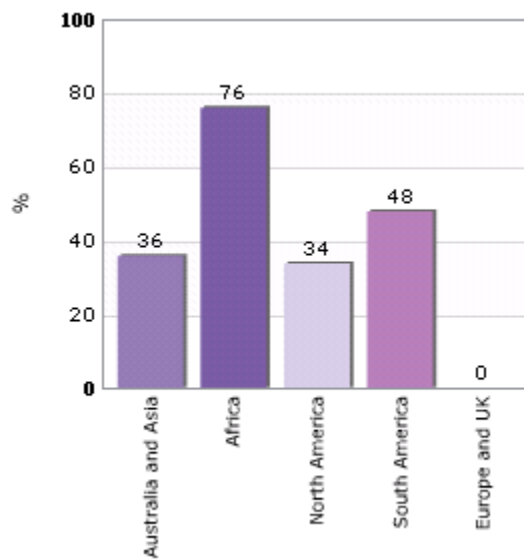
Freedom of Association

In line with our commitments to uphold the [UN Universal Declaration on Human Rights](#) and our support for the [UN Global Compact](#), we fully recognise the right of our employees to freely associate and join trade unions.

The graph below provides a breakdown of the reported percentage of employees at operated sites and offices in each region who are covered by collective bargaining agreements. Over the reporting period, around 49 per cent of our workforce globally were covered by collective agreements.

Reported Percentage of Employees Covered by Collective Bargaining Agreements by Region

2005/06



Child and Forced Labour

All sites are required to report the age of their youngest worker and the corresponding minimum working age in their jurisdiction. Over the reporting period, the youngest employees were 16.5 years of age working as apprentices and administrative trainees in our Australian operations. In line with our [Policy](#) commitment, we do not employ forced labour.

Supply

By creating opportunities for local businesses to work with BHP Billiton we enable socio-economic sustainability in the areas in which we operate. We recognise the importance of engaging and encouraging our stakeholders, including our suppliers, to share responsibility for meeting the requirements of our [Sustainable Development Policy](#) and [HSEC Management Standard 11, Suppliers, Contractors and Partners](#).

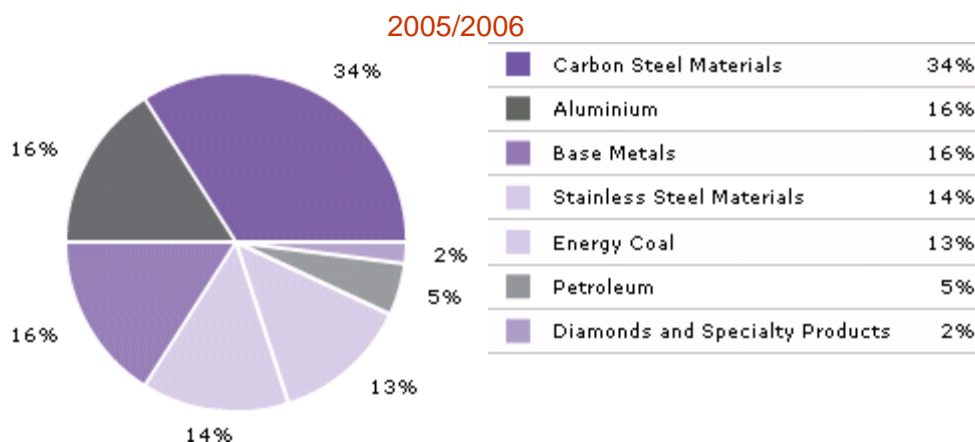
Throughout BHP Billiton significant effort is put into honouring our Policy commitments. Examples of our work in this area include:

- [Measuring the socio-economic contribution of mining operations to their host Countries – Chile and Peru](#)
- [Supporting Indigenous business at EKATI mine, Canada](#)
- [Zululand Crafters Association, South Africa](#)
- [Program to build the capacity of local suppliers in Mozambique.](#)

Total supply spend during the reporting period was around US\$13 billion. There was an increase in spend over the period due to production ramp-up, and an increasing number of capital projects coming on line.

The diagram below provides an indication of the distribution of our supply spend at a local, national or international level by our businesses.

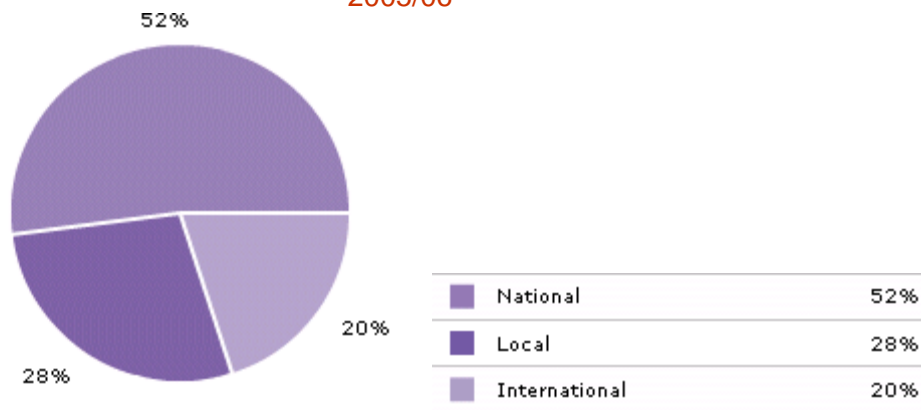
Total Global Spend on Goods and Services by Customer Sector Group



Our approach is to use local suppliers wherever possible. Over the reporting period, our distribution of spend with local suppliers increased from 27 per cent in the previous year to 28 per cent in the current year, while distribution of spend with national suppliers decreased from 54 to 52 per cent. Local spend refers to spend within the communities where we operate and the regions, such as states and provinces, where our operations are located.

Distribution of Supply Spend

2005/06



In 2006 we completed a project to improve the integration of environment and social considerations into the sourcing processes via the rollout of our Global Sourcing Guide. The rollout of the Guide is continuing in 2007.

A project is underway to investigate options to improve the capture of the non-financial benefits associated with our supply arrangements. The project is currently undergoing internal peer review.

Economic Contributions

The economic contribution we make to society is much more than the financial profits we derive. Our contribution includes the value that flows from the broader contributions of our operations, such as payments to our employees and suppliers and disbursements to governments, including taxes and royalties.

The following provides an outline of:

- [Our Financial Performance](#)
- The broader economic contributions we make to society through our [Economic Value Generated and Distributed](#).

Our Financial Performance

The data in this section deals with the financial performance of the BHP Billiton Group and covers both operated assets and our share of jointly controlled entities. Details on the financial definitions and additional performance information are available in the [Annual Reports](#).

Summary financial information for the Group is presented in the following table.

Table 1: Summary Financial Information for the BHP Billiton Group US\$ million (Year ending 30 June 2006)

	2005/06 ⁽¹⁾	2004/05 ⁽¹⁾	2003/04 ⁽¹⁾	2002/03 ⁽¹⁾	2001/02 ⁽¹⁾
Revenue ²	39,099	31,150	24,943	17,506	15,228
Underlying EBIT ³	15,277	9,921	5,488	3,481	3,102
Statutory EBIT - Profit from operations ⁴	14,671	9,271	5,020	3,462	2,890
Attributable profit (including Exceptional items)	10,450	6,396	3,379	1,901	1,622
Attributable profit (excluding Exceptional items)	10,154	6,426	3,510	1,920	1,866
Net operating assets	35,055	29,986	21,706	20,711	20,160
Income tax paid	3,152	1,476	1,337	1,002	515
Royalty related taxation paid	659	551	-	-	-
Government royalties paid or payable	776	565	421	352	294
Dividends declared in respect of the period	2,160	1,695	1,617	900	784

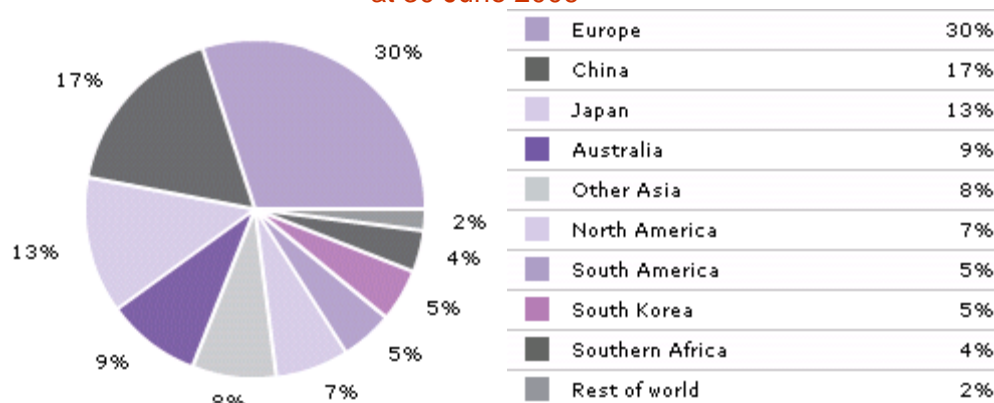
R&D expenditure	76	33	19	40	30
Underlying EBITDA to interest cover (times) ^{2 3 5 6}	44.3	51.7	21.1	13.3	11.2
Debt to equity or gearing ratio ⁷	25.2%	32.8%	25.7%	31.7%	35.0%
Retained earnings	21,088	14,059	10,461	8,580	7,475

1. 2004/05 and 2005/06 data have been calculated on the basis of International Financial Reporting Standards (IFRS). Prior periods have been calculated on the basis of United Kingdom Generally Accepted Accounting Principles (UKGAAP).
2. Including the Group's share of jointly controlled entities revenue.
3. Underlying EBIT is earnings before net finance costs and taxation, and jointly controlled entities' net finance costs and taxation, and any exceptional items.
4. Statutory EBIT includes exceptional items.
5. Underlying EBITDA is underlying EBIT before depreciation, impairments, and amortisation of both Group companies and jointly controlled entities.
6. For this purpose, net interest excludes capitalised interest, the effect of discounting on provisions and exchange differences arising from net debt.
7. Gearing as at June 2002 includes the Group's Steel business which was demerged in July 2002.

Refer to the graphs below for the Company's diversification by market (revenue) across geographic regions and a breakdown of earnings by Customer Sector Group.

