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# OVERVIEW AND SUMMARY



Total Management System Team  
(ISO Quality, Environment and OH&S Team).

## Who we are

Kingsgate Consolidated Limited (Kingsgate) is a successful, publicly owned Australian gold mining and exploration company and its shares are traded on the Australian Stock Exchange under the code KCN.

Through its wholly-owned subsidiary, Akara Mining Limited, the company owns and operates the Chatree gold mine, Thailand's only modern gold mine. The mine has low cash costs, a strong reserve/resource position and is the principal contributor to Kingsgate's earnings.

## Our Vision

Kingsgate's vision is to be a leading mining company recognised for its profitability.

We are continually assessing new business opportunities and recognise that the strength of our relationships, our experience in Asia and our operating expertise will provide the opportunities for growth.

## Our People

Only through our people can we achieve our goal of developing and operating high quality mineral resource projects. We will employ and retain highly skilled people and are committed to their continued development, safety and well-being.

## Sustainability

Kingsgate will conduct its operations to the highest standards and with due regard for the economic, social, governance and environmental considerations for the benefit of all stakeholders.

Kingsgate believes that superior environmental and social performance is integral to the successful development of the company.

## Chatree mine

The Chatree gold mine is located on the eastern edge of the Chao Phraya Basin in gently undulating terrain about 280 kilometres north of Bangkok. The area is well served with infrastructure including good road access and national grid power. The mine produces gold using open pit mining techniques and well proven processing technology. Chatree applies environmental world best practice in several key areas of the operation.

The mine is managed and operated by Akara Mining Limited, a wholly owned subsidiary, and commenced commercial production in November 2001.

## Chatree Key Data 2004

	2004	2003
<b>Reserves (30 June 2004)</b>		
Ore reserves (oz)	1,082,000	987,000
Mine life (years)	9	8
<b>Production</b>		
Tonnes milled	1,670,854	1,324,057
Gold produced (oz)	149,979	154,484
Silver produced (oz)	395,346	484,170
Cash cost (\$US/oz)	135	94
<b>People employed (30 June 2004)</b>		
Thai citizens	215	170
Expatriates	8	11
Long term contractors	271	164
Short term contractors	0	79
<b>Total</b>	<b>494</b>	<b>424</b>

# MANAGING DIRECTOR'S INTRODUCTION



Steve Reid - Managing Director

These include the successful completion of a major plant expansion on time and under budget, producing more gold at lower cost than projected at the start of the year, some outstanding exploration results, maintaining our excellent safety record and completing a number of community development projects.

In the process we achieved several major awards for our performance including:

- The Ministry of Labour award for 'Efforts on understanding the importance in improving the quality of life for women workers'.
- The Prime Minister's 'Best Practice Award for Employee Welfare' for the second year running.
- The 'Best Occupational Health Safety and Work Environment Award 2003' for Phichit Province.
- The Ministry of Labour Consolation Prize for 'Labour Relations (small enterprise)'
- The 'Best Control and Prevention of Drug Problems in Phichit Province' award from the Labour Protection and Social Welfare Department.

Attaining these awards recognises the commitment and diligence of our workforce and confirms that Chatree operates at the highest standards comparable with mining operations anywhere in the world.

Kingsgate seeks to ensure that mining and exploration activities are consistent with and integrate two key aspects of Sustainable Development:

- That development meets the needs of the present generation without compromising the ability of future generations to meet their own needs -

Welcome to Kingsgate's second public sustainability report. After our first full year of operations in 2003, we have continued to build on our early successes with several notable achievements in 2004.

1987 UN sponsored Brundtland Commission ('Our Common Future') and

- That our development generates benefits from a finite resource that are sustainable beyond the life of the mine.

The operation contributes to a wide range of community initiatives which seek to strengthen relationships with stakeholders and lead to improvements in the quality of life of local communities. One of these initiatives is to improve the reliability and quality of water supply in the local villages around the mine. Most villages do not have access to dependable supplies of clean water which is mainly obtained from surface run-off storage ponds or water bores. During the year the company installed a major water storage tank and pumping system for the village of Ban Dong Long to the east of the mine. This was followed by the installation of water filtering and cooling machines at several local village schools.

We also support local business development and promote a 'Buy Thai' policy. In November 2002 the mine commenced purchasing fire assay crucibles from Thailand's established ceramics industry at Lampang (previously all crucibles were imported). After extensive testing and development with this local supplier, all crucibles are now sourced in Thailand.

Although we have a direct beneficial impact on local communities, we are seeking ways to maximise the benefits for Thailand and align our programs with regional and national priorities. In this regard we have commenced a number of studies seeking how best to structure our social and economic programs in line with other regional initiatives. We are in the

early stages but will keep stakeholders informed of our progress.

In July 2004 the Australian and Thai governments signed a free trade agreement between the two countries. This will have substantial benefits for trade and cooperation between Australia and Thailand and lead to new development initiatives. The agreement provides for Australian companies to own up to 60% of mining ventures in Thailand. Kingsgate is pleased to be part of this ongoing cooperation and looks forward to enhancing the value of its operations in Thailand for the benefit of both countries.

To date we have invested more than \$US60 million in Thailand and continue to expand our exploration programs, with a further \$US9 million budgeted for 2004/05. We recently acquired additional tenements in the region and now hold more than 1,500 sq kilometres of prospective ground. We are introducing the most advanced exploration techniques to our programs and have increased our team of exploration geologists. Progress to date has been extremely pleasing.

We welcome your feedback on our activities and reporting, and encourage you to return the feedback form accompanying this report or contact us at any of the offices listed in the report.

