

# Annual Report

## WESTERN AUSTRALIA - MINERALS & ENERGY DEPARTMENT OF MINERALS & ENERGY WESTERN AUSTRALIA

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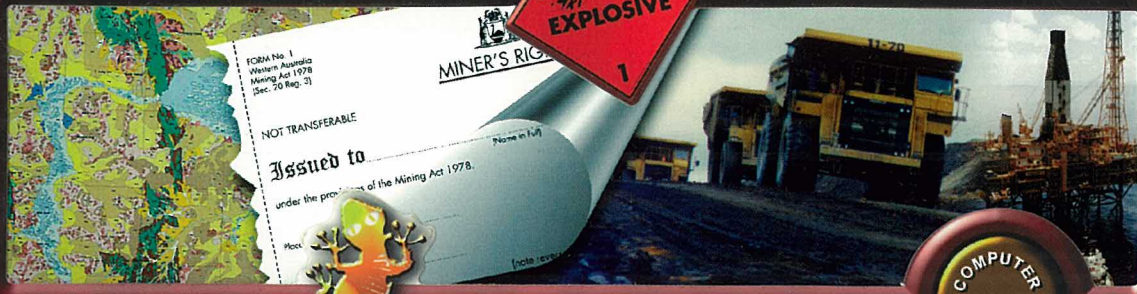
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MINERALS & PETROLEUM



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1997  
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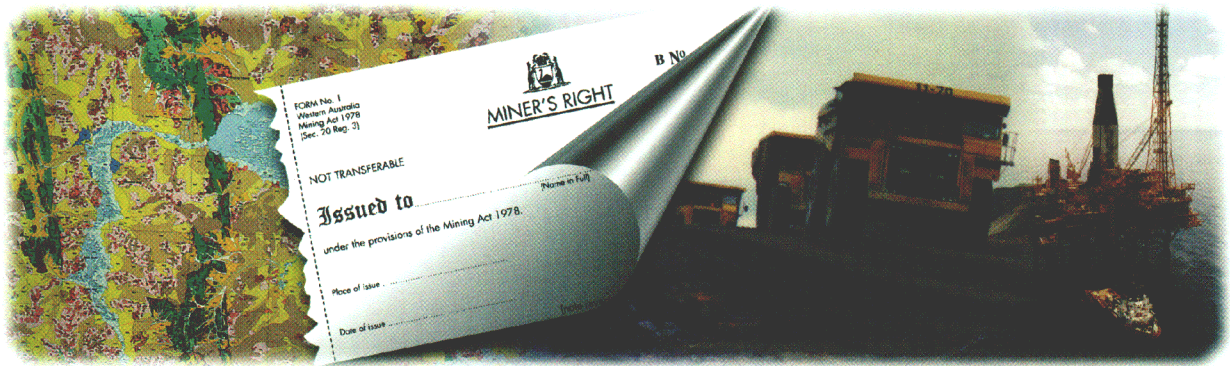
DEPARTMENT OF  
MINERALS AND ENERGY  
WESTERN AUSTRALIA

Front Cover:

The Department of Minerals and Energy's new home page. The Department recently revamped its Web site to create a new, exciting and customer-friendly way of accessing information. Like other modern businesses, the Department will use this site more and more regularly to communicate with its stakeholders. So if you haven't already, take a look at <http://www.dme.wa.gov.au> and bookmark it to get the latest information.

# Mission

To support exploration for minerals and petroleum resources in Western Australia and manage their development in the best interests of the community.



# Vision

Western Australia is the best place to explore for, develop and operate mineral and energy projects.



DEPARTMENT OF  
**MINERALS AND ENERGY**  
WESTERN AUSTRALIA

# Statement of Compliance

The Honourable Norman Moore MLC  
Minister for Mines  
Parliament House  
PERTH WA 6000

Dear Minister

In accordance with the Financial Administration and Audit Act 1985, I submit for your information and presentation to Parliament, the annual report of the Department of Minerals and Energy of the State of Western Australia, for the year ended 30 June 1997.

The annual report uses the format established in previous years, with the Department's activities described under Corporate Programs. These are set against a background of the mining and petroleum industry in 1995-96.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Lee Ranford', written in a cursive style.

Lee Ranford  
ACTING DIRECTOR GENERAL  
DEPARTMENT OF MINERALS AND ENERGY



# Contents

## Glossary

AXTAT	A computer-based accident report and statistics system
<i>Contam</i>	Departmental atmospheric contaminant exposure database
EXIS	A computer-based dial-in information system
LTIFR	Lost Time Injury Frequency Rate
MHFs	Major Hazard Facilities
<i>Minehealth</i>	A computerised data base of data from employees' health records
MiTis	A computer-based mineral titles system
MINet	A computerised data base of mining activity
MINDEX	A computer-based Mine and Mineral Deposit Enquiry System
MODIS	Mining Operations Division Information System
MPL	Mineral Processing Laboratory
NTA	Native Title Act
NNTT	National Native Title Tribunal
NOI	Notices of Intent
PEP	Performance Enhancement Program
PETMAN	Electronic title management system for petroleum tenements
SPL	Special Prospecting Licence
Tendex	Tenement Index System (will be eventually replaced by MiTiS)
<i>Tengraph</i> <sup>®</sup>	Departmental electronic mining titles mapping system
WAMEX	Western Australian Mineral Exploration database
WAPEX	Western Australian Petroleum Exploration database
WAPIMS	Western Australian Petroleum Information Management System

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# Report of the Director General

The 1996-97 financial year posed significant challenges for all Department programs and it is pleasing to record successful outcomes in most areas. Land access remained a key issue with native title again in the spotlight. In August 1996, the National Native Title Tribunal ruled that the State had failed to negotiate in good faith in relation to the right to negotiate process under the Native Title Act (NTA). This resulted in some 1000 mining tenement applications being put on hold while a new negotiating protocol was established. The High Court's Wik decision in December 1996 further complicated the native title issue and precipitated a further round of consultations and discussions about possible amendments to the NTA to make it workable. Despite these difficulties, some 2280 applications for prospecting and exploration licences were granted after being cleared through the NTA procedures.

During the year, work continued on the development of the Department's new electronic mineral titles system known as MiTiS. Some delays have occurred however it is planned to have the system up and running towards the end of the 1997 calendar year. MiTiS will replace the current manual system used to record details of mineral titles and will provide the information faster and in an easier form for our customers.

The Department has progressed two Memoranda of Understanding (MOUs) throughout the year to ensure continued access to the State's minerals. One involves the Ministry for Planning and will see improved consultation between the Western Australia Planning Commission and the Department by formalising the integration of mineral exploration, mining and land-use planning activities. The other is with the Department of Environmental Protection and applies to mineral exploration and mining in the marine environment. Both these arrangements should be finalised in 1997.

provided an opportunity to reinforce the importance of increasing community confidence in the explosives industry.

On a less positive note, it was necessary during the year for the Department to instruct the Crown Solicitor's Office to charge three companies and an individual over the death of a contractor while he was working on the Goldfields Gas Transmission pipeline. The contractor was asphyxiated during an ice plugging operation on the pipeline, about 100km northwest of Paraburdoo. The charges were laid under the Petroleum Pipelines Act 1969.

In 1996 the decision was taken to raise the profile of the Department's environmental excellence awards and change the name to the Golden Gecko Awards for Environmental Excellence. After assessing twice as many nominations as in the previous year, the selection committee recommended three excellence awards and five commendations which were presented by Minister Norman Moore at a ceremony in August, 1997. The excellence awards went to the Kings Park and Botanic Garden Plant Science Laboratory, prospector Lindsay Stockdale and BHP Petroleum. Commendations were awarded to Australian Resources (Arimco Mining), Robe River Iron Associates, Argyle Diamond Mines, Mt Morgans Gold Mine and a combined project by Resolute Limited, Titan Resources NL and *ecologia* Environmental Consultants.

The Department's funding was boosted in the 1997-98 budget by an additional \$29 million over the next four years. Around \$20 million will be spent on increased geoscience mapping and making exploration data more readily available. Another \$9 million has been allocated to provide new drill core storage facilities to be built over the next four years in Perth and Kalgoorlie.

## The Department continued activities designed to keep Western Australia as a world leader in occupational safety and health in the mining industry.

The Department continued activities designed to keep Western Australia as a world leader in occupational safety and health in the mining industry. Department staff have continued to work closely with industry and union representatives through the Mines Occupational Safety and Health Advisory Board. The Department also hosted the third international conference of Chief Inspectors for Explosives in April 1997. It was the first time this international conference had been held in Australia and it

As part of its 1997-98 budget the State Government announced a gold royalty which has implications for the Department and mining industry. Gold is currently the only mineral in Western Australia which is not subject to a royalty. The Government has indicated it proposes to introduce the royalty in two stages with the first stage of 1.25% commencing in July 1998 and the second stage of another 1.25% to apply after January 2000 if the average gold price exceeds \$450 over any quarter. The Department



GOLDEN GECKO  
Awards for Environmental Excellence

*Mr Lee Ranford, Acting Director General addresses guests at the 1997 Golden Gecko Awards for Environmental Excellence. Presentations were made by the Hon. Norman Moore, MLC.*

will have three additional staff to collect the new gold royalty.

It was a positive year all round for the petroleum sector with the latest statistics showing that, for the second year running, petroleum is the State's most valuable commodity. New production rate records were set for oil, gas and condensate with the value of output in 1996 rising by 24 per cent to reach \$4,693 million. Western Australia is now clearly Australia's premier petroleum-producing State and the increased activity has put considerable pressure on the Department's Petroleum Operations Division.

is currently the only Government Department in Australia which has a performance-based pay system throughout the organisation.

An important initiative during the year was the establishment of the Women's Voices Project. The aim of the participants is to make the Department's management aware of problems experienced by women members of staff and have policies implemented to overcome them. The Department is a male-dominated organisation and the Women's Voices group provides one avenue of working towards equal opportunity for all staff.

## In 1996 the decision was taken to raise the profile of the Department's environmental excellence awards and change the name to the Golden Gecko Awards for Environmental Excellence.

A highlight of the year for many in the Department was the official recognition given to Dr Robert (Bob) Becher for his contribution to minerals research in Western Australia. The Becher process, developed by Dr Becher when he worked for the Department, is used to produce synthetic rutile from ilmenite. The Department's Mineral Processing Laboratory at Waterford was officially named the R G Becher Building by the then Minister, Kevin Minson, in November 1996 at a function attended by Dr Becher and his family.

Organisational changes continued throughout the year as divisions adjusted to the stratified systems theory of management introduced by former Director General Ken Perry. Ken surprised everyone with his announcement in March 1997 that he was leaving the Department to move back to private enterprise after two years in Government. As a result of the changes he introduced, the Department

Finally I congratulate staff for their excellent effort last year and their contributions to the outcomes outlined above. We are still adapting to the new systems which have been introduced in recent years but I am sure we will overcome the various obstacles with professional and positive attitudes. Until the new Director General is appointed, I look forward to leading a team that I know will meet all the challenges we will face to ensure that Western Australia is the best place to explore for, develop and operate mineral and energy projects.

L Ranford  
ACTING DIRECTOR GENERAL  
29 August 1997

# Department Summary

## **Origins**

In 1892-93, gold fever swept over Western Australia as diggers and dealers rushed to the Eastern Goldfields to try and strike it rich. In attempting to handle this huge increase in demand for services and regulation, the Government of the day established the Department of Mines on 1 January 1894. Originally formed by combining the Lands Department with the Geological Survey of Western Australia, the main functions related to mine worker safety, geology and secure tenure. Later, the Department expanded to include what are now known as the Explosives and Dangerous Goods Division, Chemistry Centre, Mineral Processing Laboratory and Petroleum Operations Division.

The name was changed to the Department of Minerals and Energy on 1 July 1992, however the responsible Minister has retained the title Minister for Mines.

## **Mission**

To support exploration for minerals and petroleum resources in Western Australia and manage their development in the best interests of the community.

## **Vision**

Western Australia is the best place to explore for, develop and operate mineral and energy projects.

## **Role of the Department**

The Department has two main programs:

1. To ensure that the State's mineral, petroleum and dangerous goods industry sectors are managed for the benefit of the people of Western Australia; and

2. To increase the rate of discovery and development of the State's mineral and petroleum resources through the provision of comprehensive information about the geology and the mineral and petroleum resources of Western Australia, and of specialised mineral and processing research and testing facilities.

The Department currently administers 15 Acts under the Western Australian Parliament including the Mining Act, Mines Safety and Inspection Act, Petroleum Act, Petroleum (Submerged) Act, and Explosives and Dangerous Goods Act.

## **Financial outcome**

During 1996-97 the Department collected \$617 million in royalties, lease rents, taxes, licences and other revenues. Of this amount, \$17 million was paid to the Commonwealth for its share of royalties received from petroleum production in Commonwealth waters.

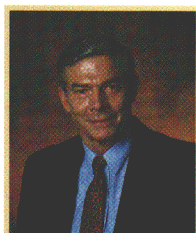
Recurrent expenditure incurred by the Department during 1996-97 was \$67.9 million, while \$1.78 million was spent on capital costs.

## **Our people**

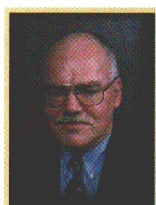
There was a 17.6 per cent turnover of permanent staff during 1996-97. A change in reporting resulted in the 1996-97 figures being based on the number of employees rather than Full Time Equivalent (FTEs). The Department had an average of 625 employees during the 1996-97 financial year, with an average of 541 permanent and 84 contract staff. At June 1996 there were 578 FTEs. Because of the different reporting styles it is not appropriate to compare these two figures. See appendix 4 for the names of Departmental staff.



## Directorate Responsibilities

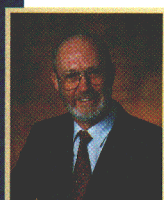


Lee Ranford  
**Acting Director General**



Bill Phillips - Acting Assistant Director General  
**Policy and Planning**

Economic policy  
Corporate planning and review  
Corporate communications  
Land access  
Mineral and petroleum royalties



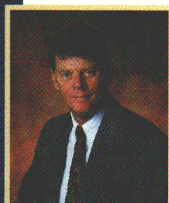
Colin Branch - Assistant Director General  
**Corporate Services**

Human resources  
Finance and administration  
Computing and information  
Internal audit  
Asset management



Jim Torlach - Director  
**Mining Operations Division**

Mining occupational health and safety  
Mining environmental management



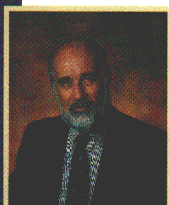
Roy Burton - Acting Director  
**Mineral Titles Division**

Mineral title registration and performance  
Warden's Court  
Mining information services



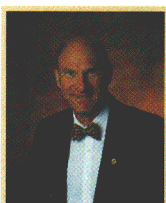
Ian Fraser - Director  
**Petroleum Operations Division**

Petroleum title registration and performance  
Petroleum exploration and production  
Petroleum safety  
Petroleum environmental management



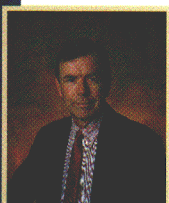
Pietro Guj - Director  
**Geological Survey Division**

Regional geoscience mapping  
Mineral and petroleum resources  
Mineral and petroleum exploration data  
Geotechnical services



Ken Price - Director  
**Explosives and Dangerous Goods Division**

Public safety, transport, storage  
Major hazards risk assessment



Tony Bagshaw - General Manager  
**Mineral Processing Laboratory**

Mineral processing testwork  
Research and development  
Consulting and advisory services

# Changes to programs

There were several significant changes made to the Department's program management structure from the 1995-96 financial year to 1996-97. They are outlined in the following table.

<b>1995-96 Program Management Structure</b>	<b>Impact of changes on the 1996-97 Program Management Structure</b>	<b>1996-97 Program Management Structure</b>
1.0 Mineral Resources Management	Amalgamated with 'Petroleum Resources Management' Program and retitled 'Industry and Resources Management' Program (1.0)	1.0 Industry and Resources Management
1.1 Mineral Titles	No change	1.1 Mineral Titles
1.2 Mineral Industry Safety and Environmental Management	Retitled 'Mining Operations' sub-program (1.2)	1.2 Mining Operations
1.3 Mineral Royalties	Amalgamated with 'Petroleum Royalties' sub-program and retitled 'Mineral and Petroleum Royalties' sub-program (1.4)	1.3 Petroleum Industry Management
2.0 Petroleum Resources Management	Amalgamated with 'Mineral Resources Management' Program and retitled 'Industry and Resources Management' Program (1.0)	1.4 Mineral and Petroleum Royalties
2.1 Petroleum Resources and Tenure	Amalgamated with 'Petroleum Industry Safety and Environmental Management' sub-program and both retitled 'Petroleum Industry Management' sub-program (1.3)	1.5 Dangerous Goods Management
2.2 Petroleum Industry Safety and Environmental Management	Amalgamated with 'Petroleum Resources and Tenure' sub-program and both retitled 'Petroleum Industry Management' sub-program (1.3)	2.0 Industry Support
2.3 Petroleum Royalties	Amalgamated with 'Mineral Royalties' sub-program (1.4)	2.1 Geological Survey
3.0 Geology and Resource Information	Retitled 'Industry Support' Program (2.0)	2.2 Mineral Processing Laboratory
3.1 Regional Geoscience Mapping and Exploration Support	Retitled 'Geological Survey' sub-program (2.1)	
3.2 Groundwater Resources	Transferred to Water and Rivers Commission on 1 January 1996	
4.0 Dangerous Goods Management	Included as a sub-program in 'Industry and Resources Management' Program (1.5)	
	'Mineral Processing Laboratory' transferred from Chemistry Centre on 1 July 1996 (2.2)	

# Features

of 1996-97

## Impact of native title

Three significant decisions during the year, one each from the National Native Title Tribunal, High Court of Australia and Federal Court of Australia, had a detrimental impact on the number of tenements that could be granted under the Mining Act 1978. As a result of this there was a 74 per cent reduction in mining leases granted, with a fall from 611 in 1995-96 to 159 in 1996-97. Despite native title impacts, new title applications increased by 542 from 1995-96, taking the total for 1996-97 to 5545 which is comparable to the number received in the early 1990s before native title became an issue.

## Mining safety and environment

The New Mines Safety Inspection Act and Regulations, which came into effect in 1995-96, has seen the Department introduce audit systems in both occupational safety and environmental management. The Department's environmental awards were raised in profile and renamed the Golden Gecko Awards for Environmental Excellence.

## Petroleum production

For the second year running petroleum was the State's most valuable resource. The petroleum sector is the State's first resource industry whose annual value of production is more than A\$4,000 million.

## Petroleum prosecutions

Three companies and an individual were charged during the year under the Petroleum Pipelines Act 1969 over the death of a contractor while he was working on the Goldfields Gas Transmission pipeline.

## Royalties

Mineral and petroleum royalties collected for the State and Commonwealth Governments increased from \$542.9 million in 1995-96 to \$667.9 million in 1996-97.

## Explosives and dangerous goods

The Department hosted the 3rd International and 27th Australasian Conference of Chief Inspectors of Explosives, which attracted delegates from Europe, North America, South East Asia and almost all Australian States. 1996-97 saw the continuation of the downward trends in accident numbers over the previous five years.

## Geoscience maps and publications

In all, 22 maps were published, comprising 16 1:100,000 scale geological maps and six maps at other scales; three GIS regolith/geochemical packages; 25 bulletins, reports, records and explanatory notes; two aeromagnetic/radiometric survey data packages; and two gravity survey packages.

## Mineral processing research

A unique collaboration in the field of minerals research was formalised in November 1996 between the Mineral Processing Laboratory, the CSIRO Division of Minerals and Curtin University of Technology.

### *Vale Dr Becher*

*After the 1996-97 Annual Report was written, the Department was saddened by the news of the death of Dr R G (Bob) Becher who is mentioned several times in the report. His valuable scientific contribution is acknowledged and deepest sympathy offered to his widow Edna and their family.*

# Summary

## of major agency level outcomes/outputs

Output Based Management is an activity-based (output) information approach which aims to help the Department achieve the outcomes desired for the community. It is the next step forward from program management and it complements initiatives such as accrual accounting, contestability of service provision, and identification of full activity-based costs.

The Department has used programs in this annual report but aims to move towards the Western Australian Treasury's output-based reporting style in next year's annual report. In line with this, the Department's 1997-98 outcomes and output groups are identified below.

### Outcomes:

- Increased mineral and petroleum exploration and development activity and effectiveness;
- Improved safety and environmental management performance in Western Australian mineral and petroleum exploration, development and production operations;
- Increased community returns including royalty payments by Western Australian mineral and petroleum producers;
- Improved public safety and community confidence with respect to transport and storage of dangerous goods.

### Output groups:

- Industry and Resources Management;
- Geoscience and Exploration Information Services;
- Mineral Processing Laboratory Services.

# Significant

## issues and trends

- Land access continued to be the predominant issue affecting mineral and petroleum exploration and development. Compliance with the Commonwealth Native Title Act 1993 increased Government administrative costs and delayed the issue of mineral and petroleum titles. Urban expansion and regional planning also presented a growing threat to access for exploration and mining in the south west of the State.
- Industry expansion, including increased underground operations and contractor activity, combined with increasing community concerns about occupational health, safety and environmental management practices, provided a challenging environment for Departmental staff responsible for regulation of the industry. The move towards a co-regulatory approach and continued dismantling of prescriptive legislation required a co-operative government/industry approach to ensure continued improvement in industry performance.
- In relation to dangerous goods there was continued movement towards uniform national standards for storage and transport, and an increased emphasis on a co-regulatory, third party audit approach. There were also increasing demands from the public for more involvement in the decision making process.
- Uncertainty surrounding the granting of titles as a result of the Commonwealth Native Title Act 1993 and more recent court rulings resulted in the diversion of some mineral exploration funds away from prospective 'greenfields' areas in Western Australia.
- About 70 per cent of the exploration in Western Australia has been directed towards the search for gold in recent times. Continuation of this high level of gold exploration will only be possible if the gold price is maintained at 1996-97 levels.
- The level of offshore oil and gas exploration and development activities was maintained but the level of onshore activity dropped to historically low levels. This was caused by rationalisation within the industry, concerns over land rights and perceptions of low prospectivity.
- Increased industry interest in exploiting opportunities for the downstream processing of mineral resources is expected to continue, particularly for iron, nickel and base metals, leading to an increased demand for a range of metallurgical investigations and testwork. There is an increasing degree of collaboration between government, university and commercial metallurgical laboratories to provide specialised services to meet this demand.



# Industry

## Production in 1996-97

The value of mineral and energy production increased by seven per cent in 1996-97 to reach \$16.4 billion. The key contributor to this growth was petroleum, which became the first Western Australian resource sector to attain the status of a five billion dollar industry. It is salient that little over 10 years ago, in 1985-86 the value of production of the entire State's mineral and energy industry was only \$5.3 billion.

### **Petroleum**

The State's petroleum industry increased its value of production in 1996-97 by 23 per cent, or almost a billion dollars, to reach a total value of more than \$5 billion. This represented more than 30 per cent of the State's total value of mineral and petroleum output. Petroleum, already the State's most valuable resource sector, set new annual production rate records for oil, gas and condensate. Western Australia is now the nation's premier petroleum producer, accounting for about half of Australia's total crude oil, condensate and gas production.

Crude oil production, worth an estimated \$1,899 million, was the most significant product. Its value of output was up around 24 per cent. This large increase was partly attributable to the first full year's production from the North West Shelf Project's Wanaea and Cossack oilfields. Importantly though, Western Australian producers also received significantly higher average oil prices in 1996-97 as world oil markets reached their highest prices in six years. This played an important role in also raising the value of LNG production to more than \$1.5 billion.

Higher oil prices, in conjunction with greater output from the North West Shelf Project, also boosted the value of condensate production by a significant 38 per cent to reach \$943 million.

The value of natural gas production increased 18 per cent in 1996-97 to \$535 million. This was chiefly due to production from the East Spar subsea gas-gathering system towards the end of 1996. East Spar is one of several gas fields now supplying the Goldfields Gas Pipeline which saw gas deliveries into Kalgoorlie start in October 1996.

Also in 1996-97 was the first full year's production from Woodside Petroleum's liquefied petroleum gas (LPG) plant. In 1996-97 the plant produced 395,000 tonnes of LPG worth \$115 million.

### **Gold**

Gold output continued to grow, increasing by a strong 12 per cent to reach 230 tonnes in 1996-97. This accounted for more than three quarters of Australia's total gold production. In addition to large increases from existing

producers such as Golden Mile, Plutonic and Granny Smith, production was boosted with the first full year's output from the Nimary and Jundee operations. The year also saw production start from the new Dalgaranga and Sunrise Dam projects.

Despite tonnage increases, the value of production, at \$3.4 billion, was barely up one per cent. This was chiefly due to low world gold prices which averaged US\$364/oz over 1996-97, about seven per cent down on the previous year. Prices were weighed down due to ongoing enormous supplies and speculative activity relating to central bank sales. For Australian producers, weak global prices were exacerbated by an appreciation in the Australian currency which translated to an Australian dollar denominated gold price being on average 10 per cent down on the previous year.

### **Iron Ore**

Iron ore output of 141 million tonnes worth \$3.2 billion in 1996-97 represented an increase in both quantity and value compared to the previous year. Output was up six per cent despite a lacklustre Japanese economy and Japanese steel manufacturers being buffeted by a strong yen. Value of production was up by eight per cent thanks to higher prices. Unfortunately, producers were unable to realise the full potential of more favourable prices due to the appreciation in Australian currency.

Several new projects are currently either committed or under consideration including moves towards downstream processing in the form of direct reduced iron (DRI). Significantly, BHP continued its construction of a DRI plant in Port Hedland with commissioning planned to start in late 1998. This will be the first downstream iron ore processing facility to come on-line out of several currently being considered in Western Australia.

### **Alumina**

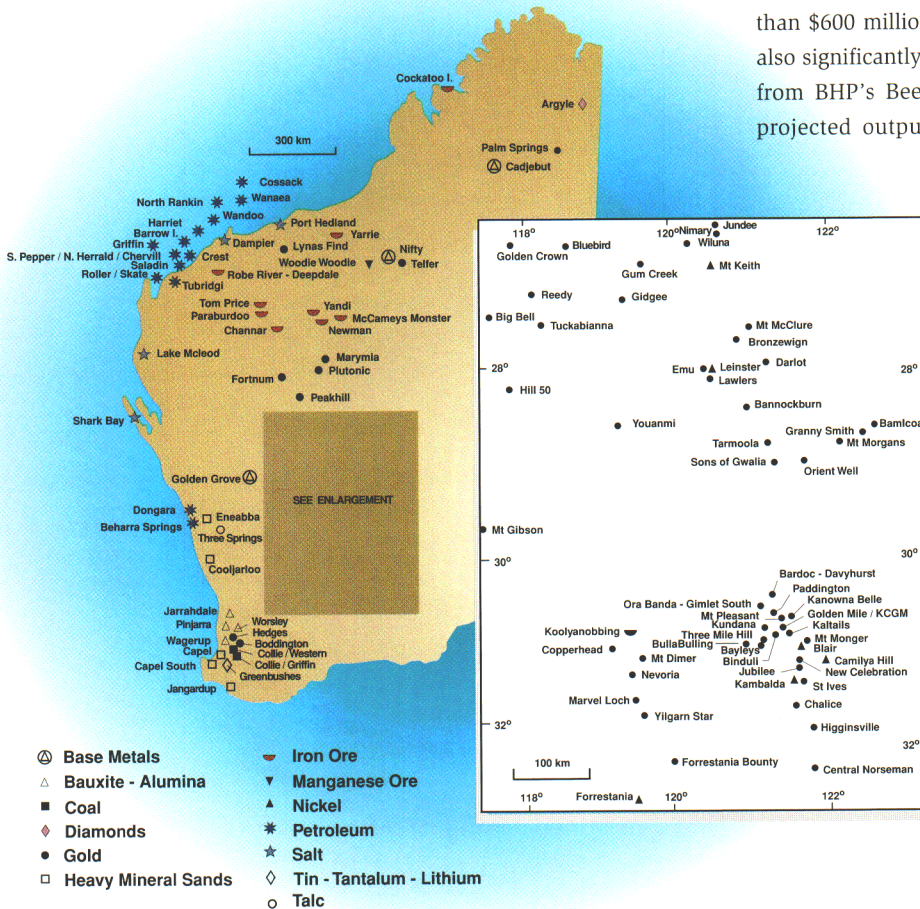
The State's alumina output increased by around 1.5 per cent to reach 8.3 million tonnes. Average contract prices received by Australian producers in 1996-97 were up by around three per cent on the previous year. Total value of production was therefore higher by two per cent to reach \$2 billion. Again, this value could have been greater had it not been for the offsetting effect of an appreciated Australian currency in 1996-97.

The alumina market was highlighted by downward pressure on the world spot price which emanated from increased capacity as producers began to restart projects which were mothballed by the memorandum of understanding reached between world producers over two and a half years ago.

## Industry Production in 1996-97 (cont.)

### Major Mineral and Petroleum Projects in Western Australia

With and Annual Value of Production in excess of \$10 million



dioxide prices falling to their lowest level in eight years at the end of 1996. However, because of lags in titanium dioxide price movements flowing through to the heavy mineral sands market and long term price contracts, the State's total value of sales grew by three per cent to more than \$600 million. The State's production capacity was also significantly augmented with the start of production from BHP's Beenup titanium minerals mine. With a projected output of 600,000 tonnes per annum, it is destined to be one of Western Australia's biggest producers of heavy mineral sands.

### Diamonds

At 53 million carats, the volume of diamonds sold from Western Australian was up a significant 57 per cent. But because of lower prices, the value of sales was down 25 per cent to \$396 million. All production emanated solely from the Argyle operation. The increase in sales volume was mainly due to aggressive marketing by Argyle Diamond Mines in its first year of selling diamonds directly to the market. Thanks to aggressive pricing strategies, the market has continued to support the Argyle product and it is hoped by Argyle that sales will further expand.

### Nickel

Despite nickel output climbing 10 per cent to 114,000 tonnes in matte, metal and concentrate products, value of production fell more than four per cent to a little more than \$1 billion. This reflected a year of weaker prices, compounded by the rise in the Australian dollar. After rising over the previous two years, the price on average fell six per cent in 1996-97. Nevertheless, nickel is now the fifth State minerals/energy sector to record a value of production in excess of \$1 billion.

Higher output from WMC's Leinster operation and expanded Mt Keith project, together with improvements at the Kwinana nickel refinery, were the most significant contributors to the increase in nickel production.

### Heavy Mineral Sands

Mineral sands continued to experience a solid recovery, with higher prices over the year. This was despite titanium

### Other Minerals

Poor copper and lead prices, combined with a drop in zinc and lead production resulted in an estimated five per cent fall in the value of the State's base metal production in 1996-97 to around \$146 million.

Despite production starting from Griffin Coal Mining's Ewington II open cut project, coal output dropped, with volumes affected to some degree by industrial unrest towards the end of 1996-97. At 304,000 tonnes, manganese production was also down by 12 per cent.

Salt production was slightly up by one per cent to reach 7.5 million tonnes, but poor prices saw the total value of that production remain almost static at \$154 million. Notably, the State's biggest salt producer, Dampier Salt Ltd, started plans to diversify into gypsum production at its Lake MacLeod operation.



# Program One

## Industry and Resources Management

recurrent expenditure: \$22.2 million  
corporate service costs: \$8.5 million  
capital expenditure: \$1.2 million  
total expenditure: \$32 million  
people employed under this program: 294

### Major achievements

Improved level of service to industry and enhanced capacity of the State to issue timely and secure mineral and petroleum titles by:

- providing on-line access to *Tengraph*®, a computer system to graphically display tenement information, and developing a computer-based Mineral Titles System (MiTis) that will replace the manual registers and provide descriptive and graphical title information. MiTis will be implemented in late 1997;
- changing procedures for processing applications for mineral and petroleum titles, and liaising closely with industry to facilitate processing affected by Native Title Act procedures; and
- starting action to consolidate petroleum legislation into a single Act. This involves incorporating pipeline requirements within the Petroleum Act 1967; extending the Petroleum Act 1967 to the outer limit of coastal waters; and repealing the Petroleum Pipelines Act 1969 and the Petroleum (Submerged Lands) Act 1982.

Enhanced ability of industry operators and departmental officers to improve safety and environmental management processes by:

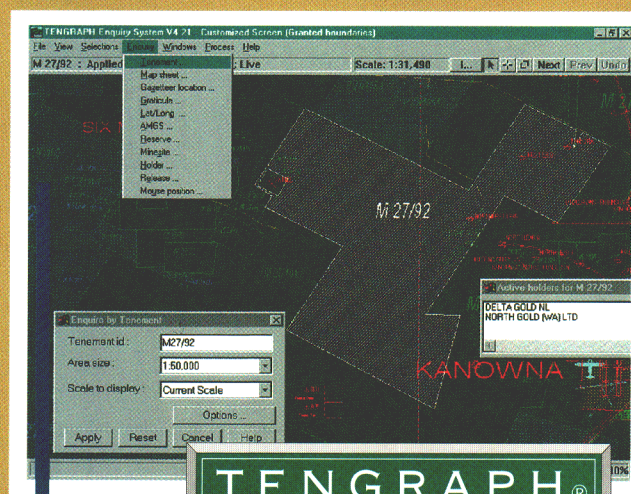
- implementing a Mining Information Network (MINet) which provides direct, secure access by companies and Departmental mines inspectors to a comprehensive mine safety and accident database, audit procedures and results, legislation, standards and other safety information;
- developing internal and external guidelines for safety audit procedures, performing a series of safety management and high-impact function audits and publishing audit results through MINet;
- drafting a new Petroleum Occupational Health and Safety Act; and
- establishing the environmental status of all operating mine tailing storage facilities containing cyanide.

Greater community confidence in safety because of effective regulation of the storage, handling and transport of dangerous goods by:

**Objective:** To ensure the State's mineral, petroleum and dangerous goods industry sectors are managed for the benefit of the people of Western Australia.

**Description:** The program aims to ensure that mineral and petroleum explorers have access to land; explorers and producers have secure titles on which to base their investments; exploration, development, mining and production activities are conducted with high and improving standards of worker safety, with due care for their impact on the environment and with regard for alternative or subsequent land uses; the community receives a fair return from the extraction of its mineral and petroleum resources; and the community is assured of its safety from the storage, handling and transport of explosives and dangerous goods.

- increasing the number of third party auditors accredited to review licence proposals for the transport and storage of dangerous goods; and
- progressing the incorporation of the 6th Edition of the Australian Dangerous Goods Code into Western Australia's dangerous goods legislation.



Registered users will be able to access valuable computer database information either through the Internet or by direct dial to Department centres.

Systems such as *Tengraph* will provide users with up-to-date mining tenement information with the convenience to create and print their own maps from office or home.

# Key PERFORMANCE Indicators

## Program One - Industry and Resources Management

*Objective: To ensure that the State's mineral, petroleum and dangerous goods industry sectors are managed for the benefit of the people of Western Australia.*

### Industry context

Mineral and petroleum exploration and development activities are dependent on a number of factors, including world commodity prices and Commonwealth and State fiscal, regulatory and land access policies. The level of control or influence the Department has over these driving factors varies considerably. The Department's initiatives are designed to respond to changes in these external factors and to contribute to a climate in which the industry sectors continue to be of significant benefit to the State. Industry activity is, therefore, a measure of the industry's response to a variety of influences, to which the Department makes a contribution.

The level of exploration activity is also a lead indicator for the future contribution of the petroleum and mineral industry sectors to the State's economy. Exploration activity is a precursor to the discovery of resources (inventory) and, potentially, their subsequent development and sale. If the industry is to continue to grow and contribute to the State, exploration activity must continue.