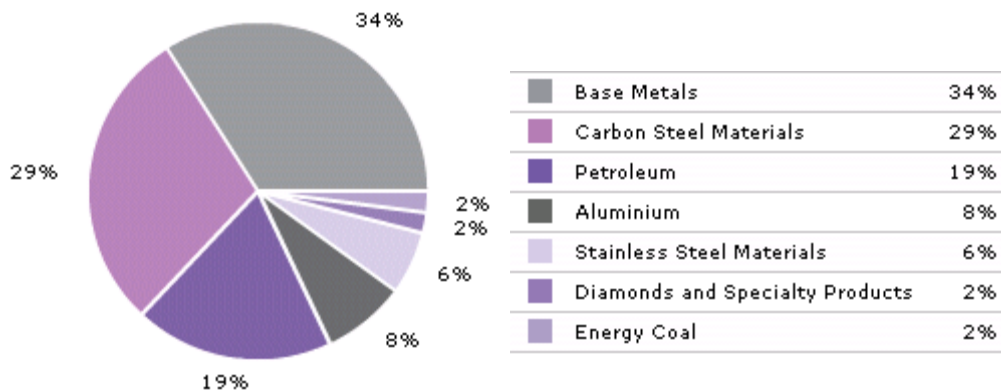
Diversification by Market (Revenue)

at 30 June 2006



CSG Underlying Earnings Before Interest and Tax (EBIT) Excluding Exceptional Items

at 30 June 2006



Economic Value Generated and Distributed

Economic value generated and distributed, consistent with the definition used by the draft G3 version of the [Global Reporting Initiative](#) (in draft at the time of reporting), provides an economic profile or context of the reporting organisation and a useful picture of direct monetary value added to regional economies.

The measure includes revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and to governments. Globally, in 2005/06 the Group spent in the order of US\$26 billion sustaining its businesses. The breakdown of this amount by category is presented below and shows expenditure by region to help to quantify the regional economic contributions of the Group.

Economic Value Generated and Distributed, US\$ million (Year ending 30 June 2006)

	Economic value generated	Economic value distributed						Economic value retained (calculated as Economic value generated less economic value distributed)
		Revenues (1)	Operating costs (1) (2)	Employee wages and benefits	Payments to providers of capital		Payments to government	
	<i>Net sales revenue plus other income</i>	<i>Payments to suppliers, contractors etc</i>	<i>Expenditure on wages and benefits of the employee workforce and not future commitments</i>	<i>Dividends to all shareholders</i>	<i>Interest payments made to providers of loans (3)</i>	<i>Gross taxes and royalties</i>	<i>Voluntary contributions and investment of funds in the broader community, Includes donations</i>	
Africa	5,558	2,516	484	153	74	327	15.2	1,989
Australia and Asia	16,610	7,620	1,639	1,169	133	2,664	26.2	3,359
Europe	6,398	2,421	151	610	49	350	1.8	2,815
North America	1,834	1,691	354	3	269	298	13.2	- 794
South America	9,486	3,740	354	< 1	101	1,702	24.9	3,563
Total	39,886	17,988	2,982	1,936	626	5,341	81.3	10,931

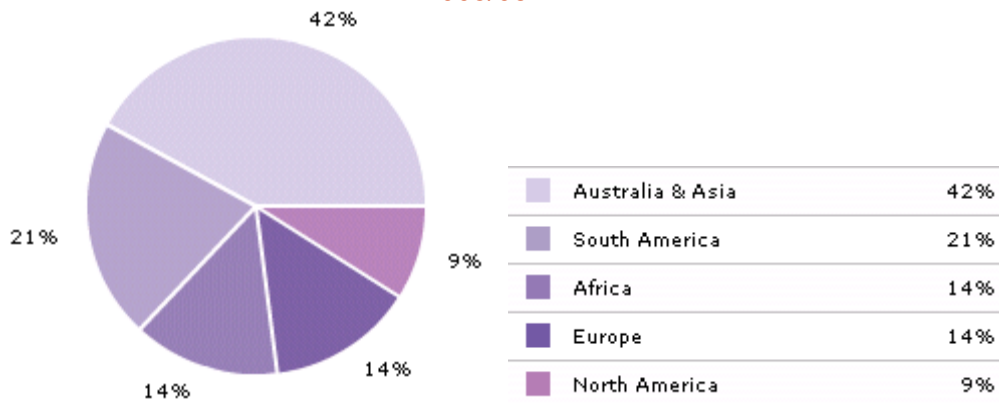
(1) Revenues include other income amounts. Amounts include revenues and costs attributable to jointly controlled entities and is consistent with the Group's financial reporting of elements comprising Underlying EBITDA. Underlying EBITDA is earnings before net finance costs and taxation, jointly controlled entities' net finance costs and taxation, exceptional items, and Group and jointly controlled entities' depreciation, impairments and amortisation. The amounts are determined on an accruals basis and extracted from the audited financial statements.

(2) Operating costs relate to expenses recognised in the financials statements. It includes expenditure paid to suppliers and contractors for materials and services, and excludes community investment expenditure.

(3) This is interest expense on debt for BHP Billiton controlled entities and jointly controlled entities, determined on an accruals basis.

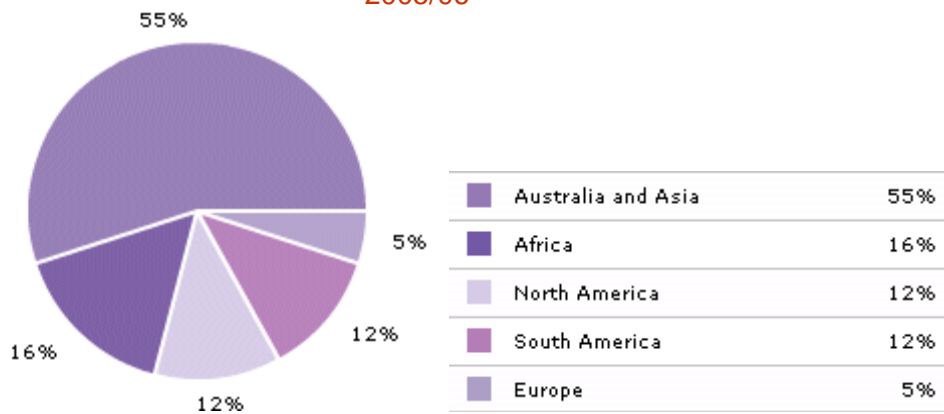
Operating Costs by Region

2005/06



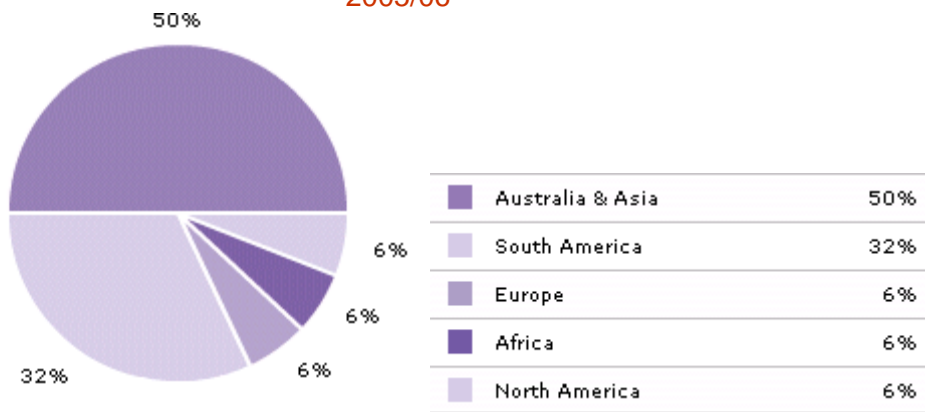
Employee Wages and Benefits by Region

2005/06

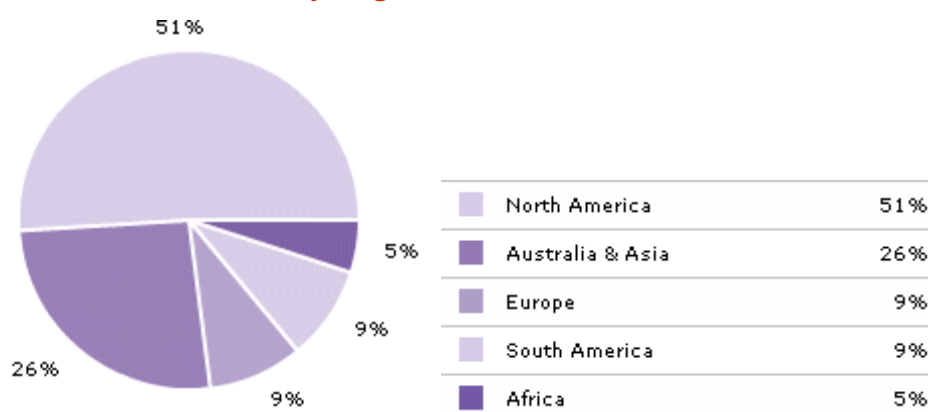


Income Tax, Royalty Tax and Royalties by Region

2005/06



Debt by Region at 30 June 2006



Extractive Industries Transparency Initiative (EITI)

The [Extractive Industries Transparency Initiative](#) (EITI) is gaining momentum as an international initiative bringing together companies, investors, governments, international financial institutions and civil society to improve disclosure and tracking of revenues in developing countries.

Two international EITI conferences have been held in recent years to scope the Initiative and agree to a set of criteria and guidelines for implementing countries and companies. In 2006 we attended a further Australian-based conference designed to continue raising awareness about the Initiative.

In May 2006, our performance regarding EITI was discussed with our [Forum on Corporate Responsibility](#). It was noted that the debate regarding the sharing of government revenues raised from resource projects is a challenge for the Group, in both developing and developed countries. In this regard, it was suggested that BHP Billiton should demonstrate greater support for Extractive Industries Transparency Review as our participation may help improve the transparency of government management of royalty and tax revenues.

Resource Endowment Initiative (REI)

During the reporting period, we continued to be actively involved in the [International Council on Mining and Metal's](#) Resource Endowment Initiative (REI). The objective of this project is to follow up on the World Bank's Extractive Industries Review, including identifying policy actions, operational practices, and partnership arrangements that will deliver improved socio-economic outcomes in the mining sector. The research aims to identify underlying reasons for national and community successes and to pinpoint practical lessons for companies, governments and other stakeholders.