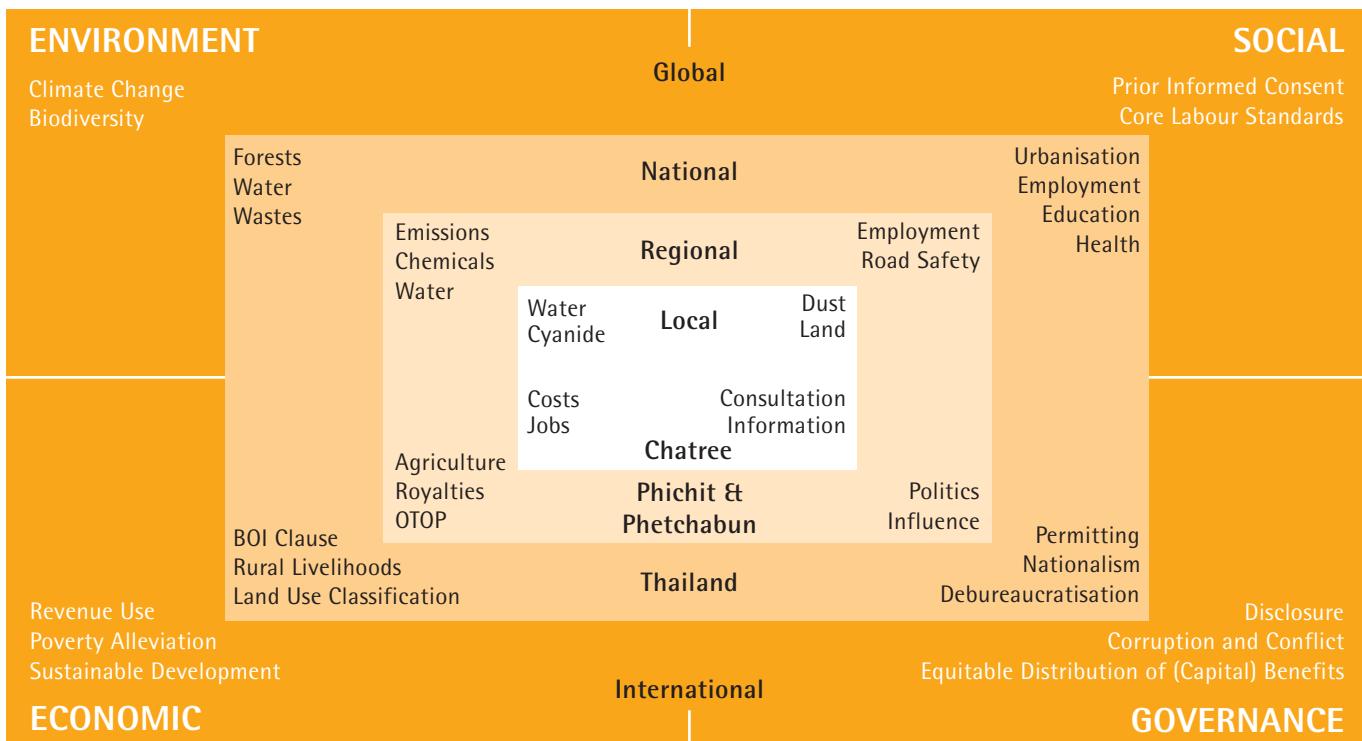
Steve Reid  
Managing Director and CEO

# HIGHLIGHTS 2004

- Safety performance at Chatree was outstanding with no lost time injuries for the entire year.
- There were no major environmental incidents during the year.
- Chatree achieved all major operational targets – gold production in excess of 125,000 ounces (149,979 oz achieved) and cash costs of \$US145/oz (\$US135/oz achieved).
- The exploration effort was intensified with excellent results and strong potential for adding to reserves and mine life.
- The Environmental Management System (EMS) was fully accredited to the internationally recognised ISO 14001 standard in December 2003.
- The Safety Management System (SMS) was fully accredited to the internationally recognised OHSAS 18001 standard in December 2003.
- Environmental performance under the Mineral Council of Australia's Code for Environmental Management increased significantly with the overall score increasing from 48% last year to 69% in 2004.
- A comprehensive external environmental audit confirmed the mine continues to operate to best practice and in compliance with its statutory requirements.

# KINGSGATE AND SUSTAINABILITY

Figure 1: Kingsgate's Integrated Sustainability Framework



Last year we introduced the concept of sustainability and how our ongoing success had to be measured on the basis of the three pillars of sustainability – economic achievement, environmental performance and social contribution. We also developed a site sustainability policy and in 2004 introduced the policy to all employees and began introducing sustainability objectives into employee and operational performance targets.

Several new initiatives have been introduced including the energy conservation policy which commits us to introducing new energy saving initiatives and minimising greenhouse gas emissions.

We are well advanced with our environmental performance and are beginning to align our social and economic contributions with local and national objectives. The Chatree operation is having a direct beneficial impact on local community employment, infrastructure, education and similar services, and we have upgraded employee capacity through training, skills and knowledge transfer but we still need to do this in a more structured way.

We need to align our objectives and programs even more with local community, provincial and national government objectives.

To this end, we have commissioned a number of studies into determining how best to structure our social and economic programs, how to measure our contribution and how to align them with other regional and national initiatives. Similar studies are being carried out by governments and corporations (in widely varying industries) across the globe and Kingsgate aims to monitor this progress and be progressive in this area.

With the framework for our Sustainability model (Figure 1) we are continuing the evolution of our programs with the assistance of our Thai hosts at a regional and national level. Under the theme of "Success Together" we aim to create sustainable growth for our employees, the region, Thailand and our shareholders.

The framework addresses the environmental, social and economic aspects of sustainability and introduces 'governance' as another important consideration. Some of the issues we are currently exploring include:

- National and regional development objectives
- Poverty, rural livelihoods, land use and sustainable development
- Partnering for progress and development
- Environmental costs and how they are managed
- Fresh water, biodiversity and sustainable agricultural projects.

Although it is early days we will continue to implement our local programs for the benefit of local communities, contribute to national priorities and seek to gain high societal value from our mining projects.

# OUR ENVIRONMENT

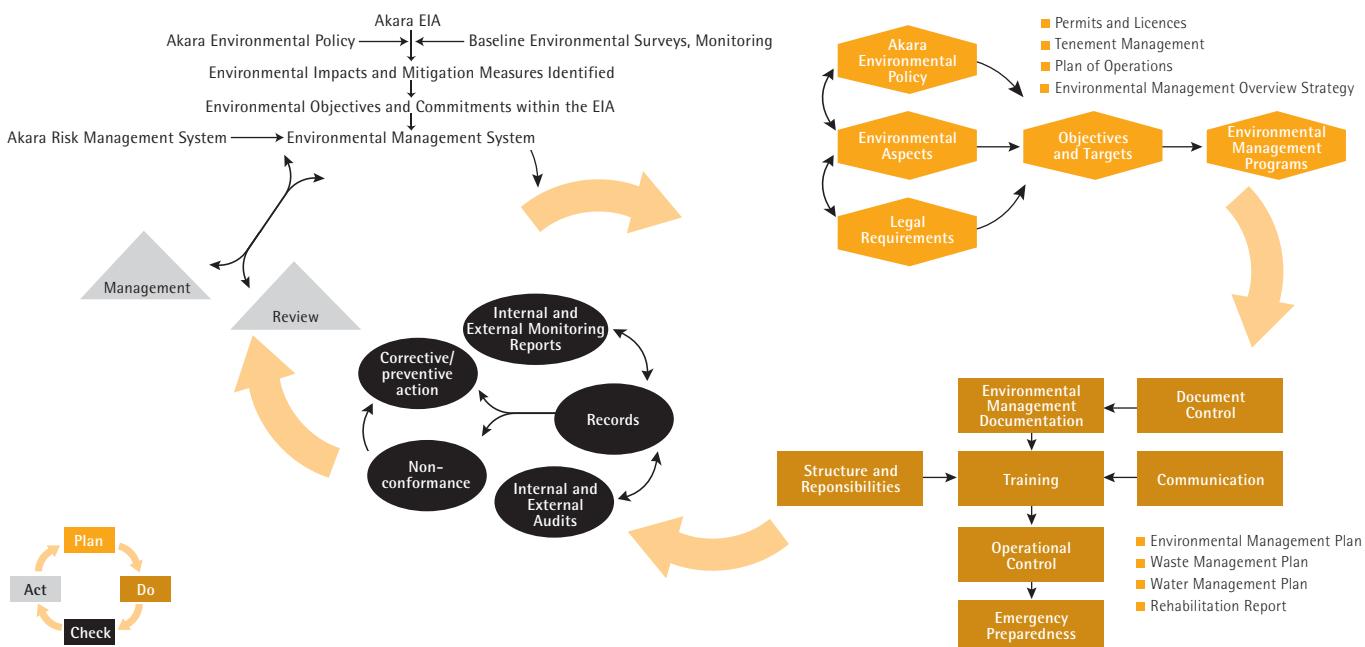
Kingsgate is committed to best practice environmental management in all aspects of the operation and has implemented standards and policies that provide the highest degree of protection for employees and the environment.



# OUR ENVIRONMENT

CONTINUED

Figure 2: Schematic representation of environmental management at Chatree



## Management

### Environmental Management System (EMS)

The mine's Environmental Management System (EMS) is based on ISO 14001, the international standard for such systems. In December 2003 the EMS was formally reviewed and accredited as achieving the ISO 14001 standard, a major achievement for a mining operation in any jurisdiction.

The EMS describes the organisational structure, responsibilities, practices, processes and resources for implementing and maintaining environmental management.

### Environmental Management Plan (EMP)

The Environmental Management Plan (EMP) developed for Chatree facilitates compliance with relevant licenses, legislation and targets for the site. It outlines specific procedures to aid the implementation of the EMP, such as revegetation trials and waste rock emplacement trials and contains specific plans for water management and waste management.

The relationship between the various components of the EMS and EMP is best illustrated in the chart above

(Figure 2). The chart illustrates the dynamic nature of environmental management at Chatree through a continuous process of planning, implementation, review and improvement.

### Auditing and review

Chatree carries out a comprehensive environmental auditing and review program to assess compliance with licence conditions, relevant legislation, EMS objectives and best practice environmental management. The program is based on regular internal and external environmental audits. These audits are regarded as key feedback and quality control mechanisms that facilitate continual improvement of environmental management programs and systems. A summary of Chatree's environmental audit program for 2004 is shown in Table 1.

Monthly reports are provided to the Kingsgate Board of Directors to ensure regular review of management strategies and potential environmental impacts. The board ensures further checks and balances by commissioning an annual independent environmental audit of the Chatree operations.

