DEPARTMENT OF
MINERALS AND ENERGY
WESTERN AUSTRALIA

DEPARTMENT OF MINERALS AND ENERGY

ANNUAL REPORT

2000-01

The Honourable Clive Brown MLA
Minister for State Development
Parliament House
PERTH WA 6000

Dear Minister

In accordance with the *Financial Administration and Audit Act 1985* and Section 10 of the *Explosives and Dangerous Goods Act 1961*, 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 2001.

The Annual Report is structured according to the Outcome-Output model used in the 2000-01 Budget Papers, with the Department's activities described by Output. These are set against a background of the mining and petroleum industry in 2000-01.

This is the last report from the Department of Minerals and Energy after it was merged with the Department of Resources Development from July 1, 2001 to become the Department of Mineral and Petroleum Resources.

Yours sincerely

Lee Ranford
Reporting Officer
Director General
DEPARTMENT OF MINERALS AND ENERGY

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REPORT OF THE DIRECTOR GENERAL

In 2000-01, the value of production from Western Australia's petroleum and minerals industries achieved a record level of $27.1 billion which is an increase of 27 per cent on the value in 1999-2000. This increase resulted from some improvements in commodity prices and the depreciation of the Australian dollar.

The value of sales of petroleum increased by 41 per cent to $10.7 billion, establishing that commodity in the number one position in terms of value. The next three most important commodities in terms of sales value were iron ore ($4.6 billion), alumina ($3.4 billion) and gold ($3.18 billion).

Petroleum exploration activities and expenditures increased during the year in response to the increased oil prices and Western Australia increased its share of the Australian total to about 70 per cent. Unfortunately, mineral exploration activity and expenditure remained at low levels, although it appears that Western Australia may have maintained its share of the national and world totals. The depressed level of mineral exploration is of great concern, as it is clear that higher levels are necessary if we are to maintain and/or increase production in future years.

While 2000-01 saw improved levels of safety in both the petroleum and mineral sectors in terms of lost-time injuries, there were five fatalities in the mining sector during the year. In response to these tragedies, the Minister requested that the Mines Occupational Safety and Health Advisory Board (MOSHAB) prepare and then commence implementation of a three-year action plan. The plan aims to improve mine safety performance across four priority areas, namely: risk-management; workplace communication and cultural change; skills, standards and capability; and information, compliance and program reviews. It is recognised that the plan will only be successful if it is supported by industry, the unions and government.

Delays associated with native title claims continued to be of concern and the backlog of tenement applications increased to about 11 000 during the period. This backlog would have been even larger if the number of applications sought had not dropped to a level about 30 per cent less than was considered normal a few years ago. The new Government, which came to power in February 2001, has established a task force to address the issues associated with the mineral title backlog. The task force is scheduled to report to Government in September 2001.

One factor causing delay and adding to the uncertainty in the mineral and petroleum industries is the appeal to the High Court concerning the Miriuwung Gajerrong case which relates to the extinguishment of native title on enclosed and/or improved pastoral leases. It is to be hoped this matter will be resolved towards the end of 2001.

The major part of the petroleum industry in Western Australia is focused on the offshore area and has not been seriously impacted upon by native title considerations. Increased crude oil prices and the decreased value of the Australian dollar resulted in increased expenditure on petroleum exploration and development during the year. Of major importance to the State was the announcement by the North West Shelf Joint Venture in April 2001 that it had received joint company approval to build a fourth LNG train at its processing plant near Karratha. This large project is expected to create 9 000 jobs across Australia during the construction period (2001-2004), add about $1 billion to the value of exports and add about two per cent to the Gross State Product.

One of the most important factors in encouraging investment in mineral and petroleum exploration is the provision by the State of regional geoscience information and data. In 2000-01 the Department released 33 maps, 38 manuscripts and 17 digital datasets which were strongly welcomed by the industry. Another highlight was the release in March 2001 of GeoView WA via the Department's website. This free service allows our customers to customise their maps, including information on geology, mineral resources and tenement information to suit their own requirements.

The Department launched its on-line bookshop in early 2000 and experience during the last year has demonstrated the value of this service, with its direct payment facility. Nearly 60 per cent of orders received during 2000-01 were from outside Western Australia and more than half of these came from overseas.

The opening of the J H (Joe) Lord Core Library and new operational base for the Geological Survey in Kalgoorlie in July 2000 was recognised as a demonstration of the Government's confidence in the future of the mineral industry in the Eastern Goldfields. By the end of the year about 37 kilometres of core from 71 sites around the State were available for viewing by explorers and researchers. Work is scheduled to commence on the State's second core library at Carlisle in 2002 and this will provide further opportunities for both mineral and petroleum explorers to assess the outcome of previous work in selected areas of the State.

The Department continued its drive to achieve improved environmental management throughout the resource sector. At the end of the year, the Department held some 2 500 Unconditional Performance Bonds to the value of over $275 million and there was good evidence that companies were routinely rehabilitating mined-out areas to reduce their bond obligations. Significant progress was also achieved during the year towards the assessment of abandoned mine sites and by the end of the period the inventory included more than 33 000 potential hazards. It is estimated that these sites represent about 50 per cent of the known high-priority sites in Western Australia.

The Golden Gecko Awards for Environmental Excellence provide an important means of encouraging continuous improvement in environmental management in the resource sector. The Awards, which are determined by a Selection Committee and presented by the Minister each year, are highly sought after. The Awards system has now been running for 10 years and the quality of the nominations give a clear indication of the improved standards in environmental management that have been achieved over that period.

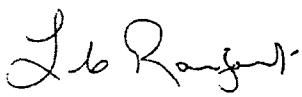
It is accepted in the Department that it is important to be perceived as "an employer of choice" if we are to attract and maintain the quality staff necessary to perform our role at the desired standard. We recognise the challenge we face to achieve contemporary standards of equal opportunity considering the history of employment in the Department and the industry we service. A comprehensive review of the effectiveness of our EEO/Diversity Management Plan was undertaken during the year and a revised plan was in draft form at the end of the year.

The Department has responsibilities for worker and public safety in the resource sector and in 2000 it was decided it was vital that our own occupational safety and health systems and standards should be a benchmark for the industry. To help achieve this goal, we arranged an independent review of safety and health practice in the Department and then created a senior safety consultant position to assist management to achieve our safety goals.

One of the greatest challenges in any large organisation is communication and this is especially important in an environment where there is considerable change. A Staff Consultative and Improvement Committee (SCIC) was established in the Department in 1999 as a means of improving communications and productivity. The Chairperson of the elected staff committee has participated in Corporate Executive meetings over the last year and this initiative is judged by all concerned to have improved communications and allowed staff greater opportunity to contribute to Corporate Governance.

As a result of changes to the Machinery of Government introduced by the Government elected in February 2001, the Department of Minerals and Energy is to be merged with the Department of Resources Development and the Chemistry Centre (WA) to form the new Department of Mineral and Petroleum Resources. The new Department will draw together the various Government policies and programs dealing with the resources sector and will provide an opportunity for improved coordination of Government activities and improved services to the sector.

The changes necessary to complete an effective merger of the two Departments into one will present some challenges, but I am confident that the highly professional and dedicated staff in the Department of Minerals and Energy will ensure services are maintained and enhanced in the new Department.



L C Ranford
Director General
DEPARTMENT OF MINERALS AND ENERGY

THE YEAR IN BRIEF

DEPARTMENTAL HIGHLIGHTS

The Department of Minerals and Energy has generated significant achievements across all areas of operation this year. While the industry enjoyed record high revenues and production levels, the Department pushed ahead with its programs, providing an improved legislative, administrative and information framework to further benefit industry and the Western Australian community.

The new Labor Government's announcement that it would create a new Department – the Department of Mineral and Petroleum Resources – from a merger of the Departments of Minerals and Energy, Resources Development and the Chemistry Centre of Western Australia (CCWA), was the focus of forward planning activity during the second half of the year.

During the year, the Department also increased the availability of geoscientific data and database access via the Internet and CD-ROM. Increasing customer demand for higher levels of electronic transactions and on-line data review will see the new Department continue to improve the availability of digital products to customers and implement online initiatives.

Outcome 1: Optimum use of land and resources

TITLE SYSTEMS

A large number of tenement applications remain outstanding, due to delays associated with native title. During the year, new applications exceeded grants and withdrawals. A backlog of some 11 000 applications exists including 5 260 mining leases, 3 130 exploration and 2 100 prospecting licence applications, covering a record 30.74 million hectares.

The election of a Labor Government in February 2001 meant a new native title policy direction focused on agreement rather than litigation and therefore, a new approach to clearing the backlog of mining tenement applications. In April 2001, the Government formed a taskforce to address the existing tenement backlog and new tenement applications.

Expected to give its findings in mid-September 2001, the taskforce identified the need for all parties to agree on an Aboriginal heritage protocol as the key issue that, if effectively addressed, could enable the granting of exploration titles without objection by native title claimants.

The clearance rate of exploration titles subject to the *Native Title Act 1993* averaged around 75 per cent throughout the year. Negotiated outcomes for mining leases in the right to negotiate process achieved a 33 per cent clearance rate for the reported period.

Mining

There were 3 457 applications for mining tenements received in 2000-01, marginally less than the previous year. This suggests application levels have now stabilised well below the average 5 000 applications per year that were being granted several years ago. It is believed that the large backlog of applications and the continued complexity, cost and time associated with

resolving native title issues have contributed to this decline. In addition, the generally poor economic outlook in the mining sector during the late 1990s reduced the urgency for some companies to expedite the granting of outstanding applications.

Because of native title considerations, only 1 675 applications were granted, compared to 3 204 grants the previous year. However, the granting of 1 049 general-purpose leases for the West Angeles iron ore project effectively doubled the amount of granted applications for 1999-2000. When comparing that year's results, the current level of grants continues to follow the downward trend of recent years.

It is pleasing to note that improved access to the Department's website for clients seeking information from the main business systems has reduced the number of customers visiting Mineral House, thereby assisting them to maximise use of their resources. During the year, on-line access to the TENGRAPH® computerised information system increased by 83 per cent, up from 1 560 to 2 766 registrations.

Petroleum

Petroleum titles in both Western Australia's onshore and offshore regions, including the Commonwealth Adjacent Area, totalled 234 for 2000-01. Occupying more than 569 000 square kilometres of land and water, their combined area makes Western Australia one of the largest petroleum exploration provinces in the world.

During 2000-01, three exploration-permit gazettal rounds were opened. As part of these gazettals, a total of 107 offshore areas were made available for exploration, either as new releases or as a re-release. The gazettals attracted 21 bids for 18 areas. If converted to permits, about $220 million could be spent on petroleum exploration in the State during the next six years.

Of particular interest was a State-wide onshore release gazettal that closed on February 2001. Attracting 16 bids for 16 onshore areas, the strong response shows a renewed interest in the State's onshore basins. An additional six bids were also received for releases in adjacent State water areas. Should these applications be converted to titles, an additional $95 million will enter the Western Australian economy.

Another significant outcome for the year was the awarding of an additional three pipeline licences, increasing the total pipeline inventory for the State to 71 licences, comprising 7 030 kilometres of pipe. These additional licences have expanded the State's gas pipelines network from 7 202 kilometres during the past year.

These are positive signs of a long-term increase in industry activity. The increased activity will help us better identify the extent of the State's petroleum resources and assist with planning of the State's economic development.