As part of the REI, ICMM have completed two case studies on our Escondida mine in Chile and our Antamina mine in Peru. The case studies include an assessment of the socio-economic impact of the mines on their respective regions. The studies highlight some of the programs that have helped the mines make a positive contribution to the region, such as efforts to raise the capacity of local suppliers, the establishment of links to educational institutions through joint research and development programs, and the development of social programs that have helped to build human and social capacities.

Read more: [Socio-Economic Case Studies>Socio-economic Assessment at Escondida and Antamina](#).

Socio-Economic Case Studies

The following case studies are examples of socio-economic issues, initiatives, projects and programs across the Group that highlight some of the sustainability opportunities and challenges faced by our operations. Case studies are also presented for the areas of [health](#), [safety](#), [environment](#) and [community](#).

[View](#) all case studies.

Read more:

Working in Emerging Markets	The Company takes up the challenge of procuring supplies from emerging markets.
Skills Development	Project Greenshoots and BMA's Skills for Growth Program are helping to attract and retain people.
Diversity	Building the profile of women in our workforce increases the diversity of our employee base.
Indigenous Skills Development and Employment	EKATI (Canada) and GEMCO (Australia) lead the way in promoting employment and business opportunities for local Indigenous peoples.
Mining Impact Analysis	Antamina (Peru) and Escondida (Chile) measure the socio-economic contribution of mining operations to their host countries.
Supporting Local Suppliers	An important way we support our host communities is using local suppliers.
Human Rights	Human rights aspects are integrated across our business, as evidenced by training in Algeria and at Cerrejón (Colombia).

Socio-Economic Case Studies

Socio-Economic – Working In Emerging Markets

Case Study Contributor:	Global Supply
BHP Billiton Interest:	Corporate Function
Location:	Global
Customer Sector Group:	All Customer Sector Groups
Commodity:	All Commodities
Case Study Status:	New for 2006

Optimising Supply by Sourcing from Emerging Markets

In November 2005, the Company created the Supply Optimisation in Emerging Markets (SOiEM) Team to take up the challenge of sourcing from emerging markets. Starting in Asia but with plans to extend to other emerging markets in the near future, the focus of the initiative has been in China so as to take advantage of the existing cultural and business knowledge and experience developed over many years by our marketing personnel.

The objective of the early phase of the project has been to rapidly establish the requisite processes and support on the ground in China to encourage the inclusion of potential Chinese suppliers in the routine tendering activity of our businesses.

A key task for the SOiEM Team is to identify suppliers with the potential to increase our access to critical supplies and deliver cost-effective supply chain solutions in a manner consistent with our Sustainable Development Policy and HSEC Management Standards.

Initially, a desktop search is completed. This is followed by preliminary requests for information on fundamental management and performance areas, including human relations, quality, environmental commitment and safety management. Suppliers that can demonstrate the existence of such processes and procedures are then visited and interviewed to verify the information provided and to determine the degree of cultural alignment with BHP Billiton on sustainability issues.

Typically, our initial observations revealed some shortcomings. Our approach, however, has been to identify those suppliers where closing the gap between our approach and the supplier approach is readily manageable through an ongoing supplier development and engagement process. Where suppliers exhibit a major difference in approach or where the effort required to assist them to reach acceptable conditions is unacceptable, the suppliers are either disqualified from further consideration or earmarked for reassessment in the event that they upgrade their facilities or practices at a later time.

In conducting supplier assessments in China in recent months, the SOiEM Team discovered that the pace of change is delivering rapidly improving supplier performance on sustainability measures. It has been most encouraging, not only to observe the rapid adoption and adaptation of leading business technologies and processes, but also to note the willingness to work towards a similar business culture.

Our task is being made easier by the Central and Provincial Governments in China, as many of the more successful plants visited had been encouraged and assisted by the statutory authorities to relocate away from their original locations and the attendant environmental constraints, management bottlenecks, infrastructure stress and population encroachment on heavy industry. Typically these plants were less than five years old and with their relocation, the opportunity had been taken to upgrade buildings, equipment and processes.



We are looking to work with suppliers in emerging markets with positive and safe work environments

Among those businesses currently deemed to be lacking in acceptable HSEC awareness and application, the SOiEM Team observed that many were already planning a move to more modern facilities with inherently improved safety features to be supported by rapidly improving statutory governance. The newer facilities visited boasted computer-aided automation for the remote operation of heavy machinery, current-generation steel tool equipment, waste capture for recycling and other HSEC features. It was also noted, that in many provinces in China, the provision of housing, hospital and clinical care and education are increasingly required as a part of the license to operate large heavy industrial facilities.

The push to modernise, in particular in the heavy iron and steel sectors, is further encouraged by the ongoing rationalisation of overcapacity in the domestic markets. A liberalisation in Government industrial policy in the last decade has seen a proliferation of duplicated capacity across the breadth of China's provinces, which is now forcing internal competition for survival. Survival for suppliers in many cases will come from diversifying into export markets, which brings with it the focus on both good commercial practices and high-quality standards.

The next step for the SOiEM Team will be supporting the identified emerging market suppliers to successfully participate in sourcing activities for our global business. Our best opportunity to influence the further development of a supplier's HSEC and sustainable development culture will come from the more complete understanding of their business processes. Final due diligence processes conducted in collaboration with the BHP Billiton locations sourcing the product will form part of the supplier selection, contract negotiation, and contract award processes.

Socio-Economic Case Studies

Socio-Economic – Skills Development

Case Study Contributor:	BHP Billiton Mitsubishi Alliance (BMA)
BHP Billiton Interest:	50%
Location:	Central Queensland, Australia
Customer Sector Group:	Carbon Steel Materials
Commodities:	Metallurgical and Thermal Coal
Case Study Status:	New for 2006

BMA Launches A\$50 Million Skills Development Program to Help Meet Current and Future Workforce Needs

BMA has embarked on a major expansion phase in response to strong growth in global demand for high-quality coking coal for the international steel industry. To help meet its current and future workforce needs, and those of the industry in general, BMA has launched a A\$50 million program of initiatives over the next three years.

Known as the 'Skills for Growth' program, a broad range of activities will complement BMA's existing initiatives to attract, develop and retain a skilled pool of people, in line with planned growth in the Company's export coal business.

The program has been developed in response to changing circumstances affecting the resources industry that call for new and innovative solutions. Strong competition for skills from other industry sectors and an historical decline in numbers undertaking mining education and training have meant that BMA has had to take a fresh approach to attracting and retaining people. The need is shared with other mining companies, but BMA's growth plans have made it a particular priority for the Company.



The breadth of BMA's 'Skills for Growth' initiatives is illustrated in this display designed for the launch of the program

Partnering with schools, colleges and universities

The Company sees the 'Skills for Growth' program as a pyramid that brings together schools, colleges and universities to work in partnership with the mining industry. The new initiatives include alliances with the University of Queensland and Central Queensland University and wide-ranging scholarship, cadetship and engineering extension programs. These activities complement BMA's major involvement in whole-of-industry programs to drive innovative education and training opportunities in the resources sector.

Professor Elizabeth Taylor AO, Executive Dean of the Faculty of Sciences, Engineering & Health at Central Queensland University says, 'BMA has formed an alliance with the University under which we will play a central role in the development, coordination and delivery of the new BMA Cadetship and Engineering Extension Programs'.

In 2006, BMA will increase its investment in training and education programs to almost A\$19 million, a 50 per cent increase on its expenditure in 2005. By the end of 2008, BMA will have invested more than A\$50 million in these programs over the three-year period.

Response to the program has been positive. One of the BMA Scholarship Scheme recipients, Nathan Martin, who is studying Mining Engineering, says, 'I am thrilled to have been offered a scholarship with BMA and I am looking forward to a long and mutually rewarding association with the Company'.

In coming years, demand for engineers such as Nathan, as well as tradespersons, apprentices and trainees, will grow substantially in line with BMA's significant growth plans. Projects underway or approved are designed to increase production capacity from 52 million tonnes per annum (Mtpa) in 2004 to 59 Mtpa by the end of 2006. Last year the Company shipped 56 million tonnes of coal to 92 customers in 27 countries. Options for further expansion to 80 Mtpa by 2010 are being evaluated.

Over the last two years, employment levels at BMA have increased by 80 per cent to 8,100 people, including contractors working on expansion projects. BMA is confident that the 'Skills for Growth' program will play a significant role in building a pool of highly professional people to match the continuing growth of the Company.



Participants in the BMA Graduate Program are exposed to all aspects of the business from deep below the earth at Crinum mine to the most easterly point of BMA operations on the Hay Point Services Loader

Socio-Economic Case Studies

Socio-Economic – Skills Development

Case Study Contributor:	Group Human Resources
BHP Billiton Interest:	Corporate Function
Location:	Global
Customer Sector Group:	All Customer Sector Groups
Commodity:	All Commodities
Case Study Status:	New for 2006

International Recruitment Program to Add to Our Talent Pipelines

Part of the Company's overall business strategy involves the development of future growth opportunities in areas including Russia, Brazil, Mongolia, China, India, Indonesia and West Africa (Guinea and the Democratic Republic of Congo). To support this strategy, we have established a strategic graduate sourcing initiative to recruit high-calibre engineering and science graduates from these regions.

Once recruited, these graduates will work at our established operations and be integrated into our existing three-year graduate development program. Our aim is to develop graduates from diverse cultures who can gain operating experience abroad and with the intention to return to our sites in their home regions.



Our recruitment program prepares graduates for new cultures, locations, climates and business values

Forging relationships with universities

The Company has built working relationships with universities in our existing regions, and we are establishing affiliations with universities in each of the growth regions noted above. In both China and Russia, we are engaged in collaborative projects with several academic institutions, an illustration of our commitment to assist with the development of technical know-how in our growth regions.

Through these projects, we expose university faculties to real-life operational and assignment-based challenges and then sponsor students and academic staff to develop potential solutions. Furthermore, we encourage and host visits to our sites by academic staff who have expert knowledge or have developed technology solutions that we can implement to enhance our operational competitiveness. By working together, all parties can further develop their skills and problem-solving capabilities.