### Indicator: Exploration activity

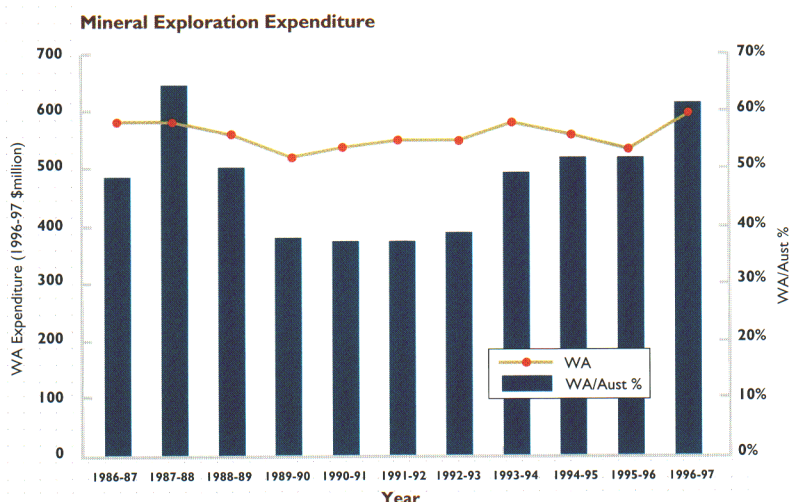
Measure: **Expenditure on mineral exploration in Western Australia.**

Description: Estimated expenditure on mineral exploration in the State and the proportion this represents of Australia-wide exploration expenditure.

Result:

Comment:

Total (estimate) mineral exploration expenditure in WA has continued to rise from 1986 and increase in 1996-97 to about \$600 million, 75% of which is for gold. This represents an increase to 58 per cent of total exploration expenditure in Australia but there are indications that there is increasing investment by Australian companies overseas and it will be difficult to continue to attract the same level of exploration commitment to WA in the future.



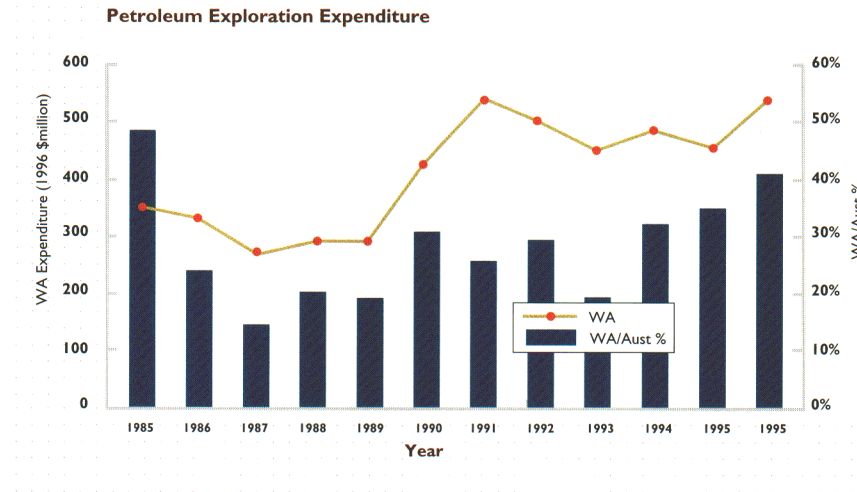


Measure: **Expenditure on petroleum exploration in Western Australia.**

Description: Expenditure on petroleum exploration in the State and the proportion this represents on Australia-wide exploration expenditure.

Result:

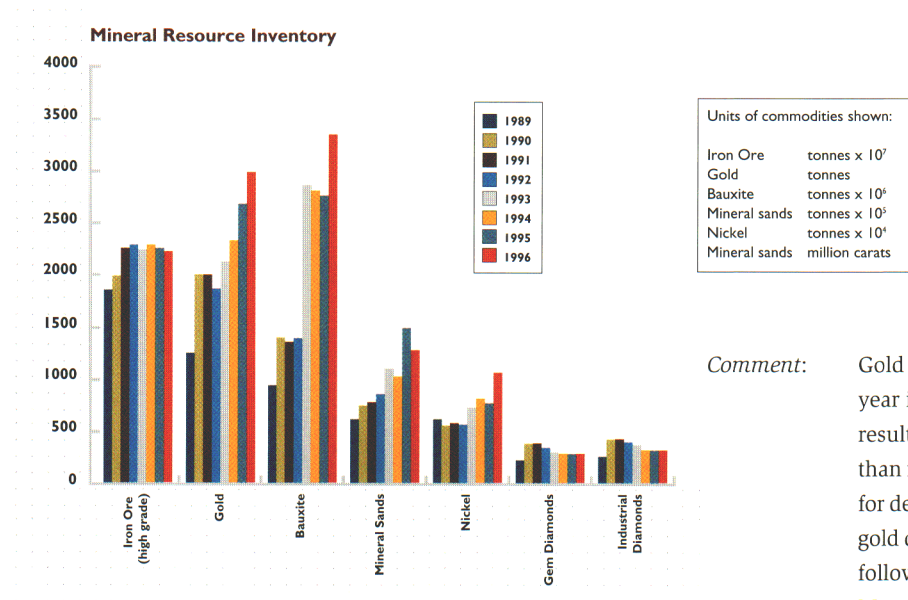
Comment: Exploration expenditure in 1996 was higher than in the previous year, at an estimated \$419 million, and had climbed to an estimated 53 per cent of total expenditure in Australia.



Measure: **Inventory of mineral resources**

Description: Measured and indicated resources at 31 December 1996 for selected commodities.

Result:



Comment: Gold resources have increased for the fourth year in succession, however, this is largely the result of extensions to known ore bodies rather than from new discoveries. The trend has been for deeper drilling on mining leases with known gold deposits. Nickel resources have increased, following detailed work at deposits including Murrin Murrin, Bulong, Silver and Silver Swan. The volume of bauxite and mineral sands resources have changed due to recent re-evaluations.

## Key Performance Indicators - Program One (cont.)

**Measure:** Inventory of petroleum reserves

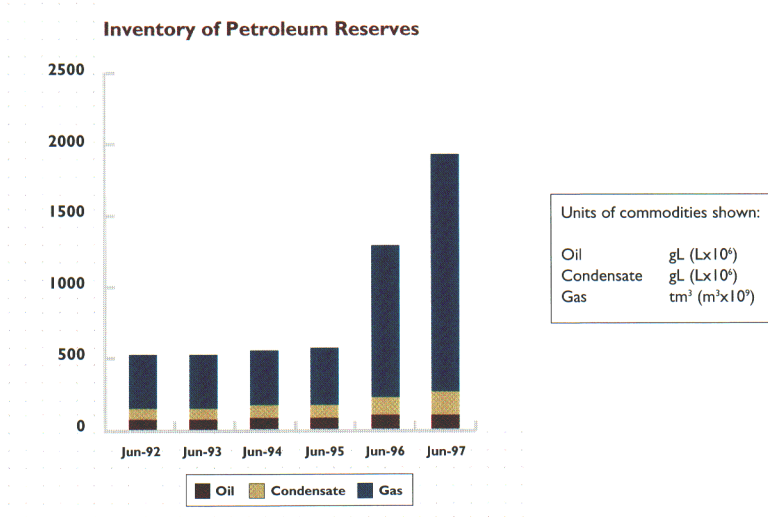
**Description:** Reserves as at 30 June 1997 at the 50 per cent probability level.

**Result:**

**Comment:**

For reserves to remain static while fields are in production, the rate of field discovery or extension must keep pace with the annual rate of production. Current WA production rates are approximately 25,500 kilolitres of oil per day, 19,000 kilolitres of condensate per day and 64 million cubic metres of gas per day.

The reserve inventory has increased this year with the addition of new fields, including the Hermes oil field and the Capella, Lambert Deep, Searipple and Perseus gas fields.



# Sub Program 1.1

## Mineral Titles

Recurrent Expenditure: \$10.6 million  
 Corporate Services Costs: \$5.2 million  
 Capital Expenditure: \$584,840  
 Total Expenditure: \$16.5 million

### Tenure

Native title claims significantly impacted on mineral titles in 1996-97 with a 74 per cent reduction in mining leases granted. The drop from 611 in 1995-96 to 159 in 1996-97 was largely attributable to a decision of the National Native Title Tribunal in August on negotiating in good faith in relation to a mining lease application submitted to the Tribunal for determination (refer to the Native Title section in this sub-program under Land Access). This was compounded by the need for lease applicants to negotiate and reach agreement with the claimants of multiple native title claims which affect most tenement applications.

A 44 per cent increase in the total number of applications awaiting determination from 4556 to 6554, impacted on the Department's ability to meet its objectives. Other notable factors were the majority of exploration licence holders asking for exemption from compulsory drop-off requirements to provide for continuity of title, enabling exploration to be carried out over areas applied as mining leases; and the citing of associated native title issues in an increasing number of requests for part exemption from expenditure commitments.

These factors affected title grants which fell from 3366 in 1995-96 to 2540 grants this financial year.

In contrast to these falls, there was an increase of 542 new title applications from 1995-96, taking the total for 1996-97 to 5545 which was comparable to the numbers received in the early 1990s before native title became an issue. At the same time the total area held under granted title increased from 41.1 million hectares to 41.5 million hectares. Both figures reflected the continued strong growth in exploration in the State which has not been affected by native title to the same extent as mining leases.

### Titles submitted to Native Title Act process

A total of 3782 tenement applications were submitted to the 'future act' process of the Native Title Act in the year. Of these the expedited procedure was claimed for 3189 exploration and prospecting titles. Objections were lodged against 393 of these applications and, while objections

**Objective:** To provide timely, secure and equitable titles and related information to facilitate mineral exploration and development.

**Description:** Accurate and up-to-date information on land status is provided, and systems are maintained to ensure the expeditious processing and determining of title applications. A public plans system and legal title registry are also maintained, and dealings creating legal interests are registered. A survey-based, title certification service is provided under a 'user pays' survey system, and compliance with expenditure commitments is monitored to ensure that land is being actively explored or made available.

### Table I: Tenements

#### Applications for the period 1 July 1996 to 30 June 1997

	No.	Area (hectares)
Prospecting Licences	1239	159,719
Exploration Licences	2484	26,352,760
Mining Leases	1653	821,268
Other	169	44,186
<b>TOTAL</b>	<b>5545</b>	<b>27,377,933</b>

#### Tenements granted for the period 1 July 1996 to 30 June 1997

	No.	Area (hectares)
Prospecting Licences	1051	136,967
Exploration Licences	1231	12,025,410
Mining Leases	159	61,200
Other	99	49,050
<b>TOTAL</b>	<b>2540</b>	<b>12,272,627</b>

#### Tenements in force as at 30 June 1997

	No.	Area (hectares)
<b>(1978 Mining Act)</b>		
Prospecting Licences	8212	1,099,671
Exploration Licences	4718	38,279,436
Mining Leases	5180	2,047,287
and others	1537	88,519
<b>(1904 Mining Act)</b>		
Mineral Claims	310	34,133
and others		
<b>TOTAL</b>	<b>19,647</b>	<b>41,514,913</b>

There were 10,238 registrations of transfers, caveats and other dealings involving changes to 19,507 titles or applications.

## Program 1.1 - Mineral Titles (cont.)

increased in the latter part of the year, 84 per cent of exploration licences and 95 per cent of prospecting licences totalling 2515 applications for exploration and prospecting titles were cleared for grant during the year. As at 30 June 1997, the balance, or 540 applications, were still within the two-month advertising period required under the Native Title Act.

Agreements reached between title applicants and native title claimants allowed 87 mining lease applications to be granted within native title claims. A further 168 applications were under active negotiations including new applications that were being dealt with on a priority basis. The overall situation for mining leases remains difficult, with 81 per cent of applications still being subject to negotiation procedures.

### Technical - MiTiS and Tengraph

The Department's electronic title mapping system *Tengraph*® was implemented in Southern Cross, Norseman, Carnarvon, Warburton, Phillips River and part of the South West Mineral Field. To support this, industry user-training was provided in regional centres and in Perth as the new system was introduced in each office.

The conversion was completed of publicly available components of *Tengraph*® to run under the common computer software program Windows. This will make the new system more accessible either through the Internet or by direct-dial to Department centres.

A contract was awarded to a Western Australian company to assess the viability of making *Tengraph*® available through the Internet. If testing and cost assessment support implementation users will be able to access up-to-date mining tenement information and have the ability to create and print their own maps from their office or home.

Application development for the Mining Titles System (MiTiS), an electronic replacement for the hard copy tenement registers, began in October 1996. Development work is to be completed in the third quarter of 1997-98. This system will have direct links to *Tengraph*®, providing users with access to graphical and textual tenement information from a single screen. The implementation of MiTiS is planned for Kalgoorlie in the second quarter of 1998 with other offices to follow later in the year. When complete, access to information on any tenement will be available from mining registrars' offices throughout the State.

### Title monitoring

Compliance with expenditure and reporting obligations continued to improve in 1996-97. Reports lodged totalled 15,849, an increase of 37 over the previous year, while applications for exemption from expenditure increased by 6.75 per cent to 5256.

There was a minor reduction in tenements forfeited for non-payment of rent and non-compliance with expenditure requirements, down from 54 last year to 47 in 1996-97. During the year 2883 notices of intention to forfeit were issued, however in most instances rent was paid and forfeiture action was discontinued.

Plaints lodged by third parties seeking forfeiture on the basis of non-compliance with expenditure requirements fell from 454 to 422 during the year. A total of 25 tenements were subsequently forfeited as a result of plaintiff action.

**Table 2: Title monitoring**

	1994-95	1995-96	1996-97
Reports received	15,355	15,812	15,849
Exemption applications	4496	4926	5256
Tenements forfeited (rent/expenditure)	124	54	47

### Customer service

The Department continued to place a high priority on customer service at its Perth and 11 country centres. The daily average number of customers attending the Mineral House Information Centre in Perth in 1996-97 was 60 compared with 80 for the previous year. The reduction mainly resulted from increased direct access by users who have established links to Departmental systems from their own offices.

Mining tenement register searches decreased by 20 per cent to 25,111 during 1996-97, and orders for tenement plans fell by 30 per cent to 4705. These decreases are attributed to clients choosing to produce their own plans from the *Tengraph*® system.

At 30 June 1997, about 860 clients had online access to the *Tendex* Tenement Information System which allowed them to search mining tenement register information from external locations via the Internet.

Remote electronic access continued to be a high priority customer focus objective, with a view to ultimately providing authorised users with 24-hour access to Departmental computer databases from their offices, homes or directly from field sites.



The Mineral Titles Division released several publications during the year including six revised and reprinted information pamphlets covering subjects ranging from a Guideline for Mineral Exploration Reports on Mining Tenements to Information Series fliers on Miners' Rights, and Private Land Provisions. The Division also released a Customer Service Charter, quick reference guide to using *Tengraph*<sup>®</sup> and three issues of the quarterly newsletter on Mining Act issues called *Mineral Titles Update*.

### **Mining Industry Liaison Committee**

Regular meetings of the Mining Industry Liaison Committee (MILC) were held throughout the year. Key issues dealt with were:

- Finalisation of amendments to the special prospecting licence provisions;
- Release of a policy guideline for exemption from expenditure commitments; and
- Introduction of "search for groundwater" miscellaneous licence at the exploration licence rental rate of 30c/ha.

A sub-committee of MILC continued to examine measures to ensure that ground held under title was actively explored, as well as a request by the Amalgamated Prospectors and Leaseholders Association for the Department to reinstate a number of areas which would not be open for exploration licences.

### **Mining Act amendments**

A Mining Amendment Act assented to in December 1996 introduced significant changes to the special prospecting licence (SPL) for gold provisions. The changes were as follows:

- A SPL may be held only by an individual;
- The warden will determine whether activities can be carried out without "undue detriment" to the primary tenement holder (previously only "detriment" had to be established);
- The report of the Director Geological Survey must be based solely on information contained in reports lodged by the primary tenement holder;
- Depth can be negotiated with the primary tenement holder;
- A limit of three SPLs at one time, as well as one lease for gold per individual; and
- Conversion to lease limited to four-year SPLs.

These amendments increased the opportunity for prospectors to access alluvial gold deposits and retain responsibility for rehabilitation, but with minimal impact on the primary tenement holders' titles.

Early indications showed the amendments were working, with seven new SPLs cleared for grant in the first six months of operation.

Other amendments included in the same Amendment Act but yet to be proclaimed provide for new registration of dealings provisions.

### **Surveys**

During the year, 257 survey instructions were prepared and issued, 218 new surveys (212 under the user-pays system) were lodged for examination and 208 tenements were legally certified.

A total allocation of \$1,008,084 was made available over two years for the Non Refunded Survey Fees Program. During 1996-97, with the agreement of mining industry and surveying organisations, \$508,605 was made available for allocation against the following initiatives:

- Purchase of Differential Global Positioning System units and deployment, with associated training for prospectors, to Mining Registrars' offices at Kalgoorlie, Leonora, Mt Magnet, Meekatharra and Marble Bar;
- Densification of the State survey control network and miscellaneous connections; and
- Funding of contract personnel in support of the accelerated release of the *Tengraph*<sup>®</sup> system in the South West Mineral Field.

The remaining funds will be used during 1997-98, apart from \$150,000 which is being retained for possible refunds during a period of public notice pursuant to Section 19(2) of the Unclaimed Money Act 1904.

## Program 1.1 - Mineral Titles (cont.)

### LAND ACCESS

#### Aboriginal liaison

The Department has two liaison officers, one based in Perth and one in Kununurra, who help exploration and mining companies gain access to land where there are community concerns. The officers advise on native title, Aboriginal heritage, legislative regimes, community sentiment and Government policy. They also mediate between disputing parties and facilitate the establishment of a good working relationship between the industry and the community.

Some of the major projects undertaken during 1996/97 included:

- Working with the Mugarinya Community (Yandeyarra Aboriginal Reserve) and the Aboriginal Affairs Department to remove the moratorium on mining currently over the reserve;
- Providing an annual explorers' forum at the beginning of each calendar year on native title, Aboriginal heritage and government policy. The 1997 forum was sponsored by the Chamber of Minerals and Energy and Association of Mining and Exploration Companies;
- Facilitating an agreement between explorers and the Tjurabalan native title claimants in the Kimberley region;
- Reviewing the administrative procedures of the Aboriginal Heritage Act 1972-80, which resulted in the production of a discussion paper *Taskforce Team Report - The Administration of the Northern Territory Aboriginal Sacred Sites Act and Proposed Changes to Heritage Management in Western Australia*;
- Producing the *Guidelines for Aboriginal Consultation by Mineral and Petroleum Explorers* and preparing the *Notes for Effective Agreements with Aboriginal Communities and Native Title Claimants*.

#### Native title

As mentioned earlier, native title has developed into a major issue for industry and Government. At 30 June 1997, 259 native title claims covered more than 80 per cent of Western Australia. In 1996-97 there were 81 new claims lodged. During the year, three significant decisions, one each from the National Native Title Tribunal (NNTT), the High Court of Australia and the Federal Court of Australia, had a detrimental impact on the number of tenements which could be granted under the Mining Act 1978.

First, in a test case on 7 August 1996, the NNTT upheld a challenge against the State of Western Australia in relation to its negotiations under the Native Title Act (NTA) dealing

with a mining lease application. The NNTT found that the State had not fulfilled its obligations to negotiate in good faith and ordered that the future act determination application made by the Department be dismissed. This meant that the State had to restart the six-month statutory negotiation period; the remaining 321 determination applications before the NNTT were withdrawn as a result of the decision.

As a result of the NNTT decision the Department had to develop a negotiation protocol which followed the suggested indicia recommended by the Tribunal Member. About 1000 mining tenement applications were placed on hold while a process was established to ask whether grantee parties required priority processing of their tenements under the NTA regime.

At 30 June 1997 there were 1593 mining and petroleum tenements within the future act process, of which 319 tenements were on the priority list and 168 tenements were actively being processed by case managers. The execution of State Deeds allowed 22 projects involving 88 titles to be granted in the 1996-97 year. The Deed must be signed by the State, grantee party and registered native title claimants and lodged with the NNTT before grant.

In addition to the above there were about 600 mining leases applications that had not been advertised under the NTA Future Act regime because priority was not nominated by tenement applicants.

Secondly, on 23 December 1996, the High Court handed down its decision in the Wik native title case. The Court ruled that it was possible for traditional Aboriginal rights to co-exist with pastoral leases. This strengthened the negotiating position of the registered native title claimants in relation to mining tenements applied for over pastoral leases.

The third decision (Dann decision) on 8 May 1997 in the Federal Court upheld that the NNTT should consider the rights bestowed by the grant of a tenement, rather than the intended use of the tenement by the applicant, when making a decision as to whether the expedited procedure (or fast track) should apply. As a result of this, if a native title party objects to the expedited procedure applying to any exploration title then the full right to negotiate process will apply.

The release of the Prime Minister's 10-Point Plan (in which he stated his position on native title) and the subsequent release of the draft Native Title Amendments Bill 1997, offer some possibility that a more workable system of dealing with native title claims related to mineral titles will be developed in future years.

## Conservation and planning

The Department continued to provide State agencies and local government with information about the importance and location of mineralised ground relevant to areas being considered for urban, industrial and rural development (for example: Swan Coastal Plain, Mandurah, Kalgoorlie, Coolgardie, Karratha). The unit is working with the Ministry for Planning to fulfil the Coalition Government's commitment that a Memorandum of Understanding (MOU) would be agreed to, to improve consultation between the Western Australian Planning Commission and the Department to formalise the integration of mineral exploration, mining and land-use planning.

A draft MOU with the Department of Environmental Protection for mineral exploration and mining in the marine environment is well advanced. A protocol for petroleum exploration and development in the State's conservation estate was agreed to by the Ministers for Mines and the Environment. This protocol will also help in managing access to the Shark Bay World Heritage Area. State Parliament passed the Acts Amendments (Marine Reserves) Bill and work is underway to establish the Marine Parks and Reserves Authority and a scientific advisory committee to oversee the management of existing marine parks and the creation of new ones. The Bill has specific provisions related to petroleum and mineral resource exploration and development in some types of conservation reserve.

Conservation proposals in the Kimberley and Pilbara regions led to the preparation of geological reports and negotiations with the Departments of Resource Development and Conservation and Land Management. These resulted in the upgrading of geographic information

systems so that decisions about land tenure and purpose can balance the competing demands of resource development, infrastructure, and nature conservation.

Protection of basic raw materials extraction and resource areas featured prominently during the year. An industry report on basic raw materials in the Perth metropolitan region was followed by preliminary work on a statement of planning policy. Investigations were commissioned by the Ministry for Planning for the Albany and Central Coast regions and by the Department of Resources Development for the Karratha region. An inventory of basic raw materials between Mandurah and Augusta was started in collaboration with the South West Development Commission. An investigation of Bunbury basalt in and around quarries at Gelorup demonstrated the resource's strategic importance and an interdepartment committee is to determine appropriate planning requirements.

The importance of access to strategic mineral resources was reflected in the finalisation of the Main Roads State Gravel Supply Strategy and discussions with the Department of Conservation and Land Management and Department of Environmental Protection concerning limesand, limestone (Dongara to Wanneroo region) and gypsum resources (wheatbelt region). Documentation of titanium mineral deposits to help planning began for the Bunbury-Augusta region as an aid to landuse planning. It is expected that these types of investigation will continue during 1997-98.

On the Federal scene, multiple land-use and staged resource development was actively pursued during Australian and New Zealand Minerals and Energy Council taskforce meetings and the early stages of policy formulation for a National Oceans Policy.

## Program 1.1 - Mineral Titles

**Objective:** To provide timely, secure and equitable titles and related information to facilitate mineral exploration and development.

### Effectiveness: Timeliness of title processes.

**Measure:** Success in meeting targets for elapsed time to process title applications

**Description:** The proportion of Prospecting Licence and Exploration Licence applications that are finalised or submitted to the Commonwealth Native Title Act 1993 procedures within the target periods. The proportion of Mining Leases granted or for which a determination on the right of grant is made within the target period.

Targets:	Timeframe	Per cent of applications
Prospecting Licence (PL)	4 months	75%
Mining Lease (ML)	7 months	75%
Exploration Licence (EL)	7 months	75%

Note: the PL target before 1996-97 was 75% in 4 months. Target timeframes in 93-94 were 3, 5 and 7 months respectively.

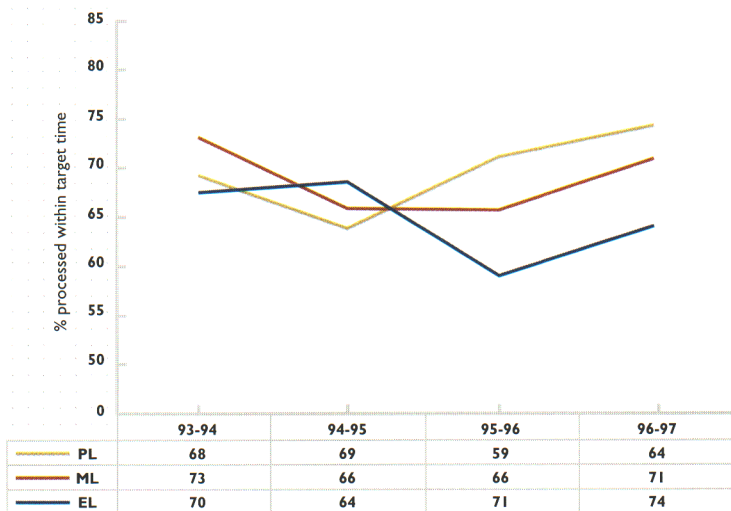
**Result:**

**Comments:**

This measure generally indicates performance within the Department, however some applications are subject to delays beyond the control of the Department, for example where applications affect private land, Aboriginal or Conservation Reserves or where legal disputes arise.

This year a greater percentage of titles has been processed within target times for all categories than last year, reflecting productivity and process improvements introduced during the year.

Percentage of applications processed within target time



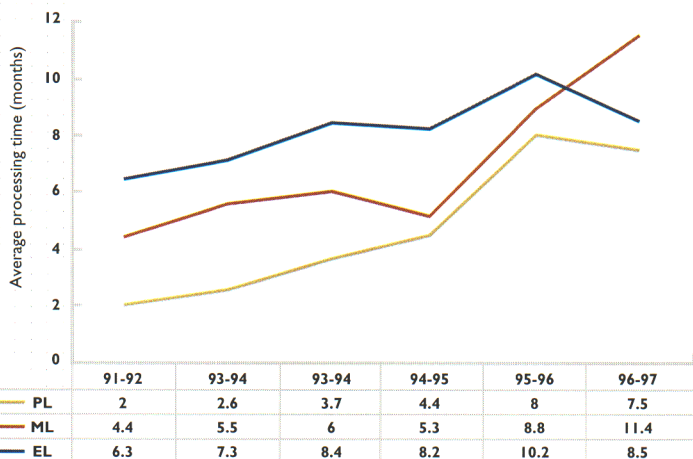
**Effectiveness: Timeliness of title processes.**

Measure: **Average length of time between the application and grant of title**

Description: The average length of time to determine each major title category, with an upper limit of 1000 days.

Result: Comment: This measure indicates the average total elapsed time to grant titles, including processes outside the Department's control.

**Average time in months for grant of titles**



The time taken to process mining lease applications continued to increase as a result of the right to negotiate process under the Commonwealth Native Title Act 1993. There is a substantial backlog of title applications for which the results of Native Title processes are not yet known. The delay on finalising these applications relative to those of the past two years is significant and will mean that the average length of time to grant will continue to increase.

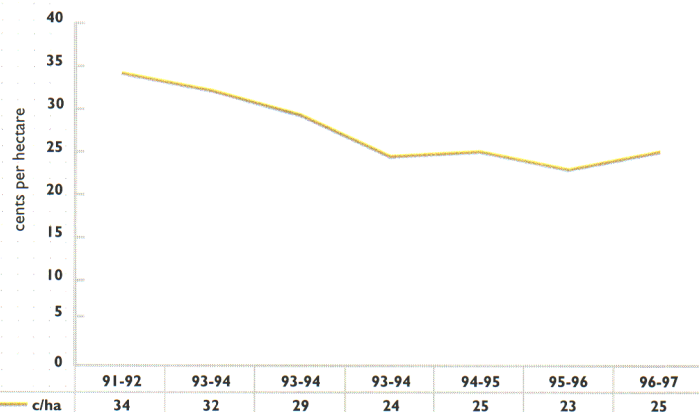
**Efficiency: Administrative cost of providing mineral titles.**

Measure: **Average cost of issuing and maintaining titles**

Description: The annual cost per hectare of issuing and maintaining titles; calculated as total expenditure for the year (salary multiplied by an overheads allowance) divided by the area of titles current as at 30 June 1997.

Result: Comment: Administrative costs have been contained, with little variation over the past four years.

**Average cost in cents per hectare of current titles**





# Sub Program 1.2

## Mining Operations

**Objective:** To achieve improved safety, occupational health and environmental management in the mineral exploration and mining industry.

**Description:** An appropriate legislative framework is maintained and worksite visits are conducted to audit and ensure compliance with regulations, guidelines and conditions of title. Operators are obliged to implement safety, occupational health and environmental management systems that match world's best practice. They are supported by educational, training and research programs and the provision of specific advice. A security bond system is maintained to indemnify the State in the event of failure by a proponent to comply with environmental conditions of title.

### The paradigm shift

The focus of activities in the Mining Operations Division changed significantly with the introduction of the Mine Safety Inspection Act 1994 (MSIA) and the Mine Safety Inspection Regulations 1995 (MSIR). There was a move from compliance inspection to systematic in-depth auditing of operations, which brought with it the need to focus on outcomes from this process.

The new Act clearly identified that mine operators (employers) were both responsible and accountable for their actions. This gave industry increased motivation and opportunity for self-regulation and improved management of occupational safety issues. Both environmental and safety management plans must be prepared by operations based on an assessment of the risks associated with the operation. These plans, together with predetermined standard criteria, form the basis of performance auditing.

In 1996-97 audit systems were introduced for both occupational safety and environmental management. The inspectorates based in Perth, Karratha, Kalgoorlie and Collie completed 26 safety management system audits, and 75 high impact function audits, and the research and technical services branch completed 36 occupational health audits and 229 environmental performance audits. The audits identified issues to be followed up in the future

Recurrent Expenditure: \$7.7 million  
Corporate Services Costs: \$1.7 million  
Capital Expenditure: \$228,034  
Total Expenditure: \$9.7 million

and provided the Mining Operations Division with an effective means of identifying problems and setting priorities for remedial measures.

A significant part of the shift in focus was the recognition of outstanding environmental performance. The Annual Environmental Excellence Awards were initiated in 1992 to give public recognition to outstanding performance in environmental management. In 1996 the profile of the awards was raised by improved advertising and a well-publicised presentation ceremony. Awards for Environmental Excellence were presented to Harry Butler, Alcoa of Australia and Rod Mitchell's Transport and Exploration Services. Dominion Mining received a Certificate of Merit.

### Industry education and training

The Department continued to play an important role in providing education training and information to the mining industry, which included the range of courses shown in Table 1. The surface and underground ventilation officers' courses were progressively revised to ensure they covered the key competencies required under the regulations. The revisions also included new areas requested by the industry such as confined space safety. The first regional ventilation officers' course was held in Port Hedland during August 1996.

The Mining Operations Division conducted two series of examinations, under the auspices of the Board of Examiners, for candidates seeking certification as First Class Mine Manager, Quarry Manager, Restricted Quarry Manager and Underground Supervisor. Certification is required by persons appointed to these statutory positions under the legislation. Candidates sat for a total of 315 papers in November 1996 and 321 in April 1997.

Recipients of the 1996 Awards for Environmental Excellence



Rod Mitchell - Rod Mitchell's Transport and Exploration Services



Peter Elliott - Alcoa



Harry Butler



Ken Dredge - Dominion Mining (certificate of merit)



**Table 1: Training Courses**

Course	Number	Participants
Ventilation Officers (Surface)	7	90
Ventilation Officers (Underground)	1	15
Geotechnical Issues for Underground Operators	1	3 crew shifts
Ground Control in the Workplace	4	3 crew shifts

Joint initiatives involving workshops, seminars and conferences on safety and health issues in the mining industry during the year included:

- A seminar on the lessons from the Moura Mine disaster (in conjunction with the Industrial Foundation for Accident Prevention);
- Four safety seminars held in Kalgoorlie, Perth, Bunbury and Geraldton for new graduates entering the industry (Chamber of Minerals and Energy);
- A workshop on positive performance indicators for assessing safety performance (Chamber of Minerals and Energy);
- A seminar on shift work, compressed work schedules and occupational health in the industry (Chamber of Minerals and Energy);
- A seminar on working in confined spaces (Chamber of Minerals and Energy).

In September 1996, the Chamber of Minerals and Energy and the Department conducted the third Minesafe International Conference in Perth. This is a major conference of recognised world standing.

Support was provided by the Department for the implementation of a mines safety induction system developed by the Mining and Resource Contractors Safety Training Association. This system has been widely adopted in the industry.

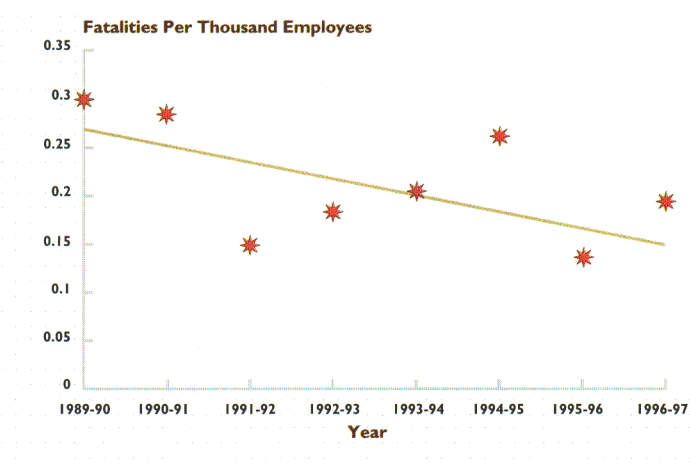
A series of information workshops was presented in Perth and Kalgoorlie to inform exploration personnel of the new requirements under the Mines Safety and Inspection Act and Regulations.

Division staff presented on-site training in geotechnical issues for underground operators and, in particular, ground control in the workplace. These courses provided direct instruction and information for underground operators and their supervisors in their workplace. A range of material was presented at plenary courses in co-operation with other organisations such as the Australian Centre for Geomechanics. Papers were presented by Division staff at several national and international conferences and workshops.

## Industry safety performance

During the year eight fatalities occurred in the mining industry: four in the gold sector, two in the nickel sector and one each in the iron ore and bauxite/alumina sectors. A fatality incidence rate of 0.19 per 1000 employees was recorded for the year, compared with 0.11 in 1995-96 (Figure 1). The Department maintains the view that **no fatal accident is acceptable** and a fatal incidence rate of zero is achievable and sustainable.

**Figure 1: Western Australian Mining Fatality Incidence**



**Table 2: Mining accidents involving injury to persons**

*A serious injury is defined as an injury which results in the injured person being disabled for a period of two weeks or more.*

Mineral	Employees	Fatal	Serious	Minor	Total
Gold	15032	4	183	205	388
Iron Ore	8835	1	52	80	132
Coal	800		12	43	55
Bauxite and Alumina	5667	1	21	32	53
Mineral sands	2708		15	28	43
Diamonds	1171		14	5	19
Base metals	813		9	6	15
Salt	565		3	5	8
Nickel	4468	2	38	64	104
Construction materials	424		5	2	7
Other	1280		8	33	42
<b>Total</b>	<b>41,763</b>	<b>8</b>	<b>359</b>	<b>503</b>	<b>862</b>

## Sub Program 1.2 - Mining Operations (cont.)

**Table 3:** Lost time injury incidence and frequency rates

	1995-96		1996-97		% Reduction	
	Incidence	Frequency	Incidence	Frequency	Incidence	Frequency
<b>Metalliferous</b>						
Surface	2.4	11	1.8	9	25	18
Underground	4.2	18	3.3	15	21	17
Total	2.6	12	2.1	10	19	17
<b>Coal</b>	11.0	62	6.9	41	37	34
<b>Total Mining</b>	<b>2.8</b>	<b>12</b>	<b>2.1</b>	<b>10</b>	<b>25</b>	<b>17</b>

The performance for coal mining improved markedly during the year, with incidence and frequency rates decreasing by 37 and 34 per cent.

Performance in the underground metalliferous sector improved during the year, with incidence and frequency rates both decreasing by 21 and 17 per cent respectively. The surface metalliferous sector also improved with the frequency rate now in single figures.

During the past decade the WA mining industry has experienced a continuous reduction in injuries, with the

overall frequency rate falling from 38 in 1987-88 to 10 in 1996-97 (Figure 2), representing a 74 per cent improvement. Although this performance has been impressive, there is considerable scope for further improvement.