The annual independent environmental audit of the operation was conducted early in 2004, following the submission

to the Thai authorities of the annual environmental monitoring report. The independent audit consisted of an assessment of compliance with licence requirements and the practicality, relevance and performance of specific environmental management strategies.

### Audit results

Audit recommendations are used to set targets for the following year and where necessary to make adjustments to the environmental management program. The 2004 auditing confirmed the mine is operating in compliance with its statutory lease and licence requirements.

The major results from the 2004 audit include:

- Chatree's EMS achieved full accreditation confirming world's best practice in environmental management systems
- Further refinements to the treatment of tailings material has resulted in the concentration levels of total cyanide consistently achieving below a level of 20mg/L. Previous auditing had identified that, at times, the concentration of total cyanide exceeded this limit

**Table 1: Environmental Audit Program for the Chatree gold mine**

Audit Type	Audit Scope	Auditor	Frequency
Internal environmental audit	Compliance with environmental management objectives and plans	Chatree Environmental Coordinator	Quarterly and annually
External environmental compliance audit	Compliance with license conditions, applicable laws in Thailand and the Chatree gold mine Environmental Policy	Independent Australian environmental consultant	Annual
Minerals Council of Australia	Compliance with the Australian Mineral Industry's Code for Environmental Management	Independent Australian environmental consultant	Annual
ISO 9001	Compliance of Quality Assurance Program with ISO 9001	Independent international consultant	Semi annual
ISO 14001 certification audit	Compliance of the Chatree gold mine EMS with ISO 14001	External certification body	Achieved accreditation in late 2003. Semi annual
OHSAS 18001 certification audit	Compliance of the Chatree gold mine Safety Management System (SMS) with OHSAS 18001	External certification body	Achieved accreditation in late 2003. Semi annual

- More rigorous management of the waste rock dumps was identified as an area for improvement, particularly the early identification and storage of potentially acid forming material. It was recommended that future assessments of acidic material should be carried out in association with mine planning and pit optimisation studies
- The EMS and EMP should be revised to include the full scope and intent of Chatree's community programs
- More detail should be provided in Incident reports and the reports modified to allow for additional detail and comments.

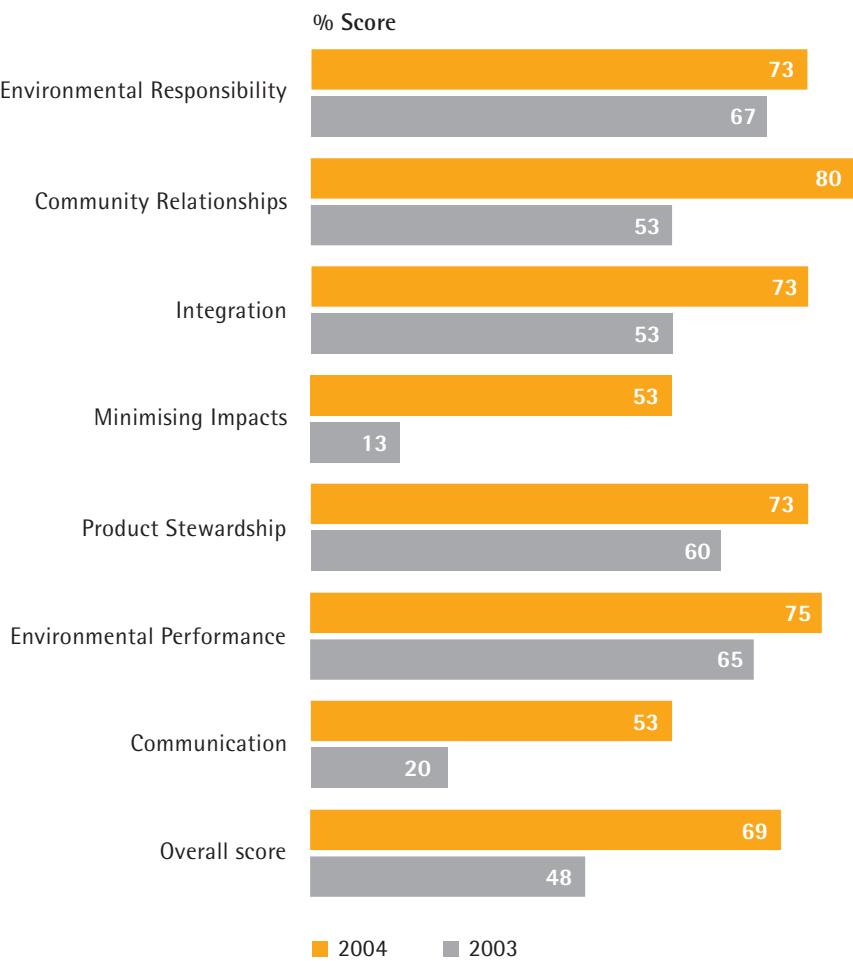
All of the audit recommendations have been implemented for the 2004/05 year.

#### **Code for Environmental Management**

Kingsgate is a signatory to the Australian Mineral Industry's Code for Environmental Management. Essentially, the Code requires signatories to commit to and demonstrate continual improvement, and to annually audit and report their performance against the Code.

The Code is divided into seven principles and a company's performance is scored against a number of criteria under each principle.

**Figure 3: Code for Environmental Management – Audit Results**



# OUR ENVIRONMENT

CONTINUED



Above: Thai farmer transplanting rice seedlings.  
Left: Local school children.

The Code is currently under review to incorporate new sustainability principles and signatories were not required to report performance for 2004. However, Kingsgate voluntarily carried out an external audit of its performance in order to continue the momentum for improvement and to determine its progress following the 2003 audit. Chatree showed a significant improvement in scores in several Code principles. Not only did the operation show substantial improvement over the first audit but overall performance was rated well above the average for all companies reporting under the Code in 2002. The results are summarised in Figure 3.

Kingsgate achieved an overall score of 69% in 2004 compared with 48% in 2003 and an average score of 55% for companies reporting under the Code in 2002. We consider this to be a very good result with a significant turnaround from some low scores in the previous audit. The low scores related primarily to areas where the company was performing satisfactorily but did not have sufficiently well developed and documented formal procedures in place to demonstrate progress. We have since documented these procedures and continued to implement improvement programs.

In the case of *Minimising Impacts*, the score increased by more than 300% as the company formally documented the procedures in place for exploration activities including risk assessment, developed a property management plan and completed a preliminary closure plan with full costings.

**Table 2: Global Reporting Initiative (GRI) indices**

GRI Indices	Description	Report Reference
EN 3	Direct energy use segmented by source	Our Environment – Air, Energy use and greenhouse
EN 5	Total water use	Our Environment – Water use and efficiency
EN 22	Total recycling and reuse of water	Our Environment – Water use and efficiency
EN 12	Significant discharges to water by type	N/A
EN 10	Air emissions by type	Our Environment – Air, Energy use and greenhouse
EN 8	Greenhouse gas emissions - CO <sub>2</sub>	Our Environment – Air, Energy use and greenhouse
EN 13	Significant spills	Our Environment – Incidents and compliance
EN 14	Significant environmental impacts	Our Environment – Land
EN 27	Objectives, programs and targets - closure	Our Environment – Management
SO 1	Policies to manage impacts on local communities etc	Our Social Contribution Our Environment

In the case of *Communication*, even though communication with the community and stakeholders was widespread, it was informal and had not been adequately recorded. In 2003 the company published its first public sustainability report, documented its progress in several community affairs initiatives and established 'message centres' in several villages around the mine. These centres provide information about the Chatree operation including current news, job postings, suggestions and complaints. Further work is planned for this area in 2004/05.

## **Global Reporting Initiative (GRI)**

The Code for Environmental Management is currently under review to align it more with the principles of the Global Reporting Initiative. The review is scheduled for completion at the end of 2004 at which time Code signatories will be required to report against a number of GRI indices. Table 2 lists some of these indices and references them to the relevant sections of this report.

## Water

### Water use and ecoefficiency

The Chatree gold mine obtains its water from surface runoff storage ponds and from water bores that intersect underground water sources. To promote water efficiency and conservation, Chatree re-uses and recycles water wherever possible.