GEOSCIENCE INFORMATION AND DATA

The Department continued to enhance understanding of Western Australia's mineral and petroleum potential through the provision of pre-competitive geoscience information and data to its customers – both exploration companies and potential investors.

The Department released 33 maps at various scales, 38 manuscripts and 18 digital datasets. These included geological, geochemical, geophysical, geochronological, mineral occurrence, and petroleum potential data. The number of digital datasets, available on CD-ROM or through the Department's website, is increasing each year in response to technological advances.

A major achievement in March was the release of GeoVIEW.WA via the Department's website. This free service lets users customise their own maps by combining different datasets such as geology, mineral resources, and tenement information to suit their particular needs.

Another significant highlight for the year was the purchase of joint copyright on a comprehensive geological dataset for the Murchison region, compiled between 1989 and 1994, by Dr Jack Hallberg (a leading authority on the geology of the Yilgarn). As a result, the dataset is now available digitally to the exploration industry at a nominal cost.

Kalgoorlie Core Library

The new J H (Joe) Lord Core Library and Geological Survey Operational Base in Kalgoorlie was officially opened on 17 July 2000. About 37 kilometres of core from 71 locations around the State is now available for viewing by explorers, and the amount of core in storage is growing steadily. All core details are catalogued in the Department's database of statutory reports submitted by mineral exploration companies.

The Operational Base also provides office accommodation for up to 10 geoscientists and technicians, as well as public areas suitable for meetings and the viewing of Western Australian Mineral Exploration Index (WAMEX) data. Work on a core library in Perth is due to commence in 2002.

Geocentric Datum of Australia (GDA)

During 2000-01, the nation-wide changeover to the *Geocentric Datum of Australia* (GDA) spatial coordinate system required changes to legislation governing Western Australia's mineral and petroleum industries. The Department coordinated the State response to these changes, drafting amendments to legislation and conducting information workshops for industry. The Department is also developing an Australian Geodetic Data (AGD) to GDA conversion table to assist industry with the transition.

Petroleum Open Day

The Department's annual Petroleum Open Day was another highlight for the year. Well received by industry, the day provided the Department with an opportunity to present displays about its role in regulating the State's petroleum industry, to provide advice to companies considering exploration in Western Australia and to emphasise the importance of the petroleum industry to the Western Australian economy.

Outcome 2: Safe and healthy mineral and petroleum industry workforces

MINING

2000-01 was another year of improvement in safety performance, consistent with the long-term downward trend in injury statistics. This is substantiated by the Department's accident statistics system – AXTAT – which tracks injuries and their causes, and helps the Department create effective programs to further reduce risk to mining industry employees.

It is the Department's view that no fatality is acceptable and that a fatal accident rate of zero can be achieved by the mining industry. The Department is working actively with industry and unions through the Mines Occupational Safety and Health Advisory Board (MOSHAB) to help achieve this goal.

MOSHAB released its *Priority Areas Report* during the year and the Department is working to implement the report's 33 recommendations.

Throughout the year, the Department conducted 46 serious accident investigations and inquiries into five confirmed work-related deaths during 2000-01. Investigations into some of the fatalities were continuing at year's end.

The Department continued its program to introduce greater self-regulation for the industry, while maintaining a high degree of visibility and interaction with the industry and its employees. This program is underpinned by a move from compliance inspections to field audits.

During the year, 11 Occupational Safety and Health audits, 25 Management Safety Systems audits and 233 High Impact Function audits were conducted. These were complemented by 1 901 inspections and another 747 site visits for other purposes. The program of audits, accident investigations and inspections resulted in 384 incidents of plant and machinery being stood down, 92 site closures and the preparation of eight prosecution briefs.

A review of the *Mines Safety and Inspection Act 1994* was launched in December 2000 and it is expected the report will be submitted to the Minister for State Development by October 2001. A review of *Mines Safety and Inspection Regulations* is also underway and should be complete by mid 2002.

The Department's system for record atmospheric contaminant levels (CONTAM) was introduced to the mining and exploration industries in July 2000 with half-day information sessions held in Perth and Kalgoorlie. Ventilation officers attending nationally-accredited, competency-based training courses also received specific information about the changes.

By the end of 2001, the CONTAM homepage will be available through the Department's homepage. It will explain all the CONTAM system features, forms and procedures, including how to view reports on the Web and electronically send sample records to the Department.

PETROLEUM

To ensure a safe working environment, the Department regulates the upstream petroleum industry's safety performance via a legislative regime that uses the safety case approach. The safety case model, as set out in the Commonwealth *Petroleum (Submerged Lands) Act 1967*, places the onus on the operator to identify and reduce risk through engineering changes and implementing better safety-management systems.

During 2000-01, no fatalities occurred in the Western Australian oil and gas exploration and production industry. Injury frequency rates for the year were consistent with the past three years but were slightly lower than last year. However, this year's figure was substantially lower when compared to the injury frequency rates prior to July 1992, when safety case regimes were introduced to the industry.

Safety management documents including Safety Cases, Safety Management Systems and Bridging Documents were assessed by the Department for:

- Development projects at Legendre, Gipsy, Echo Yodel, on the North West Shelf and a production test at Rough Range near Exmouth
- Existing North West Shelf production facilities at Buffalo oil field, North Rankin A, Stag, Varanus Island and Barrow Island
- Mobile offshore drilling units of Sedco 702 and Ron Tappmeyer
- 35 seismic operations
- 19 petroleum pipelines
- 56 exploration and production wells
- 34 diving operations

Also conducted throughout the year were Safety Management Systems audits of facilities and operations that included joint audits with operators and other Government agencies, such as the Northern Territory's Department of Mines and Energy. In addition, the Department continued its internal audit program for major operations procedures such as the operators' auditing procedures, safety case assessment and incident investigation.

The second drafting of new regulations to go with the proposed Western Australian *Petroleum Safety Act* was also completed this year. The new Act will officially apply the Safety Case regime, currently active on petroleum facilities and operations located within State and Commonwealth waters, to Western Australian onshore petroleum and exploration sites. The Act will be proclaimed in Parliament once the regulations have been finalised.

Outcome 3: Acceptable environmental standards for mineral and petroleum exploration, development, production and project completion

MINING

In 2000-01, the Department:

- Approved 243 Notices of Intent to conduct a mining operation from 275 submissions
- Conducted 280 Annual Environmental Reviews of mining operations
- Carried out 395 General Environmental Inspections of mining operations
- Received 1 333 ground applications to conduct exploration activities that would result in ground disturbance

During the year, the Department also dealt with 45 complaints of an environmental nature, ranging from unauthorised mining to environmental incidents. Sanctions initiated during the year included four stop-work orders and four work directions to carry out remedial work.

Abandoned mine sites

The rate of collection of data for the abandoned mine sites inventory, which commenced in 1999, continues to be high with 24 264 potential hazards added during 2000–01. At 30 June 2001, total potential hazards identified in the inventory stood at 33 184. The total includes some potential hazards completely or partially rehabilitated by mining tenement holders, with location data supplied to the Department by companies.

Priority for field inspection was given to those sites within ten kilometres of towns and one kilometre of main roads. About 35 per cent of all abandoned mine sites are in the high-priority category. At 30 June 2001, approximately 50 per cent of known high-priority production sites had been inspected during the first two years of the program.

Disturbed land

The following statistics are for 2000 and relate to reports received from companies conducting mining operations under the *Mining Act 1978*, the various State Agreement Acts and some operations carried out on pre-1899 title land.

A total of 132 500 hectares had been disturbed to the end of 2000 with some 10 988 hectares of new disturbance in calendar year 2000. Of the total disturbance, rehabilitation had commenced on 26 192 hectares and been completed on 18 368 hectares to the end of calendar year 2000. During 2000, rehabilitation commenced on 3 484 hectares and was completed on 2 992 hectares. This indicates that 19.8 per cent of total mine disturbance to the end of calendar year 2000 was in the process of rehabilitation.

The above numbers show considerable effort is being made by mine operators to rehabilitate waste dumps, with work commenced on 46 per cent of the dumps. Exploration activities reported are confined to those taking place close to mining operations.

Performance bonds

At 31 December 2000, the Department held 2 591 Unconditional Performance Bonds with a total value of $254.2 million to cover the cost of post-operational rehabilitation should the operators fail to meet their commitments and conditions of approval. At 30 June 2001, the number of bonds had reduced to 2 520 with a total value of $276.9 million. Based on the December 2000 figure, this indicates an average bond of $3 188 is held for each hectare of disturbance on sites held under the Mining Act.

PETROLEUM

In 2000-01, the Department assessed 341 environmental submissions, compared to 330 in 1999-2000. This included 56 Environmental Plans for Commonwealth offshore operations, 46 Environmental Management Plans for proposals in State jurisdiction, and 17 Oil Spill Contingency Plans. Other environmental documentation consists of exploration and production applications, environmental compliance audit reports, applications for renewals or relinquishments, rehabilitation and monitoring reports and Government submissions.

The Department conducted 22 environmental management audits of facilities, operations and systems during 2000-01. These included joint audits with petroleum operators, joint audits with other Government Agencies and audits of submissions for the Department's Golden Gecko Awards for Environmental Excellence. In the previous year 15 audits were conducted.

Pollution events

A total of 16 hydrocarbon spill incidents were reported in 2000-01. There were no major oil spills in the marine environment. There were six crude oil spills – five onshore and one offshore – totalling 88 cubic metres. Four onshore crude oil incidents were caused by flowline leaks affecting a total area of about 600 square metres. Rehabilitation has been implemented. One onshore spill (17.5 cubic metres) was the result of interference by a person or persons unknown. Most of this spill was retained within the facility area and 5.5 cubic metres were recovered.

Five streamer fluid spills, similar to kerosene, were reported from offshore seismic operations totalling 1.5 cubic metres. The spills resulted from damage caused by shark attacks or streamer fouling. The environmental effect of these spills is minimal as kerosene evaporates rapidly. Three minor diesel spills totalling 0.24 cubic metres were reported. One condensate spill of 500 litres was a mixture of waste oil and condensate lost during transfer from an offshore facility to a vessel. One hydraulic fluid spill of 120 litres was reported.

The Department is pursuing a prosecution relating to a 25 cubic metre crude oil spill which occurred in State waters near Varanus Island in July 1999. In January 2001, the defendant pleaded not guilty and a trial date, originally set for July 2001, has been deferred until January 2002.

Golden Gecko Awards

The 2000 Golden Gecko Awards for Environmental Excellence received enthusiastic support from the minerals and petroleum industry with 24 nominations. In September, Golden Gecko Awards were presented to:

- Placer Granny Smith for the Wallaby gold project
- Cockburn Cement for its seagrass transplanting projects at Owen Anchorage and Success Bank
- Alcoa for its land management program at the Pinjarra Alumina Refinery
- Botanic Gardens and Parks for its restoration of Airlie Island near Onslow, with funding support from WMC Resources, Novus and Apache Energy

Certificate of Merits were awarded to:

- North Mining and Westralian Diamond Drillers for their development of equipment to efficiently remove all potentially damaging drill spoil and saline water
- Barrow Island Coastal Care Group, supported by Chevron Australia, in recognition of its work cleaning up the island's beaches.

Outcome 4: Appropriate returns to the community for the exploitation of its mineral and petroleum resources

Royalties totalling $1 435.9 million were collected for the year, comprising $609.6 million for minerals and $826.3 million for petroleum. From this, $315.6 million were paid to the Commonwealth Government under petroleum royalty-sharing arrangements.