The WA mining injury frequency rate compares favourably with that of other industries as indicated in Figure 3. However, there is considerable opportunity for further improvement as employers come to grips with their responsibilities to provide a safe working environment for all employees.

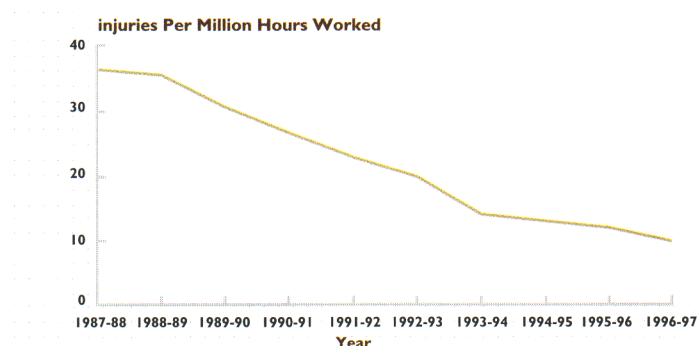
### Information systems

Development continued on an internal information system known as MODIS (Mining Operations Division Information System). This system allows storage and easy retrieval of record book entries, current legislation, guidelines, significant incident reports and safety bulletins and accident information from the AXTAT system. In time it will include audit data. Mines inspectors have access to the information in the office and in the field by the use of personal notebook computers.

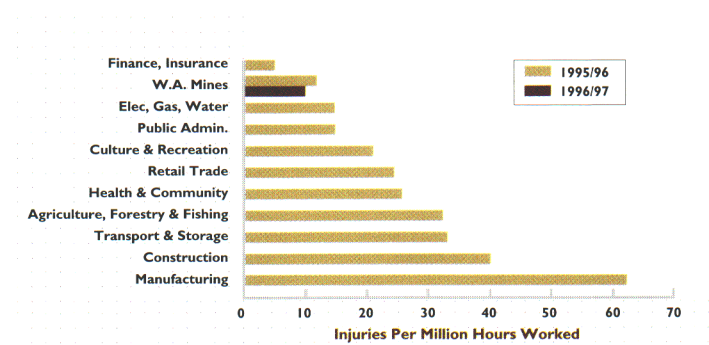
A new dial-in information service known as EXIS (External Information System) was made available to about 50 registered external users. The information is updated regularly and currently includes:

- Mines Safety and Inspection Act and Regulations;
- Minesafe journal - quarterly safety publication;
- FYIs (For Your Information) - short descriptions of various incidents and accidents;
- Accident data from AXTAT in the form of reports, charts and tables;
- AXTAT - companies can report AXTAT returns, such as the mining incident report and monthly status forms;
- Discussion database - a mechanism for industry to share and discuss safety-related information; and
- Significant incident reports and safety bulletins.

**Figure 2:** Western Australian Mining Injury Frequency Rate



**Figure 3:** Western Australian Industry Injury Frequency Rate Comparisons



The regulatory authorities in Queensland, New South Wales and Victoria intend to connect to and use the EXIS system.

### Exploration industry safety

The Geological Survey Division drilling branch carried out inspections of drilling operations before being disbanded in 1995. Effectiveness was limited by a lack of suitable legislation to give the field officers the power to enforce standards.

The Mines Safety and Inspection Act and Regulations provide this empowerment and have brought the regulation of safety in the exploration industry under Mining Operations Division. This ensures that all operations in the mining industry have consistent standards and expectations for occupational safety. 1996-97 saw the introduction of a three-pronged administration process.

#### 1. Notification

Information about all exploration notifications required under the Act is entered on a central data base known as MINet. This means inspectors can track exploration activity throughout the State. In line with the duty of care responsibilities laid out in the Act, inspectors can identify personnel responsible for specific exploration programs including the manager, drilling contractor and extent of operations.

#### 2. Inspections

Inspection protocols were developed based on a drill rig inspection schedule initially developed by the drilling branch. The system was refined through the year and is working effectively. Drilling operation inspections were conducted in three formats:

- Randomly, while inspectors have been in an area where drilling activities have been underway;
- Pre-planned with drilling contractors, exploration companies and mining companies; and
- In response to reported accidents and incidents.

A standard report was developed to help inspectors to carry out their inspections and provide feedback to operators to enable remedial action to be taken where necessary.

A formal record book entry is then forwarded to the exploration manager responsible for the site, with a copy retained on the site.

The inspections identified many areas of concern, including operating practices, maintenance of equipment, inadequate safety equipment and training. These issues will form the basis of future inspection and training programs.

#### 3. Auditing of Exploration Operations

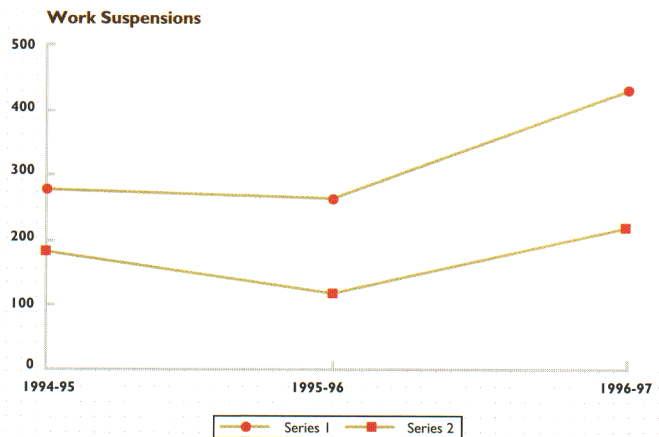
A draft high impact function audit for exploration drilling safety was developed. It comprises 86 individual elements which address the common defects found in drilling operations. Three audits have been completed by the Kalgoorlie inspectorate, with trial audits completed in the other inspectorates. The audit will be further developed in the light of experience gained in 1996-97.

### Enforcement and regulatory functions

#### Mine safety

The Mining Operations Division has an important role in enforcement of the Acts and Regulations under which it operates with respect to occupational safety issues. During 1996-97 inspectors suspended work at minesites on 214 occasions and 440 items of defective equipment were taken out of service. The increase in suspensions compared with previous years (Figure 4) related to the introduction of the structured audit system which identified problems that could have been missed previously and the incorporation of exploration activities into the audit program.

Figure 4: Work Suspensions



The breakdown of these activities is shown in Table 4.



## Sub Program 1.2 - Mining Operations (cont.)

**Table 4. Work Suspensions**

	INSPECTORATE	SURFACE		UNDERGROUND	
		Safety reasons	Following accident	Safety reasons	Following accident
Number of times portions of mines were closed	Kalgoorlie	78	5	36	5
	Perth	40	1	7	0
	Karratha	149	6	8	0
	Collie	91	9	5	0
	Sub-total	358	21	56	5
Number of items of equipment stood down	Kalgoorlie	19	10	56	11
	Perth	18	1	13	2
	Karratha	11	1	9	1
	Collie	31	8	23	0
	Sub-total	79	20	101	14
<b>TOTAL</b>	<b>437</b>	<b>41</b>	<b>157</b>	<b>19</b>	

The Department initiated two successful prosecutions under the Mines Safety and Inspection Act and Regulations, with fines totalling \$64,200.

### **Environmental**

On environmental issues, seven work directions and one stop-work direction were issued.

During the year 257 Notices of Intent (NOI) were received for mining proposals. Of these 69 were referred to the Environmental Protection Authority. There were five formal assessments, comprising two consultative environmental reviews and three section 46 changes to conditions under the Environmental Protection Act. The majority of NOI (167) were assessed by Department officers, and the remaining 90 by consultants.

At 30 June 1997 there were 2084 environmental performance bonds in place with a total value of \$94 million. During the year 557 bonds were registered with a total value of \$35 million. Four operations closed, of which three had their bonds retired. A small bond was retained on the fourth until revegetation was successfully established. Three companies were fined a total of \$20,000 for breach of environmental conditions.

A survey was carried out on 201 tailings storages containing cyanide and a draft report was prepared. Initial analysis of results showed the existence of a wide range of management strategies and a need to standardise practices throughout the industry. The survey showed that recent tailings storages were more likely to meet current guidelines for design and operation than storages carried out in earlier years.

### **Health surveillance**

By the end of June 1997 more than 20,000 health surveillance forms had been entered on the *Minehealth* electronic database. This system was developed to support the new health surveillance requirements in the Mines Safety and Inspection Act. *Minehealth* is used to monitor the health status of mining industry employees to detect adverse health trends at the earliest opportunity. This allows appropriate and timely corrective action to be taken to safeguard the health and well-being of employees, as well as providing data which may be useful for future epidemiological studies.

It is proposed to redevelop the Department's atmospheric contaminant exposure database system *Contam*. Among the many benefits of a revised system would be a link to *Minehealth*, providing direct recording of personal exposures. This would also help any subsequent investigation of exposure/response relationships.

### **Publications**

The Mining Operations Division released a range of publications during the year including five Safety Bulletins on access ladderways, manual metal arc welding - electrical safety, use of proprietary air hoists for transport of personnel in underground mines, rockbolt failures - underground, and service pipe ranges. Thirteen significant incident reports (numbers 65 to 77) were released dealing with such subjects as children exposed to hazards at unattended mines and hazardous drill hole intersections. Ten guidelines were released on a variety of environmental and safety issues such as Mining in Arid Environments and Management of Hazardous Substances on Mine Sites. Copies of the newsletters *Minesafe* and *Rehab Blab* were also released, as were reports on the Fatal and Lost Times Injuries in Western Australian Mines 1995 and 1996. An AXTAT summary 1995/96 poster was also made available.

# Key PERFORMANCE Indicators

## Program 1.2 - Mining Operations

**Objective:** To improve safety, occupational health and environmental management in the mineral exploration and mining industry.

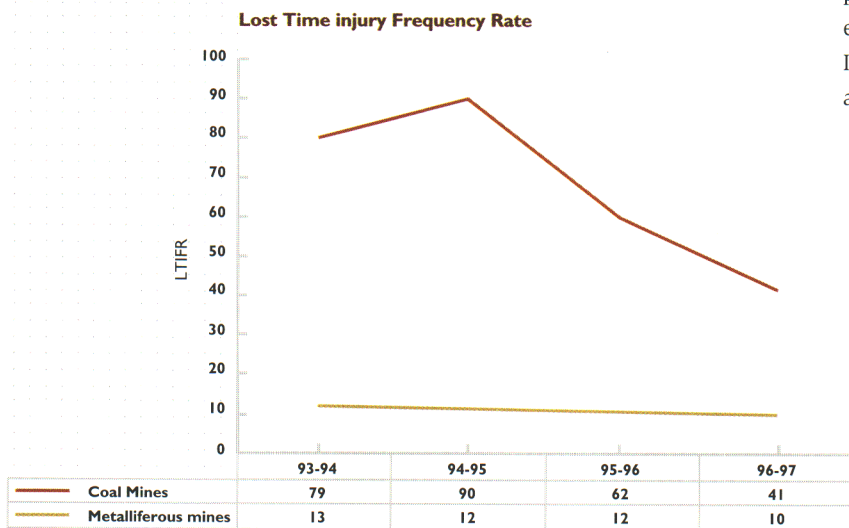
### Effectiveness: Safety

Measure: **Lost-Time Injury Frequency Rate**

Description: The number of occurrences of injury or disease for each one million hours worked as defined in Australian Standard AS1885.1-1990.

Result:

Comment: Continuous improvement in the overall safety performance of the mining industry has been evidenced by a significant fall in the Lost-Time Injury Frequency Rate for both metalliferous and coal mining sectors.



## Key Performance Indicators - Program 1.2 (cont.)

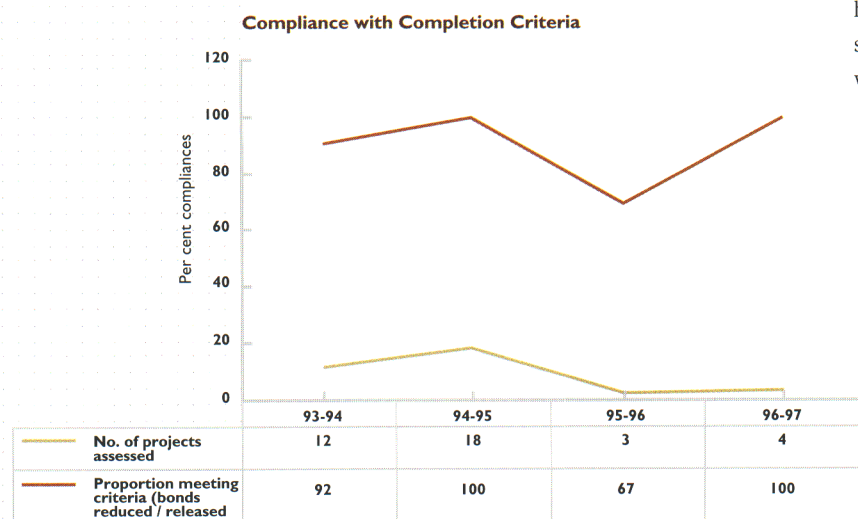
### Effectiveness: Environmental Management

Measure: **Compliance with performance criteria on completion of operation**

*Description:* A security bond system is maintained to indemnify the State in the event of failure by a proponent of mining activity to comply with environmental conditions of title. Bonds are called on to rectify unsatisfactory environmental performance. Where rehabilitation work is completed to the satisfaction of the Department, bonds are reduced or released.

*Result:*

*Comment:* Four small operations were completed and rehabilitation carried out satisfactorily. Three had their bonds retired whilst one had the bond substantially reduced. This bond will be retired when revegetation has been established.



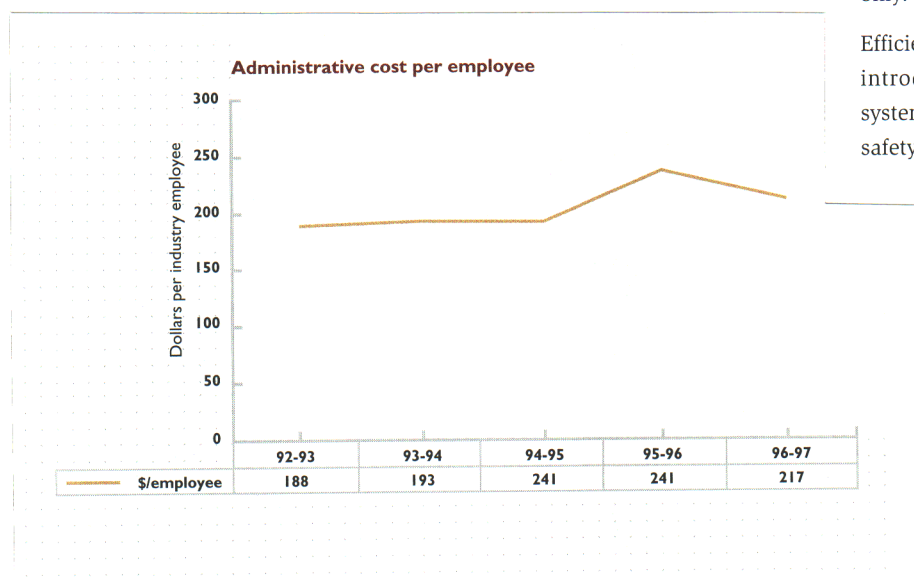
### Efficiency: Cost efficiency

Measure: **Cost per industry employee**

*Description:* The cost of direct salaries plus overheads (factor of 1.7) divided by the number of number mineral sector employees.

*Result:*

*Comment:* Figures up to 1994-95 refer to safety elements only.



Efficiency has increased this year owing to the introduction of computerised information systems and the shift to auditing the industry's safety and environmental performance.



# Sub Program 1.3

## Petroleum Industry Management

Recurrent Expenditure: \$1.9 million  
Corporate Services Costs: \$707,727  
Capital Expenditure: \$137,650  
Total Expenditure: \$2.7 million

### Resources and titles

Promotion of Western Australia and its waters as a prospective region for petroleum continued throughout the year and was helped by the publication of two issues of *Petroleum in Western Australia*. The Division also released a Petroleum Titles Map outlining the onshore and offshore titles in Western Australia.

There was a reasonable response to the release of permit areas in the Commonwealth-Western Australian Adjacent Area. About a third of the 22 areas attracted bids, six of which were competitive. A record number of 78 wells were bid for in these areas and, coupled with extensive 3D seismic projects, the outlook for offshore exploration looks healthy.

Onshore exploration was slower and, while there was a good response to the periodic State-wide releases, native title considerations hampered the early grant of titles. On a positive note, an initiative written into the Petroleum Act in 1994 has borne fruit with the grant of a large Special Prospecting Authority (SPA) in the Canning Basin. The initial SPA work, an airborne survey combined with reworking and correlating earlier data, will, it is hoped, encourage extensive drilling activity in the Basin. It is expected that the data generated will stimulate a greater interest in the area.

Petroleum production in Western Australia remained relatively constant at 11 million kilolitres of oil, 21 billion cubic metres of gas and five million kilolitres of condensate. Reserves were augmented by discoveries offshore in the Carnarvon, Browse and Bonaparte Basins.

Five new pipeline licences were issued during the year, bringing the total for State and Commonwealth to 48 licences. The new pipelines were mainly laterals to the Goldfields Gas Transmission line servicing remote minesites in the State's interior.

The petroleum titles registry continued to expand and the PETMAN electronic data base helped to maintain a comparable level of service with fewer staff.

**Objective:** To facilitate and regulate exploration for onshore and offshore petroleum resources and their development by the timely award of secure and equitable titles while ensuring continuous improvement in safety and environmental management of operations.

**Description:** Activities include promoting exploration opportunities in Western Australia, evaluating and advertising exploration acreage, evaluating industry performance, and providing timely approvals for petroleum exploration and development proposals. A legal title registry and public plan system are maintained, dealings creating legal interests are registered and registration fees assessed. Compliance with expenditure commitments and work obligations are monitored to ensure that areas are being actively explored or made available to others.

Through educational programs, worksite audit visits and an appropriate legislative framework, operators are obliged to implement safety, occupational health and environmental management systems that match world's best practice. Mandatory insurance cover is maintained by companies to facilitate administration and emergency response in the event of any environmental mishap.

Work covered by this sub-program also encompasses the day-to-day administration of petroleum activities in Commonwealth offshore areas on behalf of the Commonwealth Government.

The number of dealings in titles and actions affecting title interests remained high at 2048.

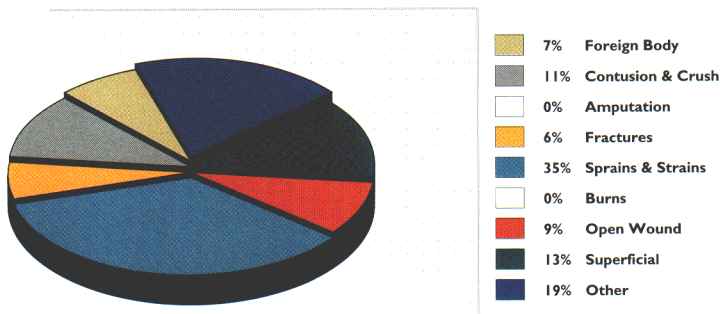
### Petroleum industry safety and environment management

New Commonwealth regulations to manage safety on offshore facilities were developed by a tripartite working group and issued in early 1997. The regulations were part of a process to replace prescriptive legislation with a more objective-based legislative regime.

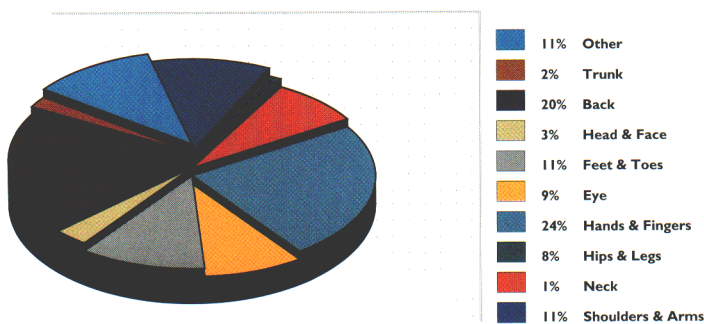
The Department continued to chair a tripartite committee advising on the draft bill for the State Petroleum Safety legislation which aims to bring all upstream petroleum operations under the one safety Act. The draft bill was substantially revised in 1996-97 and the final draft should be presented to Parliament in the 1997 spring session following industry review.

## Sub Program 1.3 - Petroleum Industry Management (cont.)

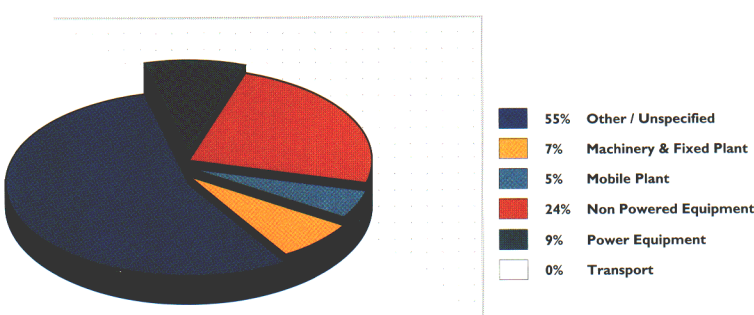
**Figure 1: Nature of Injury 1996-97**



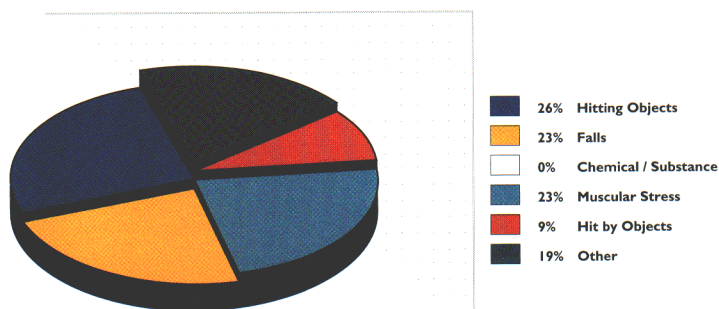
**Figure 2: Part of Body 1996-97**



**Figure 3: Breakdown Agency 1996-97**



**Figure 4: Type of Accident 1996-97**



All safety cases submitted in compliance with the requirements of the petroleum legislation were reviewed. Safety cases accepted during the year included East Spar and Wandoo B production development projects, five mobile offshore drilling unit safety cases, and 38 safety case bridging documents. All these assessments were conducted in accordance with the *Guidelines for the Preparation and Submission of Safety Cases* published by the Department of Primary Industry and Energy, and the *Guidelines for Mobile Offshore Drilling Unit Safety Case Submission* published by the Petroleum Operations Division.

The implementation of a quality management system continued in the Petroleum Operations Division with the aim of having all major processes and procedures documented by mid-1998.

In April 1997, international consultant Dr Tony Barrell conducted a second review of safety in BHP Petroleum's Australian offshore operations. Dr Barrell concluded that the safety improvements program by BHP Petroleum had progressed well, and the "safety culture" had improved and was now very positive. As part of this review Dr Barrell re-examined the 1994 gas venting incident on the 'Griffin Venture'. Dr Barrell found the formal procedures and training for tank operations quite inadequate at the time of the incident and confirmed his previous finding that there was no cover-up after the incident.

The Department laid charges against three companies and one individual as a result of a fatality that occurred on the Goldfield Gas Transmission pipeline project in February 1996. These were the first prosecutions to proceed under the State's pipeline legislation.

The Division organised technical papers and speakers for a national conference on offshore safety that was held in Perth in March 1997. Current safety and environmental issues were addressed at this forum which was attended by more than 70 representatives from various sectors of the petroleum industry.

Safety performance in the industry continued to improve, with no major incidents or fatalities occurring in operations during the past year. The overall industry Lost Time Injury Frequency Rate (LTIFR) had increased slightly to 7.1 LTIs per million person hours. The LTIFR has reduced for onshore operations to 5.2 LTIs per million person hours, but has increased for offshore operations to 8.3 LTIs per million person hours.

Of the injuries reported to the Department in 1996-97, 35 per cent were sprains and strains (see Figure 1) which indicates that manual handling injuries require attention. The 13 per cent figure for superficial injuries (see Figure 1) is a significant increase over 1996 figures, and this is considered to be owing to better reporting of minor injuries. The majority of injuries did not involve machinery (see Figure 3) and the accidents were mainly caused by falls or encounters with objects (see Figure 4). Figure 2 shows the part of the body which received injury.

### **Environmental management**

The first major field decommissioning in Western Australian waters started with the abandonment of some wells in WMC Resource Limited's Airlie project. The decommissioning of facilities is expected to continue in 1998 with the Department being responsible for co-ordinating the approval of these processes.

Australia has obligations under several international treaties and agreements to remove structures and installations from its offshore waters. The International Maritime Organisation (IMO) sets standards and guidelines for the removal of offshore installations and Australia, which is a party to the IMO convention, will abide by those guidelines in respect to its coastal waters. Generally, installations in less than 75 metres of water should be entirely removed, unless there are special reasons for them to be retained such as some future use or environment concerns attributable to the removal.

Four minor oil spills were reported during the year (two onshore and two offshore). A suspected oil leak from a storage tank on Thevenard Island was reported, however this was later found to be a measurement error. Inspection by a Department environmental inspector confirmed there was no loss of product to the environment.



# Key PERFORMANCE Indicators

## Program 1.3 - Petroleum Industry Management

**Objective:** To facilitate and regulate the exploration for onshore and offshore petroleum resources and their development by the timely award of secure and equitable titles while ensuring continuous improvement in the safety and environmental management of operations.

### Effectiveness: Timeliness of Title System

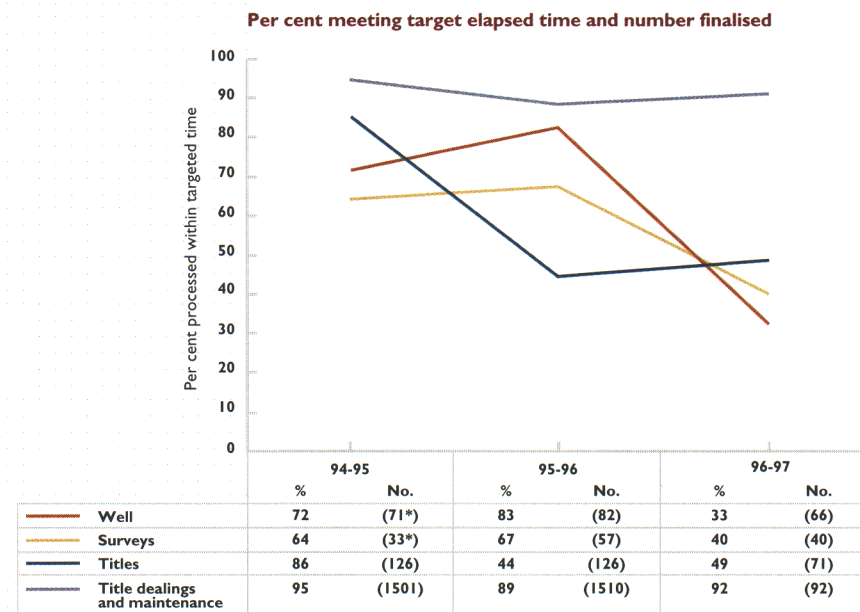
Measure: **Success in meeting target-elapsed time for processing of applications**

Description: The proportion of applications finalised within a target time period.

Target:

Application type	Jurisdiction	Target
Well	State	30 days
Well	Commonwealth	45 days
Seismic survey	State	20 days
Seismic survey	Commonwealth	35 days
Title	All	Three months
Title dealing and maintenance	All	Three months

Result:



**Comment:** The percentage of applications for wells and surveys meeting the target time fell dramatically and this is attributable to a greater emphasis on environmental issues, particularly in offshore areas.

The percentage of titles being dealt with in the target time increased slightly but is still significantly impeded by native title and access considerations.

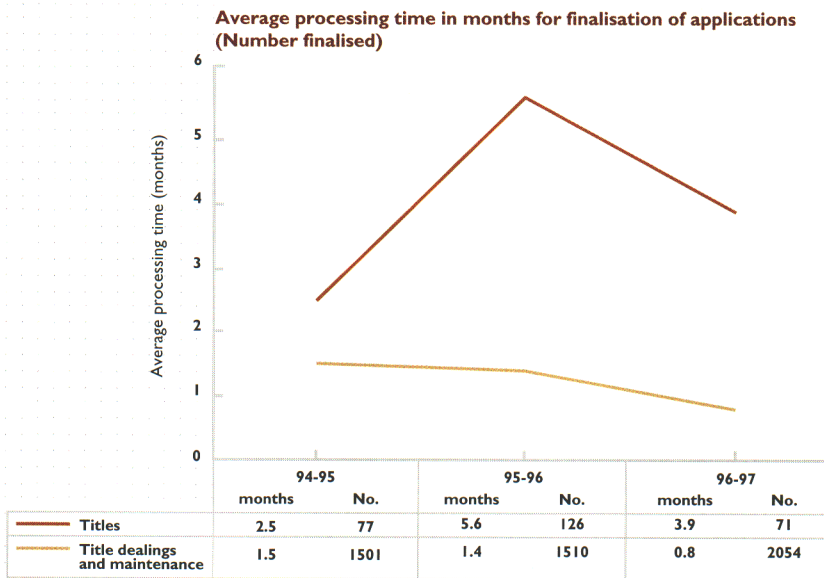
Measure: **Elapsed time for processing of applications**

Description: The average period of time from receipt of application to finalisation.

Result:

Comment:

Performance in turn-around time for dealings and maintenance applications has improved.



## Effectiveness: Safety.

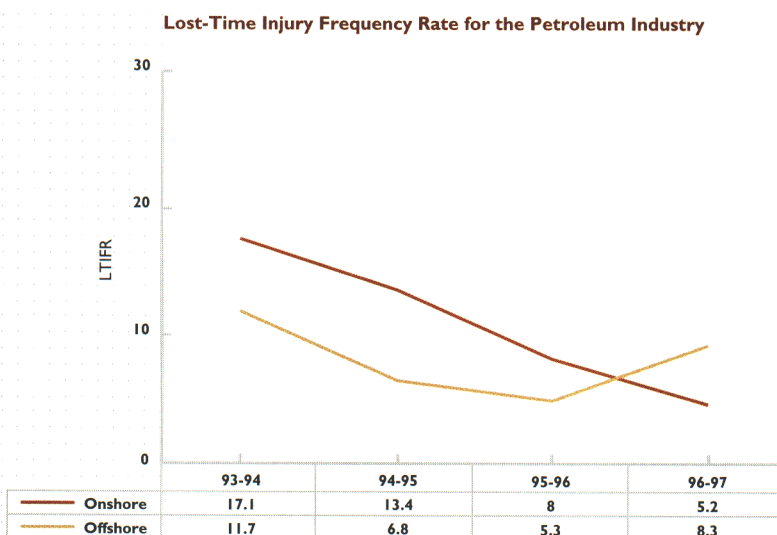
Measure: **Frequency of lost-time injuries**

Description: The lost time injury frequency rate (LTIFR) is the number of occurrence of injury or disease for each one million hours worked in Australian Standard AS1885.1-1990. The LTIFR is a lag indicator and may not reflect current safety management initiatives. Results are reported for this financial year are based on data reported by 15 August 1997. Results for previous years have been updated using all available data.

Result:

Comment:

The lost time injury frequency rate (LTIFR) has decreased for onshore operations but has increased for offshore operations, the reasons for which are being investigated and are likely to include increased compliance with requirements for reporting incidents.



## Key Performance Indicators - Program 1.3 (cont.)

### **Effectiveness: Standards of environmental management.**

**Measure:** Compliance with the Department's environmental management criteria.

**Description:** Non-compliances are defined as specific infringements of commitments made in project Environmental Management Plans (EMP) or conditions of approval, or practices not in accordance with Best Environmental Practice and which warrant formal notification by the auditor to the project operator.

Non-compliances are identified in field audits. Audits are conducted on a cross-section of projects selected on the basis of a risk-assessment basis following desk evaluations of all environmental management reports received from project operators.

**Result:** Compliance with environmental management Criteria

	1995-96	1996-97
Number of active audited	12	17
Percentage of audited projects with zero non-compliance	50%	43%

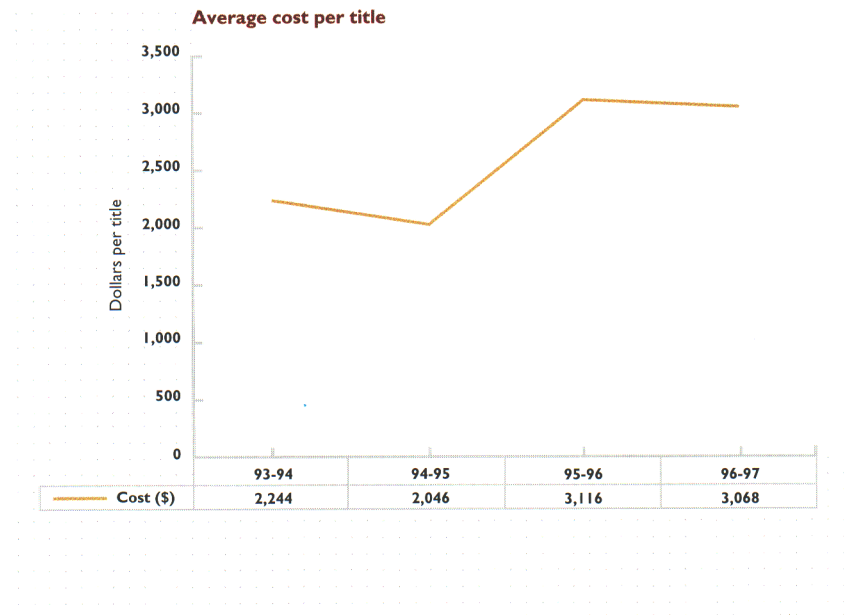
**Comment:** This is a newly developed indicator and data for previous years are not shown.

### **Efficiency: Cost efficiency of title system**

**Measure:** Average cost of administering the title registry

**Description:** Cost of "petroleum tenure" per active title as 30 June.

**Result:**



**Comment:** Performance in 1996-97 was consistent with last year.

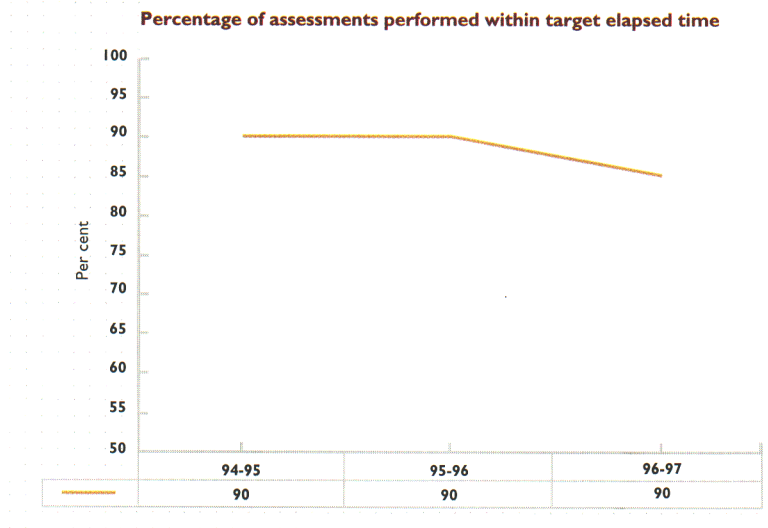
**Efficiency: Assessment of environmental plans**

Measure: **Elapsed time for assessment of environmental plans**

Description: Success in meeting target-elapsed time in working days for assessments.

Target: The target period is 15 working days.

Result:



Comment: Performance has been affected by an increase in the number of applications in potentially environmentally sensitive areas that involved other Government agencies.



# Sub Program 1.4

## Mineral and Petroleum Royalties

**Objective:** To collect a fair return for the community as compensation for the extraction of the State's mineral and petroleum resources.

**Description:** The strategies adopted involve the development and implementation of royalty systems to collect and verify the royalty payment from mineral and petroleum producers. The royalty system and verification arrangements are negotiated with producers within a common framework, determined in the context of national and international comparisons, and are then formalised through legal arrangements.