The primary consumer of water is the ore processing plant. Approximately three-quarters of the water used for processing is recycled from the Tailings Storage Facility (TSF) and on-site storage dams. Make-up water is pumped from local groundwater bores which dewater the pit areas ahead of mining.

In 2003 flow meters were installed on all groundwater bore lines to facilitate reliable measurement and water management strategies, and this process will continue in the future.

### Protecting water quality

To protect the quality of surface and underground water in the vicinity of the mine, Chatree employs world best practice in the treatment, handling and storage of tailings residue. The quality of surface and underground water is monitored to ensure the quality of water exiting the site is not significantly degraded.

The objectives of Chatree's water quality monitoring program are to:

- Assess the potential impact that mining activity may have on the local and regional surface water system
- Provide interpretable data on the quality of waters both on and leaving the site
- Ensure that the quality of surface water and groundwaters exiting the site are not significantly degraded
- Ensure that the quality of surface water and groundwater remaining on the site after mining is of an acceptable standard.

### Surface water

Surface water quality is monitored at 10 potential impact sites located around the open pits and plant site. Monitoring results in 2003 showed that the pH at nine of the potential impact sites was in compliance with Thai Standards for Surface Water and Drinking Water and the Drinking Water Standards listed in the Australia and New Zealand Environment and Conservation Council (ANZECC) Guidelines for Fresh and Marine Waters (2000). Only one site showed reduced pH readings and this was from a run-off channel from Waste Dump 1 during rainfall. The run off was collected in Sediment Pond 1 which had a pH in normal range.

### Groundwater

To measure the impact that mining activity may have on the local and regional groundwater system, monitoring of a series of groundwater piezometers is carried out both within the mining lease and regionally to measure water level and chemical changes in the hydrogeological regime.

Each monitoring location consists of a shallow and a deep hole, the former terminating in the perched laterite horizon and/or clayey sand unit and the deeper hole drilled below the anticipated water level. The locations are based on the natural direction of groundwater flow and activity/facility immediate up-gradient of that point. Groundwater from these points is collected and analysed by appropriately registered laboratories for periodic review by Chatree.

A total of 17 bores are monitored weekly for pH and conductivity levels, and quarterly for anions, cations, metals and cyanide.

Regional groundwater monitoring results show that fluctuations have occurred for some parameters but the change has generally been consistent across all sampling sites and concentrations of all parameters are within prescribed groundwater standards. Iron and manganese levels were elevated at most sampling sites, which suggests a regional trend rather than a result of activities conducted at the mine.

Groundwater level monitoring data indicates that groundwater level rises during the wet season and falls in the dry season. No complaints concerning falling groundwater levels were received in 2004.

### Tailings Storage Facility (TSF)

The TSF and treatment process at Chatree is designed and constructed according to the highest international standards. A detailed description of this process was provided in last year's report. In 2004 the facility operated in full compliance with all Thai legislation.

Under Thailand's compliance criteria, a discharge limit of 20 mg/L of total cyanide applies to tailings discharged from the cyanide detoxification plant to the TSF. However, since processing primary ores, concentrations above 20 mg/L had previously been recorded on some occasions. Processing and plant modifications in 2004 have resulted in the operation consistently achieving this limit which is well below the tailing discharge levels of almost every gold mine in the world. In 2004 WAD cyanide levels, which are most commonly used to monitor cyanide levels, averaged < 5 ppm which is a safe level for ecosystem protection.

In 2004 the monitoring program around the TSF showed no increase in cyanide levels confirming that there are no seepages from the facility or adverse impacts on local ground water.

A lift to the TSF was completed in 2004 providing capacity for a further year.

# OUR ENVIRONMENT

CONTINUED



*Chantra Pit with rehabilitated waste dump in the foreground and 'Prospect A' (the hill) in the background.*

## Land

### Incidents and compliance

Chatree holds all necessary licenses, permits and agreements to operate under the Thailand jurisdiction. The mine has operated in compliance with all its license conditions and there were no major threats to the environment during the year.

Environmental incident reporting is used by Chatree as a tool for learning and ensuring that action is taken to prevent impacts and recurrence. The protocol for incident reporting is included in the environmental induction program undertaken by all staff and contractors prior to working at the mine. In 2004 the incident reporting documentation was upgraded to allow for more detail and additional comments.

**Table 3: Environmental Incidents**

Category	Definition	2004	2003
Level 1	Low severity	2	3
Level 2	Minor severity (one-off occurrence)	0	0
Level 3	Minor severity (repeated occurrence)	0	0
Level 4	Medium occurrence (effects can be reversed)	0	0
Level 5	High severity	0	0

Two environmental incidents, both classified as Level 1 – low severity occurred in 2004. The first was a sewage overflow from a blocked sewage pipe in an ablution block and the second was a spill of about 20 litres of hydrochloric acid/water mixture from a pinhole leak in a discharge line. In both cases the lines were repaired and the spills cleaned up.

### Complaints

Chatree maintains a complaints register in which the nature of any public complaint, the response and the outcome are recorded. In 2004 two complaints were received relating to dust and noise vibration.

- The mine received a dust complaint during mining activities on the west side of the mine. Dust is difficult to control during dry conditions but a number of measures were introduced to reduce the effects including additional watering, minimising traffic movements in the area and early notification by operating personnel of excessively dusty conditions.
- Vibration monitors were installed at a house where cracks had appeared but no signals were recorded during blasting and the cracking was attributed to settlement of the house.

### Waste rock

Waste rock from the Chatree open pits is stored in conventional waste rock dumps within the mine lease. In 2004 the pit areas and waste rock dumps expanded significantly as mining progressed and now occupy most of the mining lease area. This is imposing constraints on the operation.

Specific management strategies have been devised to ensure environmental impacts associated with the emplacement and storage of waste rock are minimised.

Prior to the commencement of mining, waste rock is characterised to determine its potential to generate acid at some time in the future. The waste is classified as non-acid forming (NAF) and potentially acid forming (PAF), along with the rate and magnitude at which it is likely to occur. The allocation is carried out sufficiently in advance of mining to allow adequate planning and storage of acid generating material.

Waste rock emplacement is designed to ensure that it is geotechnically and erosionally stable in the long term. The emplacements are progressively revegetated as areas become available. Trials to establish the most suitable vegetation species are presently underway.

The performance of waste rock management strategies are regularly reviewed and the potential impacts of waste rock are monitored as part of the extensive water quality monitoring program at the site. In 2004 some deterioration in standards when handling PAF material were noted during the environmental audit. These have since been rectified and the rigorous standards that were previously applied have been re-enforced.

In 2004 a total of 10.3 million tonnes of waste rock was placed on the surface waste dumps. As mining progresses, the waste dumps are expected to advance to the west and north west with accompanying extension of the NAF wrap.



*Left: Environmental Co-ordinator (Yaowanud Chandung) and Environmental Supervisor (Thibdee Sookhook) discussing rehabilitation / revegetation trials.*

*Above: Environmental Technician checking surface water quality.*

## Rehabilitation

Chatree strives to minimise its environmental impacts and limits ground disturbance to the minimum necessary to conduct its operations.

It is Chatree's policy to progressively rehabilitate disturbed ground as it becomes available. Rehabilitation progress for the year is summarised in Table 4.

Considerable research is underway into various rehabilitation options as part of the development of the draft closure plan for the mine. Presently, land use options are being tested to determine possible final land use types, which will ultimately be presented to local stakeholders for their input.

**Table 4: Summary of Rehabilitation Activities**

Location	Area (m <sup>2</sup> )	Density (vegetation/100 m <sup>2</sup> )	Quantity	Type of Rehabilitation
Along highway No 1301 (north of D-Pit)	400	48	111	Planted Acacia mangium
Along access road in mine	1,500	35	520	Planted Acacia mangium
Along public road to the west side of mine	1,700	35	580	Planted Acacia mangium
CH-Waste rock dump slope	17,395	Full area	55,673	Planted Vetiver grass
D-Waste rock dump slope	8,000	Full area	25,000	Planted Vetiver grass

Note: The data included in this table relates to the 2003 calendar year.