Various royalty issues were addressed with a number of producers during the year. These included amendments to legislation, assessment disputes, royalty relief, audit adjustments and the development of new royalty systems.

Nine applications for royalty relief were received from projects experiencing severe cash flow problems. All applications were assessed against established royalty relief criteria and eight applications were approved.

Outcome 5: A community confident that it is safe from hazards associated with the storage, handling and transport of dangerous goods

The most significant dangerous goods fire in Western Australia's history occurred on 15 February 2001 at a Bellevue waste solvent recycling facility. While no one was directly injured, about 50 people had to be evacuated from nearby homes and the fire attracted significant community and media attention. As a result, a Parliamentary Inquiry into the fire was launched in June 2001.

Before the fire, the Department had initiated prosecution action against the operator for non-compliances with the dangerous goods storage regulations. The operator was convicted on all ten complaints and fined a total of $200 000, the highest penalty ever awarded for a breach of the regulations.

Compliance assurance

Throughout the year, the officers of the Explosives and Dangerous Goods Division conducted ongoing compliance assurance programs to further develop and maintain public safety and confidence in the dangerous goods industry. These included inspections, audits, enforcement actions, accident investigations, emergency response and issue of licences and permits under the *Explosives and Dangerous Goods Act 1961* and the *Dangerous Goods (Transport) Act 1998.*

Key outcomes for the year include:

- Amendments to the explosives regulations were proclaimed adopting the latest national code on the transport of explosives
- Proposed new dangerous goods-in-port regulations with proclamation expected in late 2001
- All of the 24 Major Hazard Facilities – classified in accordance with the national standard for the *Control of Major Hazard Facilities* – have finalised, or are expecting to finalise, their Safety Report by early 2002
- The on-road enforcement project to increase transport industry compliance with the *Dangerous Goods (Transport) (Road and Rail) Regulations* 1999 (the Transport Regulations) is a joint project with the Department of Transport to carry out road-side compliance inspections of dangerous goods vehicles. The program was designed to educate drivers, but 34 infringement notices and four prosecutions were initiated where serious non-compliances were detected
- The identification of non-compliances in the administration of the outdated *Explosives and Dangerous Goods Act 1961* and associated regulations related to the issue of licences and permits for the use of explosives by the Office of the Auditor General

ACCOLADES FOR PERFORMANCE

The Department received the following recognition for its work in 2000–01:

- At the ***Premier's Awards*** in November, RoxMap.WA received a High Commendation in the Innovation Category. RoxMap.WA allows customers to design and print their own maps from seamless digital geological data for the Eastern Goldfields

- At the ***StateWest Achievement Awards*** in December, a submission describing the discovery by Department geoscientists of the Woodleigh Meteorite Impact Structure, east of Shark Bay, reached the finals in the category of a 'group involved in a special project'

- At the ***Mapping Sciences Institute of Australia*** Annual Conference in December 2000, maps and a GIS dataset (CD-ROM) on the Mineral Occurrence and Exploration Potential of the East Kimberley won first place in the Geospatial Information Systems category

- Dr Phillip Playford, a former Director of the Geological Survey, who still works for the Department on a contractual basis received the ***Royal Society of Western Australia Medal*** for 2001, in recognition of a lifetime of contribution to geoscience and history in Western Australia. Dr Playford still works for the Department on a voluntary basis

INDUSTRY OVERVIEW

In 2000-01, the State's mineral and petroleum sectors continued to achieve record levels of production. Estimated sales reached $27.6 billion – a 29 per cent increase on the previous year, which is well in excess of the previous decade's annual average growth rate of six per cent.

These figures reflect significant rises in the value of sales for almost all of the State's resource sectors. The primary reason for the record levels of growth was the 14.5 percent depreciation of the Australian dollar.

Strong petroleum prices in the latter half of 2000, together with the depreciating Australian dollar brought about a 39 per cent increase in the value of sales, despite the fact that most petroleum products had modest falls in the quantity of sales. Petroleum continued to be the State's largest resource sector with sales of $10.6 billion. Iron ore remained the next major economic contributor with sales of $4.9 billion, an increase of over $1 billion on the previous year.

Overall, the State's growth prospects in the resource sector remain strong, and it is anticipated Western Australia will maintain its prominence on the international minerals scene.

In world terms, the latest available data shows that the State supplied, by quantity, 37 per cent of the diamond production 32 per cent of zircon production, 24 per cent of rutile production, about 20 per cent of alumina production, and eight per cent of gold production. Western Australia also provided 20 percent of the world's ilmenite, 14 per cent of its iron ore production, eight percent of liquefied natural gas (LNG) production and 14 per cent of nickel production.

Petroleum

Crude oil prices continued to be volatile during 2000-01. At the beginning of the reported period, the average monthly crude oil price was just under US$31 per barrel. By September 2000, the price had surged to a ten-year high of US$34, before falling back to US$28 per barrel in July 2001.

During the year, crude oil consolidated its position as the largest sector in the petroleum industry with strong growth in both the quantity produced (15.8 per cent to 14 gigalitres), and value of sales (52.4 per cent to $4.8 billion). However, many of the other petroleum sectors experienced marginal falls in the quantity of sales partly offsetting rises in sales value. LNG was typical of this trend managing to achieve a 39 per cent increase in value to $2.74 billion, despite a fall in the quantity of sales by nearly five per cent to seven million tonnes (or 374 million x 10^6 british thermal units). The quantity of condensate sold also fell by eight per cent, but achieved a 25 per cent increase in value.

During the year, Woodside Petroleum continued to look for more trading opportunities in Asia, winning a LNG contract with China. The company is also expanding its North West Shelf drilling projects. Apache has also had exploration success at its Harriet field.

Petroleum exploration spending in Western Australia increased by 56 per cent during 2000-01 to $693 million. However, this came too late to have a significant impact on production levels for 2000-01. Areas considered prospective for petroleum during the year included the Carnarvon, Bonaparte, Browse and Perth basins.

Iron ore

The iron ore industry continued to perform well over the year. Sales volumes increased by 7.1 per cent while value of sales increased by 32 per cent to a huge $4.9 billion.

The results confirmed Australia as the world's largest exporter of iron ore. Much of its continued success is due to a proactive role by industry in establishing a more diversified market, particularly in China and other Asian markets. Such a policy provides a buffer against potential downturns in the Japanese steel industry, on which the State has been traditionally reliant for its exports.

Much of the growth during 2000-01 has resulted from recent increases in ore prices negotiated with Japanese steel mills coupled with the gains of the depreciating Australian dollar.

Gold

Gold continued the trend of recent years with a two per cent decrease in the sales quantities in 2000-01 to 201 tonnes. However, a ten per cent increase in value offset the fall with sales value rising to $3.2 billion.

The industry also experienced a reduction in gold exploration worldwide, the closure of a number of high-cost gold mines and a rise in the demand for its use in jewellery. In addition, a low Australian dollar has also assisted in maintaining relatively strong gold returns.

During the year, rationalisation by Sons of Gwalia resulted in the closure of its Bullfinch and Yilgarn Star treatment plants. Equigold's Dalgarana mine experienced a marked decline in production. However, several mines ended the year with improved levels of production including Homestake's Plutonic, WMC's St Ives, Normandy's Jundee-Nimary and Bronzewing-Mt McCure and Kalgoorlie Consolidated Gold Mine's Superpit, which is still Australia's largest gold mine.

Alumina

Western Australia's alumina industry also continued achieving record results, with volumes increasing by 12 per cent to more than 10 million tonnes produced. The sales also rose by a significant 35 per cent to $3.6 billion.

The industry continued to benefit from increased production capacity resulting from refinery up-grades by both Worsley and Alcoa.

Nickel

The year saw impressive gains for the Western Australian nickel industry, with the sales quantity rising by 16 per cent to 167 000 tonnes. The value of sales also increased by more than 24 percent to $2 billion, despite a decline of over 12 per cent in the average US dollar price for nickel in the previous period.

Several new nickel mines commenced production during 2000-01, including Jubilee Mines' Cosmos deposit near Kalgoorlie. Lion Ore Australia began development of its underground nickel-sulphide mine at Emily Ann, 150 kilometres west of Norseman. WMC Resources Ltd provided positive news with drilling results from West Musgrave (near the triple junction borders of Western Australia, South Australia and the Northern Territory) and also from its Mt Keith operations. WMC Resources Ltd also re-opened three nickel mines in the Kambalda area throughout the year.

The high initial capital costs, combined with delays in production timetables have placed a financial strain on some nickel mining companies involved in developing nickel-laterite deposits. Despite this, production from these mines has increased by 100 per cent to 28,000 tonnes for 2000-01.

Heavy mineral sands

The State's mineral sands industry experienced growth over most commodity areas, with the overall value of sales rising 25 per cent to $917 million.

Production of synthetic rutile continued to increase with 643 000 million tonnes processed in 2000-01, an increase of 16 per cent over the last year to $409 million. Not all synthetic rutile was sold, with a proportion processed through the producers' titanium dioxide plants.

Sales quantities of ilmenite decreased by six per cent to one million tonnes, but with an 11 per cent increase in the value to $169 million. Rutile reversed recent trends by performing strongly throughout the year with significant increases of 29 per cent in sales quantities to 127 000 tonnes and a massive 51 per cent increase in value to $110 million. Sales of zircon fell marginally to 343 000 tonnes but its value increased by nearly 30 per cent to $199 million during 2000-01.

Diamonds

The diamond industry was unable to sustain the record-breaking levels set in the previous year, with significant falls in both the volume and volume of sales, down by 50 per cent and 12 per cent, respectively. Sales values for 2000-01 was $614 million.

The year also saw resolution of a protracted dispute between Argyle Diamonds and the Kimberley Diamond Company over the ownership of the prospective Ellendale fields near Fitzroy Crossing. Kimberley Diamonds' purchase of the Ellendale tenements from Argyle Diamonds settled the dispute. The project is now at the feasibility stage.

Other minerals

The value of base metal sales including copper, lead and zinc continued to rise, with a 27 per cent increase in value to $427 million during 2000-01. Sales of copper and lead were particularly strong. However, towards the end of the reported period, the value of base metals production began a sharp decline.

Salt experienced a six per cent fall in the quantity of sales, while still achieving a nearly 12 per cent increase in sales to $233 million.

Coal production continued to decline during 2000-01, with the value falling by six per cent and the quantity of sales down by seven per cent to $250 million.

AUDITOR GENERAL

To the Parliament of Western Australia

DEPARTMENT OF MINERALS AND ENERGY
PERFORMANCE INDICATORS FOR THE YEAR ENDED JUNE 30, 2001

Scope

I have audited the key effectiveness and efficiency performance indicators of the Department of Minerals and Energy for the year ended June 30, 2001 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 key performance indicators in order to express an opinion on them to the Parliament as required by the Act. No opinion is expressed on the output measures of quantity, quality, timeliness and cost.

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 and 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 key effectiveness and efficiency performance indicators of the Department of Minerals and Energy are relevant and appropriate for assisting users to assess the Department's performance and fairly represent the indicated performance for the year ended June 30, 2001.

D D R PEARSON
AUDITOR GENERAL
October 11, 2001

REPORT ON OPERATIONS

The Department of Minerals and Energy is responsible to the Minister for Mines, for administration of State Acts that regulate the mineral, petroleum and dangerous goods industries in Western Australia.

In February 2001, the election of the Labor Government saw the appointment of the Honourable Clive Brown to the position of Minister for State Development, a position which incorporated the role of Minister for Mines.