Recurrent Expenditure: \$477,068  
Corporate Services Costs: \$353,863  
Capital Expenditure: \$41,805  
Total Expenditure: \$872,736

### Introduction

Under the Western Australian legal system, most mineral and petroleum resources belong to the community. Royalties are paid by developers for the right to extract these non-renewable resources. The State Government determines the appropriate level and form of royalties to compensate the community for the depletion of its resources. The assessment, collection and verification of royalty payments are performed by the Department. It provides royalty policy advice to the Government and implements royalty policy.

Determining a fair return to the community is a complex issue. The philosophy incorporated in the Mining Act reflects a benchmark of 10 per cent of mine head value. The average rate for mineral royalty collections in 1996-97 was 9.7 per cent. No royalty was collected from the gold industry. Petroleum Acts include royalty rates of between 5 per cent and 12.5 per cent of the well head value. In 1996-97 the average rate for all petroleum production was 11.5 per cent.

Mineral royalties are implemented through the Mining Act or under State Agreement Acts which apply to particular projects. Royalties for petroleum are implemented through either the Petroleum Act 1967, Petroleum (Submerged Lands) Act 1967, Petroleum (Submerged Lands) Act 1982 or the Barrow Island Royalty Variation Agreement Act 1985.

### Royalty systems

Five royalty systems are used to determine the amount of royalty to be paid in areas of State jurisdiction. Three are used for mineral production and two for petroleum production. Royalties may be based on:

- The quantity of mineral produced (specific rate royalties). This system is generally applied to low

value products such as sand or construction minerals. Rates are generally 30 or 50 cents per tonne;

- The value of mineral produced and sold (ad valorem royalties). Most minerals such as iron ore, nickel, mineral sands and base metals use this system. Rates vary from 1.6 per cent to 7.5 per cent depending on the extent of value-adding before the sale point;
- The net profit from the mining operation (profit-based royalties). Currently one operation has a 22.5 per cent profit-based component included in its royalty system;
- The value of petroleum recovered at the well head (well head royalties); and
- A percentage of net cash flow (resource rent royalties). This system is currently used for one petroleum operation and a rate of 40 per cent applies.

### Assessment, collection and verification

During the year an average of 181 companies or individuals paid royalty. A total of 1292 royalty returns were received and assessed and 194 visits were made to royalty payers. Adjustments to royalty collections resulting from audit activities totalled \$6.5 million.

A total of \$667.9 million dollars was collected for the year, comprising \$331.1 million for minerals and \$336.8 million for petroleum. From this, \$122.9 million was paid to the Commonwealth Government under petroleum royalty-sharing arrangements.

The value of royalty collections exceeded those for the previous year by 23 per cent. This was mainly owing to the first full year of production from the Cossack and Wanaea oilfields. There was also an increase in iron ore, alumina and nickel production. These increases were offset by lower royalty collections from diamonds and mineral sands.

Apart from a few payments, all royalties were received on time. The Argyle Joint Venture is currently disputing the valuation of diamond stocks in its profit-based royalty calculation and this has affected diamond royalty collections.

A new system for monitoring royalty budget and long term forecast variations was developed and implemented. Responsibilities previously held by State Treasury in this area were transferred to the Department.

### Royalty arrangements and policy development

During the year the Department provided advice on the following royalty issues:

- Royalty arrangements for two planned iron ore projects under State Agreement Acts were developed in consultation with the Department of Resources Development. These arrangements included the concessions which the State Government introduced in December 1995 relating to iron ore used as an input to secondary processing in Western Australia;
- The introduction of a royalty under the Cement Works (Cockburn Cement Limited) Agreement Act 1971;
- Options for the introduction of a gold royalty; and
- Arrangement to administer Christmas Island royalties.

No royalty relief was provided for mineral producers. Two petroleum producers obtained relief through a temporary reduction in the royalty rate. Major royalty issues were negotiated for eight mineral projects and four petroleum projects. The negotiations related to royalty adjustments, the preparation of agreed procedures to calculate royalty and the interpretation of legislation.

A number of issues relating to Mining Act royalties were also examined:

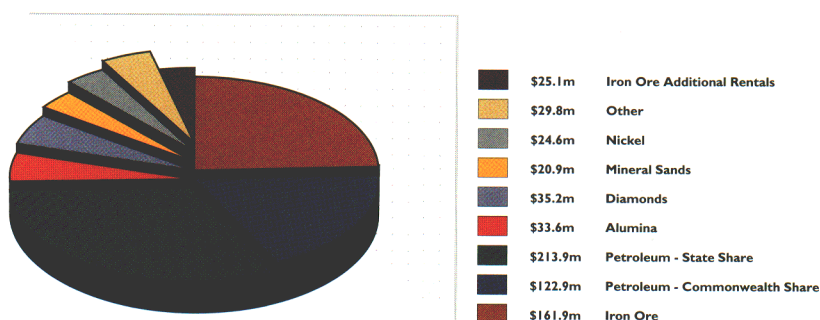
**Table I: 1996-97 Royalty Collections (\$M)**

	Revenue State	Revenue Commonwealth	Total	Paid Into Consolidated Fund
<b>State Legislation</b>				
Minerals	331.1	-	331.1	331.1
Petroleum	32.7	29.8	62.5	48.5
Sub-total	363.8	29.8	393.6	379.6
<b>C/wealth Legislation</b>				
Petroleum	181.2	93.1	274.3	181.2
<b>Total</b>	<b>1996-97</b>	<b>545.0</b>	<b>122.9</b>	<b>667.9</b>
	<b>1995-96</b>	468.2	74.7	542.9
	<b>1994-95</b>	371.2	58.9	430.1
	<b>1993-94</b>	347.8	49.3	397.1

- Penalties for late payment;
- Royalty liability for stockpiled minerals;
- Removal of minimum mineral sand royalty rates;
- Replacement of specific rate royalties by ad valorem royalties; and
- Use of groups of mineral types instead of other categories.

Changes were proposed to the Mining Act Regulations in 1997-98 as a result of these examinations.

**Figure 1: 1996/97 Total Collections \$667.9m**



# Key PERFORMANCE Indicators

## Program 1.4 - Mineral and Petroleum Royalties

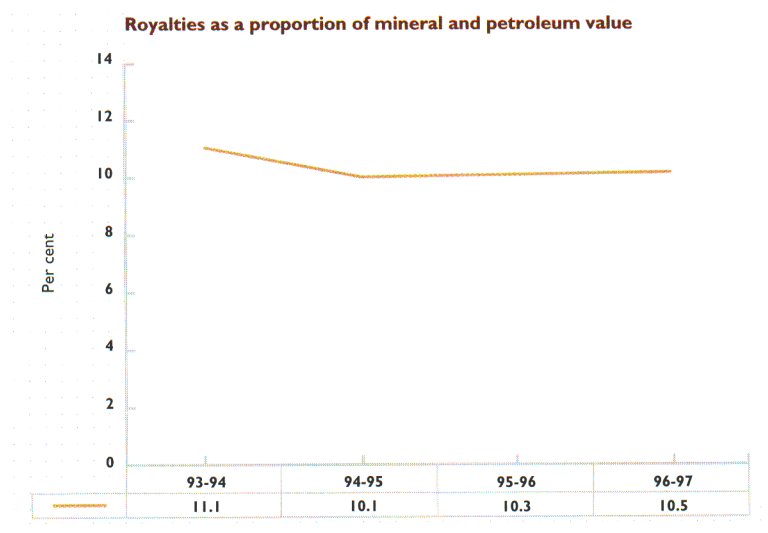
**Objective:** To collect a fair return for the community as compensation for the extraction of the State's mineral and petroleum resources.

### Effectiveness: Royalties collected

**Measure:** Average royalty rate

**Description:** Total royalties collected as a proportion of mine head and well head value

**Result:**



**Comment:** The increase is mainly owing to the higher royalty collections from petroleum projects with secondary production licences, which attract a higher royalty rate.

**Measure:** Compliance with payment schedule

**Description:** The proportion of royalties reported due that were paid by the required date, excluding those unpaid because of disputes on the amount of royalty payable.

<b>Result:</b>	1992-93	1993-94	1994-95	1995-96	1996-97
	99.9%	99.9%	99.8%	99.2%	99.4%

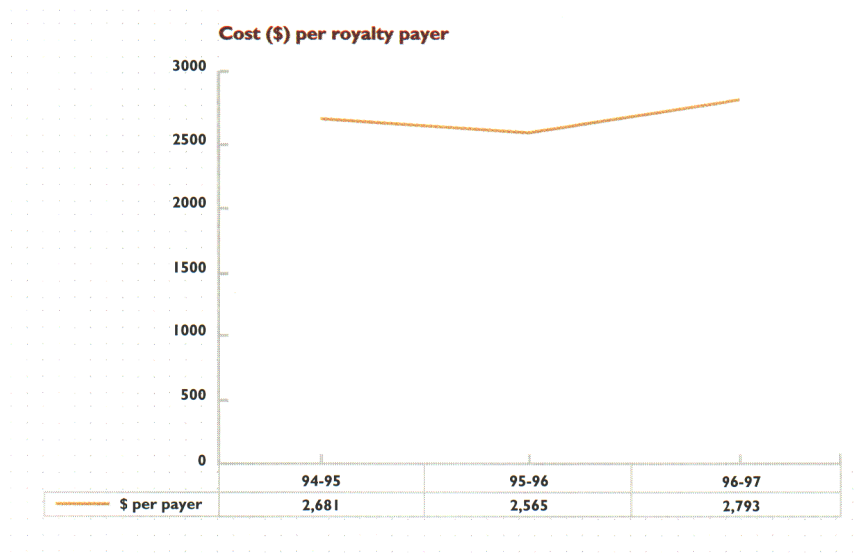
**Comment:** Payment performance remains at a high rate.

**Efficiency: Cost efficiency**

Measure: *Cost per royalty payer*

Description: Direct cash cost in dollars per royalty payer

Results:



Comment: The cost per royalty player has been relatively stable over the past three years. The number of royalty payers reduced by five to 181 for 1996-97. This was made up of 26 payers stopping royalty payments and 21 new payers.



# Sub Program 1.5

## Dangerous Goods Management

**Objective:** To achieve a community confident that measures are in place to keep it safe from hazards associated with the storage, handling and transport of dangerous goods.

**Description:** Industrial development and activities in Western Australia are dependent upon the safe storage, handling and transport of explosives and other dangerous goods. The strategy adopted to achieve the objective is based on the regulation of industry, ensuring compliance with legislation developed and maintained to the best national and international standards.

A comprehensive database of the sites where dangerous goods are manufactured and stored is maintained to assist in monitoring and auditing compliance with the regulations, and to provide the information required when an emergency response is necessary. Educational material and technical advice are also provided about compliance with the regulations; hazards control plans; and more general aspects of handling and storing dangerous goods.

### Introduction

Unless the community is confident that the storage, handling and transport of dangerous goods are safely regulated, industrial development in Western Australia will be hampered. The Department maintains and enforces the Explosives and Dangerous Goods Act to ensure that the hazards from these activities are kept at an acceptably low level.

### Location of dangerous goods public safety program within Government

An internal review of the performance and functions of the Division was conducted to determine whether it could be more effectively located either elsewhere in Government or in the Department.

The conclusions were:

- The functions performed are not duplicated elsewhere in Government;
- There is no similar legislation which could be easily modified to achieve the same functions; and
- There would be no administrative or financial benefit to justify relocating the Division, either as a whole or in parts to other departments or divisions in the Department.

Residual issues from the review were:

- A need to broaden the base of skills in the Division; and
- A need to develop career options within the Division

Recurrent Expenditure: \$1.5 million  
Corporate Services Costs: \$471,818  
Capital Expenditure: \$221,996  
Total Expenditure: \$2.2 million



Delegates at the 3rd International Conference of Explosives at Fremantle.

and enable people to get real experience at different management levels.

Existing partnering arrangements with other Government authorities will help to meet these needs. More alliances both within and outside the Department are being developed.

### Chief Inspectors of Explosives Conference

The Division was host to the 3rd International and 27th Australasian Conference of Chief Inspectors of Explosives. The conference attracted delegates from Europe, North America and South East Asia, with most Australian States represented.

Subjects discussed were safety and technical developments in commercial explosives manufacturing, classification and use.

An International Code of Practice was drafted for the safe manufacture and storage of materials used to make explosives. This is a change in the attitude of industry towards regulation and shows promise for major benefits

in the long term. It will enable Government to tap into industry's superior technical knowledge and develop enforceable codes of safe practice.

All the major Australian states with an involvement in the use of these materials agreed to apply the Code of Practice.

Another outcome of the conference was that Australia has been given the opportunity to enter accident data into an electronic database developed by the UK. This access will be in return for the provision of information which will be used to help decision-making in the explosives regulatory area.

## **Community Confidence**

### ***Dangerous Goods Liaison Committee***

The Dangerous Goods Liaison Committee entered its fourth year of operation, continuing to provide advice to the Minister for Mines on dangerous goods legislation as it affects public safety and to the Division on the strategies employed to maintain community safety.

The Committee provided valuable guidance on the development of the national road transport reform legislation, on the Division's performance monitoring and on the best use of the findings of the Community Confidence Survey described below.

The Committee proved to be an excellent consultative forum.

### ***Community confidence survey***

In 1997 the Division carried out a second survey of community confidence to measure its performance in achieving its vision.

The survey of 500 people showed a slight increase in community confidence to 63 per cent from 59 per cent in the original survey in 1996.

Western Australia's community confidence survey is unique in the world and one of very few measures of performance in delivering a public safety program. Through 1996-97 Divisional staff were active in reinforcing the issues which promote public safety that were identified in the initial report.

The plan for 1997-98 is to maintain this positive activity while simultaneously acting to remove the barriers to public safety including:

- Lack of public awareness of the regulations; and
- Public perceptions that industry does not know, or avoids, the rules.

### ***Dangerous goods accidents***

The downward trend in accident numbers over the previous five years continued in 1996-97. This was particularly gratifying in the context of increased activity in the dangerous goods industries. The downward trend was more pronounced in the storage and explosives areas than in the transport of dangerous goods.

The total number of transport incidents has reached a plateau of about 20 each year. While road crashes continued to cause serious injuries, there have not been any injuries because dangerous goods were involved. This was largely because of high industry compliance with international design standards for dangerous goods trucks.

The main causes of dangerous goods road accidents were unsafe acts by drivers. They included:

- Inappropriate speed;
- Driver fatigue;
- Inattention;
- Alcohol and drugs;
- Inappropriate risk taking; and
- A lack of commitment to safety procedures and road safety regulations.

Some accidents occurred when dangerous goods packages were not properly restrained and fell off the truck. Occasionally the cause was a mechanical failure such as a tyre blow-out.

The Division is trying to motivate the transport industry to adopt safety management systems and safety performance measures.

## **Legislation developments**

### ***National dangerous goods transport legislation***

In June 1997, the Ministerial Council for Road Transport (MCRT) approved the national reform package.

The regulations on road and rail dangerous goods transport set out the duties of all parties including consignors, prime contractors and drivers. The package also included the 6th Edition of the Australian Dangerous Goods Code, which laid down technical requirements and adopted the most recent recommendations of the United Nations Committee of Experts on the Transport of Dangerous Goods. The Division was closely involved with the drafting of this package to make sure it was appropriate for Western Australia.

It is intended that this legislation will be introduced in 1998 in Western Australia under a new *Transport of Dangerous Goods Bill* that covers both rail and road safety and achieves nationally uniform transport safety outcomes.

## Sub Program 1.5 - Dangerous Goods Management (cont.)

The new transport law is clearer and will lead to greater compliance. It is also fairer since it targets the party with control over the operation by shifting duties from the driver to the consignor and prime contractor.

### **Major Hazard Facilities (MHFs) standard**

The National Occupational Health and Safety Commission finalised a National Standard and Code of Practice for the control of MHFs. Australia now has national criteria for the classification of a chemical facility as a major hazard, that is, having potential to cause severe adverse impact on people, environment or property. The Division was involved in the preparation of this standard, ensuring that local expertise and systems used in managing the State's designated MHFs were incorporated in the national standard. As a result there should be minimal impact on these MHFs.

The criteria set for classifying an operation as an MHF are based on the quantity of dangerous goods stored or processed on site. These criteria have broadened with the national approach and consequently encompass about 30 more facilities within the State, many of them warehouses for dangerous goods.

Consultation started with these facilities to consider the implications of the national standard and to develop reasonable schedules for compliance. Concurrently, areas of overlap with occupational health and safety legislation were addressed by a working party established under the WorkSafe Western Australia Commission.

### **Hydrocarbons in motor vehicle air conditioning systems**

A large sector of the air conditioning and motor vehicle servicing industries voiced strong objections on safety grounds to the use of hydrocarbon gases as refrigerants in motor vehicle air conditioning systems. This followed a ban on such use in New South Wales and the introduction of controls in Queensland and the Northern Territory.

The Division investigated the concerns, consulting with supporters and opponents, and developed a position paper for several Ministers with a stake in this matter. The issue was complicated owing to the overlap into several jurisdictional areas (public safety, occupational safety, consumer affairs, energy safety and transport safety), none of which held suitable existing legislative controls for the practice.

The major proponents of this practice acted responsibly during the extended investigations by agreeing to withhold its introduction to Western Australia until a whole-of-government resolution was reached. This resolution is expected early in 1997-98.

### **Productivity**

The Division brought in several initiatives during the year to increase productivity.

A training module was developed for Fire and Rescue Services (FRS) personnel to check dangerous goods safety during routine building inspections. The objective was to have FRS as specialist field inspectors for the Division and for the Division to provide advice and legislative backup when problems are identified. The key areas dealt with were those aspects of the regulations with a direct impact on Fire Officer safety.

The training module was delivered in conjunction with the FRS annual training program, with a target of more than 1000 FRS officers by October 1997.

Another initiative involved the accreditation of consultants to endorse the designs of proposed storage installations for dangerous goods.

An assessment fee was introduced for work done by the Division and proponents were given a choice of using a consultant or the Division's Inspectorate. By the end of the year about 50 per cent of proponents chose to use an external consultant, resulting in a significant workload reduction for the Inspectorate.

The AgSafe industry-based accreditation and monitoring program for premises supplying agricultural and veterinary chemicals continues to support the Division thus allowing resources to be directed to other areas. Other industries will be encouraged to follow this lead.

### **Performance measurement**

Performance measures have been developed in the context of others such as public safety programs. A comprehensive report was produced summarising all the measurement activities of the Division.

Performance measures are divided into two major areas: effectiveness and efficiency. Effectiveness is measured in terms of compliance rates, accidents and community confidence.

Efficiency measures are more complex. Work has started to develop an appropriate index and extensive work was done on process improvement.

### **Publications**

The Explosives and Dangerous Goods Division released several publications during the year including four copies of its industry newsletter *Explosay*, the *Summary of Accidents Reports*, storage guidance notes, a joint Fire and Rescue Service pamphlet and Dangerous Goods Audit Report.

# Key PERFORMANCE Indicators

## Program 1.5 - Dangerous Goods Management

**Vision:** Our vision is a community confident that measures are in place to keep it safe from hazards associated with the storage, handling and transport of dangerous goods.

**Objective:** To ensure an acceptably low level of risk to the public from the storage, handling and transport of explosives and dangerous goods in Western Australia.

### Effectiveness: Community Confidence

Measure: **Level of community confidence**

Description: The percentage of people responding to a customer survey who say they are very confident or fairly confident that potentially dangerous goods and materials are stored, handled and transported safely.

Result: **Percentage of population confident in dangerous goods management**

June 1996	June 1997
59%	63%

Comment: The results are based on a general community telephone survey of 500 Western Australians from metropolitan and regional areas aged 18 years and over conducted between 2 June 1997 and 20 June 1997.

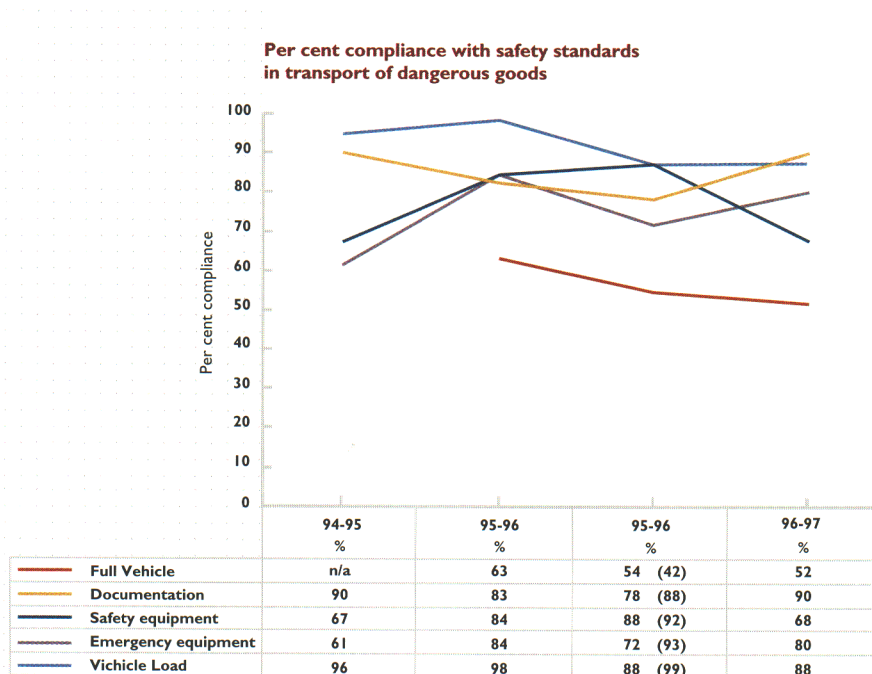
The slight increase in community confidence is a positive step towards our goal of achieving a 20% improvement in community confidence over the next 3 to 5 years.

### Effectiveness: Safety

Measure: **Compliance with safety standards in the transport of dangerous goods**

Description: The proportion of vehicles complying with safety standards set in the Dangerous Goods Regulations. Full compliance means the vehicle complied with all requirements.

Result





## Key Performance Indicators - Program 1.5 (cont.)

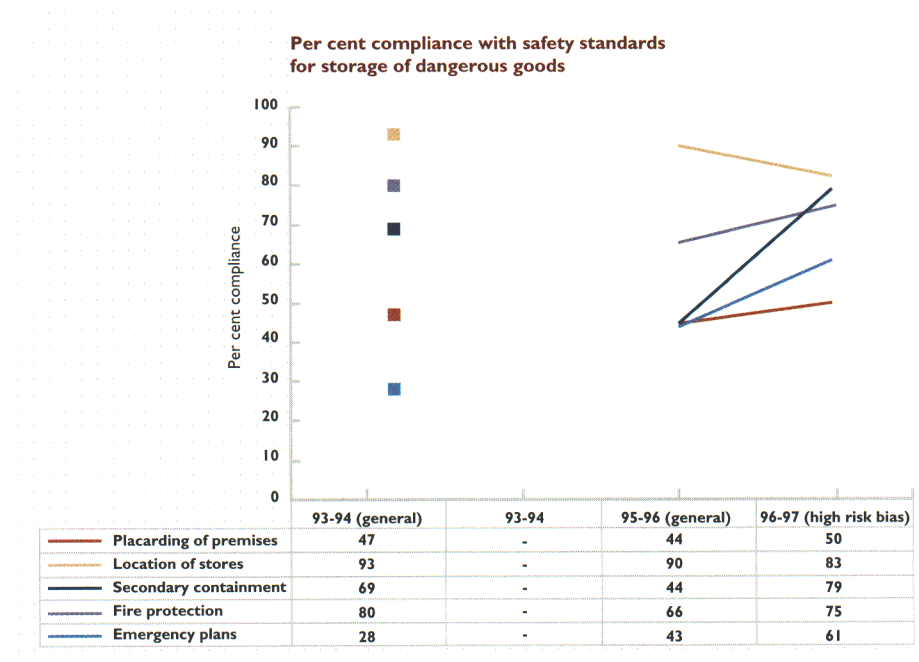
**Comment** *The introduction of a computerised information management system (DEXIS) in early 1996 has resulted in a review of historical compliance level data and consequent revision of figures for 1995-96. The old data are listed in brackets in the above table.*

The standard of compliance is at a plateau and suggests a need for a radical change in enforcement strategy. A significant improvement in compliance rates is expected with the introduction of new legislation that will provide for on-the-spot infringement notices. Compliance rates should also improve with the deployment of increased resources for on-road enforcement inspections.

**Measure:** **Compliance with safety standards in the storage of dangerous goods**

**Description:** The level of compliance with regulations observed at premises where dangerous goods are stored and handled.

**Result:**



**Comment:** Random target inspections with a focus on highest risk sites were conducted during 1996-97. Results from this sample are therefore not completely comparable to the general range of industry sites inspected in the preceding two years. The changes in the indicator between 1995-96 and 1996-97 may, therefore, not be fully representative of trends across the entire industry.

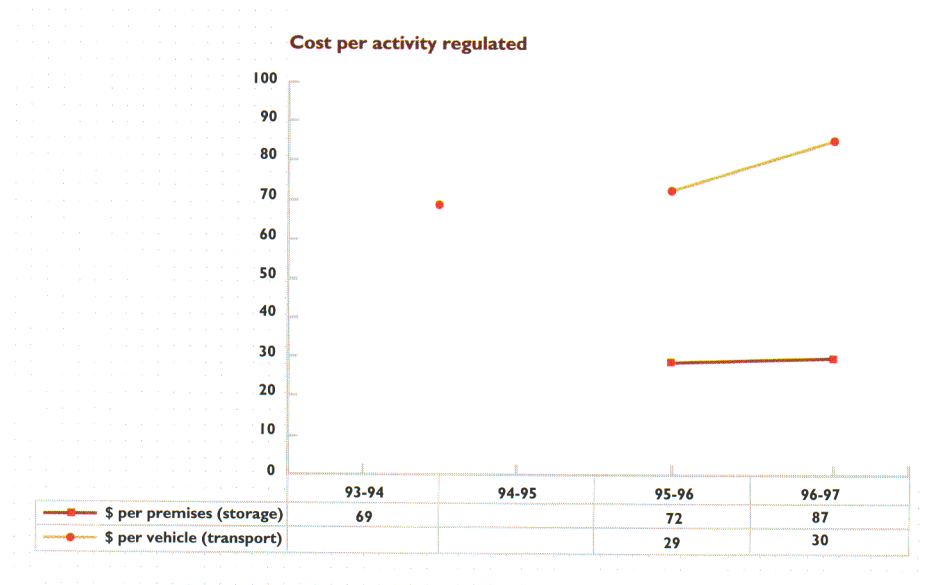
The 1996-97 results suggest that highest risk sites have better compliance levels than general industry data gathered in 1993-94 and 1995-96. This would suggest that those sites that pose a greater risk to public safety are more likely to comply with the Dangerous Goods Regulations 1992 than general industry.

**Efficiency: Administration cost efficiency**

Measure: **The cost of administering legislation per activity regulated**

Description: Direct administration costs (dollars of the day) per activity regulated.

Result:



*Comment:* The apparent increase in administration costs for regulation of dangerous goods premises is a consequence of reallocation of some corporate costs (25% of operating expenditure) and salary increases (15% per person). 1996-97 is seen as a baseline year as further significant change to accounting practices and salary is not expected in the near future.

Cost efficiency for transport was stable as the rate of cost increase was approximately proportional to the increase in the number of licensed vehicles.

# Program Two

## Industry Support

**Objective:** To increase the rate of discovery and development of the State's mineral and petroleum resources through the provision of comprehensive information about the geology and the mineral and petroleum resources of Western Australia, and of specialised mineral processing research and testing facilities.

**Description:** The program provides regional geoscience maps and compilations of geoscientific and resource information obtained from field and laboratory investigations by Government and industry. The information is used by industry to develop new exploration concepts and improve discovery rates. It is also used internally in policy development and advice, and by other agencies with responsibilities for land use planning and major infrastructure developments. The program also provides specialist mineral processing and extractive metallurgical research services. These services increase the efficiency of mineral extraction, thereby reducing costs, facilitating development and helping to maintain or improve the competitiveness of the State's mineral industry.

Recurrent & Capital Expenditure: \$12.7 million  
Corporate Services Costs: \$3.4 million  
Total Expenditure: \$16.1 million  
Offset by retained revenues collected by the Mineral Processing Laboratory: \$1.0 million  
Net Expenditure: \$15.1 million  
people employed under this program: 156

### Major achievements

- Increased geological support for exploration for new mineral and petroleum deposits in Western Australia by:
  - releasing 13 data packages of geoscience mapping products including 22 geological maps at various scales covering areas throughout Western Australia;
  - releasing 25 geoscience reports and other publications;
  - acquiring and releasing two airborne geophysical datasets and two sets of gravity images relating to the western on-shore sedimentary basins;
  - releasing regolith geochemical maps at 1:250,000 scale and associated data packages for three areas in which field work was completed in 1995-96;
  - releasing two data packages on fluorite and barite; of and talc and magnetite in Western Australia; and
  - releasing two data packages on the petroleum resources of various on-shore sedimentary basins.
- Provided greater availability of metallurgical testwork facilities, consultancy services and advice to companies, Government agencies and individuals operating in the mining and mineral processing sector by:
  - entering into a collaborative agreement with CSIRO Division of Minerals and Curtin University with the aim of fostering closer co-operation and providing a more comprehensive service to the industry; and
  - expanding the range of metallurgical testwork services offered to the industry.

# Sub Program 2.1

## Geological Survey

Recurrent Expenditure: \$10.8 million  
Corporate Services Costs: \$3.4 million  
Capital Expenditure: \$0.5 million  
Total Expenditure: \$14.7 million

### Introduction

The provision of timely, high-quality geoscientific maps, reports and databases improves the chances of exploration success. The Geological Survey Division provides this type of information to attract mineral and petroleum companies to invest in Western Australia. This is particularly relevant in the face of competition from other Australian states and from developing countries, and in light of current uncertainties in relation to land access. Geoscientific information is also an essential element in the effective management of the State's mineral and fossil fuel resources and in optimising regional and urban infrastructural development and planning decisions.

As well as geoscientific mapping and mineralisation studies, Geological Survey Division geologists provided access to the major Department collection of company mineral and petroleum exploration reports through the WAMEX and WAPEX databases respectively, and answered geological enquiries from the mining industry, Government departments, educational institutions, and members of the public.

Most effort in geoscientific mapping and resource studies occurs within integrated projects. The focus of the various project teams is determined by the needs of various stakeholders (for example, mineral and petroleum exploration industry, Government, etc.) which are represented on the Geological Survey Liaison Committee and through frequent formal and informal consultation. Strategic surveys are initiated to promote the prospectivity of areas that are regarded as under-explored but perceived as holding potential for discovery of new orebodies.

Maps and reports are produced using computer-assisted techniques and, increasingly, Geographical Information System technology is being used to manage and display digital information in a manner allowing rapid update and timely release to customers.

**Objective:** To provide up-to-date regional geological, geophysical, geochemical and resources information to support resource exploration and delineation, and land-use planning.

**Description:** Geological, geophysical, geochemical and mineral and petroleum resources data are acquired throughout the State from field investigations and from industry exploration reports. These data are synthesised to compile systematic regional geoscientific and mineral deposit maps, and petroleum basin analyses. In addition, special maps are made, ranging from maps of the whole State to detailed maps of special interest areas. The maps and analyses are made available in the form of hard-copy reports and digital data packages.

Archives of the exploration and development reports and drill core and sample material lodged by tenement holders are maintained in a form which enables them to be readily accessible when they are released to the public under the terms of the relevant legislation.

### Eastern Goldfields

#### *Eastern Goldfields project*

The Eastern Goldfields mapping project is conducted under the National Geoscience Mapping Accord (NGMA) in conjunction with the Federal Government's Australian Geological Survey Organisation (AGSO). A joint Geological Survey/AGSO Expo displaying Eastern Goldfields NGMA products was held in Kalgoorlie in October 1996.

Field mapping was completed on the BANJIWARN, BOYCE and DEPOT SPRINGS 1:100,000 sheets, and further reconnaissance mapping was carried out on the WILUNA, SIR SAMUEL, DUKETON, MENZIES AND EDJUDINA 1:250,000 sheets. Releases of new products included the WILUNA and MILLROSE 1:100,000 geological maps, and a CD-ROM package including both geology, of and a spatial index to exploration activity on the SIR SAMUEL 1:100,000 sheet.

#### *Central Yilgarn project*

The Geological Survey Division has purchased the new multiclient geophysical survey over the central part of the Southern Cross Province in anticipation of starting field mapping on the JOHNSTON RANGE 1:100,000 sheet early in 1997-98.

#### *Mineralisation studies*

This project involves geoscientific studies of the Eastern Yilgarn area, considered the State's principal mining district, to investigate the geological controls of mineralisation, document resources, and propose new



## Program 2.1 - Geological Survey (cont.)

exploration strategies. During 1996-97, the project group published two 1:100,000 geological maps and explanatory notes and a thematic map at 1:500,000 scale showing granite-related geology of the South West Yilgarn Province.

Systematic documentation of 200 gold deposits in the Kurnalpi-Edjudina area with greater than five kilograms of production or known resources has been completed. It is proposed to compile a report and map summarising the geology, size and location of each deposit described.

### **Pilbara-Kimberley**

#### ***Pilbara Craton project***

The Pilbara Craton project is an NGMA project being carried out in cooperation with AGSO. New findings from mapping in the west Pilbara are indicating the presence of additional targets for mineral exploration. In 1996-97, Geological Survey staff completed geological mapping of the PINDERI HILLS, MOUNT WOHLER, MUCCAN, YULE AND COORAGOORA 1:100,000 sheets. Three sheets (DAMPIER and SHERLOCK at 1:100,000 scale and ROY HILL at 1:250,000 scale) were published, and airborne geophysical data over the central and eastern parts of the region were released. The project will continue to the year 2000, and result in publication of more than 20 new 1:100,000 geological maps, and seven additional 1:250,000 geological maps.

#### ***Paterson Orogen project***

Field mapping for the Paterson Orogen project was completed in May 1997. Two new 1:100,000 map sheets (CONNAUGHTON and GUNANYA) were published during the year, and work towards publication of additional sheets (POISONBUSH, BLANCHE, CRONIN AND RUDALL 1:250,000) continued. The 1996-97 fieldwork and follow-up analytical studies revealed that the Tarcunyah Group has enhanced potential for gold and base metal mineralisation, with the discovery of anomalous gold and copper values.

#### ***King Leopold and Halls Creek Orogens project***

During 1996-97 several 1:100,000 and 1:250,000 series geological maps, and their accompanying explanatory notes, were compiled, prepared for publication, or published. Several of these have been mapped jointly by the Geological Survey and AGSO as part of the NGMA. The maps that have been released cover known areas of diamond, gold, platinum, chrome, rare-earth element, and base metal mineralisation in the East Kimberley. A booklet on the "Geology and Landforms of the Kimberley" was written at the request of the Department of Conservation and Land Management, and was published by them as part of their Bush Book series.

Colour 1:100,000 geological maps for MCINTOSH, TURKEY CREEK and BOW were published by the Geological Survey, together with the explanatory notes for MOUNT REMARKABLE. AGSO released preliminary colour plots of the HALLS CREEK, RUBY PLAINS, ANTRIM, COW CREEK, NICHOLSON and GORDON DOWNS 1:100,000 geological map sheets. Preparation of the MOUNT RAMSAY, LISSADELL and GORDON DOWNS colour 1:250,000 geological map sheets is well advanced, as are the explanatory notes for the ANGELO, DOCKRELL, HALLS CREEK, RUBY PLAINS, MCINTOSH and BOW 1:100,000 map sheets, and the LISSADELL 1:250,000 map sheet.

#### ***Lennard Shelf project***

The Lennard Shelf project aims to produce a comprehensive bulletin and maps of the geology of the Devonian reef complexes (an ancient reef system about 375 million years old) and a report on the subsurface geology encountered in mineral-exploration drillholes. The Devonian sequence is regarded as highly prospective for both zinc-lead mineralisation and petroleum. It is also one of the classic features of world geology and the results of the project will be of widespread interest to geoscientists and the public.

Detailed maps at a scale of 1:100,000 have been compiled over the whole of the outcrop belt and at 1:50,000 and 1:250,000 over key areas. A further regional map at 1:500,000 is to be produced. Some field work was conducted during the year in connection with surface mineralisation and to collect samples for conodont analysis and this aspect will be completed in 1997-98, in conjunction with Melbourne University. The manuscript of a report on the subsurface geology has been completed and is being edited for publication.