## Closure Planning

A Preliminary Mine Closure Plan was developed in December 2003. The Plan details potential land use options for the various disturbance areas on the mine site and includes the feasibility of the land use options, rehabilitation of waste rock dump (WRD) focusing on tree and no-tree zones, and rehabilitation of the TSF.

The waste rock dump trials are being undertaken on a purpose built waste rock emplacement, where both capping design and vegetation cover type are being tested. The trial will be used to assess the suitability of blue clay as a capping layer and revegetation of the tree and no-tree zones on the WRD.

The TSF cover trial will be used to assess the potential of each cover to:

- Provide long term surface stability and minimise the loss of tailings.
- Protect the clay liner on the bottom of the TSF.
- Maintain a landform that is safe for the nearby community.
- Provide a technically feasible and economically viable capping.

## Waste management and recycling

Chatree gold mine is located in a part of Thailand where extensive recycling facilities are not readily accessible. This has created the challenge of developing a waste management program that is sustainable for the life of the mine, while not impacting on local aesthetics and infrastructure.

Chatree's waste management and recycling program is based on a tiered strategy of:

- Waste segregation – all wastes generated are segregated into groups to facilitate re-use and/or recycling.
- Recyclable materials are re-used on-site where possible.
- Recyclable materials not used on-site are sold to recycling contractors for collection.
- Remaining wastes are placed into a small scale, on-site land-fill.

The program has resulted in approximately 85% of wastes being re-used or recycled during 2004.

# OUR ENVIRONMENT

CONTINUED



Above: Recycling 'bales' at Chatree recycling depot.  
Left: Environmental Technician with Environmental crew in the background planting seedlings on an area being rehabilitated.

## Air

### Energy use and greenhouse

Kingsgate shares public concern over the efficient use of resources and minimising environmental impacts. The company acts responsibly and uses the best available technologies to promote energy efficiency and minimise greenhouse gas emissions.

In 2004 Chatree introduced a specific Energy Conservation Policy for all employees and contractors working on site. The policy encourages employees to explore opportunities for energy saving and commits Chatree to establishing benchmarks, monitoring progress and introducing new initiatives for saving energy.

**Table 5: Recycled Solid Wastes**

Material	2004	2003	Explanation of major variations
Scrap steel (kg)	2,846	7,943	Decrease due to scrap from construction projects in 2003
Mill drums (No)	374	1,836	Decrease due to drums being used to dispose of reagent packaging
Plastic (kg)	1,932	1,154	-
Aluminium cans (kg)	4	30	-
Paper (kg)	7,311	4,436	Increase due to cardboard packaging from higher explosives use.
Used tyres (No)	47	67	-

Note: The data included in this table relates to the 2003 and 2002 calendar years.

### Energy Conservation Policy

Akara Mining Limited while conducting its activities will respect energy conservation. Our commitment is to operate at the forefront of recognised best practice for energy conservation. We will establish and maintain an effective energy management system based on best practice and a commitment to continuously improve performance. We will integrate energy conservation as an essential element in the duties of all employees and contractors.

To achieve its energy conservation objectives, Akara Mining commits to explore opportunities for reducing energy usage and costs and greenhouse emissions. This will include the commitment of senior and corporate management, operational management and those with a role that impacts on the use of energy.

The key areas are:

- Developing the fundamental elements of an effective energy management system
- Investigating current energy use performance and the potential opportunities for improved energy efficiency
- Establishing energy performance benchmarks

- Motivating economic improvements in energy efficiency and providing information and other support to achieve that end
- Gaining everyone's acceptance of energy efficiency as a sustainable management best practice activity
- Monitoring and reporting on progress towards improved energy efficiency and energy management performance with the aim of achieving continuous improvements.

Applying energy efficiency measures to existing operations and introducing energy and greenhouse efficient plant and processes is one way of reducing costs, helping the environment and limiting risk. Such measures are consistent with operating a site at optimum efficiency and maximum output.

The introduction of new technology, process improvements and operational changes can significantly improve performance. However, without effective management processes in place, improvements will either not materialise or not be sustained.

Total effort to make this commitment a reality and adherence to this policy is a requirement of every employee and contractor. Akara Mining wants to be known as being "Power Smart".



*Environmental Technicians measuring plant growth in rehabilitation / revegetation areas.*

**Table 6: CO<sub>2</sub> Emissions**

CO <sub>2</sub> Emissions (tonnes)	2004	2003	2002
From power generation	55,969	42,271	30,022
From mobile equipment	13,158	6,126	3,820
From LPG	856	814*	174*
From explosives	184	77	N/A
<b>Total</b>	<b>70,167</b>	<b>49,288</b>	<b>34,016</b>

\*Adjusted from 2003 report

Emissions to air are produced from electricity use and the consumption of diesel fuel from mining operations. The major consumer of electricity is the processing plant, with minor amounts associated with various administrative activities.

Energy use and greenhouse emissions are shown in Table 6. Greenhouse emissions are calculated using Australian protocols (Australian Greenhouse Office, Factors and Methods Workbook, 2003).

In 2004 greenhouse gas emissions increased by 42% due to an expansion of the processing plant with consequent higher ore throughput and electricity use. Higher diesel fuel usage also contributed to the increase resulting from longer haul distances as the pits deepened and the strip ratios increased.

Despite the introduction of energy saving measures, overall energy usage and emissions will continue to increase in the future in line with planned and potentially new expansions to mining and processing facilities.

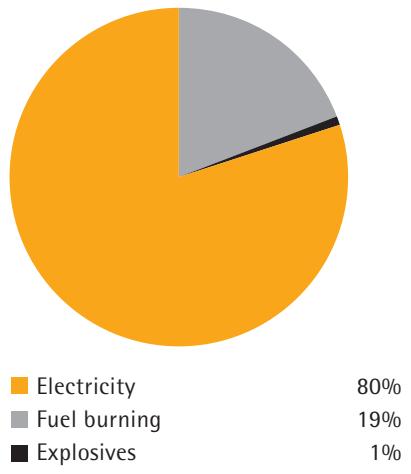
#### Air quality and dust monitoring

An extensive monitoring program is undertaken at Chatree to ensure that all aspects of the operation are carried out to the highest environmental standards. Monitoring within and adjacent to the mine covers noise, vibration, air quality and climate. The sampling stations for air quality monitoring are located at five villages surrounding the mine site.

Specific strategies to minimise impacts on air quality include the use of water trucks on unsealed roads, water sprays and avoiding specific activities on windy days.

The monitoring results show that, as expected, air quality varies with the seasons with particulate matter increasing in the dry season and reducing in the wet season. In February 2004 one station at Ban Nong Ra Man was not in compliance with the standard. This was considered to be a result of very dry conditions and excessive traffic movements. The overall monitoring results indicate that air quality management strategies implemented at Chatree are appropriate.

**Figure 4: Contributors to CO<sub>2</sub> Emissions for Chatree**



# OUR SOCIAL CONTRIBUTION



# OUR SOCIAL CONTRIBUTION

As at 30 June 2004, the Chatree operation directly employs 223 people, 96% of whom are Thai nationals.



## People

An additional 271 long term contractors are employed as mining contractors and in other service functions. The contractors are local and national Thai companies, and the vast majority of their employees are Thai.

Where possible, local community members are employed preferentially and local contractors are commissioned to undertake work at the mine or on exploration tenements. The contractors carry out open pit mining, as well as providing employee transport, cooking and eating facilities, security and other services.

Kingsgate believes that open, harmonious relationships in the workplace are conducive to high levels of employee satisfaction, productivity and quality standards.

Although modern mining methods and practices are new to the local community, the workforce has adapted well to the mining industry and the labour turnover rate for the mine was a low 4.6% in 2004. The company has a policy to improve the quality of life for women workers who comprise approximately 16% of the workforce. Although low by general industry standards, the number of women employed is relatively high for the mining industry.

In 2004 the company was awarded a trophy and certificate by the Ministry of Labour for its 'efforts on understanding the importance in improving the quality of life for women workers'.