Our newly established international graduate recruitment program is building on these relationships with the aim of increasing the capability of graduates by exposing them to best practice and state-of-the-art technologies at our operations. This reflects our commitment to add value to the economies of our host regions and to develop the skills of young professionals globally.

Facilitating cultural exchange

Major factors in achieving positive outcomes from the recruitment program include the cross-cultural experience and the training that the graduate will benefit from when relocating to one of our established operations. To underpin the success of the graduate's transition, we are implementing a number of strategies including:

- preparing the graduate for the new culture, location, climate and business values
- preparing our staff to work effectively with people with different cultural traits and values
- training the graduate in the primary language spoken at the operation (if required)
- setting up networks so the graduate can connect with their family and homeland
- setting up networks so the graduate can connect with other participants in the program
- integrating this new initiative into our established graduate development program.

In August 2005, the BHP Billiton Executive Committee approved the international graduate recruitment project, which has since developed from a strategic idea into a fully developed program. The plan is to see the first intake of graduates from our growth regions beginning their employment with the Company from August 2006.

Socio-Economic Case Studies

Socio-Economic – Diversity

Case Study Contributor:	Group Human Resources
BHP Billiton Interest:	Corporate Function
Location:	Global
Customer Sector Group:	All Customer Sector Groups
Commodity:	All Commodities
Case Study Status:	New for 2006

Building the Profile of Women in The Mining Industry

The mining industry has always had a male-dominated workforce, with women generally making up only a small percentage of the total number of employees globally. Our Company is striving to increase the richness and diversity of our employee base. Over the last year, we have made significant progress in building the profile of women in our workforce, with a number of significant appointments, some of which are 'firsts' for the Company.

Tina Markovic appointed General Manager of a major mining operation

On September 2005, Tina Markovic took up her appointment as General Manager of BHP Mitsui Coal's new Poitrel Mine located in central Queensland, Australia, and became the state's first-ever female manager of a major mining operation.

This year, the Queensland Resources Council introduced its Resources Awards for Women to recognise high achievers in the minerals and energy sector. The inaugural awards were presented on 8 March by The Hon. Desley Boyle, the Queensland Minister for Environment, Local Government, Planning and Women.

Tina was announced as the winner of the major prize. In accepting the award, she said, 'My career has been very rewarding and exciting, introducing me to different commodities, different roles, different continents and various challenges. This award demonstrates to other women that they can succeed at a senior level in the industry'.

Karen Wood is the first woman appointed to the Office of the Chief Executive

Karen Wood was appointed Company Secretary of BHP Billiton Limited and BHP Billiton Plc in June 2001. In December 2005, Karen was appointed Special Advisor to the CEO and Head of Group Secretariat and appointed to the Office of Chief Executive. She chairs the Company's Global Ethics Panel.

Karen also occupies a number of other senior business and academic positions, being a member of the Takeovers Panel (Australia), the Business Regulatory Advisory Group (Australia) and the Juris Doctor Advisory Board of The University of Melbourne.

Karen is a Fellow of the Institute of Chartered Secretaries and a member of the Law Council of Australia and the Law Institute of Victoria. Before joining BHP Billiton, Karen was General Counsel and Company Secretary for Bonlac Foods Limited.

'My career with BHP Billiton has been both rewarding and challenging', says Karen. 'To work with talented, energetic and enthusiastic people driven by a shared vision for the Company is something we all strive for in our work. The fact that the strategic driver that underpins all others at BHP Billiton is "people" reflects the fact that great people make great companies.'

'As a global company with a footprint as far-reaching as ours, we have a unique opportunity to attract women and men who reflect the diverse characteristics of the many and varied communities in which we operate. Our challenge is in developing those women and men in ways that ensure we can retain our best and brightest, irrespective of colour, creed or gender.

'Like other companies in our sector, we have some distance to go, but appointments like Tina Markovic's as Mine Manager at Poitrel in Australia and Etelvina Mause's as our first female Superintendent at Mozal in Mozambique, are inspiring to the many young women in and outside our Company who look to us for leadership on this issue. I look forward to the day when appointments of women to senior management roles are no longer seen as novel.'

Etelvina Mause appointed as Superintendent of Supply Control at Mozal

Etelvina Mause was appointed to the position of Superintendent Supply Control at Mozal, Mozambique in April 2005. This role entails the coordination of purchasing, materials planning and warehousing functions to achieve service delivery to the plant.

'As a female Mozambican, I appreciate the opportunities that Mozal have given me in terms of the challenges that I face daily, and the accelerated growth that these challenges have given me', says Etelvina. 'I am very enthusiastic about female appointments and balancing the workforce, as I believe that diversity brings forth energy, eagerness to learn and high levels of morale in an organisation. This is evident at Mozal where cultural diversity is part of the Company's DNA.

'Since my appointment there have been two other Mozambican females appointed to Superintendent positions. This confidence, maturity and trust that Mozal affords all employees, regardless of gender, is an inspiration to many females and males alike. I am proud to be working in a department where 35 per cent of the employees are females and 50 per cent of the leadership comprises of women.

'In Mozambique, female appointments are rare in these type of industries. At the onset one feels an added weight of responsibility and, therefore, the need to be great – even greater than the male counterparts– to be considered an equal; however, with time, one begins to understand that in companies such as BHP Billiton its not the gender of person that counts, but the delivery. The targets are the same for everybody and I encourage all females not to feel threatened and frightened by responsibility, but to embrace it as naturally as the next person.'

Gail de Planque appointed to the BHP Billiton Board

The Hon. E G (Gail) de Planque was appointed a Director of BHP Billiton Limited and BHP Billiton Plc on 19 October 2005. Gail is an expert in nuclear technology and has over 30 years' experience as a physicist, advisor and regulator in the field of nuclear energy. She also has significant experience as a non-executive director of global energy companies.

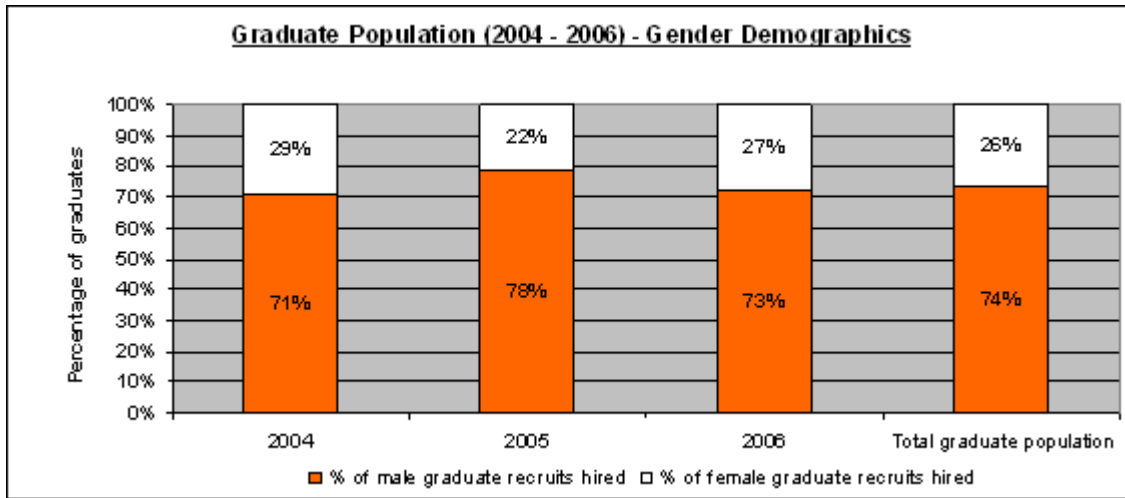
Gail has noted that, 'I was honoured, delighted and enthused when asked to join the Board of Directors of BHP Billiton. Throughout my entire career, with just one exception that I can think of (another Board), I have been either the first or only woman in every position I've ever held, not surprising for my professional field. While that has at times presented many challenges, my career has been incredibly rewarding and exciting and thus I would encourage everyone to always pursue the work about which they are most passionate, regardless of any real or perceived obstacles'.

Gail has numerous significant roles in the resources industry. As well as being a Director of our Company, she is a consultant on atomic energy matters and is President of Strategy Matters Inc. and a Director of Strategists Consultancy Ltd. Gail is a former Commissioner of the US Nuclear Regulatory Commission, a former Director of the Environmental Measurements Laboratory of the US Department of Energy, a Fellow and former President of the American Nuclear Society, a Fellow of the American Society for the Advancement of Science and a Member of the US National Academy of Engineering. Gail is also a Director of TXU Corp, Northeast Utilities, Landauer Inc., BNG America Inc., and a former Director of BNFL Plc.

Looking towards the future

In addition to these notable key appointments, it is also encouraging that there is increasing gender diversity in the recruitment of our graduate population, from which will come the Company's future leaders. Our graduates generally join the Company straight from university and spend their first three years with us on a formal graduate development program.

Over the last three years, we have hired a total of around 600 graduates. Of these, more than 20 per cent are women (see graph below).



When compared with the percentage of our full-time employees who are women, which currently stands at about 12 per cent, the recruitment figures show we are heading in the right direction in our aim to increase gender diversity in our workforce.



Karen Wood
BEd, LLB (Hons), FCIS

Tina Marcovic
B Eng, BSc, MBA

Etelvina Mousse
Superintendent at Mozal,
Mozambique



Gail de Planque
MSc (Physics), PhD (Env Health
Sciences)

Qualification Abbreviations

- B Ed** Bachelor of Education
- B Eng** Bachelor of Engineering
- BSc** Bachelor of Science
- FCIS** Fellow Chartered Institute of Secretaries
- LLB** Bachelor of Laws
- MBA** Master of Business Administration
- MSc** Master of Science
- PhD** Philosophiae Doctor (doctor of philosophy)

Socio-Economic Case Studies

Socio-Economic – Indigenous Skills Development and Employment

Case Study Contributor:	Groote Eylandt Mining Company (GEMCO)
BHP Billiton Interest:	60%
Location:	Groote Eylandt, Gulf of Carpentaria, Northern Territory, Australia
Customer Sector Group:	Carbon Steel Materials
Commodity:	Manganese Ore
Case Study Status:	New for 2006

Improving Aboriginal Employment And Development Through Consultative And Performance Management Tools

In 1997 at GEMCO, we implemented an Aboriginal Employment Strategy aimed at providing local Indigenous people with the skills to pursue careers in mainstream mining, in our Rehabilitation & Mine Services (RMS) section and in the general community.