#### ***Midwest-Gascoyne***

During 1996-97 the Geological Survey began three new geological mapping projects that will follow on from the "New Initiative" mapping of the Glengarry area. The aim of these projects is to improve the geological understanding of the Capricorn Orogen, an extensive belt of Palaeoproterozoic to Mesoproterozoic rocks that lie between the Archaean rocks of the Yilgarn and Pilbara Cratons. This belt has been under-explored in comparison with similar belts of Proterozoic rocks elsewhere in Australia, such as at Pine Creek, Mount Isa and McArthur River, which contain major deposits of gold, uranium, copper, lead, zinc and silver.

#### ***Glengarry Basin project***

During 1996-97, colour 1:100,000 geological maps were published for MILGUN, DOOLGUNNA, GLENGARRY, MOUNT BARTLE, BRYAH, THADUNA and

MOOLOOGOOOL. Explanatory notes for the PADBURY, BRYAH, MOUNT BARTLE, DOOLGUNNA and GLENGARRY 1:100,000 sheets are being prepared for publication, and notes for THADUNA, MOOLOOGOOOL and MARYMIA are being compiled. A 1:250,000 map covering the Bryah and Padbury Basins, was also compiled.

The Palaeoproterozoic volcanic and sedimentary rocks of the former Glengarry Group, once considered to represent deposition in a single basin, have now been divided into three separate basins with differing depositional environments. The economically important Peak Hill Schist has been interpreted as highly deformed, possibly Archaean rocks at the contact between the Bryah Basin and the Marymia Inlier.

### **Southern Gascoyne Complex project**

Mapping of the MARQUIS, MOORARIE and GOULD 1:100,000 map sheets began during the 1996 field season, extending onto ERRABIDY at the start of the 1997 season. Other activities involved the processing of detailed airborne geophysics, and the acquisition of 1:25,000 colour aerial photography, together with Landsat imagery. Sampling for whole rock geochemical analysis and geochronology was also carried out.

The Gascoyne Complex is the deformed medium to high grade metamorphic core of the Proterozoic Capricorn Orogen. Mapping has started at the southern margin of the complex across tectonic boundaries that separate both it and the Bryah Basin from Archaean rocks of the Yilgarn Craton, and from the Proterozoic rocks of the Bangemall Basin.

### **Earaheedy Basin**

The Earahedy Basin unconformably overlies the eastern edge of the Yerrida Basin. Following a field reconnaissance of the basin during the 1996 field season, aeromagnetic and Landsat images have been prepared, and aerial photographs obtained. Mapping on the FAIRBAIRN 1:100,000 map sheet began during the 1997 field season.

### **Bangemall Basin**

The Bangemall Basin contains Western Australia's largest stratabound lead-copper-barite deposit. This, together with the basin's age and geology, make it one of the most prospective areas in Australia for the discovery of large, blind, sediment-hosted base-metal orebodies.

During 1996-97 activities included the processing of detailed regional airborne geophysical data, and the acquisition of coloured aerial photography, Landsat imagery, and digital topographic data. Mapping on the EDMUND 1:250,000 map sheet will begin during the 1997 field season.

### **Shark Bay project**

The Shark Bay project is designed to produce a bulletin and maps of key aspects of the geology of the Shark Bay World Heritage Area. A report on the bivalve *Fragum erugatum*, which is responsible for the famous Hamelin Coquina, was completed during the year in association with the Western Australian Museum.

### **Regional geochemical and regolith mapping**

The regional geochemical and regolith mapping program delineates the distribution of surface material over selected 1:250,000 scale map sheets and provides background geochemical information on these areas. This information forms the basis for more detailed investigations by the exploration industry. Eight sets of maps and explanatory notes have been published since the inception of the program in 1993-94. In 1996-97, maps and explanatory notes for the ROBINSON RANGE, NABBERU and MOUNT PHILLIPS sheet areas were published and regolith samples were collected from the MOUNT EGERTON and GLENBURGH map sheets. The most recent phase of sample collection was carried out by helicopter over a four-week period, compared to the previous approach of ground-based vehicles which, for an equivalent area, would have taken more than 10 weeks.

The maps and explanatory notes for each map sheet consist of summaries covering the regional geology, mineralisation, and previous mining and exploration activity. The regolith samples collected for each sheet (from approximately 1000 sites) are analysed for between 45 and 50 components. The presentation and discussion of these data complete the publication and cover the relationship of regolith chemistry to bedrock and the compositional differences between different regolith units. Information recorded at each sampling site is combined with remotely sensed data in the construction of a regolith distribution map. Most data are available in both hard copy and digital form.

### **Petroleum exploration initiatives**

The objective of this project is to review the hydrocarbon prospectivity of the onshore sedimentary basins to promote private sector petroleum exploration. This is achieved by presenting new exploration concepts and models based on geological, geophysical, and geochemical datasets generated by integrating existing exploration open file industry data and new data acquired directly by the Geological Survey Division.

Crucial factors dealt with by these studies include the presence of petroleum source rocks of appropriate quality and maturity, good reservoir and sealing units and a

## Program 2.1 - Geological Survey (cont.)

structural history such that potential traps are formed before hydrocarbon generation and migration.

To expand a limited geochemical data base and clarify stratigraphic questions in the onshore Southern Carnarvon Basin and the Officer Basin, a program of stratigraphic core holes was started in 1995-96 with drilling of three bore holes totalling 1667m. Further data from four new stratigraphic core holes were obtained during late 1996-97 in the Gascoyne Platform area of the Carnarvon Basin. These four stratigraphic core holes totalled 3123m and will provide the first high quality analytical data on the source potential, reservoir quality and stratigraphy of the Silurian and Devonian sections.

Empress 1, a planned 2000 metre stratigraphic core hole in the Yowalga sub-basin of the Officer Basin, commenced in late June 1997. This well has been planned to test the Neoproterozoic sequence near the southwestern margin of the Officer Basin for potential hydrocarbon source rocks.

Existing aeromagnetic and gravity data have been reviewed and are being integrated with reprocessed and reinterpreted seismic data to provide an improved insight into the structure and tectonic history of the study areas, both for basin analysis and to locate potential stratigraphic drilling.

A report on the structure and petroleum potential of the Merlinleigh Sub-basin, Southern Carnarvon Basin, has been completed, while a comprehensive report on the structure and stratigraphy of the north Perth Basin has been released.

Two records relating to the Canning Basin were released during the year. One was a compilation and review of data pertaining to petroleum prospectivity while the other reviewed Permo-carboniferous petroleum reservoir data of selected wells. Records of Gneudna 1 and Ballythanna 1 Well Completion Reports; Northwest Cape Petroleum Exploration Results; and Gravity of the North Perth Basin were also released during 1996-97.

Papers promoting geoscience aspects of the onshore basins of Western Australia were presented at the 1996 Australian Society of Exploration Geophysicists (ASEG) annual convention in Sydney and the 1997 Australian Petroleum Production and Exploration Association (APPEA) convention in Melbourne. Promotional booths displaying geoscientific products from the Petroleum Initiatives Program at these conventions were well received by industry delegates. A similar display was mounted at the American Association of Petroleum Geologists Conference in Dallas.

### **Mineral prospectivity enhancement project**

This project is aimed at enhancement of the perceived prospectivity of the State for a range of commodities,

including precious metals, base metals, ferro-alloys, and diamonds, and to encourage exploration activity in areas of the State that are considered prospective but under-explored. Systematic studies which synthesise and integrate open-file statutory data with existing geological, mineral occurrence, geophysical, geochemical and remote sensing data are carried out. Studies of the north Eastern Goldfields, Kimberley, Bangemall Basin, Pilbara and south west Yilgarn are underway and first results will be published in 1998. Three 1:1,000,000 scale Kimberley prospectivity maps were printed on behalf of the Department of Resources Development.

### **Geoscientific advice relating to resource assessment and mining legislation**

This project maintains a detailed inventory of the State's identified mineral resources, monitors activities, and provides advice on mineral resources, mineral exploration and potential for mine development. Many of these functions are supported through the mines and mineral deposits database, MINEDEX.

A digital dataset from MINEDEX was released during the year as a Record (1996/13). Development of the MINEDEX database continued through the year, including the addition of gold production data. This will allow current gold resources and historical production to be linked to provide total in-ground resources for known individual deposits and for the whole State.

An update of mineral exploration activity was produced for the Hon. Minister quarterly throughout the year. This revealed a continuing high level of mineral exploration expenditure in Western Australia, predominantly led by the gold sector. Increased exploration expenditure was also recorded for base metals (including nickel and cobalt), iron ore and diamonds. Western Australia is maintaining its dominant share (58 per cent) of Australia-wide exploration expenditure (54 per cent in 1995-96), but the proportion of overseas activities by Australian companies is still increasing.

Another aspect of this project is to monitor and assess exploration performance on mineral tenements and provide geological advice for the administration of, and for proposed changes to, the Mining Act and Offshore Minerals Act. Most mineral tenements are held for exploration or prospecting rather than mining. Advice on these exploration activities, as gauged from mineral exploration reports and discussions with tenement operators, helps the Department to administer tenements in an efficient and equitable manner, and to ensure that the State is effectively explored.

Exploration performance on more than 700 mineral tenements was reviewed during 1996-97 (3400 in 1995-

96) as part of the assessment of applications for exemption from expenditure conditions, applications for extension of terms to exploration licences, and applications for Ministerial consent to dealings in exploration licences during the first year of tenure. Where appropriate, in relation to expenditure conditions, recommendations were made for conditions to be imposed on particular tenements to ensure that ground does not remain unworked for long periods.

### **Comprehensive regional assessment of mineral potential in the south west forest area**

Assessments of forest regions are required before individual States and the Commonwealth can negotiate Regional Forest Agreements (RFA). These embody conditions for native forest resource development, including preservation of a fixed proportion of old-growth forests in reserves.

In conjunction with the Bureau of Resource Sciences (Commonwealth Department of Primary Industry and Energy), the Geological Survey Division undertook a qualitative assessment of known and potential mineral, coal and petroleum resources of the southwest area. Critical input to the assessment was provided by industry and academia during a workshop in February 1997.

It is expected that the relevant report will be released by the joint Commonwealth—Western Australian Regional Forest Agreement Steering Committee during the latter part of 1997.

### **Industrial minerals**

During 1996-97, commodity reports were published describing talc, magnesite, pyrophyllite, barite and fluorite deposits of Western Australia. Strategic studies on limestone resources and on armour stone were completed, as was a Record on basic raw materials in the Shark Bay region and an overview summary of the industrial mineral resources of the State. A significant number of enquiries from other Government agencies and industry were answered and advice was given on Mining Act and production reporting issues.

### **Mineral and petroleum exploration data**

The WAMEX, WAPEX and WAPIMS databases are used to administer the collection, storage and dissemination of mineral and petroleum exploration company statutory reports.

These activities seek to encourage exploration and development activities and prevent wasteful duplication of effort. The strategy is to maintain and manage the legacy of data from previous exploration and to ensure that these

data are readily accessible when released under the terms of the relevant legislation.

During the year, 3698 volumes of mineral exploration reports on 10,083 tenements were received, representing an increase of 15.8 per cent. This brings the total number of volumes held to 56,006 covering 14,199 reporting groups. Gold is still the most commonly sought commodity, with 74 per cent of reports submitted relating to exploration programs for gold. Submission of data in digital form is increasing, with about 11 per cent of reports containing some data in this format.

During the year 1062 mineral exploration reports were released to open file, bringing the total number of open file mineral reports to 22,881 volumes.

During 1996-97 there were 227 active petroleum tenements, of which two expired and 30 were awarded or renewed, during a year which had the lowest recorded onshore exploration activity since 1965. A total of 23 surveys, 62 wells and 23 general studies were conducted in the State. These activities generated 55,113 sets of data, a 26 per cent increase over the previous year, to make a total of 531,853 registered sets of petroleum data held or administered by the Department. These data sets include reports, seismic sections, well logs, digital data, maps, cores and cuttings, and palaeontological data.

As part of the legislative requirement for release of petroleum data, 173 edited reports, 489 unedited reports, 106 sets of well logs and 62 sets of seismic sections were released. The increased use of digital data is evident from the 100.8 per cent increase in seismic tapes being reprocessed (32,290 tapes) as a result of 135 requests received by the Department. Additionally, 50 requests for sample drill core or cuttings and 16 requests for palaeontological data were satisfied.

This has been the first full year of required compliance with the 'Guidelines for Mineral Exploration Reports on Mining Tenements'. These guidelines outline standards for format and content of mineral exploration reports as required under the Mining Act. Forfeiture action may now be taken where mineral exploration reports are either not submitted or are unsatisfactory in that they do not follow the guidelines in format or content. With the increased quality control checking by Department staff it was found that 37 per cent of the reports submitted this year required some rectification in regard to format and/or content.

The Mining Act now legally recognises 'combined reporting status'; that is, the ability to submit one mineral exploration report on a group of tenements on a chosen date provided requirements are met.

During the year 372 reporting groups covering 3180 tenements were formalised. The total number of current



## Program 2.1 - Geological Survey (cont.)

combined reporting groups is 1479 covering 15,423 tenements.

Access to the WAMEX database was made available to outside users via the Internet from August 1996. Refinement of the prototype Paradox database (WAPIMS) for the management of petroleum data has continued, with digital downloads being made available to clients.

The 'Schedule of Wells' for the Perth, Canning, Officer, Eucla and Bremer Basins has been released and work is being undertaken to compile a complete picture of onshore seismic surveys in the State. The Division is involved with the Seismic Navigation Integration Project which is undertaking a similar compilation of offshore seismic surveys.

Finally, the mineral and petroleum exploration data management sections have merged and moved to a refurbished and more functional workplace closer to the Department library where most external clients access the data.

### Promotion of mineral and petroleum exploration

To attract investment in mineral and petroleum exploration in Western Australia the Geological Survey Division focuses its day-to-day work on investigating the geology of the State and disseminating the results to help existing explorers and to attract new ones. A series of displays on this theme was mounted at industry conferences and seminars through the year. Displays were shown at the following industry events:

- Australian Society of Exploration Geophysicists 12th Geophysical Conference and Exhibition (Sydney, February 1997);
- WALIS Forum '97 (Perth, March 1997);
- Australian Petrographic Symposium (Corowa, NSW, March 1997);
- Minerals and Energy Week (Perth, March 1997);
- American Association of Petroleum Geologists Annual Convention (Dallas, Texas, April 1997);
- Western Australian Exploration Technology Overview: Geotrain Australia (Perth, April 1997);
- Australian Petroleum Production and Exploration Association Annual Conference (Melbourne, April 1997);
- Institute of International Research: Western Australian Resources and Energy Boom Conference (Perth, May 1997);
- Institute of International Research: Native Title Conference (Perth, May 1997).

Three geoscientific seminars or courses were held in Perth during the year. Displays of Geological Survey products relevant to those events were mounted as follows:

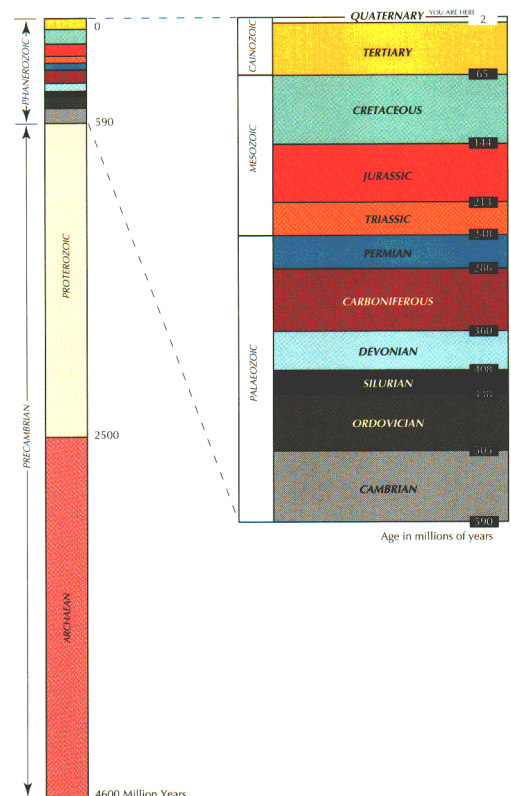
- *Yilgarn Extension Project* (October 1996);
- *Proterozoic Granites Course* (October 1996);
- *Volcanic Successions Short Course* (May 1997).

The Geological Survey, in partnership with AGSO, presented displays of recent outputs of mapping in the Eastern Goldfields under the umbrella of the NGMA in Kalgoorlie (October 1996) and Perth (November 1996).

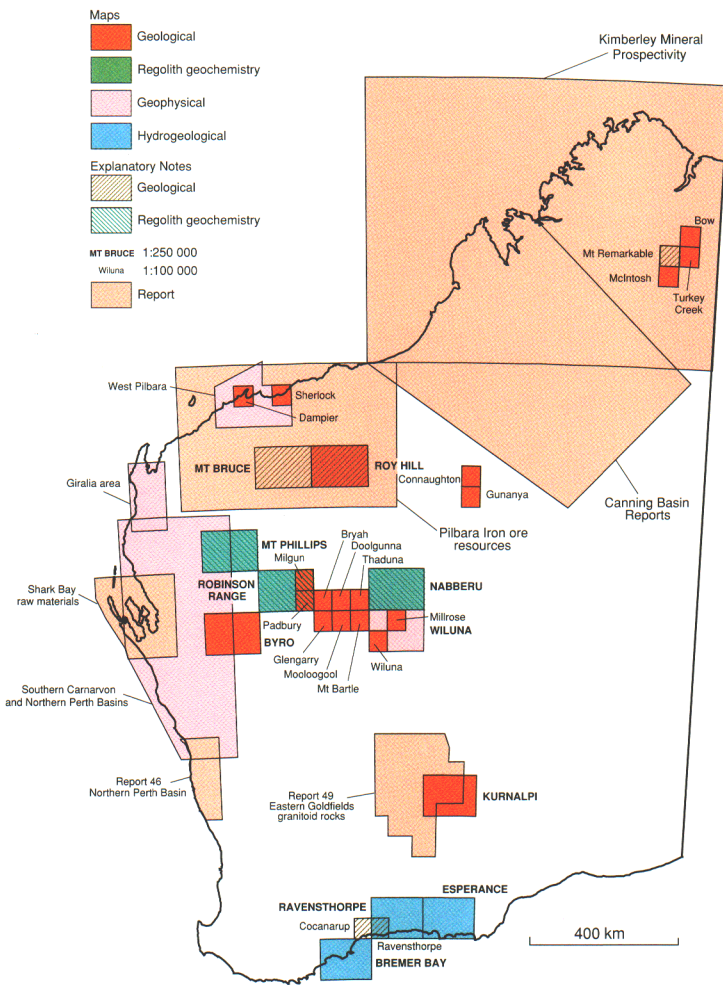
Four volumes of *Fieldnotes* (the Geological Survey quarterly newsletter first published in January 1996) were issued during the year. This newsletter has provided industry with up-to-date information on progress of work programs, recent publications and maps released, and general information about the products and services of the Geological Survey. The mailing list has grown to more than 350 during the year.

The Geological Survey Division released a series of publications including one mineral resources bulletin, two reports, seven explanatory notes, 10 records, 11 miscellaneous publications, 16 1:100,000 geological series maps, three 1:250,000 geological series maps, four project maps or map sets at various scales, four geophysical map sets and three regolith geochemistry map sets.

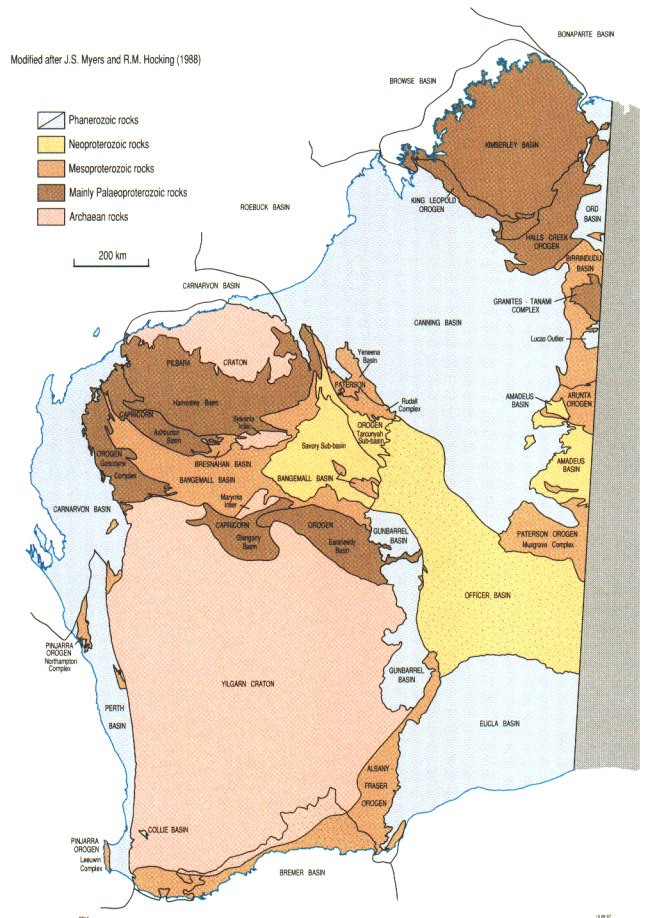
Figure 1: Geological Time Scale



**Figure 2: Maps, Explanatory Notes and Reports published 1996 - 1997**



**Figure 3: Main Tectonic Subdivisions of Western Australia**



## Program 2.1 - Geological Survey

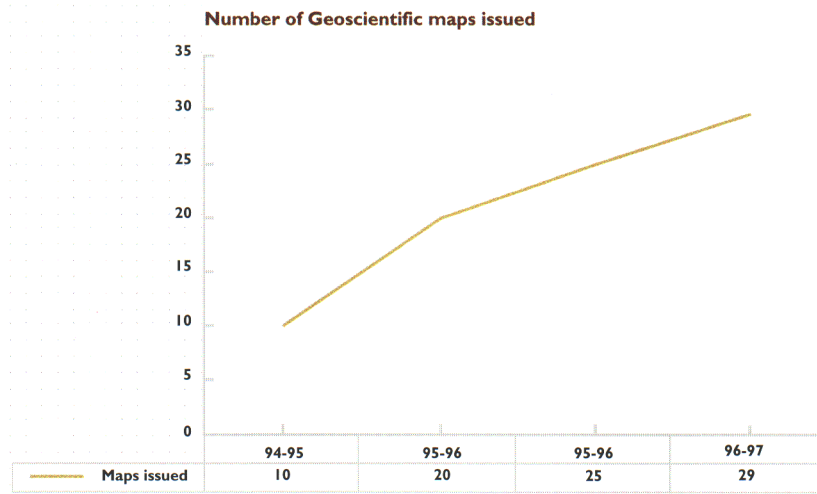
**Objective:** To provide up-to-date, enhanced regional geoscientific and resources information to support resource exploration and development, and informed land-use planning.

### Effectiveness: Geological knowledge

**Measure:** Rate of geoscientific map production

**Description:** Geoscientific maps are widely used by mineral and petroleum explorers and developers and by land-use planners as a critical source of information on which to base resource-allocation decisions. The indicator reflects the extent to which the Department is maintaining an adequate geoscientific coverage over the State.

**Result:**



**Comments:** Many of the first edition 1:250 000 geological maps of the State are becoming more than 20 years old. The National Geoscience Mapping Accord (NGMA) was entered into between all States/Territories Governments and the Commonwealth to overcome the increasing obsolescence of maps of this age which, with advancing technology and knowledge, have become outdated and in some cases unreliable. The maps referred to above are part of a critical program of updating and revision of earlier 1:250 000 scale maps, or of production of new maps at a more detailed scale (usually 1:100 000 to allow greater complexity to be displayed) or new types of maps displaying specific features such as the geochemistry of a region.

The large increase in numbers of maps from 1994-95 onward reflects a combination of additional funding provided by the Government as an “accelerated geoscience mapping” initiative and significant improvements in the Geological Survey’s productivity.



## Effectiveness: Quality

Measure: **Customer satisfaction**

Result: In addition to the rate of map production, effectiveness of this program can be gauged by both formal positive endorsement of the Geological Survey's program and expressions of satisfaction with its performance against the objectives for the year under review, from industry and other customers. These are expressed in letters tabled through the customer-based Geological Survey Liaison Committee. This committee comprises industry representatives nominated by the Australian Petroleum Production and Exploration Association, the Chamber of Mines and Energy, the Association of Mining and Exploration Companies, and other geoscience customers (e.g. the Australian Geological Survey Organisation, CSIRO, and universities). It meets twice a year to consider reports by its Technical Advisory Sub-committees and to provide guidance for future programs and feedback on past performance ensuring maximum effectiveness.

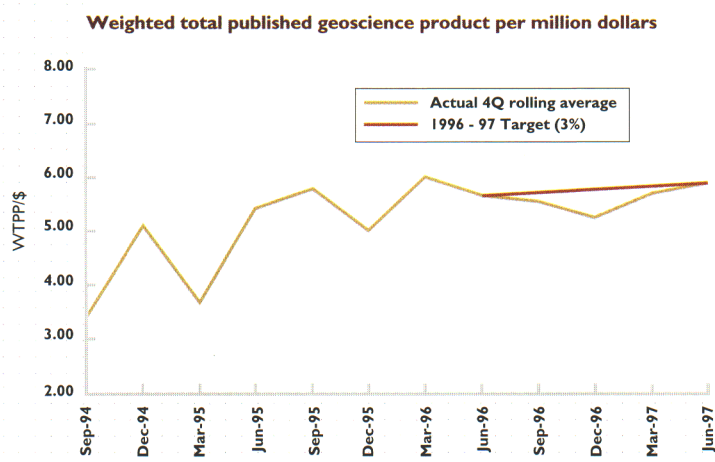
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## Efficiency: Cost efficiency

Measure: **Total Productivity Index**

Description: The weighted quarterly published map and publication output per unit of expenditure. Various types of published products (e.g. maps and books) have each been assigned a "weight" which attempts to quantify the relative effort required to proceed from their respective initial field work to final publication. The total weighted products for each quarter are then divided by the total expenditure in that quarter. The quarterly weighted products per dollar or Total Productivity Index is then smoothed using a four-quarter rolling average to compensate for output peaks and troughs caused by the different completion time for various products.

Result:



Comment: The weighted total published product per dollar continued to follow an upward trend in 1996-97 with a real productivity improvement of just over three per cent.

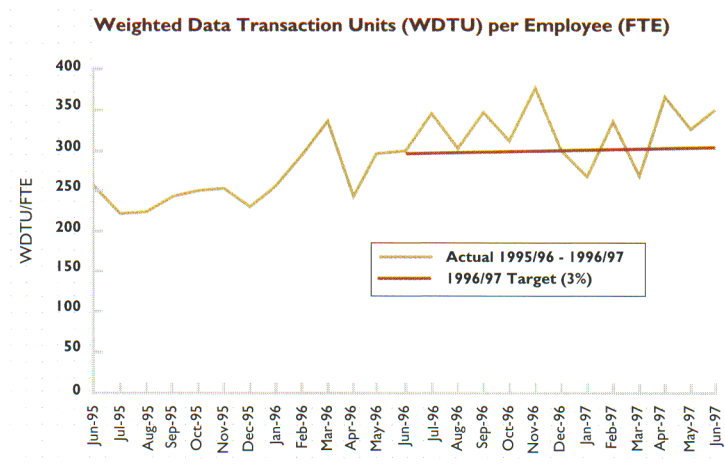


## Key Performance Indicators - Program 2.1 (cont.)

*Measure:* **Total weighted monthly data transactions per employee for exploration data management**

*Description:* Exploration data management primarily involves accessioning, monitoring, curation and public release of statutory exploration and production reports. The transactions are weighted according to their complexity, aggregated and divided each month by the input in terms of number of staff involved in the process to provide a measure of their efficiency.

*Result:*



*Comment:* This index shows that a significant productivity improvement of just over 4% in real terms, well in excess of the 3% target, was achieved over 1996-97. Average productivity may have been inflated by peaks attributable to abnormal bulk library returns and processing of accumulated requests in November 1996 and April 1997. The weighting of this type of library activity will be reviewed in 1997-98. The trough around March 1997 represents the effect of the shift in office of the section.

# Sub Program 2.2

## Mineral Processing Laboratory

Recurrent Expenditure: \$1.4 million  
Corporate Services Costs: nil  
Total Expenditure: \$1.4 million  
Offset by retained revenues: \$1 million  
Net Expenditure: \$0.4 million

### Introduction

The Mineral Processing Laboratory specialises in conducting metallurgical research and testwork for a wide range of industry clients, primarily from the gold, mineral sands, iron ore, industrial minerals and base metal sectors. Equipment for mineral dressing, pyrometallurgy and hydrometallurgy investigations is extensive, especially at pilot scale. With its applied bias, the laboratory has aided a number of technical developments including carbon reactivation kilns and on-line cyanide analysers used in the gold industry.

The Laboratory is a Registered Research Agency, conducting research projects for industry clients who benefit from the taxation incentives available. However, its major research and development effort stems from its membership of the A J Parker Co-operative Research Centre for Hydrometallurgy. The CRC's other partners are Curtin and Murdoch Universities, the CSIRO Division of Minerals and the Australian Mineral Industries Research Association (AMIRA). Core projects for the Parker CRC include pressure leaching, solvent extraction, electrowinning and gold technology. The Parker Centre received the 1996 Western Australian Industry and Export Award for Research and Development.

### Signing of Collaborative Agreement

A unique collaboration in the field of minerals research in Western Australia was formalised by the signing of an agreement in November 1996 between the Mineral Processing Laboratory, the CSIRO Division of Minerals and Curtin University of Technology. The ceremony was hosted by Mines Minister Kevin Minson.

The agreement formalised a co-operative arrangement between the three parties on 6.4 hectares of State Government land adjacent to Curtin University at Waterford. They are collectively referred to as the Mineral Research Centre. The Centre offers a convenient, integrated research and testing facility to service the needs of the minerals industry in Western Australia, as well as other States and overseas.

General agreement was reached by the parties some 10 years ago to establish a minerals research centre, and a

**Objective:** To undertake metallurgical research and testwork, and provide consultancy services and advice to companies, Government agencies and individuals operating in the mining and mineral processing sector.

**Description:** Optimum recovery of minerals from ores can represent the difference between commercial success and failure of mining ventures and is a key contributor to the economic return the State receives from the exploitation of its mineral resources. The highly specialised nature of mineral processing and extractive metallurgy testwork acts against the development of a comprehensive competitive market for the supply of testwork services. The Mineral Processing Laboratory works in collaboration with other State, Federal, university and private institutions to offer testwork programs, research and development projects and consultancy and advisory services to customers on a full cost recovery basis.



Mines Minister the Hon. Kevin Minson witnessed the signing of the Collaborative Agreement by (from left) Ken Perry, Harry Perkins, and Dr Rob La Nause.

Memorandum of Understanding between the State Government and CSIRO signed in December 1988 recognised the benefits of increased co-operation in areas of science and technology.

The three partners at the Waterford site share facilities, staff and knowledge, with the emphasis for research and development mainly on hydrometallurgy. The combined expertise on site allows industry to undertake extensive bench and pilot scale testing before committing to full scale plant production.

### Naming of R G Becher Building

The naming ceremony in November 1996 was an important occasion for Dr Bob Becher, FRACI, AM, because the Mineral Processing Laboratory building was named the 'R G Becher Building' in his honour by Mines Minister Kevin Minson. Bob was a research chemist in the



## Program 2.2 - Mineral Processing (cont.)

Engineering Chemistry Division of the Government Chemical Laboratories (the precursor to the Mineral Processing Laboratory) during the 1950s and 1960s when he developed, with colleagues, a new process for enriching the titanium dioxide content of ilmenite, to produce synthetic rutile. Bob employed some novel lateral thinking to use the rusting of iron in an advantageous way and so develop what is referred to throughout the mineral sands industry as the Becher Process.

In 1996, synthetic rutile produced by the Becher Process amounted to some 368,000 tonnes worth nearly \$182 million and plant capacity is currently being substantially increased. Bob, who still has a very active and inventive mind, turned 83 in December 1996. He was awarded the Clunies Ross National Science and Technology Prize in 1992 and an honorary doctor of science degree from Murdoch University in 1993.

The Laboratory funded the making of a video on Bob Becher and his scientific contributions. The video, entitled *The Power of One*, is 17 minutes long and directed at years 11 and 12 Science students, to illustrate how it is possible for them to achieve what Bob has in his lifetime.

### International Collaboration on Iron Ore Project

The Laboratory contributed a major effort to the project *Upgrading of Western Australian Marra Mamba Iron Ores*,

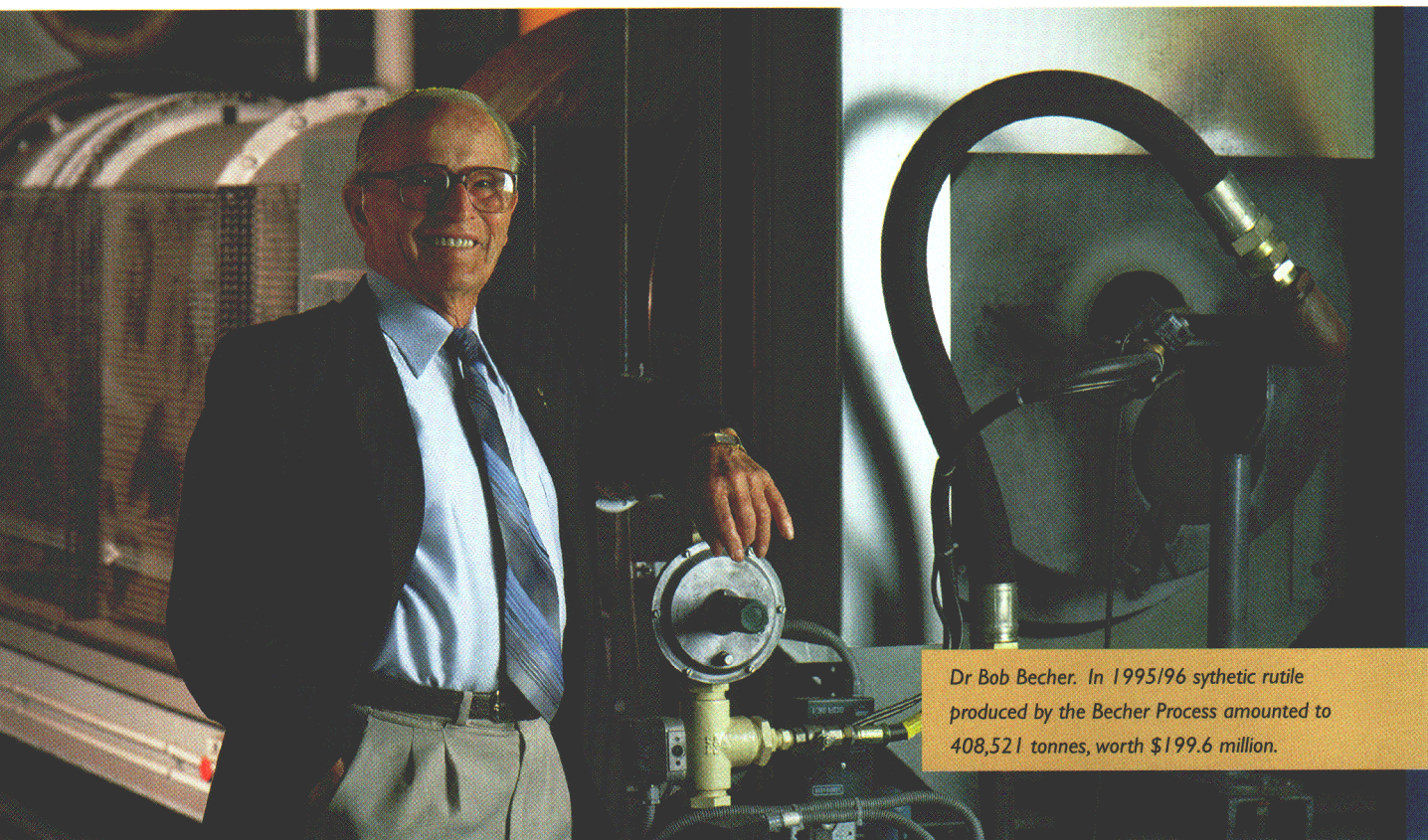
funded by the Western Australia/China Economic and Technical Research Fund and three company sponsors (BHP Iron Ore, Hamersley Iron and Hancock Prospecting) to a total value of \$380,000 over two years. The research is a joint activity with the Central Iron and Steel Research Institute (CISRI) in Beijing.