The Department also co-administers petroleum-related Commonwealth Acts for which the State and Commonwealth Ministers form a Joint Authority.

The Departmental structure has two distinct components:
- A Corporate Directorate
- Five independent Divisions or business units

The Corporate Directorate, headed by the Director General (Mr Lee Ranford) and two Deputy Directors General (Dr Pietro Guj and Mr Bill Phillips), is responsible for the corporate policy direction, planning, governance, coordination and communication and marketing of Departmental activities. It also provides the necessary corporate services and administers mineral and petroleum royalties and land access matters.

ROLE AND STRUCTURE OF THE DEPARTMENT

The five operating Divisions are industry-focused, independent business units that are primarily responsible for the provision of Departmental products and services in both the industry support and regulatory roles of the Department. Each Division is therefore responsible for one or more of the Departmental Outcomes and Outputs.

OUTCOME AND OUTPUT STRUCTURE

The Department is funded within an Output-based management structure, prescribing five Outcomes desired by Government for the community and ten Outputs provided by the Department to contribute to the achievement of those outcomes.

Outcome 1: Optimum use of land and resources

Output 1: A system for the grant and maintenance of titles to explore for and mine minerals

Output 2: A system for the grant and maintenance of titles to explore for and produce petroleum

Output 3: A geological framework of the State and its resources

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Output 3: A geological framework of the State and its resources

Output 4: An archive of geoscientific and resource exploration data

Output 5: Discontinued[1]

Outcome 2: Safe and healthy mineral and petroleum industry workforces

Output 6: A system for regulating and promoting health and safety in the mineral industry

Output 7: A system for regulating and promoting health and safety in the petroleum industry

Outcome 3: Acceptable environmental standards for mineral and petroleum exploration, development, production and project completion

Output 8: A system for regulating and promoting environmental management in the mineral industry

Output 9: A system for regulating and promoting environmental management in the petroleum industry

Outcome 4: Appropriate returns to the community for the exploitation of its mineral and petroleum resources

Output 10: A system to establish royalty rates and ensure appropriate royalties are paid when due

Outcome 5: A community confident that it is safe from hazards associated with the storage, handling and transport of dangerous goods

Output 11: A system for regulating the storage, handling and transport of dangerous goods

1 Note: Output 5 was discontinued with the transfer of the Mineral Processing Laboratory to CSIRO in 1998. The Department therefore has ten Outputs. However, the original numbering (1-11) has been retained in this report to maintain consistency with Treasury Budget Statements.

OUR VISION

To achieve economic benefits for all Western Australians through the discovery and development of the State's mineral and petroleum resources whilst meeting the community's standards for safety, health and environmental management.

OUR MISSION

To provide a legislative framework, information systems, and administrative processes for the mineral, petroleum and dangerous goods industries in order to:

- Promote the potential for resource exploration
- Facilitate access to land and provide secure title for resource exploration and development
- Meet community standards for environmental management and health and safety
- Ensure the community receives appropriate royalties

DEPARTMENTAL FUNCTIONS AND RESPONSIBILITIES

The Department's Divisions and Branches can be separated into either an industry regulation (management) or support function. The distinction between the two segments is crucial to understanding the way the Department is managed.

The regulatory Divisions' objectives are aimed at attaining and maintaining a robust standard of regulation for the wellbeing of the industry and community.

The support Divisions and Branches aim at attracting investment and increasing the levels of exploration, mining and petroleum extraction in the State. For example, the Geological Survey provides basic geological data and promotes the potential of the State's resources.

The Mineral Titles Division receives applications and allocates titles that give legal rights to explore for and mine minerals in Western Australia under the *Mining Act 1978*. A computer-based public plan system (TENGRAPH ®) and legal title registry are maintained, and dealings creating legal interests are registered. A survey-based title certification service is provided under a user-pay survey system and compliance with expenditure commitments is monitored to ensure land is being actively explored or made available to others.

The Mineral Titles Division is primarily responsible for Output 1.

The Mining Operations Division administers mine safety legislation through *the Mines Safety and Inspection Act 1994* to safeguard and promote the safety and health of those working in the industry. It provides advice to the Government and industry on mining engineering matters including underground mining, open-cut mining, quarrying, drilling and mining related environmental and rehabilitation matters.

The Division also administers the environmental management and rehabilitation requirements through conditions applied under the *Mining Act 1978* on the authority of the Minister.

The Mining Operations Division is responsible for Output 5 and 7.

The Petroleum Division facilitates the undertaking by industry of exploration and development of geophysical and drilling programs for the discovery, delineation and exploitation of oil and gas accumulations. It ensures sound engineering principles and standards are applied to the design and construction of exploration and production facilities and that safety and environmental management systems are in place to secure the occupational health, safety and welfare of the workforce and protection of the environment. It also maintains an effective title allocation and registration system, and monitors, advises and interprets State and Commonwealth petroleum legislation.

The Petroleum Division is responsible for Output 2, 6 and 8.

The Geological Survey Division systematically records and interprets the geology of the State and provides this information to Government, industry and the general public in order to enhance the prospectivity of Western Australia and assist the exploration, development and conservation of the State's mineral and petroleum resources.

It evaluates mineral and petroleum resources as a basis for policy formulation and decision-making by Government and industry while providing assistance and advice on a variety of community needs, including urban planning and land-use issues.

The Geological Survey Division is also the custodian and disseminator of a vast range of geoscientific data and information including tens of thousands of mineral and petroleum exploration reports submitted by private companies in compliance with legislation.

The Geological Survey Division is responsible for Outputs 3 and 4.

The Explosives and Dangerous Goods Division is working towards having a community confident that measures are in place to keep it safe from hazards associated with the storage, handling and transport of dangerous goods. The Division reviews, formulates and administers laws, regulations and policies aimed at the safe manufacture, storage, handling and transport of explosives and dangerous goods. It also provides safety advice on these matters and on the control of major hazard facilities.

The Explosives and Dangerous Goods Division is responsible for Output 10

The Corporate Directorate incorporates a number of Branches covering policy, planning and services with roles including:

• Developing mineral and petroleum royalty policies, which are fair and equitable, and ensuring that the State's royalties are collected in a timely manner (see Output 9)

• Providing economic advice on mining and petroleum industry issues

• Collecting and disseminating statistics and assisting in the development and coordination of general Departmental policies

• Informing staff, industry and the public about the role of the Department and the importance of the mining and petroleum industry

• Ensuring the widest possible access to areas for mineral and petroleum exploration and development (taking into consideration native title claims, conservation and urban planning and development issues) (see Output 1)

• Providing various corporate services for the Department while responding to the requirements of Government and central agencies.

These services include building and purchasing services, information technology, records management, telecommunications, finance, employee relations and auditing activities

NOTE: The majority of the Corporate Group activities fall under the Corporate Governance section.

PERFORMANCE MEASURES

Performance measures provide accountability to Parliament and the community for expenditure of public money and to assist in the management of the Department. These performance measures are published in accordance with the *Financial Administration and Audit Act 1985* (FAAA) and the associated *Treasurer's Instruction 904.*

The FAAA requires that the Department disclose audited key effectiveness and efficiency indicators ('key performance indicators') that:

- Are relevant, free from bias and quantifiable
- Encompass the operations of the Department
- Are reproduced within the elements of the report on operations to which they relate

Treasurer's Instruction 904 defines key performance indicators, this way:

- *Effectiveness* indicators provide information on the extent to which outcomes have been achieved through the funding and production of agreed outputs
- *Efficiency* indicators relate outputs to the level of resource inputs required to produce them

Treasurer's Instruction 904 also requires disclosure of Output performance measure results against estimates
published in the 1999-2000 Budget Papers.

This report contains audited key performance indicators and Output measures, together with certification of the key performance indicators by the Director General of the Department of Minerals and Energy, and the opinion of the Auditor General on those measures.

Key performance indicators are located after the operations report for each Outcome and its related Outputs.

All reported efficiency measures reflect the full cost of service reported in the financial statements. The Output performance measures for all Outputs are located immediately before the financial statements.

CERTIFICATION OF KEY PERFORMANCE INDICATORS

I hereby certify that the key 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 2001.

L C Ranford
Accountable Officer
31 August 2001

OUTCOME 1

OPTIMUM USE OF LAND AND RESOURCES

Output		1999-2000 Expenditure ($ million)	2000-01 Expenditure ($ million)
1	A system for the grant and maintenance of titles to explore for and mine minerals	17.098	18.071
2	A system for the grant and maintenance of titles to explore for and produce petroleum	2.519	3.072
3	A geological framework of the State and its resources	14.971	13.958
4	An archive of geoscientific and resource exploration data	2.535	3.009
5	Mineral processing, test-work, project and consultancy services	Discontinued	
	Total	37.123	38.110

One of the most critical issues facing the resource industry today is access to land and marine areas for the optimum development of the State's mineral and petroleum resources. Government policy, legislation, and community acceptance of the need for mineral and petroleum resource exploration and subsequent resource development have influenced the current level of land access availability in the State.

The Department grants mineral and petroleum titles over land and coastal waters of the State, extending seaward three nautical miles. Acting under a joint authority with the Commonwealth, the Department also administers petroleum activities in adjacent Commonwealth marine areas surrounding the State.

The Department assists industry by providing policy and legislative advice and current geological and resource information, as well as defining administrative processes to ensure security of access to land and marine areas. The Department also undertakes a consultative role with communities that may be affected by land access and approval processes.

ACCESS TO LAND AND MARINE AREAS

Access to land and marine areas under the jurisdiction of Western Australia is facilitated by provisions within the *Mining Act 1978*, *Petroleum Act 1967* and the *Petroleum (Submerged Lands) Act 1982*. As a result, access requirements vary depending on the tenure and legislation involved.

Effect of implementation of Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The Commonwealth *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* came into effect on 16 July 2000 to protect Australia's biodiversity. The Act provides an environmental impact assessment process for developments likely to have a significant impact on matters of National Environmental Significance (NES). With the implementation of the legislation, mineral and petroleum exploration and development proposals in Western Australia deemed to impact on NES matters invoke Commonwealth involvement in the approval process.

The Department has raised industry awareness of the EPBC Act's provisions through publication of a newsletter that provided a summary of the legislation, together with contact details for the Commonwealth environmental agency, Environment Australia. Implementation of the Act has seen an increase in the number of projects referred to the Commonwealth for approval.

Marine Reserve proposals for Western Australia

As an outcome of the *1994 Report of the Marine Parks and Reserves Selection Working Group*, several marine conservation areas were identified as potential marine parks. Other marine reserves are also currently being assessed by the Marine Parks Reserves Authority (MPRA) and its Technical Reference Committees on which there is Departmental representation. If granted, these areas will be vested under the MPRA and managed by the Department of Conservation and Land Management (CALM).

In addition, the Department actively participates in the marine reserve identification and assessment process that ensures access to offshore mineral and petroleum resources. During 2000-01, the Department supported the establishment of the Jurien Marine Park, and is currently working on the Cape Preston-Dampier Archipelago and Barrow Island-Monte Bello Island marine reserve proposals.

Biodiversity conservation and mining in the rangelands

In accord with the National Reserves System Cooperative Program, and the National Strategy for the Conservation of Australia's Biological Diversity, the Western Australian Government adopted a Rangelands Management policy in 1999. The policy is aimed at establishing a Comprehensive, Adequate, and Representative (CAR) reserve system that preserves the biodiversity of the rangelands of Western Australia. To facilitate the management program, the Department identified the mineral and petroleum prospectivity for a number of pastoral leases identifed by CALM, so that competing interests can be resolved and CAR reserves established.