While numerous objectives had been achieved, a review in February 2005 identified opportunities for improvement. We met with key stakeholders to discuss matters affecting performance in the RMS section and, by analysing business hazards and issues, have been able to identify significant risks, develop management plans and controls, capture critical data and assess performance through management review.

A range of initiatives are being applied to enhance RMS productivity, work satisfaction and safety performance. Through a collaborative management approach, crew members are consulted on all processes and encouraged to identify workplace issues and improvements.

Positive outcomes

The wider community is benefiting as our Aboriginal employment increases and the advantages of ongoing education and training are recognised. From January 2005 to April 2006, the number of RMS employees from the Angurugu community increased from none to 19. More of our Aboriginal employees are also moving into mainstream employment: from July 2005 to April 2006 there were nine transfer or secondment opportunities.

This has been recognised by the Anindilyakwa Land Council, which represents the traditional owners. Its Chairman, Tony Wurramarrba, has noted 'the considerable increase in the number of Groote Eylandt Aboriginal people employed by GEMCO', adding that the Company's 'investment of staff and resources in the Aboriginal Employment Strategy is to be commended'.

Safety performance in the RMS section is now leading practice, with a record of more than two years classified injury free, and sick leave and unplanned leave have reduced significantly.

Our Aboriginal Employment Strategy has not only helped improve our productivity and performance but also, by providing challenging and rewarding career paths, is motivating Aboriginal employees to attend work, achieve outcomes and move into mainstream employment and positions of greater responsibility.



Socio-Economic Case Studies

Socio-Economic – Indigenous Skills Development and Employment

Case Study Contributor:	Groote Eylandt Mining Company (GEMCO)
BHP Billiton Interest:	60%
Location:	Groote Eylandt, Gulf of Carpentaria, Northern Territory, Australia
Customer Sector Group:	Carbon Steel Materials
Commodity:	Manganese Ore
Case Study Status:	New for 2006

Promoting Employment and Business Opportunities for Local Aboriginal People on Groote Eylandt

In November 2004, GEMCO and the Anindilyakwa Land Council (ALC) began discussions regarding the initiation of a business enterprise arm of the ALC, with the aim of assisting the Anindilyakwan people who live on and around Groote Eylandt. On 16 August 2005, we signed a Memorandum of Understanding (MOU) with the ALC and the new business arm, Groote Eylandt Bickerton Island Enterprises (GEBIE).

Under the MOU, we identify contracts that can be tendered for by GEBIE, thereby providing job opportunities for Anindilyakwan people. We help them with the tendering process, in accordance with the BHP Billiton supply governance protocols. GEBIE is also encouraged to enter into partnerships with our non-mining contractors, so their employees can learn other skills, further assisting sustainability of the Anindilyakwan people. GEBIE has formed joint ventures with two of our contractors, and these have been successful in gaining contracts.



Former Groote Eylandt Bickerton Island Enterprises trainee Daisy Kerandun is now a GEMCO employee

'With the engagement of EES/GEBIE and DELTA/GEBIE by GEMCO to provide town and facilities management services, the MOU between the ALC, GEBIE and GEMCO has achieved a milestone,' notes Tony Wurrarramba, Chairman of the ALC. 'The cooperation between the signatories to the MOU to achieve these joint ventures was outstanding. While the MOU is in its infancy and there are many other areas to be addressed, this result augurs well for the future.'

Steps towards sustainability

GEBIE also provides training for Aboriginal people under a nationally accredited training program. The 30-week program provides 15 trainees with the potential to get jobs throughout Groote Eylandt. We are assisting by helping GEBIE build a training facility and providing trainees with work experience in administrative roles. Two trainees have gained full-time employment with us.

During discussions while formulating the MOU, several issues were identified, including risks associated with ill-informed workforces, drug and alcohol misuse, lack of safety knowledge and the challenges of complying with GEMCO standards. These were all considered, and appropriate plans and strategies have been implemented.

In working with Indigenous organisations, we have ascertained that partnerships promoting community self-empowerment play an integral role in strengthening the local economy. This groundbreaking MOU is delivering activities designed to bring long-term, sustainable economic benefits to the Anindilyakwan people.

Socio-Economic Case Studies

Socio-Economic – Indigenous Skills Development and Employment

Case Study Contributor:	EKATI Diamond Mine
BHP Billiton Interest:	80%
Location:	Lac de Gras Region, Northwest Territories, Canada
Customer Sector Group:	Diamonds and Specialty Products
Commodity:	Diamonds
Case Study Status:	New for 2006

Apprenticeship Program at EKATI Supports the Advancement Of Northern and Northern Aboriginal Employees

In 1998, EKATI signed a Socio-Economic Agreement (SEA) with the Government of the Northwest Territories, in which we committed to create employment, training and business opportunities for Northern and Northern Aboriginal residents.

The SEA set a target for Aboriginal employment of 31 per cent of the total EKATI workforce. Our current level of Aboriginal hire is 34 per cent, a pleasing situation given that it not only exceeds the target but more than 57 per cent of all positions are in skilled or professional categories.

Workplace learning

In the first year of operation at EKATI, we identified some skills issues with our workforce, including an estimate that about 25 per cent had less than a Grade 9 education and 34 per cent relied on oral instructions and simple sentences.

Our training department developed a workplace literacy and learning program, the intent of which is to improve the reading, writing and communication skills of Aboriginal employees in order to facilitate their advancement, while also helping to ensure a safe and productive workforce.

The program focuses on teaching the essential skills that workers need to do their jobs: reading, writing, math, working on computers, and oral communication. Having these skills also provides the groundwork for further learning opportunities.

Apprenticeship opportunities

Conducted alongside the literacy and learning program is our apprenticeship program, which is aimed at helping us meet our present and future workforce needs and improving and enlarging our Northern and Northern Aboriginal workforce.

The program is based on assisting employees to become apprentices and graduate as journeyman-certified trades people. One of our goals is to have a continuous flow of apprentices moving through the program, meeting the needs of the mine and creating career opportunities for graduates.

Apprenticeship support

Our training department includes two trades educators who provide support to employees as they prepare for the pre-trades entrance exam and then through their apprenticeship until graduation to journeyman status.



Paul Betsina graduated from the EKATI apprenticeship program and is now a qualified welder

Paul Betsina (pictured) is a graduate of the apprenticeship program. After finishing Grade 12 at high school in Yellowknife, Paul, a member of the Akaitcho Treaty 8 Aboriginal group, was hired as a maintenance helper in the truck shop at EKATI. With the guidance of the adult educators, he prepared for and passed his pre-trades entrance exam and in 2001 was successful in gaining a position as an apprentice welder. In June 2005, Paul graduated and has since been employed full-time as a welder in our truck shop.

Results

From its commencement in October 1998 until April 2006, 77 employees had registered in our apprenticeship program and 24 had completed and received their journeyman status. All were Northern residents at the time of their apprenticeships.

The apprenticeship program at EKATI will continue to provide opportunities and incentives for Northern and Northern Aboriginal people who are looking to pursue a meaningful career in the mining industry.

Socio-Economic Case Studies

Socio-Economic – Indigenous Skills Development and Employment

Case Study Contributor:	EKATI Diamond Mine
BHP Billiton Interest:	80%
Location:	Lac de Gras Region, Northwest Territories, Canada
Customer Sector Group:	Diamonds and Specialty Products
Commodity:	Diamonds
Case Study Status:	Update of 2005 Case Study

EKATI Conducts Underground Mining Training Program for Local Northern Aboriginal People

At EKATI, the planned transition from surface to underground mining began in 2002. As outlined in last year's Sustainability Report, a specialised training program was implemented in 2003 to provide local Northern Aboriginal men and women with an introduction to underground mining as a profession.

The Canadian diamond industry is continuing to grow, especially in the area of underground mining, and it had been identified that there would be a local shortage of appropriately skilled workers to take up the task of developing and operating the North's future operations.

Conducted within our formal agreements with the government covering hiring and employee training, the program is aimed at recruiting men and women from our local northern communities. It was designed in conjunction with Kete Whii Procon, our underground mining contractor, and comprises an intensive eight-week program that couples classroom work with hands-on experience and training underground.

In 2005, a major milestone was celebrated when the program was selected for sponsorship by the Government of Canada's Mine Training Society, which has continued to provide funding to the program based on its success and importance to the local communities.

Positive outcomes

To date, 30 people have graduated from the program and several have gone on to establish careers within EKATI's underground operations. Some graduates, such as William Michelle (pictured), have proved so competent they have moved into more skilled roles such as production drilling.

One graduate, Tracy Williams (pictured), has been promoted to the staff team and is currently working as an underground dispatcher. Tracy's career path is an inspiring example of how Northern Aboriginal people are assisting and benefiting from the transition to underground mining at EKATI. Tracy operated a haul truck in our surface mining operations before participating in the training program. After graduating and working underground for two years, Tracy was promoted to her current position, where she is continuing to expand her skills and experience.

The program has been a great contributor to our continued efforts to meet EKATI's commitments to Northern Aboriginal employment and to the North in general. Plans are currently underway to increase promotion of the program in our host communities and to involve the successful graduates in the recruitment efforts.



William Michelle, shown here training in the operation of a hand-held jackleg drill, is now an underground production driller

In reviewing the progress of the program to date, the Safety/Training Superintendent at Kete Whii Procon, Ron Burke, noted, 'While the success of this program can be measured by the number of good-quality workers it has produced and the major impact it has had on our Northern Aboriginal content, its biggest success is that it has shown we can all work safely together in a cross-culture environment'.

The EKATI underground mining training program stands as a solid example of a win-win situation for everyone involved and reflects our commitment to deliver benefits and value to all our stakeholders.