For the second year running the company was awarded the Prime Minister's 'Best Practice Award for Employee Welfare' and in 2004 the Governor of Phichit Province and several of his officers visited the site to see first hand some of the initiatives the mine has undertaken to win this award. During the visit, the officials were introduced to several of the site's employee relations policies including work practices, employee benefits, dispute and harassment, promotion of women and recent initiatives in the health and safety area including drug and alcohol use, health hygiene and sexual transmitted diseases. The visitors met key employees and conversed with a wide selection of the work force exchanging ideas for further development both at the minesite and in local communities.

Mine management encourages employees to participate in social functions. The mine sponsors a range of local sporting activities including a soccer competition and social tennis in addition to a number of employee social functions.

*Left: Minesite caterers – one from Phichit province and one from Phetchabun province.*

# OUR SOCIAL CONTRIBUTION

CONTINUED



## Safety performance

Safety in the workplace is integral to Chatree's operational and sustainability policies and the mine strives for an incident free environment for all employees and contractors. Chatree has developed appropriate policies, codes, procedures and ongoing training to help maintain an accident free work place.

All staff and contractors are required to complete the Site Safety and Environment Induction before working on the mine site. All employees are re-induced on an annual basis and undergo further training in relation to their specific occupations.

Chatree has developed a strong safety culture since it commenced construction in November 2000 with 3.9 million hours having been worked up to 30 June 2004 with only one lost time injury. For the year ended 30 June 2004, the Lost Time Injury Frequency Rate (LTIFR) was 0 compared with an industry average of 6.0 for Australian open cut mines (Minerals Council of Australia statistics).

Table 7: Safety Performance

	2004	2003	2002
Lost time injuries	0	1	0
Total recordable injuries	3	1	2
Total injuries	16	25	21
LTIFR*	0	1.1	0
TRIFR*	2.2	1.1	1.8
TIFR*	11.8	27.1	18.4

Total recordable injuries (TRI) includes all injuries but excluding first aid cases

Total injuries (TI) includes all injuries including first aid cases

\*per million hours worked

In recognition of Chatree's achievements in the area of health and safety, the operation was awarded the 'Best Occupational Health Safety and Work Environment Award 2003' for Phichit Province in June 2004.

## Occupational health

Chatree strives to measure and minimise occupational health risks at the mine site and has instituted a regular monitoring program to test noise, vibration and air quality effects on employees and the surrounding communities.

Specific testing is also carried out on employees working in certain sections of the operation including blood analysis for gold room and laboratory personnel, and radiation monitoring for some plant operators.

Chatree also carries out a range of 'fitness' for work programs for employees and in 2003 introduced random drug and alcohol testing. The testing is carried out on all permanent and contractor employees. In June 2004 the operation was awarded the 'Best Control and Prevention of Drug Problems in Phichit Province' award from the Labour Protection and Social Welfare Department in recognition of its work in this area.

## Emergency response and the local community

Kingsgate, through the Chatree mine takes a pro-active approach to managing emergencies. The mine has formed an Emergency Response Unit with representation from all areas of the minesite. The Unit trains regularly

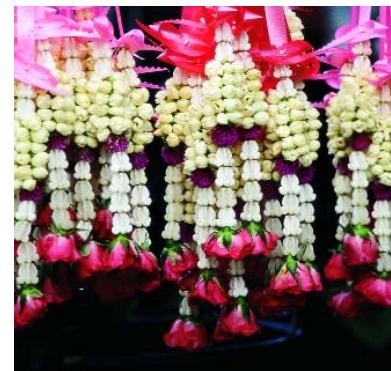
in a range of emergency procedures including fire fighting, first aid/CPR, casualty transfers, and emergency response to chemical spills.

The skills developed within the Emergency Response Team are made available to the local communities through co-ordination with the appropriate provincial authorities. Six members of the Team have attended a Public Rescuer course and received further technical training in fire control, traffic control, first-aid, patient transfer and other incident responses. As a result, they have been registered as Public Rescuers with the Phichit Province Public Rescue Service.

Public Rescuers are civilian volunteers that help the public in emergency situations such as flood, fire, road accidents or other risks. The Public Rescuers are known locally as OPPR Officers (Or Por Por Ror Officers) and are available as a valuable resource within the local community.

## Training and development

Chatree's workforce is drawn from local communities with no experience in modern mining methods. Consequently, over the past two years the mine has implemented an extensive range of training programs for its employees. The program has been enormously successful as evidenced by the safety, environmental and production statistics for the mine. Performance in all aspects of the operation has been comparable with Australian mines and is a credit to the inherent skills and diligence of the Thai people.



Above: Local flowers.  
Left: Buddhist monk at local temple.

The mine has provided basic training in all aspects of the operation but also in other areas such as risk assessment, first aid, fire fighting, chemical safety, emergency response, computers and cross cultural management. Environmental training plays an important role in securing continuous improvement. Consequently, an extensive environmental training program has been developed and implemented at the mine.

All senior Thai staff attended a training course 'Working With Internationals: Keys to Assertiveness and Accountability' which provided specific training on:

- Instructions
- Delegation
- Skills for convincing senior management
- Obstacles to communication
- Accountability
- Assertiveness in English
- Listening skills
- Giving and receiving performance feedback
- Non-verbal skills

Chatree has an Educational Assistance Program which encourages employees to take job-related courses thus developing their skills and potential for promotion, and improving their productivity. The company pays the cost of tuition, books and other fees. Chatree is currently sponsoring three employees for a Master of Business Administration, one for a Master of Computer Science and one for a Doctor of Geology.

## Community

### Culture

Chatree management encourages participation in local community events and supports a wide range of community and cultural activities. In 2004 these included:

- Songkran Festival which celebrates the traditional Thai New Year. At this time the Thai people return to their homes for family reunions and celebrations. Although this is a religious time it is also a time for celebration with gifts for parents and elders and numerous water festivals.
- National Children's Day during which Chatree donated 7,000 school packs which contained pencils, notebooks and rulers to schoolchildren from 25 schools in the Kha Chet Kuk, Tai Dong and Thap Klo areas. The mine also provided scholarships for needy students in the form of financial assistance, school uniforms and shoes.
- Father's Day during which Chatree donated blankets and clothes to adults and elderly people at Wong Thong Home, a home for elderly and homeless people in Northern Thailand.
- Loi Krathong Festival which has been observed for more than 700 years as a thanksgiving to water spirits. The Thai people traditionally make small receptacles out of banana leaves, decorate them with flowers, lit candles and joss sticks and float them on waterways and ponds after dark.

There is no river near Chatree but the operation has utilised a large storage pond that supplies water for the government plant nursery. Chatree has sponsored a festival at the nursery pond since 2001 and it has now become a popular event for local villagers.

■ Monk Leave – it is a Thai tradition that a young man spends a period of time in the monkhood generally on turning 20 or after completing his studies or before marriage. Chatree employees may take up to two weeks of paid monk leave and 120 days leave in total to undergo spiritual training.

### Community development

Chatree's activities contribute to a wide range of stakeholder's aims including business, local and national government, and community organisations. Through its community development programs, Chatree seeks to strengthen its relationships with stakeholders and introduce sustainable benefits and activities.

Chatree's community development program has a positive social impact on the local and regional community. It provides a range of opportunities for direct and indirect employment, increased access to health and education, construction of roads and water delivery infrastructure, sporting infrastructure, and financial contributions to local communities through religious centres and sporting events.

# OUR SOCIAL CONTRIBUTION

CONTINUED



Ban Dong Long water storage tank.

In calendar 2003 Chatree spent 2,509,345 Baht (\$A87,600) on a range of community activities (see Table 8).

**Table 8: Community Development Expenditure (1\$A = 28.65 Baht)**

	Baht	\$A
Education	470,035	16,400
Sport	128,100	4,500
Local government	138,528	4,800
Custom and culture	706,486	24,700
Community access (roads in villages)	195,079	6,800
Religion	817,900	28,500
Public Health	53,217	1,900
<b>Total</b>	<b>2,509,345</b>	<b>87,600</b>

Kingsgate recognises the important role of religion in the local community and provides regular donations to assist with religious programs and for up-keep of the temples.

In addition to the above activities, Chatree also supported a water supply system to Ban Dong Long (\$A57,000) (see Community Infrastructure following) and constructed a concrete pad for rice drying (\$A8,400).