CALM acquired more than 30 pastoral leases to assist the initiative, some of which will be incorporated into the Kennedy Range National Park and Muggon Conservation Park as part of their proposed extensions. Their acquisition was

negotiated by the Department and involved consultation with industry, local government and Aboriginal interest groups.

Government drilling – Kalgoorlie north-west sector

In early 2001, the Department completed a comprehensive rotary air blasting/aircore drilling program immediately north-west of the Kalgoorlie townsite, covering approximately 360 hectares. Involving the Department of Land Administration (DOLA), Landcorp and the Department, the drilling program helped expedite land release over an area identified for residential and recreational development.

Community consultation was undertaken by the Department with environmental and safety approvals obtained prior to commencement of drilling. A report on the drilling results was distributed to DOLA and a mining company with tenement interests in the area. Results from the drilling revealed the area had low, near-surface mineral potential. After completion, the drill sites were rehabilitated to a high standard.

The Department has provided DOLA with clearance under Section 16 (3) of the *Mining Act 1978*, to enable the residential and recreational development to proceed. The Geological Survey of Western Australia will publish the drilling results in late 2001.

Basic raw materials surveys

In association with the Ministry for Planning and Infrastructure, the Department is involved in conducting Basic Raw Material (BRM) surveys throughout the Kalgoorlie and Esperance regions of Western Australia.

The surveys are designed to progress planning strategies within these regions through the identification and protection of BRM resources. The surveys document recent and current BRM production, show the distribution of resources, and provide details on sampling locations and results.

BRM resources identified in the survey include sand for concrete and general building purposes, gravel, crushed rock aggregate for road construction, limestone, limesand, and calcrete (kankar) as potential sources of lime for agriculture and mineral processing. The Kalgoorlie and Esperance reports are being finalised and will be released in late 2001.

Investigation of blasting effects at Bunbury basalt quarries

Strategic sources of construction materials in the SouthWest region are currently produced at quarries close to existing and future residential areas in Bunbury. Many residents living adjacent to the quarries have raised concerns over recent years regarding the vibration effects of quarrying blasting.

The Department, in conjunction with the Western Australian Planning Commission (WAPC), engaged a consultant to investigate vibrational effects from the proposed quarries. The consultant also assessed what measures could be taken to reduce the effects of blasting on nearby residents.

In June 2001, the consultant's draft report was given to the Western Australian Planning Commission for consideration. The final report should be completed early next financial year and will form the basis for public consultation prior to establishing an appropriate buffer zone.

Ravensthorpe town planning and mineral resource investigation

The mining and wheat-growing town of Ravensthorpe, 1 430 kilometres south east of Perth, is destined for major growth if a proposed $700-million nickel mine, east of the town is approved in late 2001. The town and surrounding area have one of the most diverse ranges of high mineral potential of any shire in Western Australia, with the possibility that mineralistion may also occur underneath or adjacent to the town site.

To assess this potential and avoid any future land-use conflict, the Department has negotiated with the Shire of Ravensthorpe a mutually acceptable vision for the town's development that sees access maintained for future mineral exploration while ensuring the town has room to grow.

Square Kilometre Array radio telescope site investigation

Western Australia has emerged as a prime candidate in Australia's bid to establish an international Square Kilometre Array (SKA) radio telescope for space research. Western Australia was chosen over other states because of its large areas of low radio noise and extensive areas of under-utilised land. Working with the Commonwealth Scientific and Industrial Research Organisation (CSIRO) and the former Department of Commerce and Trade, the Department has identified possible sites of low mineral and petroleum prospectivity in areas where there are no competing land-uses. The SKA reserve requires an area 50 kilometres in diameter, with an additional 10-kilometre-wide protection zone.

Several possible SKA sites were identified in the Gascoyne-Murchison region. However, the Department's geological assessment has highlighted the Mount Wittenoom and Mileura areas west of Cue and Meekatharra as the preferred sites.

An international panel is expected to make the final decision on site selection in 2005, with construction taking place over the following 10 years at a cost of $1 billion.

Technical Taskforce participation

Strategies to address native title issues in Western Australia were implemented by the newly elected Labor Government in April 2001. The strategies include a review of the general guidelines for native title determinations and agreements, and the establishment of a Technical Taskforce on mineral tenement and land title applications.

The Technical Taskforce, which includes industry, Native Title Representation Bodies and State Government representatives, was established to investigate and recommend ways in which mineral and land title applications could be dealt with more efficiently, while recognising and protecting the native title rights of indigenous people. Terms of reference also include development of options to address the backlog of applications, and providing options for the most appropriate way to approve new mineral and land title applications.

The Taskforce is required to report back to the Cabinet Standing Committee on Native Title in September 2001.

Agreement between Amalgamated Prospectors and Leaseholders Association and the Goldfields Land Council

Through Departmental facilitation, agreement was reached between the Amalgamated Prospectors and Leaseholders Association (APLA) and the Goldfields Land Council (GLC) to facilitate land access in the Goldfields region for low impact mining by non-corporate prospectors. The agreement sets out a path for low impact non-corporate miners to avoid objections under the native title tenement process, following the satisfactory completion of an Aboriginal heritage survey.

Facilitation of major resource projects

During the year, the Department also successfully facilitated, through the right to negotiate process, finalisation (either through State Deeds or determination) of the following major resource projects:

- Tiwest Titanium Joint Venture, 30 kilometres south of Bunbury
- Ravensthorpe Nickel Project, 30 kilometres east of Ravensthorpe
- BHP Mining Area C Iron Ore Project, 120 kilometres north-west of Newman
- WAPET Thevenard Island Petroleum Production Licence, 22 kilometres offshore from the town of Onslow
- Anaconda Nickel Project, 94 kilometres east of Leonora

OUTCOME 1: OPTIMUM USE OF LAND AND RESOURCES

Output 1:

A system for the grant and maintenance of titles to explore for and mine minerals

Output Description:

The ongoing management of mining legislation and a mineral titles system that provides information on land availability for mineral exploration and mining, encourages exploration on titles and ensures security for title holders. Products and services provided within the management system include advice on land access matters, accurate and up-to-date information on land status, processing and determination of title applications, maintenance of a register of titles and assessment of compliance with expenditure commitments.

Expenditure in 2000-01: $18.071 million

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Corporate Group

Mineral Titles Division

Petroleum Division

Geological Survey Division

Mining Operations Division

Explosives and Dangerous Goods Division

OVERVIEW

Native title remains a key issue facing Western Australia's mining title scene, with a large number of tenement applications still outstanding. The election of a Labor Government in February 2001 resulted in a new native title policy direction focused on agreement rather than litigation.

The year began with the previous Coalition Government's adoption of policy guidelines for the granting of mining tenements over areas of enclosed pastoral lease and former mining-leasehold land. This action, made possible by the Full Federal Court decision in the Miriuwung Gajerrong appeal case aimed to deliver certainty of process, and increase the number of granted mining tenements. This was seen as particularly important as 4 500 pending applications lay within pastoral leasehold land.

However, difficulties in proving enclosure on pastoral leases, and concern over title grants under this process resulted in only 273 applications being granted before the policy was suspended by the incoming Labor Government in February 2001, pending a High Court decision on the Miriuwung Gajerrong appeal.

During the year, new applications exceeded grants and the withdrawal of applications. As a consequence, the backlog reached 11 000, including 5 260 mining leases, 3 130 exploration licences and 2 100 prospecting licence applications, all covering a record area of 30.74 million hectares.

The clearance rate of exploration titles submitted to the expedited procedure under the *Native Title Act* averaged around 75 per cent throughout the year. Negotiated outcomes for mining leases in the right to negotiate process were not as successful with only 33 leases granted in the reported period.

The new Labor Government adopted a new approach to clearing the backlog of mining tenement applications. In April 2001, a Technical Taskforce was formed with its terms of reference requiring recommendations on options to address the existing tenement backlog and new tenement applications.

Expected to give its findings in mid-September 2001, the Taskforce identified Aboriginal heritage and the need for all parties to agree on a heritage protocol as key issues that if effectively addressed, could enable the granting of exploration titles without objection by native title claimants. Other issues identified include the need to introduce short-term amendments to deal with the mining lease application backlog and long-term amendments to ensure that exploration is carried out on an exploration title.

Another area of change relates to the new Government's policy regarding exploration and mining in the conservation estate. Details have not yet been finalised as to the impact on the determination of existing and future tenement applications.

In July 2000, the Federal Government introduced its Goods and Services Tax (GST). The new tax was applied to tenement rents.

Tenure

There were 3 530 applications for mining tenements received during the reported period, marginally less than the previous year. This suggests application levels have now stabilised well below the average 5 000 applications per year that were received several years ago. It is believed the backlog of 11 000 applications, continued complexity, cost and long timeframes in resolving native title issues in respect of individual applications, have contributed to this decline. In addition, the generally poor economic outlook in the mining sector during the later stage of the 1990s has reduced the urgency for some companies to seek the grant of outstanding applications.

During 2000-01, 6.8 million hectares of land held under granted title was relinquished. However, the overall number of titles in force increased from 16 280 in 1999-2000 to 17 326, with a slight increase in the area under tenure to 23.82 million hectares, compared to 23.75 million hectares in the previous year.

Native title considerations affected the number of applications with only 1 675 being granted during the 2000-01 period, compared to 3 204 granted the previous year. However, the granting of 1 049 general-purpose leases for the West Angeles iron ore project effectively doubled the number of granted applications for 1999-2000. When comparing that year's results, the current level of grants continues to follow the downward trend of recent years.

Table 1.1: Tenements

Applications for the period 1 July 2000 to 30 June 2001

	No.	Area (hectares)
Prospecting Licences	1 143	146 605
Exploration Licences	1 542	13 820 520
Mining Leases	731	348 957
Other	114	258 550
TOTAL	**3 457**	**14 574 632**

Tenements granted for the period 1 July 2000 to 30 June 2001

	No.	Area (hectares)
Prospecting Licences	693	99 765
Exploration Licences	653	6 149 640
Mining Leases	221	74 962
Other	108	284 900
TOTAL	**1 675**	**6 609 267**

Tenements in force as at 30 June 2001

(Mining Act 1978)	**No.**	**Area (hectares)**
Prospecting Licences	5 512	711 300
Exploration Licences	3 162	18 153 430
Mining Leases	4 841	1 803 233
Other	2 999	710 580
(Mining Act 1904)		
Mineral Claims	186	21 570
and others	626	2429 286
TOTAL	**17 326**	**23 828 877**

Title Monitoring

Lodgement of the compulsory Form 5 expenditure report which provides a breakdown on the activities and expenditure carried out on tenements was slightly up on the previous year, with 12 080 Form 5 expenditure reports lodged, compared to 11 680 in the previous year. This represents an 86.5 per cent compliance level with respect to the 13 959 existing mining leases and prospecting and exploration licences which had reports due, a slight increase compared to last year's 82.9 per cent compliance.

Changes in information technology over the last year have allowed the Department to monitor lodgement of both Form 5 expenditure and mineral exploration reports. The implementation of on-line technology has also allowed the Department to regularly issue notices of intention to forfeit titles, due to the non-lodgement of either Form 5 expenditure or mineral exploration reports. This new process has enabled the Department to obtain reports containing valuable exploration data that could have otherwise been lost or delayed.