Tracy Williams, here operating an 8-cubic-yard scoop tram, is now an underground dispatcher

Socio-Economic Case Studies

Socio-Economic – Mining Impact Analysis

Case Study Contributor:	Escondida, Antamina
BHP Billiton Interest:	Escondida 57.5%, Antamina 33.75%
Location:	Escondida: Region II, Northern Chile; Antamina: Ancash, Peru
Customer Sector Group:	Base Metals
Commodities:	Escondida: Copper Concentrates and Cathodes; Antamina: Copper and Zinc Concentrates
Case Study Status:	New for 2006

Measuring the Socio-Economic Contribution of Mining Operations to Their Host Countries

Over the past five years, the economic, social and environmental dimension of mining operations has been the subject of wide-ranging consultation, critical comment, research and analysis. A major study by the [International Council on Mining and Metals \(ICMM\)](#) has been undertaken to understand how large-scale mining activity can enhance the socio-economic development of host countries.

Part of this work was an analysis of the contribution of mining in Chile and Peru in relation to two mines: Antamina in Peru and Escondida in Chile. In both cases, there is evidence that the mining operations have contributed to economic and social improvements and their efforts provide lessons on how to promote better socio-economic outcomes in natural resource development projects.

Natural resource endowments have contributed to broad-based and long-term socio-economic development in some countries but the degree of development is not consistent across those countries. The ICMM study sought to understand why some countries have been able to avoid problems and how the dynamic forces that created good outcomes can be repeated.

This case study provides a high level summary of the socio-economic impacts of the Escondida mine in Chile and Antamina in Peru. It provides a snapshot of some of the ICMM's key recommendations for companies and host governments on how to induce better socio-economic outcomes on the ground.

Escondida

The Escondida mine is located in Chile's Region II in the Atacama Desert, 170 kilometres south-east of Antofagasta. The orebody was discovered in 1981, construction of the mine commenced in 1988, and by 1990 the first ore was processed. We are the majority shareholder, with 57.5 per cent equity interest, and also the operator. Escondida is the world's largest producer of copper and is undergoing further expansion. As at 30 June 2005, a total of almost US\$5.1 billion had been invested in the facility since construction began in 1988.

Antamina

The Antamina mine in Peru is located in the Ancash region, approximately 285 kilometres north of Lima. Construction of the mine was completed in 2001, with a total investment of about US\$2.3 billion. By 2005, the mine was the world's seventh-largest producer of copper and the third-largest producer of zinc. The mine is operated by Compañía Minera Antamina SA. We are one of four major shareholders, with 33.75 per cent equity interest. Since 2001, mining's contribution to the [gross domestic product](#) (GDP) of the Ancash region has risen to 17 per cent of the total. Being a new mine, from the outset Antamina has been able to apply modern approaches to community relations.

Socio-economic contributions

A summary of the contribution of the two mines to employment and procurement and the contribution of the mining sector to national GDP and exports is presented in Table 1. Though modern industrial mining is highly mechanised, the numbers of people employed (either directly or indirectly) are substantial. Another striking employment characteristic is the generally low number of expatriate staff. At Antamina, the number of expatriate staff halved in the five years to 2005; 92 per cent of the staff come from the local region. At both mines, the value of the procurement of goods and services is substantial, as is the proportion that is sourced domestically.

Table 1. Summary of the contribution of Escondida and Antamina mines to employment and procurement and of the mining sector to national GDP

Employment and other contributions (highlights) (Data is from the latest year available)	Escondida (Chile)	Antamina (Peru)
Total employment	2,930	3,524
Indirect employment (Includes permanent contract employees located at the mines)	2621	2102
Estimated induced employment	12,300	5,815 to 8,810
Expatriate/Domestic employment	1% / 99%	1% / 99%
Procurement	US\$540m	US\$265m
Domestic procurement	85%	89%
Contribution to domestic tax revenue	US\$896m	US\$319m
National mining sector contributions to:		
GDP	8.0% ¹	7.6%
Exports	57%	50%

1. According to some estimates, the mining sector in Chile would represent more than 13% of the national GDP if indirect impact is considered (Ramos, Diaro Financiero, 2005).

Both mines have adopted social investment policies and have invested in a range of social and economic infrastructure initiatives. Escondida stated its commitment to a sustainable development framework from the outset, and this has been reflected in various social investments in line with strategic priorities.

This was accompanied by government economic and policy reforms had led to significant national economic growth which coincided with an increase in mining investment. Given the complexity of the development process, it was not possible to prove that mining, as distinct from other factors, was a cause of economic revival. Nonetheless in Chile and Peru, mining investments were clearly an important part of the story as they were among the few significant early productive investments during the period of economic revival.

Overall impacts

The ICMM analysis of the overall social and economic impacts of the mines is summarised in Table 2. Social and community impacts of the mines are in part a function of the measurement of the direct impacts of mining on incomes and employment – typically quite strong – as well as the broader socio-economic aspects identified above. The impacts are also fundamentally influenced by, and cannot be entirely unbundled from, the strength of local governance and local institutions. Interestingly, there was much less relationship between national policies for mining revenue redistribution and reduction of poverty.

In terms of poverty reduction, Chile recorded significant gains at both national and local levels during the period of mining’s resurgence, while the Ancash region and Peru overall has not fared as well. In Chile’s case, it is important to note that government made a concerted effort to ensure that non-mineral sectors have benefited from the presence of mining and have in turn contributed to local economic activities. Redistribution measures were not introduced. Similarly the government encouraged the high level of domestic procurement which is indicative of a highly developed mining supply sector.

The similarly high level of domestic procurement in Peru is encouraging, although the lack of diversification may be a reflection of a lack of guidance and available techniques to assess whether mining communities will be viable after local mines shut and how the closure process should be managed. This also applies to the other countries considered by the ICMM (Ghana and Tanzania). Adoption of the BHP Billiton mine [Closure Standard](#) (developed in 2004/05) will help address this challenge, although supportive public policies would also be useful.

In the view of the ICMM consultants who conducted the analysis in Peru, Antamina faces a significant challenge in finding effective development partners to work with to underpin the sustainability of social infrastructure. A serious issue, it was observed, is that the government is either unwilling or unable to exert authority over agreed corporate/community commitments.

Table 2. Summary of overall social and economic impacts of Escondida and Antamina

Overall social and economic impacts of the mines	Escondida (Chile)	Antamina (Peru)
Links between mining and poverty indicators	The GDP per capita of Region II is more than twice the national average. The region also has the lowest poverty rates in Chile and the highest poverty alleviation rates (1990-2003).	It is not yet possible to ascertain whether mining has improved or undermined the regional human development index relative to the national average.
Status of economic development and diversification	There is significant local procurement, resulting from deliberate targeting and fostering of suppliers, combined with efforts to build their capacities through a collaborative training and development process.	The limited size of the economy and young age of the mine mean that it is premature to assess such status definitively. Initiatives that have been put in place will take time to have an impact.

Status of social infrastructure and sustainability

Escondida has invested in human and social capital within Region II via a Foundation, with increasing emphasis on partnering with stakeholders to underpin the sustainability of social infrastructure. Additionally, the Company has developed in Antofagasta a training centre for the industrial and mining sectors.

The Company has invested in enhancements to the social infrastructure of host communities in order to underpin their sustainability.

The ICMM Report concludes with a summary of recommendations focussing on the underlying, institutional factors – at all levels of society – which might help countries achieve success. The overarching recommendation is that new, joint approaches between governments, companies, donors and non-governmental organisations are needed to capture the full potential benefits of mineral wealth.

Recommendations to companies, which are reflected in the Chilean and Peruvian experiences at Escondida and Antamina, include:

- extending conventional commercial risk analysis to take account of perceived weaknesses in the capacity of governments at different levels to undertake economic development planning and management
- consider strengthening local or regional development agencies in mining areas in partnership with others
- building a sustainable domestic supply chain through procurement policies and activities that focus on building the capacity of local suppliers
- implementing community development principles that focus on reducing poverty in host communities and underpinning their sustainability.

A full set of recommendations for companies, governments and donors can be found in the final chapter of the ICMM [Synthesis Report of Four Country Case Studies](#).

In a letter to the ICMM, Peru's Minister of Energy and Mines, Glodomiro Sanches Jeija, stated, 'In general, we agree with the overall assessment that Peru's political and economic reforms of the last ten years have been very effective in attracting and fostering significant injections of capital and know-how into productive activities, which in turn fostered macroeconomic stability that is ever crucial as foundation for a country's development.

'Unfortunately, we also agree that in the case of Peru these reforms were still not sufficient in ensuring true development leading to poverty alleviation and social advancement. The dilemma and challenge for this and future governments will be to mirror the successful macro policy reforms in place, with the ability to implement policies and regulations at the sub-national levels.

'In this sense, the study is particularly helpful in pointing key issues and aspects that deserve special attention. I particularly concur with the assertion that only a long-term outlook should lead to sustainable solutions, and that this outlook should be the shared responsibility of everyone in Peruvian society, not just government and industry. Indeed, the primary thing we should be doing in the short term in Peru is to get started working on long-term strategies and policies. The risk of doing nothing is great and especially apparent in these times of very high mineral commodity prices.'

According to Karen Poniachik, the Chilean Minister of Mining and Energy, 'In the last fifteen years the mining industry has made a unique contribution to the socio-economic development of Chile and particularly to the regions where mining operations are located.

'As indicated in this study, the GDP per capita of Chile's Second Region - which concentrates great part of the mining production of the country – more than duplicates the national average, and its socio-economic indicators such as growth average, poverty reduction, education level, reduction of the income inequality gap and the index of human development, are significantly above those of the rest of the country. These indicators have taken a particularly positive trend since the Second Region began again receiving foreign investment in mining in 1990, which is coincident with the start up of the Escondida operations.

'Our challenge is that this enormous and positive impact caused by mining, generates a sustainable development in time. Hence our interest lies in strengthening the so-called mining cluster, so that the supplier industry of goods and services for mining also becomes a great export sector. In this aspect we totally agree with the recommendation that this study makes to the companies to collaborate in the improvement of the quality standards of their contractors and suppliers, in line with what the Government of Chile together with Escondida have done in the "suppliers' development programs".

'The study is a reflection of what the mining industry in Chile has achieved in terms of contribution to the communities that host it. The Government has clarity on the relevance of this, and precisely for this reason believes that joint work with the industry and other stakeholders will continue to allow deepening the impact of this contribution with the ultimate objective of making mining development in Chile a sustainable development.'