The overall aim is to determine how the Marra Mamba fines can be upgraded to a feedstock which successfully produces Direct Reduced Iron (DRI), a strong contender for producing steel via electric arc furnace technology.

The Laboratory has completed the characterisation and mineralogical examination of the sponsors' ore samples, and CISRI has reported on the optimum route to upgrade the fines. Pilot scale production of the concentrates is underway, which will be followed by pelletisation and pellet testing. The final stage will involve high temperature processing of these materials.

### Publications

The Mineral Processing Laboratory released a series of publications during the year including a journal article in the Australian Mining Magazine, five reports, a mineral processing newsletter for key stakeholders and a set of information pamphlets outlining the different processes used at the Laboratory.



Dr Bob Becher. In 1995/96 synthetic rutile produced by the Becher Process amounted to 408,521 tonnes, worth \$199.6 million.

# Key PERFORMANCE Indicators

## Program 2.2 - Mineral Processing Laboratory

**Objective:** To provide metallurgical testwork facilities, consultancy services and advice to companies, government agencies and individuals operating in the mining and mineral processing sector.

### Effectiveness: Cost effectiveness

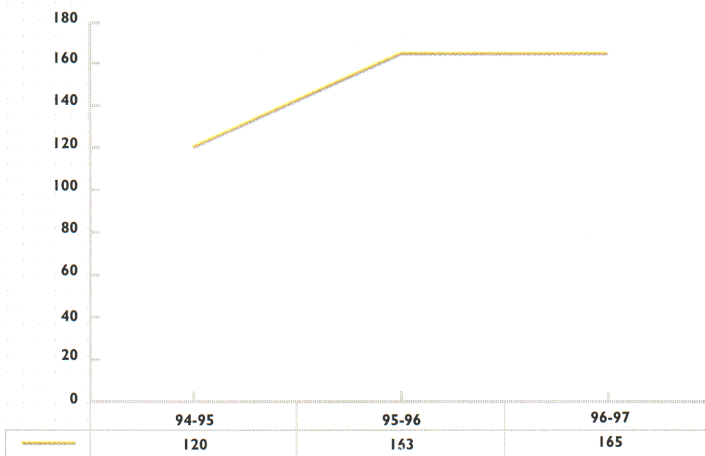
**Measure:** Income received for effort expended

**Description:** The dollars of revenue per hour of labour directly put in.

**Result:**

**Comment:** An increasing rate of revenue return indicates a greater sophistication of the service delivery. The gains made in 1995-96 have been maintained this year.

Dollars per hour of staff time



### Efficiency: Cost efficiency

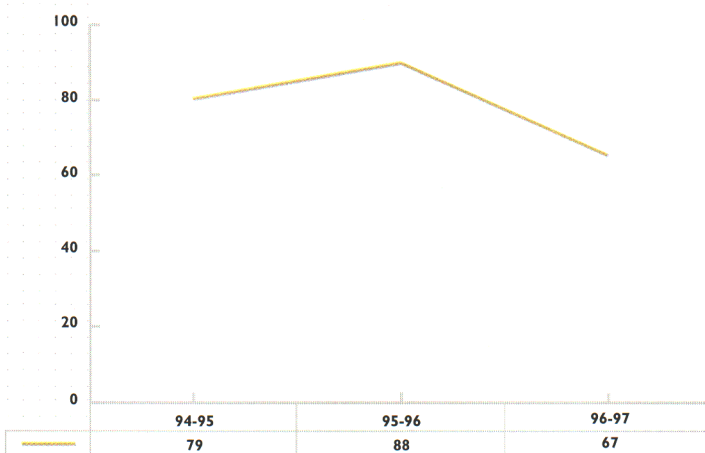
**Measure:** Income received for costs incurred

**Description:** Revenue as a percentage of total costs

**Result:**

**Comment:** A 100% result marks full cost recovery, at which point there would be no requirement for a net appropriation.

Per cent cost recovery



The reduced fiscal performance in 1996-97 is a consequence of a lower than expected revenue stream against stable expenditure. The reduced income is the result of an industry-wide reduction in demand for services and increasing competition from private sector laboratories, exacerbated in MPL by the predominance this year of short-term, lower profit work. Expenditure was controlled this year but only as a result of significant reductions in purchase of essential equipment and maintenance.





## Opinion of the Auditor General

To the Parliament of Western Australia

DEPARTMENT OF MINERALS AND ENERGY  
PERFORMANCE INDICATORS FOR THE YEAR ENDED JUNE 30, 1997

### Scope

I have audited the performance indicators of the Department of Minerals and Energy for the year ended June 30, 1997 under the provisions of the Financial Administration and Audit Act 1985.

The Director General is responsible for developing and maintaining proper records and systems for preparing and presenting performance indicators. I have conducted an audit of the performance indicators in order to express an opinion on them to the Parliament as required by the Act.

My audit was performed in accordance with section 79 of the Act to form an opinion based on a reasonable level of assurance. The audit procedures included examining, on a test basis, evidence supporting the amounts and other disclosures in the performance indicators, and assessing the relevance of the performance indicators to the program objectives and the appropriateness of the performance indicators in assisting users to assess the Department's performance. These procedures have been undertaken to form an opinion as to whether, in all material respects, the performance indicators are relevant and appropriate having regard to their purpose and fairly represent the indicated performance.

The audit opinion expressed below has been formed on the above basis.

### Audit Opinion

In my opinion, the performance indicators are relevant to the objectives of the Department of Minerals and Energy. The indicators are appropriate for assisting users to assess the Department's performance and fairly represent the indicated performance for the year ended June 30, 1997.

D D R PEARSON  
AUDITOR GENERAL

September 19, 1997



### Certification of Performance Indicators

I hereby certify that these performance indicators are based on proper records and fairly represent the performance of the Department of Minerals and Energy for the year ended 30 June 1997

L C Ranford  
Accountable Officer

15 August 1997

# Corporate Services

Recurrent Expenditure: \$11.8 million  
Capital Expenditure: \$400,000  
Corporate services provided to  
the Chemistry Centre (WA): \$200,000  
Total Cost: \$12.2 million

## Corporate planning and review

The Department reports its objectives and performance within a set of programs. During 1996-97, this program structure changed to better align it with the budget and management structures. This reflects a decision to move away from a matrix management approach and is consistent with the Department's preliminary work on "Output Based Management" for budget allocation and reporting.

The new structure has a different emphasis and fewer programs. In 1995-96 the Department had four programs which related primarily to industry sectors. The new structure has only two programs: Industry and Resource Management which is regulatory, and Industry Support, which provides information and advice. The changes which have occurred are tabulated on page 6.

## Economic policy and statistics

Royalty policy issues included the wellhead petroleum royalty system, the introduction of a gold royalty and arrangements for two planned iron ore projects under State Agreement Acts. Discussions also continued regarding Argyle diamond mine royalties.

Forecasts and advice on resource rent tax revenues were supplied to Treasury and contributions were made to the Commonwealth Grants Commission 1999 Review. The branch also continued to co-ordinate the Department's response to the State's National Competition Policy objectives.

Economic modelling, analysis, advice and briefing notes were provided on various commodities, companies and resource industry issues, including commodity price and production forecasts. Economic assessments of two offshore retention lease applications were also completed for the Petroleum Operations Division.

The Statistics Digest, the flagship statistics publication on the State's mining industry, was produced with official figures on the output, employment and exports of the State's industry and analysis of the mining industry in an international context.

Streamlining of the Mining Act Regulations pertaining to royalties continued, with progress towards the removal of minimum rates on mineral sands and simplification of mineral categories.

## Corporate communications

Policies were implemented during the year as a result of the major review of the Department's publications and other communications. These developments aimed at improving efficiency and effectiveness of Departmental communications.

The Public Affairs Branch was restructured and retitled Corporate Communications Branch, reflecting the broader nature of activities.

Tracking of media activities showed further improvement in media relations as a result of the restructure. Corporate Communications released a media handbook on the Department as part of an education campaign.

## Human resource management

The momentum of change in human resource management was consolidated in 1996-97. The impact of this was felt not only in the central Human Resources Branch but even more so by line managers with people responsibilities.

The emphasis has been to maximise the contribution of all employees to achieve required outcomes. The approach adopted emphasised the need for leadership qualities in managers, better communication, employee involvement and team development. Significant issues and challenges have involved:

- Completion of the stratification of the organisation structure. This resulted in the consolidation of four management layers, providing greater accountability, improved communication and clearer reporting systems. The beneficial impact of this has already become evident across the workplace;
- Restructuring of the Department's human resource branch function provided a more pro-active and strategic focus by working in partnership with executive and managers;
- Completion of training for the entire workforce on the Performance Enhancement Program (PEP) was achieved. For the first time annual performance assessment ratings were recognised through eligibility to receive a performance-related base salary increase. More than 60 per cent of employees received increases between one and five per cent as a result of the assessment process;

## Corporate Services (cont.)

- Management training for senior managers who participated in a series of workshops. These aimed to refine requisite behaviour standards, ensure employees are tasked more equitably and provide a better framework for planning work activities. The effectiveness of this program will be measured in its impact on the organisation's overall management performance;
- Consolidation of the enterprise bargaining process resulted in new Enterprise Bargaining and Workplace Agreements being registered. These agreements, both due to expire in September 1997, are largely focused on collective and individual-based performance, with the opportunity for further modest salary increases based on productivity achievements at the completion of the 12-month agreement period;
- A 17.6 per cent staff turnover occurred during 1996-97. However, the turnover for permanent staff fell to 10.56 per cent from 13 per cent in the previous year. An increased emphasis on recruiting staff on short-term contracts led to a higher turnover in that area (63.1 per cent). As a result of short-term contracts and organisational efficiencies, the size of the permanent workforce was reduced to 513 from 578 the previous year;
- Completion of the Department's first full year since the implementation of the Public Sector Standards guidelines for human resource practices was positive. An audit by the Public Service Management Office of the Department's policies and practices complimented the Department and recognised our standards as higher than those specified in the guidelines. During the year there were five complaints of suspected breach of the Recruitment and Selection Standard. Investigation by external consultants showed none of the complaints to be proven.

### **Finance and supply services**

A study undertaken during 1996-97 determined that electronic commerce was viable in the Department and preparatory work was undertaken on the first implementation phase, payment of accounts by electronic funds transfer and electronic purchasing, which will be achieved during the first quarter of 1997-98. The second phase, expected to occur about two years later, will be the automation of processing client invoices for payment. Both phases will enable downsizing to occur owing to reduction in manual processing.

Accrual-based financial reporting at cost centre level was implemented during 1996-97 to enable managers to manage on a commercial basis. During 1997-98 these

reports will be further developed and tailored to meet the requirements of each cost centre.

The Department provided consulting advice on a full cost recovery basis to the Disability Services Commission (DSC) and the Department of Environmental Protection to help with the implementation of the Oracle financial management information system. This is a system the Department has been operating for two years. Both agencies have requested that the Department continue to provide consulting advice in 1997-98. DSC has requested that the Department prepare a proposal for the provision of financial, supply and audit services on a regular basis. If this arrangement proceeds, the Department is likely to achieve significant savings from improved economies of scale and improved quality of service.

Improvements were made to the asset management system to ensure that all public property, including items which are not capitalised, can be properly recorded, monitored and managed throughout the Department.

### **Asset management**

During the year the asset management function was restructured to achieve improved use of the Department's assets, which have an estimated value of \$32,820,000.

It includes the supply of energy to and the maintenance of all Departmental buildings, including outstations. During 1996-97, a program of major refurbishment was undertaken. Capital works for the year included the Mineral Research Centre, Waterford; Kalgoorlie Explosives Reserve; Leonora Mining Registrar's Offices and the completion of construction of Meekatharra Mining Registrar's offices.

### **Internal audit**

The annual audit program reflected a changing emphasis, from transaction/compliance-based audit testing to efficiency reviews, while maintaining systems analysis work at a constant level. New initiatives included an operational review of PETMAN, examination of several productivity milestone/performance indicator data bases and accompanying royalty officers on some field audit visits. External audit work reverted to the Office of the Auditor General following a three-year contract with a private accounting firm.

### **Information services and technology**

The performance objectives set for computing and information services functions for 1996-97 were achieved.

Detailed tender specifications were prepared for the outsourcing of information technology services. This was carried out in conjunction with 10 other Western Australian Government agencies and, by the end of 1996-97, had reached a stage of due diligence before finalisation of the service contracts. Arrangements for the introduction of contractual services and the physical replacement of infrastructure are expected to start in the second quarter of 1997-98.

A major challenge during the exercise centred on retention of staff. Fortunately only a small turnover occurred enabling existing service commitments to be met.

The rate of change in global information technology continued to impact on the Department's operations. One of the more profound changes has been the shift to distributed computing technology, as opposed to a centralised approach. The planning, management and control of distributed computer systems are complex and performance reliability requires considerable attention. In line with other organisations the Department has achieved this through deployment of additional in-house and contract technical support staff.


During the year the Department replaced its existing main frame computer with an enterprise server which complements the distributed computing strategy. The savings from this arrangement will continue to produce reductions in the Department's operational budget.

The remote access systems introduced by the Department in 1995-96 continued to expand. The Department now supports a large number of Internet-based customers, both nationally and overseas, who regularly access Departmental databases.

The Department's records management function was upgraded and an information and data management specialist was recruited to co-ordinate this area.



1. *In the administration of the Department of Minerals and Energy I have complied with public sector standards in human resource management, the code of ethics and our code of conduct which currently consists of a series of guidelines and policies which will be further refined.*
2. *I have put in place procedures designed to ensure such compliance and conducted appropriate internal checks to satisfy myself that the statement made in 1 is correct.*
3. *The applications made for breach of standards review and the corresponding outcomes for the reporting period are:*
  - *Number lodged - 5 (all against the Recruitment Selection and Appointment Standard);*
  - *Number of breaches found, including details of multiple breaches per application - nil;*
  - *Number still under review - nil.*



L Ranford  
ACTING DIRECTOR GENERAL  
29 August 1997

### **Equal Employment Opportunity**

It has been almost 10 years since the Department first developed an EEO management plan. Some strategies needed a major overhaul and several initiatives were undertaken. One was the establishment of the Women's Voices Project. This forum raised numerous issues relating to health, work and family matters which affect all workers in the Department. Many of these have been incorporated into new strategies.

A major diversity survey which assessed equity issues was undertaken in conjunction with the Public Sector Standards Commission.

### **Implementation of the Disability Service Plan**

The Department developed and implemented a Disability Services Plan on 1 January 1996. The plan is a blueprint to improve access for people with disabilities, their families and carers.

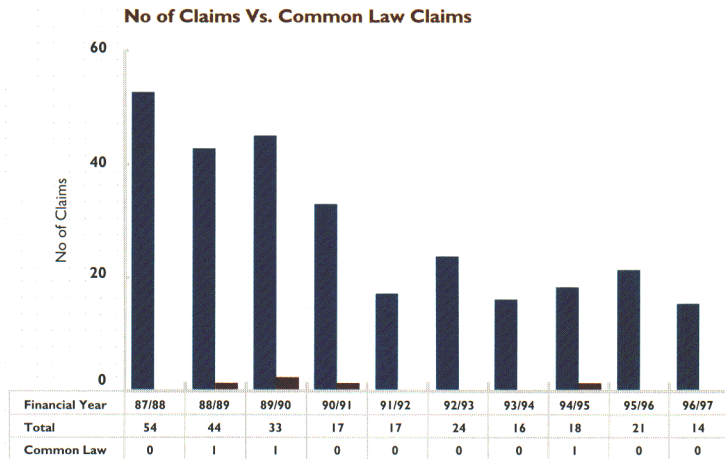
Key activities in the areas of training and improvement of facilities were:

- A senior staff member attended the Independent Living Centre Disability Awareness Workshop and the National Conference on Access - "Creating Accessible Communities", and was trained in the use of the Disability Services Commission Access Resource Kit;
- Staff in regional areas were trained through a program of video viewing;
- Three in-house Disability Awareness Training Workshops were held. A representative of the Disability Services Commission gave presentations at each workshop. More than 75 staff attended and several worthwhile suggestions were received; and
- A report on progress of the Disability Service Plan was made to the Disability Services Commission.

### **Health and safety**

A major focus of the Occupational Health and Safety Committee was to undertake general safety audits of all work areas. Identified risks/hazards were incorporated in the hazard register and most were considered or rectified during the year.

All stairwells in Mineral House were painted with a non-slip coating and tread-identifying lines to minimise the potential for slips and falls, and the main electrical switchboard in Mineral House - South was given a major upgrade. Divisions are progressively dealing with the remaining risks/hazards, focusing on those identified as



high priority. During the year, two safety human resources bulletins were issued, dealing with Manual Handling and Stress/Change in the Workplace, as part of ongoing safety education.

There were 14 workers' compensation claims during the year, all of which were accepted. Although this is less than previous years, three of the claims were considered significant, emphasising the need for continued vigilance. The workers' compensation frequency rate for 1996-97 was 8.53, the estimated cost of claims was \$0.67 per \$100 wageroll, and the premium rate was 0.797 per cent.

### The Year 2000 problem

The Year 2000 problem arises from the practice of storing dates in such a way that two digits are used to represent the year. In this context, a term frequently used is "Year 2000 Compliance". To be compliant, a process "must accept, store, retrieve and process correctly any date before, during and after 1 January 2000".

The Department is a member of the PSMO Information Policy Unit's Year 2000 Focus Group which recommends policies, strategies and actions to help Government agencies prepare for 1 January 2000. The Department's aim is to achieve compliance by 31 December 1998.

The major impact is likely to be on services which depend on information technology. Information systems, especially those which the Department's customers see or use, such as *Tengraph*, *Tendex* and *WAMEX*, are easily recognisable areas of risk. Other, less obvious areas, include process control equipment, building environment and security control, telephone exchanges, facsimile machines and any device with an embedded processor.

Progress to date includes:

- Completion of an inventory of items, products or processes which must be Year 2000 compliant; and
- Commencement of a detailed planning phase to identify the compliance requirement, risks, resource requirements (people, skills, funding and time), and fallback plan for each item in the inventory.

### Risk management

The implication of failure in managing risks was brought to a head by the termination of Government self-insurance schemes on 30 June 1997 to be replaced by a managed fund.

This has thrown the spotlight on areas of the Department's operations not previously considered as attracting liability or for which it was regarded necessary to obtain cover through paying premiums. The process began with completing a risk and self-insurance questionnaire and follow-up meetings with Risk Cover representatives to validate the information as the basis for calculating the premium contribution to the managed fund. As a result, future premiums required will substantially exceed premiums traditionally paid for limited liability cover. It is expected the Government will make up the difference in the first year from a global allocation.

A report commissioned during the year also identified some deficiencies in current security arrangements, and these will be assessed as part of a total risk review during 1997-98.

Other issues identified for consideration are the level of risk management awareness, the ability to recover from a disaster, the obligation under duty of care, and Occupational Health Safety and Welfare issues.

## Compliance Reporting Requirements 1996-97 (cont.)

### **Customer service**

The Department issued a revised Customer Service Charter during the year as part of the State Government's Customer Focus approach. The charter outlines the Department's vision, programs and service standards, as well as listing contacts points around the state.

### **Program evaluation**

A review of the safety elements of the Mining Operations sub program is almost complete.

### ***Evaluations conducted in 1996-97***

<b>Activity</b>	<b>Key Result</b>	<b>Key Action</b>
Exploration Data Management	The review identified efficiencies in amalgamating management of data derived from both mineral and petroleum exploration. It also identified benefits in replacing existing, outdated systems for data archiving, collation and access to meet current and future customer needs. Translation of digital data onto more durable media to protect the large but deteriorating archive is a key element.	Key Actions: Rationalise existing data management facilities. Develop strategies to implement new data archive and management systems.

### ***Evaluations proposed for 1997-98***

<b>Activity</b>	<b>Reason for Evaluation/Review</b>
Petroleum Industry Management	To review the roles, responsibilities and processes of the Department with respect to exploration and development of petroleum resources in State and Commonwealth jurisdictions.

# Financial Statements

Operating Statement

Statement of Financial Position

Statement of Cash flows

Consolidated Fund Appropriations and Revenue Statements

Schedule of Expenses and Revenues

Schedule of Assets and Liabilities

Notes to the Financial Statements

Certification

Opinion of the Auditor General



## Accounting

The financial statements for the year ended 30 June 1997 have been prepared in accordance with the provisions of the *Financial Administration and Audit Act 1985*, Treasurer's Instructions issued pursuant thereto, and relevant accounting standards of the Australian Society of Certified Practising Accountants and the Institute of Chartered Accountants in Australia. To assist in comparisons with other Government agencies they follow the format suggested in the appendices to the Treasurer's Instructions.

Mineral and Petroleum royalties represent the bulk of revenue collections but, as they are not operating revenue, they appear below the bottom line of the Operating Statement as administered revenue.

## Revenue

### Consolidated Fund

During the financial year the Department was responsible for the collection of \$618 million through the Consolidated Fund (CF). Mineral and petroleum royalties collected from companies operating under State legislation comprised 90 per cent of this amount. Part of the revenue was also payments collected by the State on behalf of the Commonwealth for petroleum produced within Commonwealth waters. These receipts were subsequently paid to the Commonwealth by way of special purpose payments after payment into the Consolidated Fund.

In addition to royalties, the Department also collected lease and other rental charges, (representing approximately 8.5 per cent of revenue), taxes and licences (1.4 per cent) and Departmental revenue (approximately one fifth of one per cent).

## Expenditure

### Consolidated Fund

Funds are appropriated by the Parliament through the Consolidated Fund to provide for recurrent services and capital expenditure.

#### Recurrent services

This appropriation includes provision for operating costs of the Department, refunds of revenue collected in previous years and payments to the Commonwealth. Payments to the Commonwealth are made under the provisions of the *Petroleum (Submerged Lands) Act 1982* for the Commonwealth share of royalties received from offshore operations. The Commonwealth revenue has been collected by the State into the Consolidated Fund. Payments to the Commonwealth totalled \$16.91 million in the year, compared with \$20.05 million paid in the previous year.

#### Capital expenditure

During the year, \$1.8 million was spent on capital projects funded from this source.

## Financial Management

The Department continued the development of its integrated new generation financial management information system (FMIS). Work included the implementation of an inventory module.

## Pricing Policy

The Department generally adopts a full-cost-recovery user-pays approach in determining fees and charges for services provided to the public and industry. With some services, where there is considered to be an element of service to the general public, a nominal fee has been determined. However, this represents only a small fraction of services provided and has minimal impact on revenue. In other cases the data collected are considered to be a freely available resource for the public and for industry, but a charge is levied to cover the cost of supplying this data in user-friendly formats.

## Royalty Policy

The Department has a corporate objective of ensuring that the community receives a fair return for the extraction of non-renewable resources owned by the people of the State. The Department continually aims to develop royalty systems and collect royalties on time, economically and efficiently.

# Operating Statement

for the year ended 30 June 1997

	Note	1996-97 (\$'000)	1995-96 (\$'000)
<b>Cost of Services</b>			
Operating expenses			
Salaries	5	29 869	28 314
Superannuation	6	3 213	397
Depreciation	7	2 732	3 143
Administration expenses	8	24 564	20 140
Net loss on disposal of non-current asset	9	679	2
Total cost of services		61 057	51 996
Operating revenues			
User charges and fees	10	935	1 096
User charges and fees retained under a net appropriation agreement	10	1 006	
Other revenues	11	222	356
		2 163	1 452
<b>Cost of Service before Abnormal Items</b>		58 894	50 544
Abnormal items	12	798	1 031
<b>Net cost of services</b>		59 692	51 575
<b>Revenues from Government</b>			
Appropriations	13	52 007	48 884
Receipts paid into Consolidated Fund	14	( 2 224)	( 1 335)
Resources received free of charge	15	3 224	1 846
Liabilities assumed by the Treasurer	16	3 213	397
Total revenues from Government		56 220	49 792
<b>Change in Net Assets Resulting from Operations</b>		( 3 472)	( 1 783)
<b>Increase in Net assets Resulting from Restructure</b>	17	13 277	-
<b>Change in Net Assets</b>		9 805	( 1 783)
<b>Administered Expenses and Revenues</b>			
<b>Expenses</b>			
Petroleum (Submerged Lands) Act 1982		15 958	20 050
Total Administered Expenses		15 958	20 050
<b>Revenues</b>			
Taxes & Fees		8 751	8 312
Royalties & Rentals		598 792	541 260
Total Administered Revenues		607 543	549 572

# Statement

## of Financial Position

as at 30 June 1997

	Note	1996-97 (\$'000)	1995-96 (\$'000)
<b>Current Assets</b>			
Cash and amounts in suspense	19	1 186	356
Restricted cash	20	-	2 499
Inventories	21	2 337	2 323
Accounts receivable	22	404	289
Prepayments	23	110	322
Total current assets		4 037	5 789
<b>Non-Current Assets</b>			
Property, plant, equipment and vehicles	24	37 513	39 887
Works in progress	25	917	793
Total non-current assets		38 430	40 680
<b>Total assets</b>		<b>42 467</b>	<b>46 469</b>
<b>Current Liabilities</b>			
Accounts payable	26	1 126	551
Accrued Salaries	27	395	198
Employee Entitlements	28	5 077	4 680
Treasurer's advances	29	20	20
Trust Accounts	30	39	2 637
Total current liabilities		6 657	8 086
<b>Non-Current Liabilities</b>			
Employee entitlements	28	2 774	2 124
Total non-current liabilities		2 774	2 124
<b>Total liabilities</b>		<b>9 431</b>	<b>10 210</b>
<b>Equity</b>			
Accumulated surplus/ (deficiency)	31	12 804	2 999
Asset revaluation reserve		20 232	33 260
<b>Total equity</b>		<b>33 036</b>	<b>36 259</b>
<b>Total liabilities and equity</b>		<b>42 467</b>	<b>46 469</b>
<b>Administered Assets and Liabilities</b>			
<b>Administered Current Assets</b>			
Restricted cash		3 068	2 478
Accounts Receivable		105 452	119 831
Cash		5 638	
Total administered current assets		114 158	122 309
<b>Administered Non-Current Assets</b>			
Property, Plant, Equipment and Vehicles		31	
Total administered assets		114 189	122 309
<b>Administered Current Liabilities</b>			
Payments received in advance		3 090	2 478
Accounts payable		1 314	2 254
Total administered current liabilities		4 404	4 732
<b>Total administered liabilities</b>		<b>4 404</b>	<b>4 732</b>

# Statement

## of Cash Flows

for the year ended 30 June 1997

	Note	1996-97 (\$'000) Inflows (Outflows)	1995-96 (\$'000) Inflows (Outflows)
<b>Cash Flows from Operating Activities</b>			
Payments			
Salaries and related costs		( 28 979)	( 27 276)
Administration		( 20 728)	( 18 664)
Receipts			
User charges and fees and other revenues		1 218	1 335
User charges and fees retained under a net appropriation agreement		994	-
Net cash used in operating activities	34	( 47 495)	( 44 605)
<b>Cash Flows from Investing Activities</b>			
Payments for purchase of non-current assets		( 1 568)	( 2 944)
User charges and fees retained under a net appropriation agreement		12	-
Net cash used in investing activities		( 1 556)	( 2 944)
<b>Cash Flows from Government</b>			
Receipts from capital appropriations		1 800	2 944
Receipts from recurrent appropriations		50 207	45 940
Revenue paid to CF		( 2 224)	( 1 335)
Net cash provided by government		49 783	47 549
Net increase in cash held		732	-
Cash at the beginning of the reporting period		20	20
Cash at the end of the reporting period		752	20

Note: The cash flow figures do not include amounts held in suspense at Treasury for accrued salaries.

### Cash Flows from Administered Transactions

#### Cash Inflows from Administered Transactions

Business	8 751	8 312
Mining	607 532	527 117
Total administered cash inflows	616 283	535 429

#### Cash Outflows from Administered Transactions

Administered Expenses	16 906	17 796
Total administered cash outflows	16 906	17 796
Net cash inflows/(outflows) from administered transactions	599 377	517 633



# Summary

## of Consolidated Fund Appropriations and Revenue Estimates

for the year ended 30 June 1997

	1996-97			1995-96		
	Estimate \$	Actual \$	Variation \$	Estimate \$	Actual \$	Variation \$
<b>Details of Appropriation Items and Expenditures Authorised by Other Statutes</b>						
	Amount required for					
	Recurrent Services for the year	48 239 000	50 036 901	1 797 901	46 668 000	45 791 581 ( 876 419)
	Less Retained Revenue	1 005 000	994 495	10 505		
Item 147	Amount provided for					
	Recurrent Services for the year	47 234 000	49 042 406	1 808 406	46 668 000	45 791 581 ( 876 419)
	Amount Authorised by Other Statutes					
	- Salaries and Allowances Act 1975	147 000	170 818	23 818	147 000	148 376 1 376
	- Petroleum (Submerged Lands) Act 1982	12 200 000	16 906 413	4 706 413	14 700 000	17 796 232 3 096 232
	Total Recurrent Services	59 581 000	66 119 637	6 538 637	61 515 000	63 736 189 2 221 189
	Amount required for					
	Capital Services for the year	1 370 000	1 799 751	429 751	3 290 000	2 944 122 (345 878)
	Less Retained Revenue	65 000	11 751	53 249	-	-
Item 230	Amount provided for					
	capital services for the year	1 305 000	1 788 000	483 000	3 290 000	2 944 122 (345 878)
	<b>Grand Total</b>	<b>60 886 000</b>	<b>67 907 637</b>	<b>7 021 637</b>	<b>64 805 000</b>	<b>66 680 311 1 875 311</b>
<b>Details of Expenditure</b>						
<b>Recurrent</b>						
	<b>Corporate Services</b>	<b>220 000</b>	<b>220 000</b>	<b>0</b>	<b>220 000</b>	<b>220 000 0</b>
	<b>Refunds of Revenue</b>	<b>1 960 000</b>	<b>3 686 032</b>	<b>1 726 032</b>	<b>1 960 000</b>	<b>1 826 153 ( 133 847)</b>
<b>Programs</b>						
	<b>Industry and Resources Management</b>	<b>30 146 000</b>	<b>30 681 610</b>	<b>535 610</b>	<b>28 931 000</b>	<b>27 856 930 (1 074 070)</b>
	<b>Sub-Program details:</b>					
	Mineral Titles	13 880 000	15 722 045	1 842 045	12 941 000	11 963 765 ( 977 235)
	Mining Operations	10 000 000	9 500 039	( 499 961)	9 968 000	9 944 762 ( 23 238)
	Petroleum Industry Management	3 150 000	2 601 314	( 548 686)	3 097 000	2 982 250 ( 114 750)
	Mineral and Petroleum Royalties	766 000	830 931	64 931	720 000	712 356 ( 7 644)
	Dangerous Goods Management	2 350 000	2 027 281	( 322 719)	2 205 000	2 253 797 48 797
	<b>Industry Support</b>	<b>16 060 000</b>	<b>15 120 062</b>	<b>( 939 938)</b>	<b>15 704 000</b>	<b>16 036 874 332 874</b>
	<b>Sub-Program details:</b>					
	Geological Survey	14 850 000	13 743 437	( 1 106 563)	15 704 000	16 036 874 332 874
	Mineral Processing Laboratory	1 210 000	1 376 625	166 625	-	-
	<b>Recurrent Expenditure</b>	<b>48 386 000</b>	<b>49 707 704</b>	<b>1 321 704</b>	<b>46 815 000</b>	<b>45 939 957 ( 875 043)</b>
	Transfer to Operating Trust Account ( Unexpended Appropriation)	-	500 015	500 015	-	-
		<b>48 386 000</b>	<b>50 207 719</b>	<b>1 821 719</b>	<b>46 815 000</b>	<b>45 939 957 ( 875 043)</b>

	1996-97			1995-96		
	Estimate \$	Actual \$	Variation \$	Estimate \$	Actual \$	Variation \$
<b>Capital</b>	1 370 000	1 567 766	197 766	3 290 000	2 944 122	(345 878)
Capital Expenditure	1 370 000	1 567 766	197 766	3 290 000	2 944 122	(345 878)
Transfer to Operating Trust Account (Unexpended Appropriation)	-	231 985	231 985	-	-	-
	<b>1 370 000</b>	<b>1 799 751</b>	<b>429 751</b>	<b>3 290 000</b>	<b>2 944 122</b>	<b>(345 878)</b>
<b>Appropriations per operating statement</b>	<b>49 756 000</b>	<b>52 007 470</b>	<b>2 251 470</b>	<b>50 105 000</b>	<b>48 884 079</b>	<b>(1 220 921)</b>
Less Revenue Retained	1 070 000	1 006 246	63 754	-	-	-
<b>Appropriations for administered expenses</b>	<b>12 200 000</b>	<b>16 906 413</b>	<b>4 706 413</b>	<b>14 700 000</b>	<b>17 796 232</b>	<b>3 096 232</b>
<b>Grand Total of Appropriations</b>	<b>60 886 000</b>	<b>67 907 637</b>	<b>7 021 637</b>	<b>64 805 000</b>	<b>66 680 311</b>	<b>1 875 311</b>

#### Details of Revenue Estimates

##### Operating Revenues

###### Departmental

Explosives	538 000	235 401	( 302 599)	490 000	476 990	( 13 010)
Administration	133 000	222 524	89 524	133 000	174 414	41 414
Geological Survey	320 000	384 449	64 449	287 000	399 836	112 836
Mining Operations	25 000	79 285	54 285	42 000	61 066	19 066
Mineral Titles	200 000	261 841	61 841	251 000	197 565	( 53 435)
Petroleum	25 000	34 466	9 466	37 000	25 384	( 11 616)
Mineral Processing	1 070 000	1 006 246	( 63 754)	-	-	-
	<b>2 311 000</b>	<b>2 224 212</b>	<b>( 86 788)</b>	<b>1 240 000</b>	<b>1 335 255</b>	<b>95 255</b>

##### Administered Revenues

###### Business

Petroleum Permits and Licences Prospecting Exploration and Other Mining Licences	3 643 000	3 824 569	181 569	4 183 000	3 585 690	(597 310)
Explosives Regulations	156 000	171 495	15 495	146 000	141 383	( 4 617)
Dangerous Goods Regulations	856 000	883 700	27 700	750 000	739 611	( 10 389)
	<b>7 811 000</b>	<b>8 751 340</b>	<b>940 340</b>	<b>8 235 000</b>	<b>8 311 788</b>	<b>76 788</b>

###### Mining

###### Royalties:

Iron Ore	174 500 000	161 908 466	(12 591 534)	159 500 000	156 284 784	(3 215 216)
Petroleum	221 000 000	229 746 771	8 746 771	198 000 000	159 405 226	(38 594 774)
Alumina	38 500 000	33 622 840	(4 877 160)	28 000 000	30 194 089	2 194 089
Diamonds	32 500 000	35 266 731	2 766 731	34 500 000	37 972 557	3 472 557
Mineral Sands	21 500 000	20 936 711	( 563 289)	20 500 000	22 295 061	1 795 061
Nickel	27 500 000	24 659 213	(2 840 787)	26 000 000	23 648 999	(2 351 001)
Other	33 500 000	29 769 372	(3 730 628)	33 000 000	31 344 648	(1 655 352)
Lease and Other Rentals	67 000 000	71 622 218	4 622 218	64 500 000	65 972 058	1 472 058
	<b>616 000 000</b>	<b>607 532 322</b>	<b>(8 467 678)</b>	<b>564 000 000</b>	<b>527 117 422</b>	<b>(36 882 578)</b>

##### Total Revenue Estimates

	<b>626 122 000</b>	<b>618 507 874</b>	<b>(7 614 126)</b>	<b>573 475 000</b>	<b>536 764 465</b>	<b>(36 710 535)</b>
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Explanations of variations between the current year estimates and actual results compared with the immediately preceding year, are set out in note 37.