Chatree's direct contribution to community, social and infrastructure development since start-up exceeds \$A240,000. The sustainability initiatives supported by these funds are shown in Figure 5.

## Community infrastructure – reliable water supplies

Fresh water is a precious resource in all parts of the world but especially in those areas that do not enjoy a reticulated supply. One of Kingsgate's sustainability aims for Chatree is to improve the reliability and quality of water supply in the local villages around the mine. Most villages do not have access to dependable supplies of clean water which is mainly obtained from surface run-off storage ponds or water bores, and resultant water quality is variable.

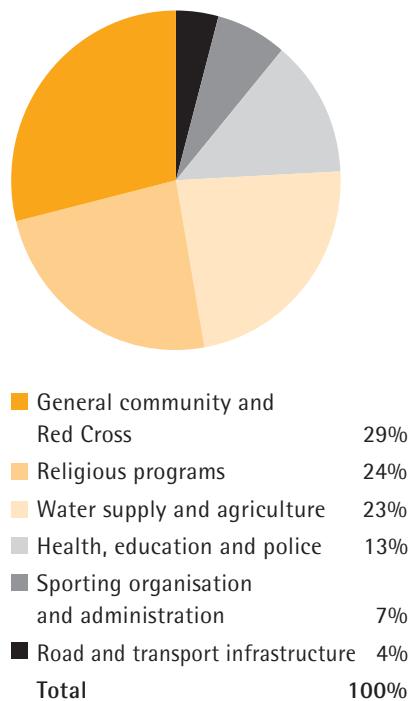
A major Kingsgate water supply initiative was the installation of a water storage tank and pumping system for the village of Ban Dong Long to the east of the mine. This was followed by the installation of water filtering and cooling machines at several schools in the vicinity of the Chatree mine.

These projects fit with Kingsgate's sustainability policy which promotes improvements to the quality of life in areas where it operates.

## Capacity building

The project contributes to capacity building at a number of levels including skilled labour, technician and professional levels at the mine, in local communities through the company's social programs and also at the government level through interaction with various levels of government. Since starting, the number of geologists has increased from 4 to 18 and they are all trained in state-of-the-art exploration techniques. Thai geologists are used to evaluate potential projects world wide.

**Figure 5: Contribution to community development since mine start-up**



# OUR ECONOMIC CONTRIBUTION



*Left: Ladies at village in the minesite area making purses using water hyacinths.*

## Economic Contribution

Chatree is located in a very dry area east of the Nan River on the border of the provinces of Phichit and Phetchabun. Most people in the Chatree vicinity are farmers who harvest only one crop per year. They are relatively poor and young people are often forced to seek employment away from home in Bangkok and other larger towns.

The mine directly employs 223 people and provides indirect employment for more than 270 in contract services in a relatively infertile region of Thailand.

**Table 9: Workforce in 2004**

### Chatree employees

Local Thai employees	165
Other Thai nationals	50
Expatriates	8
<b>Total employees</b>	<b>223</b>
Contractors	271
<b>Total workforce</b>	<b>494</b>

Kingsgate believes that mining developments should result in the sharing of benefits for all stakeholders. While contributing to the Thai economy through goods, services taxes etc, Kingsgate also seeks to promote economic independence in local communities and to assist small business.

Most opportunities are contracts with the company on mine related services but Chatree's long term aim is to diversify local enterprises beyond mining activities. Where the potential exists, we encourage and support improvements in the subsistence economy.

Since commencing operations Chatree has proactively sourced more of its goods and services from Thailand in preference to importing them from Australia and other countries. The company promotes a 'Buy Thai' policy. Examples of local business development initiatives include:

- The mine warehouse stocks 3,600 items of which 80% are sourced from Thailand. Most of the non Thai items are specialised equipment and related parts.
- Company personnel including expats rent family accommodation in local towns rather than building separate accommodation quarters which is common in many mining projects.
- Minesite catering is provided by two local contractors, one from Phichit and the other from Phetchabun (see page 14).
- In November 2002 the mine commenced bulk purchases of fire assay crucibles from Thailand's established ceramics industry at Lampang (previously large quantities of crucibles were imported).
- The mine's light vehicle fleet is predominately sourced from Thailand.
- All transport, construction and equipment hire is sourced from local companies.

96% of employees are Thai nationals

Thai employees benefit through:

- Knowledge transfer
- Technology transfer
- Training and localisation programs

# OUR ECONOMIC CONTRIBUTION

CONTINUED

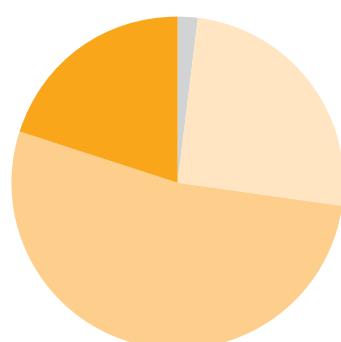


Kingsgate aims to continue stakeholder engagement and seek input from the community regarding initiatives for wealth generation. Our objective is to ensure that wealth generating opportunities created by the mine are sustainable long after decommissioning and closure.

Substantial payments are made in the form of wages, taxes, royalties, goods and services all of which have a major benefit on the local economy.

In 2004, Chatree spent \$US33.9 million on goods and services of which 20% was spent in local provinces and a further 53% in the rest of Thailand. In addition, \$US1.73 million was paid in royalties and \$US1.0 million in taxes and duties.

**Figure 6: Expenditure by region (\$USm)**



Thailand – Local provinces	6.8
Thailand – Other provinces	17.9
Australia	8.6
Other overseas	0.6
<b>Total</b>	<b>33.9</b>

## Business Performance

### *Operations*

The Chatree mine performed strongly in its second full year of operation:

- Gold production of 149,979 ounces was achieved at a cash cost of \$US135 per ounce.
- Mine production was escalated to meet increased process plant capacity and waste stripping requirements.
- Process plant upgrade was completed and is operating at above design capacity.
- The excellent safety and environmental performance continued.

### *Corporate*

**Table 10: Value added and distribution for Kingsgate (\$USM)**

Economic Value Added	Value Distribution
Gold and silver sales	59.9
Interest income	1.7
	Wages and salaries*
	2.7
	Royalties and duties*
	20.5
	Payments to suppliers*
	Reinvestment in Thailand
	- Community investment
	0.4
	- Plant and equipment
	9.5
	- Exploration and evaluation
	8.6
	Debt service / interest
	13.8
	Dividends paid to shareholders
	12.7
	Cash utilised
	(10.0)
<b>Value Added</b>	<b>61.6</b>
	<b>Value Distribution</b>
	<b>61.6</b>

\*Significant components of these distributions (all for royalties and duties) were incurred in Thailand.

# OUR CORPORATE GOVERNANCE

The Integrated Sustainability Framework developed by Kingsgate includes a governance dimension which is becoming a more commonly recognised fourth component of sustainability.

This governance dimension is broader than current corporate governance requirements (within Australia) but the sustainability framework in itself is consistent with, and indeed a contributor to, Kingsgate's overall corporate governance. Such a relationship is based on two core concepts; the first being a clearer articulation of the criteria on which decisions are made; and the second is the process by which information is made available before, during and after such decision making. Kingsgate is in the process of developing this concept further as it applies to the strategy and systems needed to implement the framework.

#### **Governance framework**

Kingsgate Consolidated Limited (the company) and the Board are committed to achieving and demonstrating the highest standards of corporate governance. An extensive review of the company's corporate governance practices was completed in light of the best practice recommendations released by the Australian Stock Exchange Corporate Governance Council in March 2003. The company's framework was largely consistent with the recommendations and exceeded them in some areas. However, a few changes were made as a result of this review and other recent governance developments.

#### **Shareholders**

Shareholders play an important part in the governance of the company by electing the Board, whose task it is to govern on their behalf. In carrying out this role, the Board recognises that shareholders must receive timely and relevant information of the highest standard. The Board oversees the protocols for investor and media relations with a view to facilitating an efficient, competitive and informed market.

#### **Policies**

Further details of the company's corporate governance and related policies are contained in the 2004 Annual Report and on the Kingsgate website ([www.kingsgate.com.au](http://www.kingsgate.com.au)).