Socio-Economic Case Studies

Socio-Economic – Supporting Local Suppliers

Case Study Contributor:	EKATI Diamond Mine
BHP Billiton Interest:	80%
Location:	Lac de Gras Region, Northwest Territories, Canada
Customer Sector Group:	Diamonds and Specialty Products
Commodity:	Diamonds
Case Study Status:	New for 2006

EKATI's Support and Development of Local Suppliers is a Win-Win Situation

When EKATI began operating eight years ago, we developed a plan to foster business relationships with suppliers from Indigenous and Northern communities, to build their capacity and help ensure their sustainability and the mine's.

The plan is based on our Social Economic Agreement (SEA) with the Northwest Territories Government and Impact and Benefit Agreements (IBAs) with Indigenous peoples. The SEA requires that 70 per cent of our business spend is in the North. As shown in the table, we have consistently exceeded that target.

Category	1999	2000	2001	2002	2003	2004	2005
Northern Business <i>% of Northern Business spend going to Aboriginal Business</i>	79%	82%	85%	86%	85%	81%	79%
	14%	21%	28%	30%	30%	30%	28%
Other	21%	18%	15%	14%	15%	19%	21%
Total C\$ millions	\$356	\$316	\$386	\$415	\$417	\$413	\$474

'We started out in 1998, with a small community who were building surveyor stakes and core boxes for us. They now build them for other mining companies,' says Dale Sooley, EKATI Supply Superintendent. 'Our current Indigenous business partners include airlines, mining contractors and suppliers of catering and cleaning, ore hauling, light vehicle maintenance, on-site tire maintenance and repair, trucking and explosives, and general industrial supplies'.

The ingredients of successful business relationships

According to Charlie DeLuca, EKATI Supply and Operations Services Manager, the keys to building supplier strength and sustainability are to:

- work with them to understand their needs
- gain their respect
- earn their trust
- build a solid foundation by doing what you say you're going to do
- help them grow their businesses beyond the Company's requirements.

These principles are underpinning discussions about a new supply opportunity. As Dale Sooley explains: 'All the mines use large quantities of cement but it's currently manufactured and bagged in the South and transported by truck when our ice road is open. This is a very small window of time that we cannot control. If we had a bagging plant in Yellowknife, product ingredients could be hauled 365 days a year. Indigenous companies could do the hauling and provide year-round employment.'

'It's another business opportunity, in line with our commitment to develop joint ventures and individual businesses. Our goal is that long after we're gone these enterprises will be sustainable.'



EKATI's spend with local suppliers consistently exceeds the 70 per cent target

Socio-Economic Case Studies

Socio-Economic – Supporting Local Suppliers

Case Study Contributor:	Bayside and Hillside Aluminium Smelters
BHP Billiton Interest:	100%
Location:	Richards Bay, Northern KwaZulu-Natal, South Africa
Customer Sector Group:	Aluminium
Commodity:	Aluminium
Case Study Status:	New for 2006

Helping the Local Crafters of Zululand Create a Route Out of Poverty

Despite the pressures of increasing westernisation, traditional crafts are being kept alive in South Africa, especially in rural communities of Zululand in northern KwaZulu-Natal, where our Bayside and Hillside aluminium operations are located. Tourism is a support platform for crafting, which has become an important means of generating income. A great variety of items are produced, largely by hand and using local materials and traditional skills.

The tourism market is encouraging young village women to learn crafting from their mothers, who are skilled in various age-old handcrafts, including beading and the weaving of *uhashu* (indigenous grass) into baskets, bowls and mats in distinctively African colours. Men and boys also produce items such as clay sculptures and woodcarvings.



The Zululand Crafters Association – building capacity and alleviating poverty

The Zululand Crafters Association (ZCA) is a non-profit organisation formed in 1995 to help local crafters develop viable, income-producing businesses that can sustain their families and assist the advancement of women, the disabled, and young people in rural communities.

Presently, 76 groups of crafters are affiliated to the ZCA. Through our support, the Association operates with a management body, a coordinator, trainers and volunteers. It occupies a new centre with an exhibition area, conference room and training facility and has other outlets throughout Zululand.

Through a training program we fund, the crafters can attend professionally run workshops that address topics such as business skills, production, pricing, packaging and customer care. To date, more than 1,100 people have attended training courses.

Apart from financial support, our Corporate Social Investment (CSI) team visits the centre on a regular basis; facilitates exhibitions, open days and monthly craft markets; and actively seeks other opportunities for the crafters to market their work. The CSI team played an integral role in setting up a networking system for the ZCA, which links crafters with markets, businesses, community forums and government departments. Orders have been received from local governments, the UK and Germany.

Cultural meanings embedded in traditional crafts

There is much more to traditional crafts than their role as items for sale to tourists. Beadwork, for instance, is closely integrated with religious beliefs and is part of a symbolic code used in traditional magic. It has meanings in law and in social relationships, education and communications, with specific attributes assigned to certain colours.

Our support of the Zululand Crafters Association and its objectives is helping not only to keep traditional crafts alive but also to provide opportunities for rural communities to become sustainable through self-empowerment.



Traditional beadwork

Socio Economic Case Studies

Socio-Economic – Supporting Local Suppliers

Case Study Contributor:	Mozal Aluminium Smelter
BHP Billiton Interest:	47%
Location:	Maputo Province, Southern Mozambique
Customer Sector Group:	Aluminium
Commodity:	Aluminium
Case Study Status:	New for 2006

Mozal Motivates Other Companies in Mozambique to Further Build the Capacity Of Local Suppliers

Since 2002, Mozal has increased spending with Mozambican companies from around US\$6 million per month to more than US\$15 million per month.

This significant increase is the result of a focused drive by Mozal's operational areas and procurement department to award contracts to Mozambican suppliers who comply with the Company's HSEC and business conduct principles.

Additionally, we have continued to proactively support programs and initiatives aimed at building the capacity of small and medium enterprises (SMEs), such as the Mozlink SME Development Centre, which provides SMEs with training in safety, maintenance, quality and management. While utilising existing programs like Mozlink to further develop SMEs, we had also been thinking of ways to extend this good practice and help to further accelerate the growth of the Mozambican economy.



Mozlink II — extending the SME development program

Following a benchmarking exercise with the International Finance Corporation (IFC), we conceived a way to build on the benefits being derived from the existing Mozlink program. The idea was to establish Mozlink II, by firstly convincing other big Mozambican companies to analyse the supply chain together. After the analysis phase, the next step was to identify materials and services currently purchased from outside Mozambique that could potentially be provided from within Mozambique. Then SMEs can be equipped and developed to manufacture the materials or deliver the services locally.

The Mozlink II concept has been put into practice and five companies – Sasol, Cervejas de Mocambique, Banco Austral, Corridor Sands and Maputo Port – have enthusiastically committed to join with us in advancing the program. Meetings are currently being held on a monthly basis to further analyse the supply chain, execute SWOT analysis for opportunities and identify local SMEs that have the potential to be developed to supply these big Mozambican companies in the future.

The range of commodities that can potentially be supplied by Mozambican SMEs includes abrasives and welding consumables, adhesives and sealants, airconditioners, auto batteries, bearings, cleaning consumables, corporate clothing, corporate gifts, fasteners and springs, hand tools, office furniture and equipment, personal protective clothing and equipment, scrap recycling, signs and display boards, stationery, tyres and tubes.

The first contract package under the enhanced Mozlink program has been awarded to Faumil, a personal protective clothing (PPC) manufacturer. The PPC is made from a specialised material needed for hot metal work at Mozal. Previously, the clothing was procured from outside Mozambique. Through Mozlink II, the supplier has transferred garment manufacturing knowledge to a Mozambican SME so that now just the material is purchased from outside Mozambique and the garments are tailored locally, boosting the economy by around US\$500,000 and further building capacity. It is anticipated the value of the contract for the total project could grow to around US\$5 million per annum within two years.

The Global Linkages Unit Manager of the IFC, Sujata Lamba, has noted, 'The IFC considers the Mozal Linkages Program a pioneering program and an example in best practice in supporting supplier linkages, one which has been shared with colleagues from around the globe. However, we always note that the project would have never been successful had it not been for the commitment and participation of Mozal and its parent BHP Billiton'.

Socio-Economic Case Studies

Socio-Economic – Human Rights

Case Study Contributor:	Cerrejón Coal
BHP Billiton Interest:	33.3%
Location:	Guajira Department, North-East Colombia
Customer Sector Group:	Energy Coal
Commodity:	Steaming Coal
Case Study Status:	New for 2006

Cerrejón Engages in Human Rights Training for Security Personnel and the Community

Colombia has been facing internal conflicts for many years, and Cerrejón's operations are exposed to these threats. Concerned by these conflicts and their potential impacts, Cerrejón is actively engaged in promotion of and respect for human rights within its operation, in its neighbouring community and in the country.

Cerrejón initiated a human rights training program for its security personnel, private security contractors, public security forces and its neighbouring community. As a result of the program, political and civic leaders and neighbouring municipal administrations have stated that there is a significant, positive change in the attitude and vision of the public security forces.



A drill at the Albania base regarding non-combatants' rights

Background

Cerrejón is an independent operation owned in three equal parts by subsidiaries of BHP Billiton, Anglo American and Glencore International. It operates an open cast mine, a 150-kilometre railway and a direct loading port at Puerto Bolívar, at the northern tip of South America. Since commencing production in 1984, Cerrejón has become the largest mining operation in the country. Current output stands at 28 million tonnes per year, and an expansion project will take it to 32 million tonnes by 2008.

Faced with security challenges and aware that it is undertaking a strategic economic activity in Colombia, Cerrejón requires measures to protect its employees, their families and its assets. These methods include a company security detail, private security providers and the support of governmental public security forces. To try to ensure that this structure has no negative impact on the human rights situation of the local population, Cerrejón bases its security policy on the US–UK Voluntary Principles on Security and Human Rights.

The training program

To comprehend human rights issues, the Company commenced a training and qualification program on this matter. The initiative consists of a comprehensive plan aimed at creating human rights awareness, education and promotion within four critical stakeholder groups: public security forces, private security contractors, company personnel and the community. Within this last group, special attention has been given to the Indigenous population in the area of influence of Cerrejón's operation: the Wayuu ethnic group. Training began in 2004 and its initial focus was the Colombian public security forces. In 2005, the additional stakeholders were included.