The Department issued 1 960 notices of intention to forfeit for non-payment of rent and non-compliance with expenditure commitments. As a result, 198 titles were forfeited during this period, resulting in a 33 per cent increase over the152 titles forfeited in the previous year. The majority of forfeitures were related to the non-payment of rent.

During the year, 5 224 exemptions from expenditure affecting 6 671 tenements were finalised, compared to the previous year when, 5 660 exemptions affecting 5 883 tenements were granted.

Table 1.2: Title Monitoring

	1998-99	1999-2000	2000-01
Reports received	15 299	11 680	12 080
Exemption applications	5 570	5 883	5 503
Tenements forfeited (rent/expenditure)	136	152	198

Mining Industry Liaison Committee

The Mining Industry Liaison Committee (MILC) provides a forum for industry groups and the Department to consider and review issues relating to the *Mining Act 1978* and provide recommendations to the Minister. Key issues considered during the year included:

- *Expenditure exemption on project grounds*

An amendment to the *Mining Act 1978* has been proposed to provide for the separation of exploration and mining expenditures when exemption is sought on project grounds. Prior to 1999, the Department considered project exemptions on the basis that exploration expenditure should be separated from productive mining expenditure. However, in early 1999 the Supreme Court ruled that current legislation did not make the distinction between exploration expenditure and mining expenditure for the purpose of calculating aggregate project expenditure.

The Department believes the distinction should apply and action is being taken to amend the *Mining Act 1978*.

- *Clarification of Wardens' powers*

It is proposed to amend the *Mining Act 1978* to clarify the administrative and judicial powers of a Warden and the Warden's Court. The proposed amendments will enable the Warden's Court to deal more effectively with matters such as the failure of a witness to appear, issuing of subpoenas and the circumstances for the awarding of costs.

- *Miscellaneous licence mark-out exemptions for groundwater searches*

It is proposed that the need to mark out the corners of miscellaneous licence applications granted for groundwater search be made exempt, due to their large size and purpose. Miscellaneous licences are infrastructure tenements, which support mining operations.

- *Provision of drill core for the WA storage facility*

A new drill core library was opened in Kalgoorlie in 2000, with work on the Perth facility due to commence in 2002. Amendments to the Mining Act and associated regulations are being developed to administer the collection and storage of drill core.

Mining Act amendments

There were two amendments to the *Mining Act 1978* during the year:

- *A new datum reference system*

Western Australia adopted a new, internationally compatible spatial coordinate system in December 2000. The new system, called the *Geocentric Datum of Australia* (GDA), adjusted grid coordinates by approximately 200 metres in a south-westerly direction and brought Western Australia into line with the rest of Australia. To accommodate the shift, the Department amended the *Mining Act 1978,* conducted a number of workshops to familiarise industry and upgraded its TENGRAPH ® database so it could be viewed using the new GDA coordinates.

- *Access to exploration licences by holders of a Miner's Right*

Following an amendment to the *Mining Act 1978* in February 2001, holders of a Miner's Right, if granted a Section 20A permit, can access Crown land within a granted exploration licence. However, access to an exploration licence is conditional, with prospectors required to give prior notice of their intention to the exploration licence holder. In addition, prospectors can only use hand-held tools. A Section 20A permit has a three-month lifespan.

Following introduction of the new laws to increase access for prospectors, the second edition of the booklet *Prospecting in Western Australia* was published. Aimed at increasing community and mining industry awareness of prospecting, the booklet explains the rights and obligations of prospecting, as well as the need to communicate with landholders and other land users when prospecting. Over 8 000 copies of the publication were distributed within the State, with several thousand booklets supplied to interstate outlets to inform tourists and visitors on how to prospect legally in Western Australia.

Customer and information services

Implementation of the Department's Risk Management and Building Security Plan in November 2000 has reduced unauthorised public access to the upper levels of Mineral House. As a result, all normal customer inquiries have been centralised in the Information Centre on the first floor. The Department's Library was also relocated to the first floor, adjacent to the Information Centre.

Counter inquiries at the Information Centre rose minimally from 13 007 in 1999-2000 to 13 227 for the reported period, with an average 51 visitors to the centre each day. The Centre's receipt of tenement applications, dealings and documents was down slightly on the previous year from 10 064 to 10 002. Collection of tenement rents was significantly influenced by the impact of receiving pro-rata portions of GST. Rent transactions increased sharply by 97 per cent to 27 628 payments compared to 14 038 in 1999-2000. There was also an increase in the number of tenement searches, rising from 28 298 in the previous year to 39 999. This 41 per cent increase was mainly due to the supply of documents to the Crown Solicitor's Office related to native title issues.

On-line services

Improved access to the Department's website for clients seeking information available from the Department's main business systems has benefited customers working in their own offices. During the year, on-line access to TENGRAPH® increased significantly by 83 per cent, up from 1 560 to 2 766 registrations. TENGRAPH® is a computerised information system that displays the position of mining tenements in relation to other land information. It also provides textual information on mining tenements, land tenure and topography.

Introduced in February 2000, the Department's on-line electronic bookshop, with its direct payment facility, is becoming a popular alternative method of payment for clients wanting to purchase geological publications. More than 57 per cent of orders received by the Department's on-line bookshop were from clients outside Western Australia, with over half of these coming from outside Australia. The benefits of fast and easy Internet access for clients to the Department's information systems have also helped offset the centralising of customer requests to the Information Centre.

The Government's WAFastPay facility has assisted the development of e-commerce, allowing customers to directly pay invoices and accounts. The electronic banking and inventory system was implemented at 12 Mining Registrar offices throughout the State in mid-2000. The facility has significantly improved daily banking procedures, accounting processes and GST collection.

TENDEX® (electronic titles information system)

General information about the State's mineral title system continued to be provided to industry through the TENDEX® system. TENDEX® (Tenement Index System) is one of the Department's information databases which contains information about all mining tenements applied for under the new *Mining Act 1978*, and all those deemed leases which made the transition from the old *Mining Act 1904*. Access to this information system is available via the Internet, the Department's Information Centre at Mineral House, and from the Department's 12 regional offices throughout the State.

On-line access increased in popularity with 4 154 clients now registered to use TENDEX®, a 41 per cent increase on the previous year.

During 2000-01, preliminary work began on replacing the mainframe-based TENDEX® with a new system to provide title information in a flexible, more user-friendly way. This system changeover will continue through the next reporting period.

TENGRAPH ® (Computerised tenement mapping system)

In partnership with the TENDEX® database, TENGRAPH® continued to provide industry with graphical representations of mineral titles, either through print-outs gained from Mineral House, the Department's regional offices or via the Internet.

To cater for legislative changes and new native title and environmental requirements, numerous programming enhancements have been made to the system. However, the most significant change to TENGRAPH® was the adoption of the new Australia-wide mapping datum known as the *Geocentric Datum of Australia* (GDA). A project to include petroleum titles within TENGRAPH® is expected to be completed towards the end of 2001.

A computer and printer with Internet access to TENGRAPH® installed by the Department at Sandstone, in conjunction with the Amalgamated Prospectors and Leaseholders Association (APLA), continued to be well used by prospectors and local residents. However, it is anticipated the Sandstone community will have a telecentre established during the next reporting period and as a result, the equipment currently on loan to the Shire of Sandstone will be returned to the Department.

MiTiS (Mineral titles electronic management system)

Development of the new computerised tenement registry system to replace TENDEX®, MiTiS, gained momentum during the year with data entry and validation completed for Kalgoorlie. Industry training workshops in the use of MiTiS were held in Perth and Kalgoorlie in readiness for the 2 April 2001 release, through the Department's public counters in Perth and Kalgoorlie. In addition, an intensive three-day training course in the operation of MiTiS was held for staff in Perth and six regional offices.

Elsewhere, the development and progressive implementation of MiTiS continued throughout the State, with data entry completed for the mineral field districts of Karratha, Marble Bar, Coolgardie, Southern Cross and Norseman. This represents about 40 per cent of all tenements in the State. Public access will be available at these centres when the data consolidation process is complete.

The rollout of MiTiS throughout Western Australia has also involved assessing and upgrading the existing computer facilities in the Department's regional offices.

Geocentric Datum of Australia (GDA)

During the year, the Department continued to work on the technical, legislative and promotional implementation of GDA.

In August 2000, programming enhancements were added to the TENGRAPH® System:

- Ability to view the existing Australian Geodetic Datum (AGD) and the new GDA grids and coordinates
- Prints displayed the AGD/GDA grids

The GDA newsletter was distributed to mining industry customers in October 2000, with the Department providing further information on its website.

During November 2000, the Department also conducted a series of workshops for staff and industry in Perth and Kalgoorlie, focusing on the GDA's impact on mining titles and its associated legislative amendments.

The regulations supporting GDA came into effect in December 2000 with the following provisions:

- Anyone can apply for the prescribed land (gap between the AGD/GDA grids) as a prospecting licence or a mining lease
- As long as whole gaps are applied for, there is no requirement to mark out prescribed land

- Only adjoining land held by the same holder, or available land within the same blocks, may be amalgamated

- Section 57(4) boundaries will be moved to the new GDA grid

Transformation of a number of the Department's spatial databases was completed on time, with the GDA successfully implemented on 18 December 2000.

Survey Services

Requests for the survey of mining tenements increased markedly from 112 in 1999-2000 to 386 in 2000-01. The increase was primarily due to a request to survey 267 general-purpose leases for BHP at their Mt Newman iron ore operations.

Legal certification of surveyed tenements decreased to 94 as a result of a backlog of 227 surveyed tenements being subject to the native title process.

Collaborative field inspections by Departmental officers and the Department of Land Administration were carried out in the Yalgoo, Murchison, East Murchison and North Coolgardie mineral fields. These random inspections determined compliance and the legal and spatial accuracy of mining tenement surveys under the Department's User Pays Survey System. Outcomes from the field inspection included:

- Notifying Department-approved surveyors of the standard of their surveys and the rectification of any deficiencies

- Upgrading the Department's guidelines on the Provisions and Regulations of the *Mining Act 1978* and Directions relating to the Surveying of Mining Tenements

- Compliance requirements for the survey of mining tenements under the *Mining Act 1978* and other State statutes

OUTCOME 1: OPTIMUM USE OF LAND AND RESOURCES

Output 2:

A system for the grant and maintenance of titles to explore for and produce petroleum

Output Description

The ongoing management, revision and provision or contracting of a set of products and services for Government and industry to manage access to land for petroleum exploration and production, ensure security for title holders, and encourage effective exploration and production within titles. The products and services include advice on land access matters, release of land for application, processing and determination of title applications, maintenance of a public register of titles and transactions, assessment of compliance with titlework commitments, approval of field operations and reserve assessments.

Expenditure in 2000-01: $3.072 million

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Corporate Group

Petroleum Division

Geological Survey Division

Mining Operations Division

Explosives and Dangerous Goods Division

OVERVIEW

During 2000-01, continued high crude oil prices helped the petroleum sector achieve a record sales value of $10.6 billion, making it the largest economic contributor to the State's resource industry. From a national perspective, Western Australia's onshore and offshore areas, along with the Commonwealth Adjacent Area, accounted for about 49 per cent of the nation's total oil, condensate and natural gas production.

High levels of petroleum exploration also continued throughout 2000-01, with the State attracting 66 per cent of Australia's total petroleum exploration expenditure.