# THE FUTURE



Thai, Akara and Chatree flags flying over Administration office at Chatree.

Chatree continues to look for opportunities to add value to the business. A major plant expansion was completed late in 2003, exploration activity has been stepped up with excellent results to date and we are formalising our relationships with local communities.

## Mine Life and Exploration

The mine's future depends on discovering more gold resources. To date Kingsgate has spent \$US15 million on exploration and is planning to spend a further \$US9 million in 2004/05.

Kingsgate believes the geology of Central Thailand is highly prospective for major occurrences of gold and copper. Consequently we continue to expand our exploration programs. In 2004 we acquired additional tenements in the region and now hold more than 1,500 sq kilometres of prospective ground. We are introducing the most advanced exploration techniques to our programs and have increased the number of exploration geologists significantly.

We are continuing near-mine exploration drilling and a revised regional exploration program is also underway. New prospects were identified adjacent to the mine and these will be further tested in 2004/05.

Progress to date has been extremely pleasing – in May 2003 we announced the first reserve estimate (402,000 oz) for Prospect A. In July 2003 we discovered an extension to the H orebody in the Tawan pit and began mining this near-surface material in the second half of 2003. In 2004 during grade control drilling of the H orebody, a separate zone of extremely high grade gold mineralization was encountered close to surface (Prospect P).

The mine life currently stands at approximately nine years following the plant expansion and an increase in reserves. We believe our exploration efforts will continue to expand reserves and resources and, in time, extend this mine life considerably.

## Conceptual sustainability models and benefits for Thailand

As a small company, Kingsgate's own knowledge and experience has grown rapidly through its involvement in Thailand. Aligned with its commitment to sustainable growth, Kingsgate is exploring new models for future development and looks forward to discussing these with the Board of Investment and other relevant Thai authorities.

On 5 July 2004, the Thailand and Australia Free Trade Agreement (FTA) was signed by Prime Ministers Dr Thaksin Shinawatra and John Howard. The FTA demonstrates the growing and improving relations between the two nations and comes into effect on 1 January 2005. The agreement is the first between Thailand and a developed nation.

Looking forward, Kingsgate anticipates further opportunities to support the initiative and entrepreneurial spirit of its Thai hosts in the Provinces of Phichit and Phetchabun.

Kingsgate's objective is to become a fully integrated member of the regional community by aligning its community relations programs with local development priorities.

Kingsgate also acknowledges government efforts to decentralise decision making and to strengthen the domestic economy at the grassroots level while welcoming foreign investment. Kingsgate believes the continuing development of Chatree helps achieve these objectives and looks forward to being a long term partner in the development of Thailand.

# SUSTAINABILITY OBJECTIVES AND TARGETS



*We are certified.*

Objective	Target for 2004	2004 Performance against Target	Target for 2005
<b>Environment and Safety</b>			
Review Environmental Management System	Review and update following plant expansion	Review completed in December 2003 and adjustments made to the Environmental Plan	Update following the recommendations of the independent audit
Certification of the Chatree Environmental Management System (EMS) under ISO 14001	Ensure the EMS is fully implemented during 2003 and accredited in 2004	EMS fully implemented in 2003 and externally accredited in December 2003.	Maintain certification through continuous improvement
Certification of the Safety Management System (SMS) under OHSAS 18001	Ensure the SMS is fully implemented during 2003 and accredited in 2004	SMS fully implemented in 2003 and externally accredited in December 2003.	Maintain certification through continuous improvement
No people hurt at work	Zero lost time injuries	Achieved. No lost time injuries	Zero lost time injuries
<b>Social and Economic Benefits</b>			
Introduce sustainability and incorporate into employee activities	Incorporate sustainability into employee job descriptions and activities	In progress	Complete
Formalise and improve community relations activities	Prepare a Community Relations plan and introduce to employees	Complete	Implement
<b>Communication</b>			
Annual Public Environmental Reporting	Publish first Public Environment Report during October 2003	Achieved and expanded to more comprehensive Sustainability Report	Produce second Public Sustainability Report by October 2004
Improve communications in local communities	Review existing communication links and introduce new initiative	Established 'message centres' in local villages	Continue to improve and implement new initiatives Carry out community survey in 2005
<b>Operations</b>			
Achieve operational production and cost targets	Produce >125,000 oz of gold at <\$US145/oz	Produced 149,979 oz at \$US135/oz	Produce >150,000 oz at <\$US165/oz
Optimise plant and throughput rates	Complete second mill expansion (grinding) on time (Q1/04) and budget. Achieve throughput rate of 1.8Mtpa following expansion	Expansion completed on time and budget Throughput of 1.8Mtpa consistently achieved	
Enhance mine life	Increase reserves and resources	Increased reserves by 259,000 oz	Increase reserves and resources

# TABLES AND DATA

**Table 1: Land Management**

Land	Area (ha)	
Mining Leases	292	
Rehabilitation (ha)	2004	Project to Date
Area of land disturbed	56.0	292.0
Area of land rehabilitated	20.1	25.2
Area of land available for rehabilitation	3.8	3.8

**Table 2: Energy Use and Greenhouse Emissions**

Energy Use	2004	2003	2002
Electrical power (MWh)	53,253	40,220	28,565
Diesel fuel – mobile sources (litres)	4,891,487	2,277,107	1,419,673
Liquid Petroleum Gas (LPG) / Propane (tonnes)	295	281	60
Explosives (tonnes)	1,123	472	N/A
CO <sub>2</sub> Emissions (tonnes)	2004	2003	2002
From power generation	55,969	42,271	30,022
From mobile equipment	13,158	6,126	3,820
From LPG	856	814*	174*
From explosives	184	77	N/A
<b>Total</b>	<b>70,167</b>	<b>49,288</b>	<b>34,016</b>

\*Adjusted from 2003 report

**Table 3: Assurance programs**

Assurance Program	Type	Business Aspect	Internal or Ext verified (I or E)
AMI Code for Env Management	Audit	Environment	E
Env Licence Compliance	Review	Statutory	I
Tailings Management System	Audit	Waste management	E
ISO 9001	Audit	Quality assurance	I & E
ISO 14001	Audit	Environment	I & E
OHSAS 18001	Audit	Occupational Health & Safety	I & E

**Table 4: Environmental Incidents**

Category	Definition	2004	2003	2002
Level 1	Low severity	2	3	0
Level 2	Minor severity (one-off occurrence)	0	0	0
Level 3	Minor severity (repeated occurrence)	0	0	0
Level 4	Medium occurrence (effects can be reversed)	0	0	0
Level 5	High severity	0	0	0

Table 5: Material Inputs and Outputs

Inputs	Outputs
<b>Water (ML)</b>	
Raw water	779
Recycled water	2,072
<b>Total water</b>	<b>2,851</b>
<b>Energy Use</b>	
Grid demand (MWh)	53,253
Diesel fuel – mobile sources (litres)	4,891,487
LPG (tonnes)	295
Explosives (tonnes)	1,123
<b>Ore</b>	
Tonnes	1,670,854
<b>Chemicals (tonnes)</b>	
Cyanide	756
Hydrochloric acid	207
Lime	3,434
Carbon	37
<b>Water (ML)</b>	
Discharge to surface waters from non-process sources	0
<b>Landfill (m³)</b>	
Landfill	500
<b>CO₂ Emissions (tonnes)</b>	
From electricity generation	55,969
From mobile sources	13,158
From LPG	856
From explosives	184
<b>Total</b>	<b>70,167</b>
<b>Products &amp; Waste (tonnes)</b>	
Gold (ounces)	149,979
Silver (ounces)	395,346
Milled tailings	1,670,854
Waste rock to surface dumps	10,300,000

# FURTHER INFORMATION

## In Sydney, Australia

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## The following are available on request:

Code of Business Conduct  
Sustainability Policy  
Environmental Policy  
Safety Policy  
Annual report  
Sustainability report  
Quarterly reports

## Kingsgate website

To access electronic versions of this  
and other Kingsgate reports, please  
visit Kingsgate's website at  
[www.kingsgate.com.au](http://www.kingsgate.com.au)