The first phase of the program was conducted by the Costa Rican Human Rights Training, Qualification and Analysis Centre (CECADH). The second phase is being implemented by the Colombian Red Cross and the International Committee of the Red Cross.

The Colombian Army, Navy and Police were the public security institutions that received initial training. Specifically these were: three Army battalions (the Gustavo Matamoros Armoured Group, the Juan José Rondón Armoured Cavalry Group and the Cartagena Infantry Battalion); the Navy Coast Guard Command at Puerto Bolívar; and the police stations located at the various municipalities around Cerrejón. The total manpower figure of these units is nearly 2,000; the first phase of the program involved 500 of them.

Methodology

Basic principles on human rights and international humanitarian law are taught through a combination of drills, cases, games and awareness-building exercises. Entire military and police operational units (such as platoons and squadrons, which are the units they usually work as) were trained.

This methodology seeks to ensure that soldiers and commanding officers can apply concepts in their regular activities, including combat. The objective sought is that the military are prepared to operate in an efficient and effective manner, fully respecting Colombia's judiciary system and the fundamental principles and standards of human rights and international humanitarian law.

The methodology is an open system with a participative approach that allows for easy interaction between the lecturer and the audience. Through this process, members of the military forces, during two days, face the real dilemmas encountered in their daily activities and learn to solve them by putting into practice human rights regulations. This helps to maintain realism and provides conditions similar to actual decision-making processes.

Special emphasis has been given to the respect of the rights of women and the Wayuu ethnic population. The former play a prominent socio-political role in the region, and the latter are a traditionally vulnerable population.

Program Training Schedule - Phase I: Initial Stakeholders

Group	Participants	
Army	432	Fourth Quarter 2004
Police	57	
Navy	22	
Total	511	

Program Training Schedule - Phase II: Additional Stakeholders

Group	Participants	
Army	50	Fourth Quarter 2005
Police	50	
Other State security organisations	40	
Wayuu community	150	
Private security	90	
Cerrejón security personnel	50	
Cerrejón community division personnel	35	
Total	465	

Program Training Schedule - Phase III: 2006 Training Program

Group	To be Trained	
Army	800	2006
Police	70	
Other State security organisations	45	
Indigenous authorities/leaders	150	
Civil and governmental authorities	100	
Private security	700	
Cerrejón security personnel	50	
Cerrejón community division personnel	25	
Coal-handling division personnel	50	
Total	1990 approx.	

In addition to the Armed Forces, the program now includes private security providers, Cerrejón personnel and the community itself. This allows all interacting stakeholders to have a common understanding of human rights concepts and be fully aware of the need to uphold them.

Stakeholder response

The following comments on the human rights training program and its consequences have been provided by a range of Cerrejón's stakeholders.

'Thanks to the implementation of the human rights program, a really big change has occurred, above all in the treatment of the Public Forces towards us and ours towards them. It is not the same treatment as before that led us to look at them with fear because we thought that the Armed Forces came here to harm us, to humiliate us; now, we look at them with trust, quite different from what it was before.'

Luis Socarras Ipuana, Member of the Board of Directors of the '4 de Noviembre' Wayuu Indigenous reservation

'The change in the Armed Forces is noticeable: in their friendship, in the peace. We got to know them better, now we talk to them when they arrive at the hamlets. Before the implementation of the human rights program, they did not ask permission to enter, they walked in without any respect, they did not respect any authority.'

José Prudencio Pushaina, Leader of the Jurimakal Community

'It is very healthy for the community, for the people, because this is making our Armed Forces more professional and provides us a guarantee on their actions with the people.'

Miguel Luna Morales, Albania Councillor

'In truth, we know quite a bit about International Rights and what are human rights, but it is necessary to practice them so that we do not make mistakes in our daily activities. I believe it is a fundamental tool in our daily interaction with the population, especially with this sector of the community here in La Guajira. Thanks to this program, we are coming closer to the community, because now we approach them with respect for their rights, so as to prevent any type of clashes.'

José Gustavo Valencia, Police Officer

'Many times we are not prepared for situations we must face. The training in International Humanitarian Laws has served us a lot because we were taught many things we did not know before, now we know how to treat people, we now have other attitudes, we seek to treat people as must be done.'

Cervante Valencia, Professional Soldier, Gustavo Matamoros Armoured Group

'The relationship with the Armed Forces at this time is quite different from what it was before, because we have changed [our attitude] towards them. We now have a relationship with better communications, now we have trust; before, when we saw them coming, we used to hide. We were afraid because we thought they could harm us, because they never came in good faith. Today they come to our hamlets with respect and good treatment.'

Benito Quintero Ipuana, Jurachi Community, Clan Ipuana

'It taught me many things, because before I did not know how to treat civilians, and because I wore the uniform representing an institution; now, after the training, I know how to treat civilians and to respect their rights, and the best of all was that the lecture was quite good.'

Locarno Jiménez, Professional Soldier, Cartagena Infantry Battalion

'There does not exist in Latin America a similar activity, never has been seen such concern of a multinational company in a practical manner to carry out this type of activity for the promotion, protection and respect of Human Rights ...'

Costa Rican Human Rights Training, Qualification and Analysis Centre (CECADH)

Outcomes

The results of this program have been valuable for both Cerrejón's neighbouring community and for the members of Armed Forces. Results are noticeable. As well as the positive change in the attitude and vision of the public security forces, there is a growing sense of trust between the community and the authorities, as indicated in the stakeholder quotes.

This is good for all parties, including Cerrejón, since a trusting environment helps construct relationships that can lead to better security figures. Less violence and less crime enhance development and strengthen confidence. Thanks to this program, the Police and Army now enjoy a higher degree of credibility within the civilian population in this region of Colombia, particularly among inhabitants neighbouring Cerrejón.

This program mitigates the risk of running an operation in the middle of an armed conflict and is a palpable effort to enhance community wellbeing. Furthermore, since private and public security forces assist in Cerrejón's security, it is important that their behaviour is consistent with the preservation of human rights. This enhances Cerrejón's reputation, improves risk management, reduces litigation and financial risks and preserves the Company's social licence to operate into the future.



Drills at the Carraipía base



A role-playing exercise at the Carraipía base

Socio-Economic Case Studies

Socio-Economic – Human Rights

Case Study Contributor:	Algeria Asset
BHP Billiton Interest:	Joint Venture Partner in Two Operations
Location:	Algeria
Customer Sector Group:	Petroleum
Commodities:	Oil and Gas, Exploration
Case Study Status:	New for 2006

Algeria Asset Expands Human Rights Awareness Training

Our Algeria Asset has expanded its human rights awareness training for employees and contractors. Educational material has been printed in several languages and a comprehensive training program has been conducted for all staff and contractors in London, Algiers, Hassi Messaoud and the three new exploration blocks.

This approach is in line with our HSEC Management Standards that were revised in August 2005. Standard 8, which relates to business conduct, human rights and community development, was expanded from five to eight elements, including that all employees and contractors receive training to ensure that they are familiar with and abide by the Articles of the United Nations Universal Declaration of Human Rights (UNDHR) relevant to their activities.

The UNDHR is the most widely accepted human rights document in the world and underpins the Company's Sustainable Development Policy commitments. The intent of the Policy is that all activities and operations are conducted in an ethical manner that supports fundamental human rights and respects traditional rights, values and cultural heritage.

Protecting human rights is everybody's responsibility

Human rights is a broad topic. While it's often the more extreme abuses of human rights such as unlawful detention and torture that are highlighted, human rights is essentially about basic standards of treatment to which everyone is entitled. These include fair remuneration, adequate leave and rest breaks, the right to work in an intimidation-free environment, and fair treatment regardless of nationality, gender, race, economic status or religion.

In recent years, there has been increasing attention on the resource industry's human rights performance. Across the Company, we have various mechanisms in place to help ensure that we do not breach human rights; however, the challenge is that every site operates within a different historical, cultural and religious context, which can mean different interpretations of human rights and different approaches to dealing with issues.

Algeria Asset Team Leader Francis Egan says, 'While our site managers have primary responsibility for human rights at an operational level, everyone needs to be aware of how human rights are relevant at their site. They need to understand not only the broad context of our exposure to human rights issues, but also how to identify issues that may arise locally and who they should speak to if they need to raise a human rights issue'.



The Ohanet development, our first commercial production in Algeria

Human rights awareness and training

The Algeria Asset has printed the UNDHR and the BHP Billiton Employee Guide to Human Rights in Arabic, French and English, and made them available at all the Company's sites in Algeria. Human rights are also addressed in the HSEC induction process at the Ksar Hirane exploration block, and information material is included in the induction pack provided to every employee and contractor on site. The same approach will apply once work gets underway at the Hassi Bir Rekaiz and Oudoume exploration blocks.

The Asset's latest round of human rights awareness training was conducted in early 2006 in London, Algiers and Hassi Messaoud and, for the first time, all staff and contractors were expected to attend. This is a change from previous years, where people from key disciplines, such as the Asset Leadership Team, HR, HSEC and Security, were effectively the guardians of human rights matters. The idea was that everyone should be in a position to recognise a potential transgression, report it and follow it through.

Describing how the training was conducted for participants, External Affairs Adviser Naomi Korolew, says, 'We used relevant current affairs examples of human rights transgressions from around the world in the training, and the informal feedback was that people found the presentation very interesting'.

New toolkit to self-assess human rights performance

Compliance with the Company's commitment to human rights responsibilities is assessed through the HSEC Audit and Self-Assessment processes. When the Algeria Asset underwent its latest audit, it piloted the Company's new Human Rights Self-Assessment toolkit.

'The new toolkit is a very helpful way to raise human rights issues regularly within the asset', says Naomi Korolew. 'The asset has a formal review date scheduled every year to complete the annual self-assessment, conduct a gap analysis on policy and practice developments, and implement an action plan that includes annual human rights awareness training at all asset sites. We have also developed a matrix to map the asset's sphere of influence in relation to human rights, and at the end of every workshop, we remap our stakeholder groups to reflect the current situation'.

Human rights awareness training is now being rolled out across the Company.