The significant production development for the year was the $2.4 billion North West Shelf joint venture partners' announcement to expand the North West Shelf's liquefied natural gas (LNG) processing facility located near Karratha.

Legislative amendments

During 2000-01, the nation-wide changeover to the *Geocentric Datum of Australia* (GDA) spatial coordinate system required changes to legislation governing the Western Australia petroleum industry. The new coordinate system, which came into effect during December 2000, adjusted the State's grid coordinates by approximately 200 metres in a south-westerly direction.

The amendments, contained within the *Acts Amendment (Australian Datum) Act 2000*, formally implemented a new coordinate system over the established five minutes of latitude by five minutes of longitude grid system, on which all petroleum exploration and production titles are marked. Furthermore, the new coordinates are expressed as decimals of a second, rather than even minutes. The Department is currently developing an AGD to GDA conversion table to assist industry with the transition.

Similar amendments were also made to the Commonwealth's *Petroleum (Submerged Lands) Act 1967*. However, they are yet to be officially proclaimed, as the associated regulations have not been finalised.

Another legislative highlight was the passing of an amendment to the *Petroleum (Submerged Lands) Amendment Act 2001* which transferred administrative responsibilities of the Commonwealth-State Joint Authority to the Western Australian Minister for State Development, (who has assumed the responsibilities of the former Minister for Mines) who is deemed the Designated Authority.

The amendment, created in response to the recommendations handed down in the *Role of the Commonwealth Government in Offshore Exploration and Development* report, released in October 1997, transferred responsibilities, including the approval of dealings and transfers of title interests to the State. The transfer of responsibility has allowed the Joint Authority to concentrate on broader matters such as policy development. The streamlining of the Joint Authority will also assist both industry and Government effectiveness.

Industry liaison

A high level of industry consultation continued throughout the year, with the Department having about 1 000 meetings with industry. This open-door policy to discuss legislative and resources-based issues is essential for the Department to remain in touch with the concerns and requirements of industry. The Department believes industry liaison is the key to maintaining customer satisfaction and the efficient regulation of the petroleum industry.

In a more official capacity, the Department met with the Petroleum Industry Liaison Committee (PILC) twice during the year to discuss broader policy issues. PILC is a committee comprised of industry representative organisations and Government officials. A major issue of concern to PILC was the impact of the *Commonwealth Native Title Act 1993* on the processing time taken to grant exploration titles. To help reduce future delays on the approval of exploration titles, PILC agreed to the creation of a new strategy for releasing designated areas available for exploration, as opposed to the previous strategy of an all-inclusive, State-wide release. In addition, the new permit release strategy would also include value-adding through the availability of geological and environmental information to explorers. The Department would also initiate preliminary negotiations with native title claimants in these areas.

The Department's annual Petroleum Open Day was another highlight for the year. Well received by industry, the day provided the Department with an opportunity to present displays and information about its role in regulating the State's petroleum industry, provide advice to companies considering exploration in Western Australia and emphasise the importance of the petroleum industry to the Western Australian economy.

Throughout the year, Departmental representatives made a number of presentations at industry forums. Highlights included presentations given at the Australian Petroleum, Production and Exploration Association conference in Hobart during April 2001.

Titles and access to land

Petroleum titles active in both Western Australia's onshore and offshore regions, including the Commonwealth Adjacent Area, totalled 211 for the reported period, not including pipeline licences. Occupying more than 569 000 square kilometres of land and water, the combined area of these titles makes Western Australia one of the largest petroleum exploration provinces in the world.

During 2000-01, three exploration permit gazettal rounds closed. In these gazettals, a total of 107 offshore areas were made available for exploration, either as new releases or as a re-release. The gazettals attracted some 21 bids for 18 areas. If converted to permits, some $220 million could be spent in the State over the next six years.

Of particular interest was a State-wide onshore release gazettal that closed in February 2001. Attracting 16 bids for 16 onshore areas, the strong response has shown a renewed interest in the State's onshore basins. An additional six bids were also received for releases in the adjacent State waters area. Should these applications be converted to titles, an additional $95 million will enter the Western Australian economy.

Another significant outcome for the year was the awarding of an additional five pipeline licenses, increasing the total pipeline inventory for the State to 78 licences. These additional licences have expanded the State's petroleum (mainly gas) pipelines network from 7 202 kilometres in 1999-2000 to 7 373 kilometres in 2000-01.

The above statistics, coupled with industry's encouraging response to the last State-wide exploration release during the year, are positive signs of a developing industry. It augurs well for identifying the extent of the State's petroleum resources and assists planning for the State's economic development.

Exploration

Plans by industry to explore, including such activities as drilling programs and geophysical surveys, are reviewed by the Department for approval.

The approval process includes ensuring proponents have the appropriate rights to access land or waters, and that their activity meets the minimum work program requirements for a particular title. Data generated from the exploration activity also needs to be regularly supplied to the Department in a specified format. The data helps the Department review trends in exploration and further improve its understanding of industry dynamics, so that it can implement changes to the regulatory regime, encourage further exploration and reflect changes in technology.

During 2000-01, Western Australia continued to attract most of Australia's petroleum exploration. Western Australia is considered prospective due to its high success rate, running at 44 per cent for 2000-01.

Geophysical surveys, which provide valuable information about what geological features could contain petroleum, including 2D and 3D seismic and aeromagnetic surveys, continued at high levels over offshore areas during 2000-01. Compared to the previous year, 3D surveys rose by 31 per cent with 2D surveys decreasing by 32 per cent. There was also a marked reduction in the number of surveys carried out over prospective onshore areas, the exception being magnetotelluric surveys.

From an international perspective, Australia continued to rank highly among international surveys as a place to explore for petroleum. The attraction comes from Australia's low sovereign risk coupled with favourable fiscal and legislative regimes. The success of offshore exploration, most noticeably off the coast of Western Australia, has also added to this attraction. For example, a recent Robertson's International New Ventures Survey ranked Australia as the second most attractive country to invest in exploration and upstream production. The Department's challenge now is to further increase general petroleum opportunities in Western Australia, in particular the State's prospective onshore areas.

Promotion of exploration

This year, the Department continued its targeted marketing strategy to encourage exploration, particularly onshore. Part of this marketing strategy included the release of an array of publications and promotional material. To increase exposure, these

publications were distributed at a number of key exploration-oriented conferences throughout Australia and overseas.

In addition to the publications, the targeted marketing approach continued to identify prospective areas within Western Australia that match a company's specific exploration philosophy or profile. In addition, the Department has compiled a database of company contacts made at conferences and taken from company lists. These contact persons are also provided with general information about Western Australian exploration opportunities. A Departmental staff member then follows up the initial contact to answer any specific questions about the information supplied.

For the second consecutive year, the *Western Australian Onshore Petroleum Opportunities 2001* booklet was published to encourage greater exploration activity in existing onshore permits. Containing information gathered from exploration companies in onshore farm-in opportunities, the publication was marketed and distributed internationally through a variety of industry journals, professional societies, and conferences, as well as being distributed world-wide. Comments received to date from both Government agencies and industry have suggested this annual publication has helped attract new explorers.

Two issues of *Petroleum in Western Australia* magazine were also published during 2000-01. Containing information about the regulation, exploration opportunities and issues in the Western Australia petroleum industry, the magazines also contained poster-sized maps of petroleum fields and development facilities.

During 2000-01, work continued on the release of the second volume of the *Atlas of Petroleum Fields: Onshore Canning and Carnarvon Basins.* The publication is expected to be available to industry by late 2001.

Production and development

During 2000-01, North West Shelf joint venture partners announced their plans to expand the North West Shelf's liquefied natural gas (LNG) processing facility located near Karratha.

The $2.4-billion expansion will provide a major boost for the State's economy through additional royalties, the creation of 2 000 new jobs during construction, plus an additional 70 ongoing positions once the project is active. The expansion will require additional gas production for the anticipated start-up in 2003, which will require additional onshore facilities.

Another highlight of the year was the commencement of production at Apache's Gipsy and North Gipsy oilfields in February 2001.

The year also saw significant progress made on a number of North West Shelf projects including Woodside's preparations to bring the Legendre oilfield online. Production started in early July 2001.

Woodside is also currently developing its Echo/Yodel gas-condensate field for commercial production by late December 2001. Additional fields in the Greater Echo/Yodel area have been earmarked for development.

Technical assessments also continued at the large Perseus/Athena natural gas field development. The Perseus-Athena Field is one of the largest in Australia and its continued development has significant economic benefits for Western Australia.

As part of the assessment process, 14 field inspections of drilling, production testing of equipment and metering stations, as well as the drilling of 30 development and extension wells were carried out during the reported period.

Another significant prelude to development during the year was the outsourcing study of pressure variations in the Barrow Sub-basin to investigate the effects of aquifer depletion on the resource management of producing fields, and the potential effects on undeveloped or undiscovered fields.

Initial steps were also taken to examine similar pressure variations in the Dampier sub-basin. To improve the analytical capabilities of these studies, the Department acquired new reservoir simulation software in early 2001.

Other major gas or condensate developments under evaluation or planning stages during the year included:

- AGIP's Woollybutt oil field in the Barrow sub-basin
- Apache's Simpson oil field also in the Barrow sub-basin
- Woodside's Angel field in the Dampier sub-basin

Based on the continued development of the State's known offshore natural gas resources, long-term growth in this sector is expected to continue. At of the end of the reported period, there was an estimated 3 000 giga cubic metres (100 trillion cubic feet) of natural gas resources to underwrite the State's long-term role as a global gas supplier.

As Western Australia continues to be the focus of Australia's petroleum development, the Department has increased its emphasis on access to skills and technical resources to ensure that petroleum resources management practices continue to benefit the State.

In particular, greater use is being made of external technical resources through the outsourcing of specialised studies.

The need for technical assessment for numerous development plans continued throughout 2000-01, reflecting the continued interest in the development of the State's petroleum resources. This activity included assessment of:

- Eight production licences applications and renewals, including North West Shelf developments
- Seven locations and retention leases applications
- 22 development wells applications
- Ongoing updating of field development plans for Goodwyn, Lambert-Hermes and Wanaea-Cossack.

OUTCOME 1: OPTIMUM USE OF LAND RESOURCES

Output 3:

A geological framework of the State and its resources

Output Description

Published maps, reports and datasets to maintain an up-to-date geological framework of the State and its mineral and petroleum resources to further encourage exploration and investment.

Expenditure in 2000-01: $13.958 million

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Corporate Group

Mineral Titles Division

Petroleum Division

Geological Survey Division

Mining Operations Division

Explosives and Dangerous Goods Division

INDUSTRY OVERVIEW

Western Australia continued to attract the majority of national exploration expenditure in a depressed international environment throughout 2000-01. Despite this, the value of mineral and petroleum production in Western Australia for the calendar year 2000 reached record highs at more than $27 billion, a result strongly influenced by high crude oil prices and a lower Australian dollar.

However, towards the end of 2000-01, there were signs that exploration activity was emerging from the depressed state it had experienced since mid-1997. The Australian Bureau of Statistics reported that mineral exploration expenditure increased 10.5 per cent in the March 2001 quarter, compared to the same quarter in 2000.

There was also further evidence of potential growth in exploration expenditure from an increase in resource sector floats on the Australian Stock Exchange since December 2000, and an increase in capital expenditure in the minerals sector in the March 2001 quarter.