# Program

## Schedule of Expenses and Revenues and Administered Expenses and Revenues for the year ended 30 June 1997

PROGRAM	INDUSTRY AND RESOURCES MANAGEMENT		INDUSTRY SUPPORT		GENERAL NOT ATTRIBUTED		TOTAL	
	1996-97 \$'000	1995-96 \$'000	1996-97 \$'000	1995-96 \$'000	1996-97 \$'000	1995-96 \$'000	1996-97 \$'000	1995-96 \$'000
<b>Operating expenses</b>								
Salaries	15 154	14 067	7 321	7 872	7 394	6 375	29 869	28 314
Superannuation	1 616	223	849	59	748	115	3 213	397
Administration Expenses	9 755	7 289	4 490	4 184	10 319	8 667	24 564	20 140
Depreciation	843	1 510	354	559	1 535	1 074	2 732	3 143
Net loss on disposal of non-current asset	30		31	2	618		679	2
<b>Total cost of service</b>	<b>27 398</b>	<b>23 089</b>	<b>13 045</b>	<b>12 676</b>	<b>20 614</b>	<b>16 231</b>	<b>61 057</b>	<b>51 996</b>
<b>Operating revenues</b>								
Users' Fees & Charges & Other Revenue	588	903	327	375	242	174	1 157	1 452
Users' Fees & Charges under Net Appropriation			1 006				1 006	
<b>Total revenue from services</b>	<b>588</b>	<b>903</b>	<b>1 333</b>	<b>375</b>	<b>242</b>	<b>174</b>	<b>2 163</b>	<b>1 452</b>
<b>Cost of services before abnormal items</b>								
	26 810	22 186	11 712	12 301	20 372	16 057	58 894	50 544
Abnormal items	473	( 191)	287	1 293	38	( 71)	798	1 031
<b>Net cost of service</b>	<b>27 283</b>	<b>21 995</b>	<b>11 999</b>	<b>13 594</b>	<b>20 410</b>	<b>15 986</b>	<b>59 692</b>	<b>51 575</b>
<b>Revenues from Government</b>								
Appropriations	23 215	21 334	12 669	12 287	16 123	15 263	52 007	48 884
Receipts paid into Consolidated fund	( 590)	( 761)	( 1 392)	( 400)	( 242)	( 174)	( 2 224)	( 1 335)
Resources received free of charge	3 100	1 709			124	137	3 224	1 846
Liabilities assumed by the Treasurer	1 616	223	849	59	748	115	3 213	397
<b>Total revenues from Government</b>	<b>27 341</b>	<b>22 505</b>	<b>12 126</b>	<b>11 946</b>	<b>16 753</b>	<b>15 341</b>	<b>56 220</b>	<b>49 792</b>
<b>Change in net assets resulting from operations</b>	<b>58</b>	<b>510</b>	<b>127</b>	<b>( 1 648)</b>	<b>( 3 657)</b>	<b>( 645)</b>	<b>( 3 472)</b>	<b>( 1 783)</b>
<b>Increase in net assets arising from restructuring</b>			<b>13 277</b>				<b>13 277</b>	
<b>Change in net assets</b>	<b>58</b>	<b>510</b>	<b>13 404</b>	<b>( 1 648)</b>	<b>( 3 657)</b>	<b>( 645)</b>	<b>9 805</b>	<b>( 1 783)</b>
<b>Administered Expenses and Revenues</b>								
<b>EXPENSES ADMINISTERED FOR THE CROWN</b>								
Petroleum (Submerged Lands) Act 1982	15 958	20 050					15 958	20 050
<b>Total administered expenses</b>	<b>15 958</b>	<b>20 050</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>15 958</b>	<b>20 050</b>
<b>REVENUES ADMINISTERED FOR THE CROWN</b>								
Taxes, Fees & Royalties	607 543	549 572					607 543	549 572
<b>Total administered revenues</b>	<b>607 543</b>	<b>549 572</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>607 543</b>	<b>29 869</b>

# Program

## Schedule of Assets and Liabilities and Administered Assets and Liabilities as at 30 June 1997

PROGRAM	INDUSTRY AND RESOURCES MANAGEMENT		INDUSTRY SUPPORT		GENERAL NOT ATTRIBUTED		TOTAL	
	1996-97 \$'000	1995-96 \$'000	1996-97 \$'000	1995-96 \$'000	1996-97 \$'000	1995-96 \$'000	1996-97 \$'000	1995-96 \$'000
<b>Assets</b>								
<b>Current</b>								
Cash & Amounts in Suspense	472	142	607	86	107	128	1 186	356
Restricted Cash		2 499					-	2 499
Inventories	19	23	2 318	2 300			2 337	2 323
Accounts Receivable	223	226	181	63			404	289
Prepayments	13	135	6	28	91	159	110	322
<b>Total Current Assets</b>	<b>727</b>	<b>3 025</b>	<b>3 112</b>	<b>2 477</b>	<b>198</b>	<b>287</b>	<b>4 037</b>	<b>5 789</b>
<b>Non-current</b>								
Property Plant & Equipment	2 648	5 191	1 033	2 749	33 832	31 947	37 513	39 887
Works in Progress	837	713	80	80			917	793
<b>Total Non-Current Assets</b>	<b>3 485</b>	<b>5 904</b>	<b>1 113</b>	<b>2 829</b>	<b>33 832</b>	<b>31 947</b>	<b>38 430</b>	<b>40 680</b>
<b>Total assets</b>	<b>4 212</b>	<b>8 929</b>	<b>4 225</b>	<b>5 306</b>	<b>34 030</b>	<b>32 234</b>	<b>42 467</b>	<b>46 469</b>
<b>Liabilities</b>								
<b>Current</b>								
Accrued Salaries	201	98	107	55	87	45	395	198
Accounts Payable	528	382	363	82	235	87	1 126	551
Employee Entitlements	2 606	2 537	1 000	1 176	1 471	967	5 077	4 680
Trust accounts	39	2 543		31		63	39	2 637
Treasurer's Advances					20	20	20	20
<b>Total Current Liabilities</b>	<b>3 374</b>	<b>5 560</b>	<b>1 470</b>	<b>1 344</b>	<b>1 813</b>	<b>1 182</b>	<b>6 657</b>	<b>8 086</b>
<b>Non-current</b>								
<b>Total Non Current Liabilities</b>	<b>1 461</b>	<b>1 143</b>	<b>687</b>	<b>542</b>	<b>626</b>	<b>439</b>	<b>2 774</b>	<b>2 124</b>
<b>Total Liabilities</b>	<b>4 835</b>	<b>6 703</b>	<b>2 157</b>	<b>1 886</b>	<b>2 439</b>	<b>1 621</b>	<b>9 431</b>	<b>10 210</b>
<b>Net assets</b>	<b>( 623)</b>	<b>2 226</b>	<b>2 068</b>	<b>3 420</b>	<b>31 591</b>	<b>30 613</b>	<b>33 036</b>	<b>36 259</b>

### Administered Assets and Liabilities

#### Administered Current Assets

Accounts Receivable	105 452	119 831					105 452	119 831
Cash	5 638						5 638	
Restricted cash	2 396	2 322	347	156	325		3 068	2 478
<b>Total administered current assets</b>	<b>113 486</b>	<b>122 153</b>	<b>347</b>	<b>156</b>	<b>325</b>		<b>114 158</b>	<b>122 309</b>

#### Administered non-current assets

	11		20				31	
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#### Total Administered Assets

	113 497	122 153	367	156	325		114 189	122 309
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#### Administered current liabilities

Payments received in advance	2 398	2 322	367	156	325		3 090	2 478
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#### Accounts Payable

	1 306	2 254	8				1 314	2 254
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#### Total administered current liabilities

	3 704	4 576	375	156	325		4 404	4 732
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# Notes

## to the Financial Statements

30 June 1997

### 1 Departmental objectives and funding

To manage and support the sustainable development of the State's mineral and petroleum resources in the best interests of the community of Western Australia; and to ensure the community is protected from the hazards associated with dangerous goods.

The Department is predominantly funded by Parliamentary appropriation. A net appropriation agreement between the Treasurer and the Accountable Officer is in place to allow the Mineral Processing Laboratory (MPL) to retain its revenue. Details of expenditure and revenues retained as per the agreement are as follows:

MPL Gross Expenditure	- Recurrent	\$	1 376 625
	- Capital	\$	11 751
		\$	1 388 376
Revenues credited to Consolidated Fund and Retained		(\$)	1 006 246
MPL net expenditure against appropriation		\$	382 130

### 2 Significant accounting policies

#### (a) General Statement

The financial statements constitute a general purpose financial report which has been prepared in accordance with Australian Accounting Standards and UIG Consensus Views as applied by the Treasurer's Instructions. Several of these are modified by the Treasurer's Instructions to vary the application, disclosure, format and wording. The Financial Administration and Audit Act and the Treasurer's Instructions are legislative provisions governing the preparation of financial statements and take precedence over Australian Accounting Standards and UIG Consensus Views. The modifications are intended to fulfil the requirements of general application to the public sector together with the need for greater disclosure and also to satisfy accountability requirements.

If any such modification has a material or significant financial effect upon the reported results, details of that modification and, where practicable, the resulting financial effect is disclosed in individual notes to these financial statements.

#### (b) Basis of accounting

The financial statements have been prepared in accordance with Australian Accounting Standard AAS29 as modified by Treasurer's Instruction 1101A.

The totals of user charges (being fees for services rendered by the Department that are not regulatory in nature), recoups, reimbursements and proceeds from the sale of assets controlled by the Department are included as operating revenues of the Department notwithstanding that the amounts or parts thereof are required to be paid directly into the Consolidated Fund and are not controlled by the Department in the sense of being retained by the Department through a net appropriation or otherwise. Inclusion of these amounts in operating revenues discloses a more accurate cost of services, which would not otherwise be disclosed. If the provisions of AAS29 had been followed and only user charges and fees retained by the Department (under a net appropriation agreement treated as operating revenues) the net cost of services would have been reported as \$60.849m.

The financial statements have been prepared on the accrual basis of accounting using the historical cost convention, with the exception that certain non-current physical assets have been introduced at written down current cost as at 30 June 1995. Additions to non-current physical assets since valuation are stated at cost.

#### (c) Appropriations

Appropriations in the nature of revenue, whether recurrent or capital, are recognised as revenues in the period in which the Department gains control of the appropriated funds.

The Department gains control of appropriated funds at the time those funds are drawn down by the Department. Appropriations which are repayable by the Department to the Treasurer are recognised as liabilities.

#### (d) Employee entitlements

##### 1 Annual leave

The provision for annual leave represents the amount which the Department has a present obligation to pay resulting from employees' services provided up to balance date. The provision has been calculated on current remuneration rates and includes related on-costs.

##### 2 Long Service Leave

The liability for employee entitlements to long service leave represents the present value of the estimated

future cash outflows to be made by the employer resulting from employees' services provided up to balance date.

Liability for employee entitlements which are not expected to be settled within twelve months are discounted using the rates attaching to national government securities at balance date, which most closely match the terms of maturity of the related liabilities.

In determining the liability for employee entitlements, consideration has been given to future increases in salary rates and the Department's experience with staff departures. Related on-costs have also been included in the liability.

### **3 Sick leave**

Experience indicates that on average sick leave paid during the reporting period is equal to the amount due and no liability for non-vesting sick leave exists.

### **4 Superannuation**

Staff may contribute to the Superannuation and Family Benefits Act Scheme (a pension scheme now closed), or to the Gold State Superannuation Scheme (a lump sum scheme now also closed to new members), which are both defined benefits schemes. All staff who do not contribute to either of these schemes become non-contributory members of the West State Superannuation Scheme, an accumulation fund complying with the Commonwealth Government's Superannuation Guarantee (Administration) Act 1992. The employer's portion of liability for all schemes is assumed by the Treasurer.

The superannuation expense comprises the following elements:

(i) change in the unfunded employer's liability in respect of current employees who are members of the Superannuation and Family Benefits Act Scheme and current employees who accrued a benefit on transfer from that Scheme to the Gold State Superannuation Scheme; and

(ii) notional employer contributions which would have been paid to the Gold State Superannuation Scheme and West State Superannuation Scheme if the Department had made concurrent employer contributions to those Schemes.

The superannuation expense does not include payment of pensions to retirees as this does not constitute part of the cost of services provided by the Department in the current year.

(The total unfunded liability for pensions and transfer benefits assumed by the Treasurer at 30 June 1997 in respect of current employees is \$10.086m (1996 \$10.184m) and for pensions payable to retirees is \$31.038m (1996 \$31.050m).

## **(e) Property, Plant, Equipment and Vehicles.**

### **1 Acquisition**

Items of property, plant, equipment and vehicles are recorded at cost and depreciated as outlined below.

The Department controls approximately 100 Crown Reserves throughout the State. The majority are decommissioned explosives reserves.

They have been brought to account under the asset category of land. A large number have negligible future economic value and will be relinquished in due course.

### **2 Revaluations**

Land and buildings valuations are based on Integrity1 "desktop" valuations by the Valuer General except for certain metropolitan properties which have been valued as Integrity3 "kerbside". All properties are held on the government property register at these valuations.

Government has directed the Valuer General's office that over the next three-year period every property particularly those with improvements will have a value at an Integrity3 level.

All other items of property, plant, equipment and vehicles are carried at the lower of cost, less accumulated depreciation, and recoverable amount.

### **3 Depreciation of non-current assets**

All non-current assets having a limited useful life are to be systematically depreciated over their useful lives in a manner which reflects the consumption of their service potential.

## Notes to the Financial Statements (cont.)

Depreciation is to be provided as follows:

Buildings	50 Years	Straight Line Method
Furniture	10 ‘	‘ ‘ ‘
Office Equipment	5 ‘	‘ ‘ ‘
Computer Equipment	5 ‘	Diminishing Value Method
Computer Software	3-5 ‘	Straight Line Method

Motor Vehicles are not depreciated. As the Department is exempt from sales tax, experience has indicated that the resale value returns an amount approximately equivalent to the purchase price.

Proprietary computer software is not capitalised as it is not owned by the Department. The Department merely pays for a licence to use it. However, in-house developed software is capitalised and hence depreciated over a period of three to five years (depending on the assessed useful life) once full costs have been determined.

### (f) Valuation of Inventories

All inventories brought to account are chargeable publications, as are maps produced by the organisation. They are generally valued on the basis of the selling price which in turn approximately equates to the marginal cost of publishing the end product.

Inventories are carried at the lower of cost and net realisable value. Cost is based on the first in first out principle. Net realisable value is determined on the basis of average demand over recent years.

In accordance with national policy under the National Geoscience Mapping Accord (NGMA) maps older than 20 years are systematically written off. The value of maps younger than 20 years is in turn reduced to 80%, 50% and 20% of their original selling value dependent on average demand over recent years.

### (g) Leases

The Department has entered into a number of operating lease arrangements for motor vehicles and computing equipment where the lessors effectively retain all of the risks and benefits incident to ownership of the items held under the operating leases. Equal instalments of the lease payments are charged to the operating statement over the lease term as this is representative of the pattern of benefits to be derived from the leased property.

## 3 Changes in accounting policy

### Christmas Island Trust

An agreement has been reached between the Commonwealth and the Department (Indian Ocean Territories Agreement) to carry out inspection services. Monies received on a quarterly basis from the Commonwealth are to cover future inspections. As a consequence these monies are held in a Trust account and subsequently drawn down when costs are incurred.

In the previous year, prior to the formulation of the agreement and subsequent accounting treatment, a notional cost for work done to date was brought to account through Accounts Receivable.

## 4 Programs of the Department

The programs of the Department and their objectives are:

### Program 1 - Industry and Resources Management

Objective: To ensure that the State's mineral, petroleum and dangerous goods industry sectors are managed for the benefit of the people of Western Australia.

### Program 2 - Industry Support

Objective: To increase the rate of discovery and development of the State's mineral and petroleum resources through the provision of comprehensive information about the geology and the mineral and petroleum resources of Western Australia, and of specialised mineral processing research and testing facilities.

As from 1 July 1996, the Mineral Processing Laboratory (MPL) transferred its operations from the appropriation provided for the Chemistry Centre of Western Australia to the appropriation provided for the Department of Minerals and Energy (DME). A net appropriation agreement for services provided by MPL is in place.

MPL provides metallurgical testwork capabilities and facilities as well as consultancy service and advice to a broad range of small, medium and large companies in the mining and mineral sector. It does some work for the public sector, primarily for the Department of Resources Development. It also carries out research and development projects for national research centres, including the AJ Parker Cooperative Research Centre, of which it is a partner, on behalf of the State.

In addition, the objective of Corporate Services is to assist the Department in using its human, financial and other resources effectively and efficiently to provide a service responsive to the needs of the community, industry and government.

Corporate support is provided from the following areas:

Executive  
Finance and Administration  
Human Resources  
Internal Audit  
Computing and Record Services  
Public Affairs  
Policy and Planning.

	1996-97 (\$'000)	1995-96 (\$'000)
<b>5 Salaries</b>		
Salaries	28 959	27 190
Change in employee entitlements	910	1 124
	29 869	28 314
<b>6 Superannuation</b>		
Total expense for the year	3213	397
The "notional" superannuation expense is made up of the movement in the unfunded superannuation liability balance in respect of current employees.		
In 1996-97 there was an increase in this liability as a result of an increase in the Pension and Pre-transfer expense component, whereas in 1995-96 there was a substantial reduction (\$2.0m) in the liability under the Contributory Lump Sum Scheme which substantially reduced the net cost of superannuation		
<b>7 Depreciation</b>		
Buildings	392	190
Computer Software	286	446
Furniture	65	88
Office Equipment	286	300
Computer Equipment	1 703	2 119
	2 732	3 143
<b>8 Administration expenses</b>		
Expenses incurred during the year	21 340	18 294
Resources received free of charge (see note 15)	3 224	1 846
	24 564	20 140
<b>9 Net loss on disposal of non-current assets</b>		
Office equipment	23	2
Computing equipment	656	-
	679	2
<b>10 User charges and fees</b>		
Explosives	323	491
Mineral Titles	172	220
Geological Survey	326	329
Mining Operations	79	30
Petroleum	35	26
Mineral Processing- net appropriation	1 006	-
	1 941	1 096



## Notes to the Financial Statements (cont.)

		1996-97 (\$'000)	1995-96 (\$'000)
<b>11</b>	<b>Other revenues</b>		
	Administration	222	356
	All the above receipts form part of "Operating Revenues" as disclosed in the Operating Statement.		
<b>12</b>	<b>Abnormal items</b>		
	Inventory write-down	58	1 375
	Asset adjustments	740	( 47)
	Employee entitlement adjustment	-	( 297)
		798	1 031
<b>13</b>	<b>Appropriations</b>		
	Consolidated fund		
	Recurrent	50 036	45 792
	Other Statutes - Salaries & Allowances	171	148
	Capital	1 800	2 944
		52 007	48 884
<b>14</b>	<b>Receipts paid into Consolidated Fund</b>		
	Departmental revenue		
	Explosives	(236)	( 477)
	Mineral Titles	(262)	( 197)
	Geological Survey	(384)	( 354)
	Mining Operations	(79)	( 30)
	Petroleum	(35)	( 25)
	Administration	(222)	( 252)
	Mineral Processing	(1006)	-
		(2224)	( 1 335)
<b>15</b>	<b>Resources received free of charge</b>		
	Administration Expenses	3 224	1 846
	Resources received free of charge has been determined on the basis of the following estimates provided by agencies.		
	Office of the Auditor General		
	- audit services	75	70
	Building Management Authority		
	- property maintenance services	-	12
	Government Property Office		
	- property management services	6	7
	Health Department		
	-health surveillance of mine employees	-	112
	Department of Land Administration		
	-land registration dealings, land information and products	3 100	1 597
	Treasury Department		
	- GAS processing and associated services	43	48
		3 224	1 846
<b>16</b>	<b>Liabilities assumed by the Treasurer</b>		
	Superannuation	3 213	397
<b>17</b>	<b>Increase in net assets arising from restructuring</b>		
	Transfer of MPL operations from Chemistry Centre	13 277	-

1996-97  
(\$'000)

1995-96  
(\$'000)

**18 Administered expenses and revenues**

**Expenses**

An appropriation is made under the provisions of the Petroleum (Submerged Lands) Act 1982 for the Commonwealth's share of royalties received from offshore operations. The Commonwealth revenue has been collected by the State into the Consolidated Fund receipts.

Petroleum (Submerged lands) Act 1982 15 958 20 050

Payment made during the year was \$16.906m (1995/96 \$17.796m) and expenditure due but not paid was \$1.306m (1995/96 \$2.254m).

**Revenue**

Taxes, Licences and Royalties

The Department is responsible for collection of certain taxes, licences and royalties. These are not classified as operating revenues and are paid directly to Consolidated Fund.

Collections made during the year were: \$607.532m (1995/96 \$527.117m) and revenues due but not collected were \$105.452m (1995/96 \$119.831m).

Royalties

Iron Ore	157 156	156 155
Petroleum	223 007	161 711
Diamonds	29 133	43 605
Alumina	33 788	32 255
Mineral Sands	23 095	21 209
Nickel	24 478	25 669
Other	30 080	34 684

Lease and other rentals	78 055	65 972
	<u>598 792</u>	<u>541 260</u>

**Taxes and Fees**

Petroleum Permits and Licences	3 825	3 586
Prospecting Exploration & Other Mining Licences	3 871	3 845
Explosives Regulations	171	141
Dangerous Goods Regulations	884	740
	<u>8 751</u>	<u>8 312</u>
	<u>607 543</u>	<u>549 572</u>

**19 Cash and amounts in suspense**

Suspense Account	39	138
Cash on hand	20	20
Accrued salaries Suspense Account	395	198
Operating trust account at Treasury	732	-
	<u>1 186</u>	<u>356</u>

**20 Restricted cash**

Trust account		
Barrow Island Royalty Trust	-	2 499

**21 Inventories**

Geological Survey - Carlisle	2 318	2 184
Mining Titles	13	139
Petroleum	6	-
	<u>2 337</u>	<u>2 323</u>

## Notes to the Financial Statements (cont.)

		1996-97 (\$'000)	1995-96 (\$'000)
<b>22</b>	<b>Accounts receivable</b>		
	Accounts receivable for goods and services supplied	404	289
	Less: provision for doubtful debts	-	-
		<b>404</b>	<b>289</b>
	<p style="margin-left: 40px;">Note: The previous years figure included an amount of \$104000 relating to work done by the Department for the Commonwealth in respect of Indian Ocean Territories. New accounting policy now account for work done through a Trust fund.</p>		
<b>23</b>	<b>Prepayments</b>		
	Prepayments	110	322
<b>24</b>	<b>Property, Plant, equipment and vehicles</b>		
	Land - at Valuation	14 022	14 022
	Buildings- at Valuation	19 237	19237
	- at Cost	246	126
	Accumulated Depreciation	570	177
	<b>Total Buildings</b>	<b>18 913</b>	<b>19 186</b>
	Furniture - at cost	761	648
	Accumulated depreciation	417	352
	<b>Total Furniture</b>	<b>344</b>	<b>296</b>
	Office equipment - at cost	1 983	1 737
	Accumulated depreciation	1 193	935
	<b>Total Office Equipment</b>	<b>790</b>	<b>802</b>
	Computer equipment - at cost	10 057	11 693
	Accumulated depreciation	7 847	7 567
	<b>Total Computer Equipment</b>	<b>2 210</b>	<b>4 126</b>
	<b>Total Equipment</b>	<b>3 000</b>	<b>4 928</b>
	Computer Software - at cost	2 287	2 232
	Accumulated depreciation	1 142	855
	<b>Total Computer Software</b>	<b>1 145</b>	<b>1 377</b>
	Vehicles - at cost	89	78
	<b>Total of Property, Plant, Equipment and Vehicles</b>	<b>37 513</b>	<b>39 887</b>
<b>25</b>	<b>Works In Progress</b>		
	Mining Registrar/Magistrate Chamber - Meekatharra	642	608
	State Drill Store- Carlisle	80	80
	Kalgoorlie Explosives Reserve Roadwork	82	49
	Dexis	-	56
	Mungarri Explosive Reserve	113	-
		<b>917</b>	<b>793</b>
<b>26</b>	<b>Accounts payable</b>		
	Amounts payable for goods and services received	1 126	551
<b>27</b>	<b>Accrued salaries</b>		
	Amount owing for 2 working days from 27th June 1997 to 30th June 1997 was \$197000 (1996- 28th June 1996 to 30th June 1996, 1 working day. was \$97000)	395	198

	1996-97 (\$'000)	1995-96 (\$'000)
<b>28 Employee entitlements</b>		
Current liabilities		
Fringe Benefit tax	75	93
Liability for annual leave	2 907	2 683
Liability for long service leave	2 095	1 904
	<u>5 077</u>	<u>4 680</u>
Non-current liabilities		
Liability for long service leave	2 774	2 124
	<u>7 851</u>	<u>6 804</u>
<b>29 Treasurer's Advances</b>		
Cash Advances- Sub advance	20	20
	20	20
<b>30 Trust Account</b>		
Barrow Island Royalty Trust	-	2 499
Suspense Account	39	138
	<u>39</u>	<u>2 637</u>
<b>31 Equity</b>		
Equity represents the residual interest in the net assets of the Department. The Government holds the equity interest in the Department on behalf of the community. The asset revaluation reserve represents that portion of equity resulting from the revaluation of non-current assets.		
Accumulated surplus/ (deficiency)		
Balance at the beginning of the year	2 999	4 782
Change in net assets	9 805	( 1 783)
Balance at end of the year	<u>12 804</u>	<u>2 999</u>
Asset revaluation reserve		
Balance at the beginning of the year	33 260	-
Adjustment for takeup of MPL property from Chemistry Centre as at 1 July 1996	( 13 028)	
Revaluations during the year	-	33 260
Balance at end of the year	<u>20 232</u>	<u>33 260</u>
<b>Total Equity</b>	<u>33 036</u>	<u>36259</u>

### 32 Administered assets and liabilities

Administered assets and liabilities are not controlled by the Department but are administered by it on behalf of the Government.

#### Administered Current Assets

Restricted Cash		
Special Projects Trust Fund	487	167
Deposits Mines Department Account	435	464
Survey of Leases Under Mining Act Account	1 821	1 847
Income tax and GEHA deductions	325	-
	<u>3 068</u>	<u>2 478</u>
Cash	5 638	
Cash banked but unprocessed		
Accounts Receivable	105 452	119 831
This represents royalty not collected as at 30 June 1997 on production which occurred prior to balance date.		
Accounts receivable includes royalty collections of \$4.1 million which was due and payable prior to 30 June but has not yet been received and is the subject of current negotiations.		

The Department is confident that the amount will be collected.

## Notes to the Financial Statements (cont.)

	1996-97 (\$'000)	1995-96 (\$'000)
<p>An additional amount of \$8.2 million is also in dispute but is likely to be subject to arbitration and hence has not been brought to account. Other negotiations are taking place to determine royalty arrangements for individual mines and wells. As these discussions result in substantial levels of royalty collection by the State, they represent a contingent asset. However it is not possible to quantify the level of this asset at balance date.</p>		
<b>Administered Non-Current Assets</b>		
Property, plant, equipment and vehicles	31	-
	<b>114 189</b>	<b>122 309</b>
<b>Administered Current Liabilities</b>		
Trust Account	3 090	2 478
Accounts Payable	1 314	2 254
	<b>4 404</b>	<b>4 732</b>
<b>33 Resources provided free of charge</b>		
<p>During the year the following resources were provided to other agencies free of charge for functions outside the normal operations of the Department:</p>		
MERIWA (Building Services, Parking, Conferences)	6	3
AJ Parker Cooperative Research Centre for Hydrometallurgy	311	-
Chemistry Centre (Notional Rent on Buildings)	268	348
DOLA	59	-
	<b>644</b>	<b>351</b>
<b>34 Reconciliation of net cash used in operating activities to net cost of service</b>		
<p>For the purposes of the Statement of Cash Flows, "cash" has been deemed to include cash on hand.</p>		
Net cash used in operating activities (Statement of Cash Flows)	( 47 495)	(44,605)
Adjustment to non-current assets	(740)	47
Decrease/(increase) in accrued salaries	( 100)	100
Decrease/(increase) in employee entitlements	( 910)	( 827)
(Decrease)/increase in accounts receivable	115	117
(Decrease)/increase in inventory	73	( 1 375)
Superannuation	( 3 213)	( 397)
Decrease/(increase) in accounts payable	( 575)	48
Depreciation	( 2 732)	( 3 143)
Resources received free of charge	( 3 224)	( 1 846)
(Decrease)/increase in prepayments	( 212)	308
Loss on disposal of non-current assets	( 679)	( 2)
<b>Net cost of service (operating statement)</b>	<b>( 59 692)</b>	<b>( 51 575)</b>
<b>35 Remuneration and retirement benefits of Senior Officers</b>		
Remuneration		
Total of salaries and other benefits received, or due and receivable, for the financial year by Senior Officers of the Department.	918	915
<p>The number of Senior Officers whose total salaries and other benefits received, or due and receivable, for the financial year, falls within the following bands:</p>		
	1996-97	1995-96
\$40 000 to \$50 000	-	1
\$50 000 to \$60 000	-	-
\$60 000 to \$70 000	-	-
\$70 000 to \$80 000	-	-
\$80 000 to \$90 000	-	1
\$90 000 to \$100 000	1	1
\$100 000 to \$110 000	3	5
\$110 000 to \$120 000	3	-
\$150 000 to \$160 000	1	-
\$160 000 to \$170 000	-	1



	1996-97 (\$'000)	1995-96 (\$'000)
Retirement benefits		
In respect of Senior Officers the following amounts became payable for the financial year.		
Notional contributions to the Government Employees Superannuation Act Scheme.	90	86
Redundancy payments	-	-
Number of Senior Officers employed at 30 June who are members of the Superannuation and Family Benefits Act Scheme:	-	-
Senior Officers of the Department's Corporate Executive	3	3

### 36 Adjustments

Some adjustments have been made to classifications this year to reflect more appropriately certain categories of transactions. As a result, comparative figures shown in these Estatements are not directly comparable with figures shown in last year's financial statements.

### 37 Explanatory Statement

The Summary of Consolidated Fund Appropriation Compliance and Revenue Estimates discloses appropriation and other statutes expenditure estimates, the actual expenditure made and revenue estimates and payments into the Consolidated Fund, all on a cash basis. The following explanations are provided in accordance with Treasury's Instruction 945:

#### (a) Details of expenditure in advance of appropriation approved in accordance with Section 29 of the Financial Administration and Audit Act

(i) Amount Provided For Recurrent Services	1 808	(876)
--	-------	-------

The variation is mainly caused by supplementary funding being provided for refunds of royalty revenue collected in prior years (\$1,723,000) and advertising costs associated with Native Title Legislation (\$80,000).

(ii) Amount Authorised by Other Statutes		
Salaries and Allowances Act 1975	24	1
Petroleum (Submerged Lands) Act 1982	4 706	3 096

Excess funding was provided by Treasury to meet these special act requirements. An increase in royalty payments to the Commonwealth through the Petroleum (Submerged Lands) act was caused by higher petroleum royalty revenue collections.

#### (b) Significant variations (greater than 10 per cent) where actual expenditures exceeded budget estimates for the financial year

Amount Provided for Capital Services	483	(346)
--------------------------------------	-----	-------

The variation is mainly owing to expenditure on computing, furniture and office equipment offset by a corresponding reduction in recurrent expenditure.

#### (c) Significant variations (greater than 10 per cent) where actual expenditure exceeded the estimate for programs identified in the annual estimates.

There were no significant variations this financial year.

#### (d) Significant variations where actual revenues exceeded or were less than budget estimates for the financial year

(i) Departmental Revenue	(87)	95
There was no significant variation.		
(ii) Business Revenue	940	77
The increase in revenue is mainly owing to an increase in applications for mining tenements as a result of increased activity.		
(iii) Mining Revenue	( 8 468)	( 36 883)
Lower mineral royalty collections were caused by lower than		

## Notes to the Financial Statements (cont.)

	1996-97 (\$'000)	1995-96 (\$'000)
<p>expected prices for alumina, nickel and iron ore. This was partially offset by increased petroleum royalty collections owing to higher than expected crude oil prices and increased rental revenue from mining tenements.</p>		
<b>(e) Significant variation between actual outcomes for the financial year and outcomes for the immediately preceding financial year</b>		
(i) Refunds of Revenues Refunds were above last year's level as a result of a once off refund of royalty (\$1,723,000) to WAPET that was collected in prior years. This refund was as a result of a renegotiated royalty rate.	3 686	1 826
(ii) Amount Authorised by Other Statutes Payment to the Commonwealth for its royalty share was slightly less than last year.	16 906	17 796
(iii) Capital Reduction in funding for Work in Progress items, namely Tengraph and Mining Registrar's office at Meekatharra.	1 800	2 944
(iv) Programs <i>Industry and Resources Management</i> The increase was mainly owing to increased costs associated with Native Title legislation and expenditure on Special Survey programs.	30 682	27 857
(V) <i>Industry Support</i> The reduction was mainly caused by the transfer of the Groundwater Resources sub-program to the Waters and Rivers Commission in 1995/96 offset by additional funding for the Petroleum Onshore Exploration Incentive project.	15 120	16 037
<b>38 Lease Commitment</b>		
At the reporting date, the following lease commitments are due for payment:		
not later than one year	930	227
later than one year but not later than two years	84	-
later than two years	-	-
<b>39 Other Commitments</b>		
As at balance date, the department had the following commitments:		
Capital	85	-
Recurrent	376	-
<b>40 Contingent obligations</b>		
As at balance date there were no known contingent obligations		
<b>41 Events occurring after balance date</b>		
No known event or events occurred after year end which materially affect the results reflected in this financial report.		
<b>42 Related bodies</b>		
The Department had no related bodies as defined in the Financial Administration and Audit Act 1985 and Treasurer's Instruction 951.		
<b>43 Affiliated bodies</b>		
The Department had no affiliated bodies as defined in Financial Administration and Audit Act 1985 and Treasurer's Instruction 951.		

#### 44 Accounts of the Trust Fund

##### Survey of Leases Under the Mining Act Account

Survey fees collected under the Mining Act are paid into this account. The actual cost of surveys is charged to the Consolidated Fund, and fees previously collected are then transferred to Consolidated Revenue. If the applicant decides not to proceed with the survey, the fee collected is refunded. The balance of the Account is held at Treasury.

	1996-97 \$	1995-96 \$
Opening Balance July 1	1 846 712CR	2 853 204CR
<u>Add Receipts</u>		
Survey Fees	-	-
	<u>1 846 712CR</u>	<u>2 853 204CR</u>
<u>Less Payments</u>		
Transferred to Revenue	-	508 605
Refunds	25 647	497 887
Closing Balance June 30	<u>1 821 065CR</u>	<u>1 846 712CR</u>

##### Barrow Island Royalty Trust Account

The account was created under the Barrow Island Royalty Trust Account Act 1985 which provides for royalty payments received under the Barrow Island lease to be credited to the account and subsequently apportioned between the Commonwealth and the State. The balance of the Account is held at Treasury.

	1996-97 \$	1995-96 \$
Opening Balance July 1	3 332 329CR	6 348 866CR
<u>Add Receipts</u>		
Royalties Received	16 716 803	9 835 682
Total Receipts	<u>16 716 803CR</u>	<u>9 835 682CR</u>
	<u>20 049 132CR</u>	<u>16 184 548CR</u>
<u>Less Payments</u>		
Transferred to Revenue	5 012 283	1 936 526
Remitted to Commonwealth	15 036 849	10 915 693
Total Payments	<u>20 049 132</u>	<u>12 852 219</u>
Closing Balance June 30	<u>-</u>	<u>3 332 329CR</u>

##### Deposits: Mines Department Account

Funds held are received for the issue of temporary reserves and exploration permits pending finalisation of certain legal requirements. The balance of the Account is held at Treasury.

	1996-97 \$	1995-96 \$
Opening Balance July 1	464 500CR	707 000CR
<u>Add Receipts</u>		
Bonds, Securities		8 000
Interest	30 034	39 759
	<u>494 534CR</u>	<u>754 759CR</u>
<u>Less Payments</u>		
Refund of Bonds, Securities	30 000	250 500
Transfers to Revenue		
- Interest	30 034	39 759
Total Payments	<u>60 034</u>	<u>290 259</u>
Closing Balance June 30	<u>434 500CR</u>	<u>464 500CR</u>

## Notes to the Financial Statements (cont.)

### Transfers to Suspense Account

The account is maintained to hold funds to meet any relevant end of year commitment in respect of plant and equipment or land. The balance of the account is held at Treasury.

	1996-97	1995-96
	\$	\$
Opening Balance July 1	54 055CR	-
<u>Add Receipts</u>		
Transfers ex CF - Plant & Equipment		54 055CR
	54 055CR	54 055CR
<u>Less Payments</u>		
Purchase of Plant & Equipment or land	54 055	-
Closing Balance June 30	-	54 055CR

### Departmental Receipts in Suspense

This account is held at Treasury is used to hold moneys temporarily pending identification of the purpose for which the funds were received. The balance of the account as at 30 June 1997 was \$38 762

### Special Projects Trust Fund Account

The account was created to hold funds for the purpose of participating in significant projects with other countries, the Commonwealth and the private sector to the mutual benefit of the other participants and the State of Western Australia.

This account includes an agreement between the Commonwealth and the Department (Indian Ocean Territories Agreement) to carry out inspection services at Christmas Island. Receipts received totalled \$182342 (1995/96 nil) and payments made totalled \$49 215 (1995/96 NIL) giving a closing balance of \$133 127Cr (1995/96 NIL).

	1996-97	1995-96
	\$	\$
Opening Balance July 1	166 575CR	661 733CR
<u>Add Receipts</u>		
Contribution from:		
Industry	551 954	120 878
Government		125 270
Total Receipts	718 529CR	907 881CR
<u>Less Payments</u>		
Salaries	84 274	110 415
Travel	7 921	13 048
Equipment, Misc	138 948	446 787
Transfers		171 056
Total Payments	231 143	741 306
Closing Balance June 30	487 386CR	166 575CR

### Income Tax Deductions and GEHA Rental Account

The account was created to hold PAYE income tax, salary packaging and rental instalments deducted from salaries and wages of employees of the Department's payroll.

	1996-97	1995-96
	\$	\$
Opening Balance July 1	-	-
<u>Add Receipts</u>		
Salaries and Wages Deductions	8 509 685	-
Total Receipts	8 509 685CR	-
<u>Less Payments</u>		
PAYE	8 053 683	-
Rental	131 117	-
Packaging	287	-
Remunerator		-
Total Payments	8 185 087	-
Closing Balance June 30	324 598CR	-

Supplementary Financial Information	1996-97	1995-96
Losses of public monies and public or other property through theft or default	\$ 2	\$ -
Amount Recovered		
Losses for write off	2	-
Public and other property, revenue and debts due to the State, written off in accordance with section 45 of the Financial Administration and Audit Act by:		
The Accountable Officer	848	1269
The Minister	14 402	-
	15 250	1 269
Analysis of losses written off		
Stock shortages		1 269
Bad debts	15 250	-
	15 250	1 269
Consolidated Fund		
revenues due	403 740	289 247
Less considered to be irrecoverable		-
Amount considered to be recoverable	403 740	289 247
Gifts of Public Property		
	-	-

**TRUST STATEMENT NO. 13**

**Name** An account called the Income Tax Deductions and GEHA Rental Account shall be maintained as an Account of the Trust Fund at the Treasury.

**Purpose** To hold P.A.Y.E. income tax and rental instalments deducted from salaries and wages of employees on the Department of Minerals and Energy payroll.

**Receipts** Such moneys as are received by the Department of Minerals and Energy being P.A.Y.E. income tax and rental instalments deducted from salaries and wages of employees on the Department of Minerals and Energy payroll, shall be credited to the account.

**Payments** The funds in the Account shall be applied as P.A.Y.E. payments to the Commonwealth Commissioner of Taxation and as rental payments to the Government Employees Housing Authority.

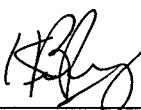
**Administration of Account** The Account shall be administered by the Director General, Department of Minerals and Energy in accordance with the Financial Administration and Audit Act, Financial Administration Regulations and the Treasurer's Instructions.


**Accounting Records** There shall be maintained by the Director General a detailed record of transactions processed through the Account, together with such other accounting records and procedures as are prescribed in the accounting manual.

**Financial Statement** The Director General shall cause to be prepared a statement of cash receipts and payments and such other supplementary information in accordance with the requirements of Treasurer's Instructions.

**Investment of Funds** Moneys standing to the credit of the Account may be invested in accordance with section 40(a) of the Financial Administration and Audit Act.

I have examined and agree to the provisions of this Trust Statement.

  
 \_\_\_\_\_  
 DIRECTOR GENERAL  
 DATE 12/7/96

  
 \_\_\_\_\_  
 ASSISTANT UNDER TREASURER  
 (ACCOUNTING)  
 DATE 12/7/96





## Opinion of the Auditor General

To the Parliament of Western Australia

DEPARTMENT OF MINERALS AND ENERGY

FINANCIAL STATEMENTS FOR THE YEAR ENDED JUNE 30, 1997

### Scope

I have audited the accounts and financial statements of the Department of Minerals and Energy for the year ended June 30, 1997 under the provisions of the Financial Administration and Audit Act 1985.

The Director General is responsible for keeping proper accounts and maintaining adequate systems of internal control, preparing and presenting the financial statements and complying with the Act and other relevant written law. The primary responsibility for the detection, investigation and prevention of irregularities rests with the Director General.

My audit was performed in accordance with section 79 of the Act to form an opinion based on a reasonable level of assurance. The audit procedures included examining, on a test basis, the controls exercised by the Department to ensure financial regularity in accordance with legislative provisions, evidence to provide reasonable assurance that the amounts and other disclosures in the financial statements are free of material misstatement and the evaluation of accounting policies and significant accounting estimates. These procedures have been undertaken to form an opinion as to whether, in all material respects, the financial statements are presented fairly in accordance with applicable Accounting Standards, other mandatory professional reporting requirements (Urgent Issues Group Consensus Views) and the Treasurer's Instructions.

The audit opinion expressed below has been formed on the above basis.

### Audit Opinion

In my opinion,

- (i) the controls exercised by the Department of Minerals and Energy provide reasonable assurance that the receipt and expenditure of moneys and the acquisition and disposal of property and the incurring of liabilities have been in accordance with legislative provisions; and
- (ii) the Operating Statement, Statement of Financial Position and Statement of Cash Flows, Program Schedules and Summary of Consolidated Fund Appropriations and Revenue Estimates and the Notes to and forming part of the financial statements are based on proper accounts and present fairly in accordance with applicable Accounting Standards, other mandatory professional reporting requirements and the Treasurer's Instructions, the transactions for the year ended June 30, 1997 and the financial position at that date.

D D R PEARSON  
AUDITOR GENERAL

September 19, 1997



### Certification of Financial Statements

The accompanying financial statements of the Department of Minerals and Energy have been prepared in compliance with the provisions of the *Financial Administration and Audit Act 1985* from proper accounts and records to present fairly the financial transactions for the year ended 30 June 1997 and financial position as at 30 June 1997.

At the date of signing we are not aware of any circumstances which would render the particulars included in the financial statements misleading or inaccurate.

LC Ranford  
Accountable Officer

13 August 1997

P H Palmer FCPA  
Principal Accounting Officer

# Appendix I

## Department of Minerals and Energy Directory

### Head Office

Mineral House  
100 Plain Street (cnr Adelaide Terrace)  
**East Perth** WA 6004  
Telephone (08) 9222 3333  
Facsimile (08) 9222 3430

### Metropolitan Offices

Geological Survey Transport Store  
and Laboratory  
91 Briggs Street  
**Welshpool** WA 6106  
Telephone - Store (08) 9470 0308  
Telephone - Laboratory (08) 9470 0324  
Facsimile (08) 9362 5694

Mineral Processing Laboratory  
15 Conlon Street

**Waterford** WA 6152  
Telephone (08) 9334 8900  
Facsimile (08) 9334 8999

### Regional Offices

Mining Registrar  
c/- Ministry of Justice  
Court House (Box 28)  
**Broome** WA 6725  
Telephone (08) 9192 1137  
Facsimile (08) 9192 1878

Mining Registrar  
c/- Ministry of Justice  
Court House (35)  
**Carnarvon** WA 6701  
Telephone (08) 9941 1082  
Facsimile (08) 9941 2779

Regional Mining Engineer  
66 Wittenoom Street  
**Collie** WA 6225  
Telephone (08) 9734 1222  
Facsimile (08) 9734 1606

Mining Registrar  
40 Bayley Street (Box 41)  
**Coolgardie** WA 6429  
Telephone (08) 9026 6066  
Facsimile (08) 9026 6204

Regional Mining Engineer  
Brookman Street (Box 10078)  
**Kalgoorlie** WA 6430  
Telephone (08) 9021 9419  
Facsimile (08) 9021 3612

Regional Mining Registrar  
Brookman Street (Box 364)  
**Kalgoorlie** WA 6430  
Telephone (08) 9021 3066  
Facsimile (08) 9091 2428

Geological Survey  
Cnr McDonald Street and Boulder Road  
**Kalgoorlie** WA 6430  
Telephone (08) 9021 9425  
Facsimile (08) 9091 4499

Regional Mining Engineer  
Hedland Place (Box 518)  
**Karratha** WA 6714  
Telephone (08) 9186 8243  
Facsimile (08) 9186 8251

Kimberley Regional Office  
Shop 24 Kununurra Shopping Centre  
**Kununurra** WA 6743  
Telephone (08) 9168 3011  
Facsimile (08) 9168 3051

Mining Registrar  
c/-Ministry of Justice  
Court House (Box 917)  
**Kununurra** WA 6743  
Telephone (08) 9168 1011  
Facsimile (08) 9168 1103

Mining Registrar  
Rochester Street (Box 4)  
**Leonora** WA 6438  
Telephone (08) 9037 6106  
Facsimile (08) 9037 6248

Mining Registrar  
Bohemia Road (Box 7)  
**Marble Bar** WA 6760  
Telephone (08) 9176 1044  
Facsimile (08) 9176 1048

Mining Registrar  
Savage Street (Box 7)  
**Meekatharra** WA 6642  
Telephone (08) 9981 1008  
Facsimile (08) 9981 1482

Mining Registrar  
Richardson Street (Box 13)  
**Mount Magnet** WA 6638  
Telephone (08) 9963 4040  
Facsimile (08) 9963 4488

Mining Registrar  
Prinsep Street  
**Norseman** WA 6443  
Telephone (08) 9039 1082  
Facsimile (08) 9039 1657

Mining Registrar  
Great Eastern Highway  
**Southern Cross** WA 6426  
Telephone (08) 9049 1107  
Facsimile (08) 9049 1431

### National Relay Service

Deaf people, hearing-impaired people and those with a speech impairment who are text callers, TTY users or modem users can contact Department-listed telephone numbers via the National Relay Service by dialling 13 25 44.

# Appendix 2

## Legislation

The Department is responsible to the Minister for Mines for administering 15 Acts of the Western Australian Parliament:

### The four main Acts are:

- **Mining Act 1978**
- **Petroleum Act 1967**
- **Mines Safety and Inspection Act 1994**
- **Explosives and Dangerous Goods Act 1961**

Other Acts include:

- Barrow Island Royalty Trust Account Act 1985
- Barrow Island Royalty Variation Agreement Act 1985
- Coal Industry Tribunal of Western Australia Act 1992
- Coal Miners' Welfare Act 1947
- Miners' Phthisis Act 1922
- Mining (Validation and Amendment) Act 1986
- Mining on Private Property Act 1898
- Petroleum (Registration Fees) Act 1967
- Petroleum (Submerged Lands) Act 1982
- Petroleum (Submerged Lands) Registration Fees Act 1982
- Petroleum Pipelines Act 1969

The following Commonwealth offshore legislation is administered by the State through Commonwealth/State Joint Authorities (listed in order of importance):

- Offshore Minerals Act 1994
- Offshore Minerals (Exploration Licence Fees) Act 1981
- Offshore Minerals (Retention Licence Fees) Act 1994
- Offshore Minerals (Mining Licence Fees) Act 1981
- Offshore Minerals (Works Licence Fees) Act 1981
- Offshore Minerals (Registration Fees) Act 1981
- Offshore Minerals (Royalty) Act 1981
- Petroleum (Submerged Lands) Act 1967
- Petroleum (Submerged Lands) Fees Act 1994
- Petroleum (Submerged Lands) (Registration Fees) Act 1967
- Petroleum (Submerged Lands) (Royalty) Act 1967

### Changes to Legislation

#### ACTS:

##### *Mining Act 1978*

- **Mining Amendment Act 1996 (No. 54 of 1996)**

Assented to 11 November 1996 and sections 5, 7, 10, 13 & 23 proclaimed to operate from 7 December 1996 (remaining sections not yet proclaimed to operate). Changes related to the registration of dealings provisions, State Forests and Timber reserves outside the South West Mineral Field and special prospecting licences.

- **Acts Amendment (Marine Reserves) Act 1997 (No. 5 of 1997)**

Assented to 10 June 1997 however no provisions have been proclaimed to operate as yet. Includes provisions regulating activities in marine reserves.

##### *Petroleum Act 1967*

- **Acts Amendment (Marine Reserves) Act 1997 (No. 5 of 1997)**

Assented to 10 June 1997 however no provisions have been proclaimed to operate as yet. Includes provisions regulating activities in marine reserves.

##### *Petroleum (Submerged Lands) Act 1982*

- **Acts Amendment (Marine Reserves) Act 1997 (No. 5 of 1997)**

Assented to 10 June 1997 however no provisions have been proclaimed to operate as yet. Includes provisions regulating activities in marine reserves.

#### REGULATIONS:

##### *Mining Regulations 1981*

- **Mining Amendment Regulations 1997**

Gazetted on 4 April 1997 to operate from that date. Various minor amendments.

##### *Explosives Regulations 1963*

- **Explosives Amendment Regulations 1996**

Gazetted on 28 June 1996 and commenced on 1 July 1996. Fees and charges were increased.

##### *Mines Safety and Inspection Regulations*

- **Mines Safety and Inspection Amendment Regulations (No. 3) 1996**

Gazetted on 1 November 1996 to operate from that date. Fees for certificates in Schedule 2 increased.

- **Mines Safety and Inspection Amendment Regulations (No. 4) 1996**

Gazetted on 13 December 1996 to operate from that date. Regulations 1.3 and 7.1 amended.

- **Mines Safety and Inspection Amendment Regulations 1997**

Gazetted on 28 February 1997 to operate from that date. Regulations 2.22 and 2.25 amended.

- **Mines Safety and Inspection Amendment Regulations (No. 2) 1997**

Gazetted on 4 July 1997 to operate from that date. Regulation 3.47 amended.

# Appendix 3

## Publications

The Department has many publications and maps which can be purchased or obtained free of charge by members of the public. The Department's library on the fifth floor of Mineral House, 100 Plain Street, East Perth, has copies of most publications and can be accessed by the public. The Mining Information Centre on the first floor of Mineral House sells and distributes publications and maps, and has a range of other services offered free of charge. Some publications can also be obtained from the Department's 11 country centres.

Publications and information about the Department and industry are available electronically on the Department's Internet homepage which is located at <http://www.dme.wa.gov.au>. General information on the mining and petroleum industry is available from the Chamber of Minerals and Energy's Minerals Information Centre, located on the ground floor, 12 St Georges Tce, Perth.

The Department's publications cover a wide range of topics including:

- Environmental issues affecting mining and petroleum exploration;
- Mine work and safety practices;
- Petroleum exploration, safety and environmental considerations;
- Mineral exploration and land access;
- Geological, geophysical and geochemical maps and publications;
- A range of educational material, including a series of fact sheets;
- Explosives and dangerous goods;
- Departmental Annual Report;
- Statistical digests which contain comprehensive statistical information on the Western Australian mining and petroleum industries;
- Mineral tenement maps and various thematic maps relating to mining and other land-use applications in Western Australia;
- Occupational Health and Safety Acts and Regulations.

# Appendix 4

The following staff were employed at the department as at 30 June 1997.

ABBOTT	Gregory Victor	BUSH	Dorothy Mary	DURBIN	Geraldine Martine	HOCKING	Roger Malcolm
ABEYSINGHE	Pathmasekara Banda	BUTSON	Mark Peter	DUTKIEWICZ	Grzegorz	HOCKING	Claire
ADAMIDES	Nicos Georgiou	BUXTON	Karen Alexis	DUTT	Edmund Eddol	HOFFMAN	Arthur Wellesley
AINSLY	Frank Vaughan	CAHILL	Peter Bruce	DYE	Robert Andrew	HOLLAND-MCNAIR	Lisa
ALEXANDER	Helen Claire	CANNON	Mark Patrick	EDBROOKE	Peter William	HOLMES	Mario
ALEXANDER	June Morag	CAPON	Peter	EDWARDS	Deanne Michelle	HOLMES	Alan
ANDERSON	Anthony Edward	CAREW	Eugene Robert	EDWARDS	Tara Margaret	HOPKINS	Peter Sydney
ANDERSON	Kim	CAREY	Mark Gregory	ELLIOTT	Ian Watson	HOPKINS	Peter William
ANDERSON	William Braid	CARLINO	Julia Emilia	ELLIS	John Kenneth Wardley	HOWARD	Simon Hyam
ANNISON	Leslie	CARLSEN	Gregory Mark	ELLIS	Margaret Jadwiga	HUBBARD	Dean Bradley
APAK	Sukru Neil	CARR	William Maxwell	EVANS	Elaine Pamela	HUGGELL	Patricia Grace
APIDOPOULOS	Fiona Jane	CARROLL	James Peter	EXTRACT	Andrew	HUGHES	Bernard Joseph
ARATHOON	Claudette Louise	CASSERLY	Rebecca Mae	FAIR	John Albert	HUGHES	Jennifer Lee
ARENAJO	Annabelle Aguas	CAVALLARO	Bethel Maureen	FALLON	Charles	HUMPHREYS	David Brian
ARGENTA	John Paul	CHEAH	Liew Chooi Elsie	FARNWORTH	James	HUMPHREYS	John Alistair
ARGUS	John Charles	CHEN	Sheta	FARRELL	Terence Raymond	HURLEY	Jennifer Louise
ASHLEY	Melinda Ann	CHEUNG	Chui Wai Eunice	FARROW	John Frederick	HURT	Suzanne Denise
ASSER	Dawn	CHRISP	Karina Janenne	FAULKNER	Joan Alexandrina	HUSSEY	Gary Ian
ATRI	Anil Kumar	CLARK	Dean	FERDINANDO	Darren David	HUTT	Joanne Louise
AUSTIN	Douglas Howard	CLAYTON	Craig Matthew	FERGUSON	Kenneth McIntosh	IASKY	Robert Paul
AVRAAMIDES	James	CLEMENS	Russell Steven	FERRAU	Jacqueline Anne	IHDAYHID	Khalil
BACKHOUSE	John	CLEMENTS	Graham Edward	FETHERSTON	John Michael	ITALIANO	Margaret Angeline
BAGAS	Leon	CLEMENTS	Vivienne Maria	FIELDER	Angela Margaret	JANCE	John
BAGSHAW	Anthony Nicholas	CLOUGH	Amanda Jayne	FIELDING	Christopher Roy	JENKINS	Lynley Anne
BAKKER	Pieter Cornelius	COBBY	Graham Leslie	FINCH	Sally Janine	JENSEN	Catherine Diane
BALCHIN	Debra Rose	COLDICUTT	Shaun Ronald	FINFELSTEIN	Bowe	JOHNSON	Heather Nancie
BANDY	Stephen George	COLLIER	David Bruce	FLETCHER	Mark	JOHNSTON	Jean Frances
BARTLETT	Clive Frederick	COLLIER	Nigel	FLINT	Donald James	JONES	Murray Charles
BASSETT	Alan John	COLLINS	Ross William	FORBES	Alexander St-clair	JONES	Hugh
BATTEN	Kim June	COLLOPY	Sean Peter	FOWLE	Kenneth George Edward	JONES	Katherine Joy
BAVINGTON	Andre Ebenezer	COLLYER	Stephen	FOX	Alistair Douglas	JOSE	Geoffrey Colin
BEAHAN	Frank Stephen	CONDUIT	Stephen James	FOX	Darlene Kerry	JURSA	Frantisek
BEALL	Margaret Pearl	CONNOR	Clyde Esson	FRANCOIS	M Annick Katuscia	KACIUBA	Joseph
BEARDMORE	Alexis Anne	COOK	Anthony	FRASER	Ian	KALAT	Martha
BECKER	Amanda Jane	COOPER	Roger William	FREEMAN	Michael John	KAMARUDIN	Stephen
BELL	Peter James	COOPER	Christella Geniven	FREEMAN	Natalie Anthea	KARNIEWICZ	George Peter
BELL	Christopher Jeffrey	COPP	Iain Alexander	FRENCH	Michael Leonard	KAZEMI	Kamran
BELLINGHAM	Roselyn	CORMACK	Eric Donald	FULLER	Kevin Bruce	KELLY	Kathleen Elizabeth
BERGIN	Lynette Anne	CORNFORD	Kenneth Raymond	GARBIN	Peter Michael	KELLY	Marina Lee
BERMAN	Erez	COSGROVE	Lisa Jo-Anne	GATT	Sharon Jane	KEMPTON	Ngaire Gaye
BERRYMAN	Leslie Phillip	COUSINS	Andrew William	GHORI	Khwaja Ameer	KENT	Anne-marie
BIBBY	Barbara	COUSINS	Caroline	GILLARD	Christine	KEOGH	James
BIGGS	John William	COX	Michelle Anne	GILLHAM	Stephen Ross	KEOGH	Carol Anne
BILLS	David Eric	COYNE	Ian Archibald	GOH	Robynn Kok	KHO	Peggy
BILMAN	Richard Stanley	CRABTREE	David Charles	GOLINSKI	Marek Henryk	KIMPTON	Allan Michael
BIRT	Andrew Geoffrey	CRADDOCK	Richard John	GOODWIN	Janice Doreen	KING	Natalie Helen
BLIGHT	David Frank	CRESSWELL	Brian Eric	GOSS	Andrew Gerard	KING	Michael George
BLYTHE	Jane Amanda	CROSS	Robert James	GOZZARD	John Robert	KINGHORN	Alan Duncan
BONANNELLA	Josephine	CULLEN	Linda Anne	GOZZARD	Beryl Margaret	KIRK	John Robert
BOND	Carolyn Lesley	CUNNINGHAM	Dean Leslie	GRACE	Amanda Louise	KIRKWOOD	Doris Audrey
BONEHAM	Brett Vincent	CUPIN	Michelle Alice	GREEN	Ellis Mervyn	KLEINMAN	Felice Anne
BONER	Peter	D'ANGELO	Vincenzo Antonio	GREENBERG	Kay Eileen	KNEE	Martin John
BONZAS	James	D'COSTA	Dagma Cecilia	GREY	Kathleen	KNIGHT	Nicholas Marc
BOROZDIN	Richard Konstantin	D'CRUZE	Samson Patrick	GRIFFIN	Timothy John	KNYNT	Brian John
BOUCAUT	James Penn	D'ROZARIO	Yvonne Mary	GRIFFIN	Richard James	KOJAN	Christopher John
BOUWHUIS	Eugene	DALY	Matthew	GRIMES	Paul Thomas	KUKULS	Liesma
BOWMAN	Barry Reginald	DAVENPORT	Laurence Warren	GRYGUC	Amanda Jane	KUMAR	Manjeet
BOWRA	Kim Atlee	DAVEY	Julien Mark	GUJ	Pietro	KURYLWICZ	Simon Nicholas
BOYLAND	Philip Earl	DAVEY	Keith John	HAARMAN	Aloysius Hendricus	LADBROOK	David Allen Edward
BRADLEY	Alan Joseph	DAVEY	Janelle May	HALL	Kevin Raymond	LAMBERT	Zbigniew Jan
BRADLEY	John	DAWSON	Raymond Frank	HAMILTON	Tracey Jane	LAMONT	Alexander John
BRADSHAW	Brian John	DAWSON	Brian Frederick	HAMMOND	Meath Robert	LANG	Adrian Maxwell
BRANCH	Bronwen	DE BURGH	Robert Jason	HANSEN	Neil Gordon	LANGFORD	Richard Llewellyn
BRANCH	Colin David	DE CINQUE	Frank	HARMSEN	Frederik	LANNAN	Clyde Gordon
BRIDGER	Colin James	DE LEUW	Lorraine June	HARNWELL	Hazel	LAPTHORNE	John Malcolm
BRIEN	Cameron David	DE LUCA	Christopher Joseph	HARRAP	Stephen	LASSERRE	Daniel
BRIGGS	Torquil John	DEDMAN	Rodney Ellis	HARRISON	Anthony Neil	LAVENDER	Ruth Sarah
BRINKMAN	John Robert	DENNIS	Graeme Victor	HARSLETT	Lynnette Joy	LAWRENCE	James Fitzgerald
BROOKS	David Andrew	DESMOND	John Joseph	HARSLETT	Natasha Jayne	LAWTON	Anthony
BROOKS	Patricia	DEVENISH	Elizabeth Rosemerry	HARTLEY	Janice Lesley	LECKIE	Robert Walter
BROWN	Stephen Michael	DHU	Laurel Jean	HARTLEY	Gary John	LEE	Charlotte Margaret
BROWN	Mark James	DINNISON	Neil	HARVEY	Sandra Lorraine	LEESE	Kathryn Anne
BROWN	Brian Weston	DISS	Jason Kevin	HARVEY	Colin Frederick	LEETE	Anthea Joy
BROWN	Denis	DITMANAS	John	HASSAN	Lee Yvonne	LEGGERINI	Robert John
BROWNE	Richard	DOD	Lyn	HAVORD	Peter John	LENANE	Thomas Leslie
BRUCE	Richard Harry	DOHERTY	Sean Patrick	HAWORTH	Jeffrey Huntly	LENNON	Kerry Elizabeth
BRYAN	Alison Michelle	DOMBROWSKY	Peter Victor	HAYLES	Jeffrey Gerard	LESIAK	Irena
BRYANT	Jennifer Anne	DORES	Kelly	HENG	Kim Lian	LEWIS	Maureen Patricia
BRZUSEK	Marianna	DOWLING	Heidi Jane	HENRYON	Peter Andre	LILLYWHITE	Colin Walter
BUCKLER	Eleanor	DOWSETT	Suzanne Naomi	HEWITT	Peter Anthony	LIM	Lawrence Kao
BULLEN	Anthony Thomas	DREWETT	Ronald Frederick	HEWSON	Gregory Stanley	LIN	Herng Yi
BULNER	Ursula Fay	DRYGALA	Peter	HICKMAN	Arthur Hugh	LINDEN	Bert Jacob
BURDEN	Philip	DUCA	Angelo	HICKS	David Mark	LISIGNOLI	Raymond Domenic
BURKE	Patrick Anthony	DUFFY	Francis	HILL	Stephen Gregory	LLOYD	Melany Louise
BURTON	Roy William	DUGGAN	Josephine	HISCOCK	Jason Lloyd Charles	LOAN	Geoffrey Ian



LOBO Daphne  
 LOCKYER Stuart Edward  
 LONG Tracy Leanne  
 LOPEZ Annabelle  
 LUNGHITANO Giuseppe  
 LYON Enid  
 MACCORQUODALE  
     Fiona Margaret  
 MAHAJAN Manohar Lal  
 MALATESTA Peter  
 MARENKO Doris  
 MARSHMAN Ian Warwick  
 MASON William Frederick  
 MASON Jan-Sandra  
 MATHEWS Leon Ross  
 MATHIE Cunison Allan  
 MATTHEWS Valerie Joan  
 MAYER Ian Gavin  
 MCAULLAY Lauren  
 MCCAGH Isabella Maria  
 MCDONALD Stephen  
 MCFARLANE Raymond George  
 MCGEE John Patrick  
 MCGORRIN Yvonne Mary  
 MCGOVERN Timothy  
 MCGRATH Francis John  
 MCGREGOR Brett Roland  
 MCINTYRE Alan John Graham  
 MCNALLY Anne  
 MCQUILLAN-BROUGHAM  
     Deirdre Marie  
     Garrie George  
 MEDDINGS Gordon  
 MEKLEJOHN Catherine Louise  
 MELIA Janette Kaye  
 MELVILLE Linda Maree  
 MERRITT Graeme Francis  
 MERTON Renee Elizabeth  
 MEWBURN David Alan  
 MEWBURN Victor  
 MIASI Jennifer Anne  
 MIKUCKI Mark Alexander  
 MILEY James Joseph  
 MILLER Ian Spencer  
 MILLER Dennis George  
 MILLER Pane  
 MIOVSKI Phillip Geoffrey  
 MIRABELLA Ian John  
 MISICH Vibhuti Narain  
 MISRA Arthur  
 MISTILIS Faye  
 MITCHELL Helen True  
 MITCHELL Rhonda Anne  
 MONACO Scott Bradley  
 MONTGOMERY Brian Joseph  
 MOORE Susan Jennifer  
 MOROCZ Paul Andrew  
 MORRIS Richard  
 MORY Arthur John  
 MOUNTFORD Terry Wayne  
 MULLIGAN Siobain Rose Anne  
 MUNROWD Maree Sybil  
 MYERS John Stuart  
 NAGY Pearl  
 NARDUCCI Tania  
 NELL Meryl Valerie  
 NELSON David Raymond  
 NEWLAND Charles Edward  
 NG Chan Tek  
 NICOLAOU Phillip  
 NIND Michael Colin  
 NOONAN Kathleen Susan  
 NORRIS David Allan  
 NOWAK Ian  
 O'BRIEN Richard John  
 O'BRIEN John Bernard  
 O'DWYER Carole Anne  
 O'NEILL Paola  
 OCCHIPINTI Sandra Anne  
 OOSTERHOF Jenny Patricia  
 ORTON Shane Robert  
 PAGEL Jutta Marianne  
 PAGOTTO Giovanni Marino  
 PALLOTTA Lucio  
 PALMER Phillip Harry  
 PALMIERI Helen  
 PARK Russell Douglas  
 PARKER Jo-Anne  
 PARKER Christopher Noel  
 PARKS Eric William  
 PARRY David John  
 PATTON Anna Elisabetta  
 PEIRCE Gary Edward

PEIRIS Elias Pulle Wije  
 PERCIVAL Philip Ian  
 PEZZANO Giovanna  
 PHILLIPS William  
 PIKE Claire  
 PIKE Roger Gerard  
 PINTABONA Angela  
 PIRAJNO Francesco  
 PLAYFORD Phillip Elliott  
 PLEYSIER Ronny  
 POLLARD Andrew David  
 POTTS Julie  
 POWER Paul Anthony  
 PRAUSE Michael  
 PRICE Kenneth Robert  
 PROSPER Jean Benjamin  
 QUAGLIA Tanya Lorraine  
 QUINN Ian Roy  
 RAMSELL Sean Keith  
 RANASOORIYA Jayantha  
 RANFORD Lee Cranfield  
 RATHMANN Graeme Robin  
 RAYNER Dale Robert  
 READ Andrew John  
 READ Michael James  
 REARDON Patricia Elizabeth  
 REILLY Pauline Denise  
 REYNOLDS Jane  
 RICHARDS Francis Bernard  
 RICHARDSON Karen Doris  
 RIDGE Simon Luigi  
 ROBERTSON Ian  
 ROBERTSON Charles Cameron  
 ROBINSON Dale William  
 ROBSON Rosaleen Anne  
 RODRIGUES Keok Meng  
 RODRIGUES Mark Albert  
 ROGERSON Richard John  
 ROSE Vincent  
 ROWE Michael Beverly  
 RUDDOCK Ian  
 RUSSELL Mary-Ann  
 RYALL Anthea May  
 SADLER Neil Robert  
 SAINSBURY Stuart Colin  
 SAINT Joan Marie  
 SALE Gregory Leigh  
 SAMUELS Hayden Patrick  
 SANDERS Andrew James  
 SARA Darryn Jay  
 SAUNDERS Patricia Dawn  
 SAUNDERS Shaan  
 SAUNDERS Maxine  
 SAVILLE Francis Reginald  
 SAWERS Paul James  
 SAWYER Martin Edward  
 SAWYER Michael Ian  
 SCHUITEMA Jan Albertus  
 SCILLIERI Roger  
 SCOTT Ann  
 SCREAIGH Stanley John  
 SEGUI Diane-Claire  
 SENYCIA Patrick  
 SHAFRAN John David  
 SHANNON Kerrie  
 SHARPE Leigh Ernestine  
 SHARPE Christopher Johnston  
 SHEPPARD Stephen  
 SHEPPARD Alan  
 SHERWOOD Brian Leslie  
 SHERWOOD Robert John  
 SHEVCHENKO Sergey  
 SHEWCHUK Jaroslav Eric  
 SIEFKEN Terence Christopher  
 SIMMONS Gary James  
 SIMMS Virginia  
 SINAGRA Philip John  
 SINCLAIR Sara Joanne  
 SISTI Vincenzo Raphael  
 SLATER Elizabeth Edith  
 SMART Carmel Renae  
 SMART David Bruce Boddingt  
 SMITH Raymond John  
 SMITHIES Robert Hugh  
 SMURTHWAITE Anthony John  
 SPALDING Graham Philip  
 SPENCER Graeme Ronald  
 SPENCER Neil  
 SPENCER Geoffrey Frank  
 SPIBEY Martin Frank  
 STACEY Michael Warren  
 STANCZAK Mariola  
 STAPLETON Gladys Cecilia  
 STECK Ellen Patricia

STEVENS Mark Keith  
 STEVENS John James  
 STEVENSON John Terrence  
 STEWART David Wallace  
 STEWART Alan  
 STOELWINDER Reinder  
 STOYANOFF Nellie  
 STRACHAN Ronald Arthur  
 STRAUSS Charles Frederick  
 STRONG Caroline Ann  
 STUBLEY Christopher David  
 SUDA John Andrew  
 SUTTON Dellys  
 SWALBE Andrejs Karlis  
 SWARBRICK Gweneth Dawn  
 SZEDLAK Marta Maria  
 TAYLOR Robert George  
 TAYLOR Benjamin Victor  
 TAYLOR Peter John  
 TEEDE Allan Richard  
 THEEDOM Erica Margaret  
 THOMAS Ann Marie  
 THOMSON David  
 THORNE Kerry Roberta  
 THORNE Alan Martyn  
 THORNTON Penny Vanessa  
 TOMICH Donald John  
 TOQUERO Julieta  
 TORLACH James Milne  
 TOWNSEND David Bruce  
 TRPCEV Jadranka  
 TURNER Ann  
 TURNER John  
 TYLER Ian Michael  
 UPTON Hazel  
 URBINI Simon  
 VADALA Joan Maria  
 VALENTI Gino  
 VAN BURGEL Gerrit  
 VAN KRANENDONK  
     Martin Julien  
     Carmen  
 VETRONE Peter Heinz  
 VIELHAUER Craig Andrew  
 WAINWRIGHT Paul Murray  
 WAKELING Faye Michelle  
 WALSH Stephen Patrick  
 WALSTER Annaliese  
 WATKINS Karen  
 WATT John Healy  
 WATTS Leslie James  
 WEARNE Robert John  
 WEST John James  
 WEST Elizabeth Russell  
 WESTCOTT Timothy John  
 WHALAN Stephanie Elizabeth  
 WHITE Steve  
 WHITELEY Mark Francis  
 WILCZEWSKI Jerry Robert  
 WILDAY Kylie  
 WILDE Michael William  
 WILLIAMS Brian Pemberton  
 WILLIAMS John Charles  
 WILLIAMS Kim  
 WILLIAMS Gary Thomas  
 WILLIAMS Ian Robert  
 WILLIAMS Ross Leon  
 WILLIAMS Bruce Denton  
 WILLIAMS Leslie Anne  
 WILLIAMSON Jane Felicity  
 WLADYKA Francis Joseph  
 WONG Henrietta Ah  
 WOOD Mei Ping  
 WOOLFREY Jennifer  
 WOOLFREY Barbara May  
 WOOTTON Rae Joan  
 WYCHE Stephen  
 WYLES Graham Andrew  
 YASIN Ahmad Raza  
 YOUNG Stephen Walter  
 YOUNG Keith Edward  
 ZUIDERSMA Henry Simon  
 ZWANENBURG Janette Yvonne