Recent successes point to stronger industry activity across a range of minerals:

Gold

The gold sector is emerging from a difficult period for producers troubled by lower world prices and reduced activity. Highlights for the year include the discovery of the Raleigh deposit just south of the Kundana Gold mine near Kalgoorlie, and the completion of a bankable feasibility study on the two-million-ounce Thunderbox deposit near Leinster.

Tantalite and platinum

Interest in tantalite and platinum group elements is high due to their increasing usage in a variety of technological products. Highlights for the year include the start of tantalite mining at Bald Hill, south-east of Kambalda, and construction of a tantalite pilot plant at Dalgaranga, north-west of Mount Magnet. A full feasibility study of the Munni Munni platinum group elements deposit south of Karratha has also commenced.

The Musgrave geological complex, near the remote triple junction borders of Western Australia, South Australia and the Northern Territory, remains the focus of attention for true greenfields exploration after WMC Resources Ltd discovered massive and disseminated nickel, copper and precious metal mineralisation at Nebo and Babel in May 2000.

Diamonds

Western Australia is close to having its second major diamond mine, with Kimberley Diamond undertaking bulk sampling at Ellendale 4 and 9 in the West Kimberley, and full-scale production being considered for 2002.

GEOLOGICAL INFORMATION AND DATA

During the year, the Geological Survey continued to enhance understanding of Western Australia's mineral and petroleum potential through the provision of pre-competitive maps, reports and digital datasets to both exploration companies and potential investors.

Hallberg-Murchison data purchase

A highlight for the year was the purchase of joint copyright on a comprehensive geological dataset for the Murchison region compiled between 1989 and 1994 by Dr Jack Hallberg, a leading authority on the geology of the Yilgarn. As a result, the dataset is now more widely available to the exploration industry at a nominal cost.

The dataset is based on detailed 1:25 000 scale mapping by Dr Hallberg and includes both surface and subsurface data obtained from drillholes and old mine workings. The dataset was released in digital form and includes maps at 1:25 000 scale, a 1:100 000 scale Geographical Information System (GIS) dataset, as well as six comprehensive reports.

GeoVIEW.WA maps free on-line

A major achievement in 2000-01 was the release of GeoVIEW.WA to the Department's website in March 2001. This application lets explorers and other customers view and integrate numerous geoscience datasets held in the Department's databases.

Customers can construct maps, combining different datasets such as geology, mineral resources, and tenement information to suit their own needs. It is compatible with both Internet Explorer and Netscape net browsers. GeoView.WA is free.

Mapping and resources studies

The Department carried out geological mapping and resources studies in a number of areas across the State. These include mapping projects in the East Pilbara, Eastern Goldfields, northern Southern Cross, Gascoyne and Lake Carnegie regions.

Regolith and geochemical mapping was undertaken on the Byro 1:250 000 sheet (west of Meekatharra). The regolith-landform resources mapping program, designed to determine what landforms are best suited to certain land uses in high-growth zones of rapid developement concentrated its work in the Leeuwin-Naturaliste and Geraldton areas, with work commencing in the Kalgoorlie-Boulder area.

Mineral occurrence mapping was completed in the east Pilbara, and data collection was commenced in the central and southern Kimberley and the Canning Basin.

The Petroleum Initiatives Team continued its work on the northern Perth and southern Carnarvon basins, including the drilling of three stratigraphic wells totalling 893 metres inland from Shark Bay. Fieldwork was also carried out in the Gibson Desert area of the Officer basin in preparation for follow-up drilling in 2001-02.

Geophysical data was acquired over the Byro 1:250 000 sheet area (four kilometre-spaced gravity), and the Sandstone 1:250 000 sheet area (200-400 metre-spaced aeromagnetic and

radiometric). Purchase of copyright for data in the Bangemall Basin (Gascoyne region) and Barlee–Jackson areas north of Southern Cross allowed the release of a further 250 000 line-kilometres of aeromagnetic data during the year.

The first published outputs of the new 1:50 000 scale regolith–landform resources mapping program were released by the Minister for Mines at a function in Margaret River in November 2000. The launch of the Cowaramup package, including map, GIS dataset and explanatory notes, was well attended by organisations and individuals with an interest in landuse planning.

Other significant geological information and mapping projects completed during 2000-01 included:

- 33 maps at various scales, 38 manuscripts and 17 digital datasets. These included geological, geochemical, geophysical, geochronological, mineral occurrence, and petroleum potential data. The number of digital datasets released is increasing each year in response to technological advances, and a number of datasets were published in 2000-01 in both traditional hardcopy and digital formats, either on CD-ROM or on the Department's website

- An integrated dataset on the mineral potential of the Mid-West Region including a report, map and CD-ROM

- A comprehensive bulletin *Geology of the Fortescue Group* rocks of the Pilbara region

- An updated State-wide 1:500 000 scale geological map in electronic format, accessible free of charge via GeoVIEW.WA at the Department's website

- An updated 1:5 000 000 scale map showing the State's major geological provinces

Promotional activities and awards

The Department continued to exhibit geoscience mapping products and promote the prospectivity of Western Australia at national and international investment and exploration conferences during 2000-01.

These included the annual conferences of the Prospectors and Developers Association of Canada (Toronto), the American Association of Petroleum Geologists (Denver), the Association of Exploration Geochemists (Chile), Diggers and Dealers (Kalgoorlie), Mining 2000 (Melbourne) and the Australian Petroleum Production and Exploration Association (Hobart).

Other important conferences and customer liaison events organised by the Department during the year included:

- Showcase of recent advances in the understanding of the State's geological framework and resources to industry and the public through staging of GSWA 2001 in March 2001. GSWA 2001 was an open day of technical talks and poster displays highlighting current Geological Survey services, products, and work-in-progress. GSWA 2001 focused mainly on minerals explorers, and provided an opportunity for the new

Minister for State Development to meet explorers. The release of the Hallberg-Murchison dataset was a major feature of the day

- A Petroleum Open Day was held in October 2000, where issues of interest to petroleum explorers were presented via a series of talks and poster displays. The day also provided a forum for exchange of ideas between the Department and the upstream petroleum industry

- Customer liaison committee meetings at which the work programs proposed by the Geological Survey Division were discussed. Committee members include representatives from industry, universities and the Australian Geological Survey Organisation (AGSO)

- A showcase of publications and poster displays at the Burswood International Resort Casino as part of the Minex Conference in March 2001.

The Department received the following recognition for its work in 2000-01:

- ***Premier's Awards*:** In November, the software program, RoxMap.WA, received a High Commendation in the innovation category. RoxMap.WA allows customers to design and print their own maps from systematic, seamless 1:100 000 scale geological data for the Eastern Goldfields

- ***StateWest Achievement Awards***: In December 2000, a submission describing the discovery by Department geoscientists of the Woodleigh Meteorite Impact Structure, east of Shark Bay, reached the finals in the category of a group involved in a special project

- ***Mapping Sciences Institute of Australia (MSIA)*:** At the Annual Conference held in Sydney during December 2000, maps and a GIS dataset (CD-ROM) on the Mineral Occurrence and Exploration Potential of the East Kimberley, the department won first place in the Geospatial Information Systems category

- Dr Phillip Playford, a former Director of the Geological Survey, who still works for the Department on a voluntary basis, received the ***Royal Society of Western Australia Medal*** for 2001, in recognition of a lifetime of contribution to geoscience and history in Western Australia.

GEOLOGICAL SURVEY FUNDING REVIEW

An independent review of the long-term funding needs and future priorities for the Geological Survey Division was announced by the Minister for Mines in July 2000. The review team, chaired by Dr Ross Fardon, a highly qualified geologist with senior industry and government experience, presented its report and recommendations for increased funding to the Minister in October 2000. The new Minister for State Development (who has encompassed the role of Minister for Mines) is now considering the report and its recommendations in the context of the Labor Government's programs and priorities.

OUTCOME 1: OPTIMUM USE OF LAND RESOURCES

Output 4:

An archive of geoscientific and resource exploration data

Output Description

To develop and make more readily available an archive of geoscientific and resource exploration documents, samples and data to better define the State's mineral and petroleum exploration potential and improve the rate of exploration success.

Expenditure in 2000-01: $3.009 million

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Corporate Group

Mineral Titles Division

Petroleum Division

Geological Survey Division

Mining Operations Division

Explosives and Dangerous Division

EXPLORATION INFORMATION MANAGEMENT

During the year, the Department increased the availability of geoscientific and resource exploration data to better define mineral and petroleum exploration potential and improve the rate of exploration success in Western Australia.

The Department acquired, stored and released to open file, information submitted by mineral and petroleum tenement holders to the Department under statutory regulations. The data can be used by existing and potential investors to make more informed choices about where to explore and what commodities to look for, thereby reducing their risk and increasing the efficiency of exploration expenditure.

This year, 1 981 mineral exploration reports were received from industry. A total of 44 869 sets of petroleum-related data including seismic tapes, logs, well tapes, reports and samples were captured from various sources for indexing in the database.

After the expiration of confidentiality periods, the Department released 3 262 mineral reports to the public. The Department also responded to requests from the petroleum industry and released a total of 344 petroleum exploration reports. In addition, 63 approvals were granted for access to magnetic tapes from 242 seismic surveys and 15 exploration wells. Samples from 72 wells were requested, along with glass slides for microscopic examination of samples from 16 wells.

Kalgoorlie core library

The new J H (Joe) Lord Core Library and Geological Survey Operational Base in Kalgoorlie was officially opened by the Premier and the Minister for Mines on 17 July 2000.

A total of 37 kilometres of core from 71 locations around the State is now available for viewing by explorers in specially designed viewing booths inside and outside the Library complex. The amount of core in storage is growing steadily, sourced in particular from historically important mines and exploration programs. All core details are catalogued in the Department's Western Australian Mineral Exploration Index (WAMEX) database of statutory reports submitted by mineral exploration companies.

The building also provides office accommodation for ten geoscientists and technicians, as well as public areas suitable for meetings and the viewing of the WAMEX database.

Enhanced petroleum database system

A pilot program for an enhanced petroleum database management system was successfully completed under contract by Schlumberger-GeoQuest. As a result, the Western Australian Petroleum Information System (WAPIMS) database can now provide faster access to more data through its improved retrieval platform. The database contains information on petroleum permits, wells, geophysical surveys and other exploration reports submitted to the Department by petroleum explorers. WAPIMS will also be available on the Department's website in late 2001.

A State-wide compilation of wells, providing comprehensive details for all petroleum wells drilled in Western Australia, was also published as a digital database (on CD-ROM) during the year. This database supersedes six compilations for individual sedimentary basins, published in hardcopy over the last five years.

OUTCOME 1: OPTIMUM USE OF LAND RESOURCES

Output 5:

Discontinued

Output 5 was discontinued with the transfer of the Mineral Processing Laboratory to CSIRO in 1998. The Department therefore has ten Outputs. However, the original numbering (1-11) has been retained in this report to maintain consistency with 2000-01Treasury Budget Statements.

AUDITED KEY PERFORMANCE INDICATORS

OUTCOME 1: OPTIMUM USE OF LAND AND RESOURCES

OUTPUTS

1. A system for the grant and maintenance of titles to explore for and mine minerals
2. A system for the grant and maintenance of titles to explore for and produce petroleum
3. A geological framework of the State and its resources
4. An archive of geoscientific and resource exploration data

EFFECTIVENESS

Optimum* or appropriate land-use planning relies on quality, timely land information, including resource potential and land title status. The Department of Minerals and Energy is the State authority on the geology and mineral resources of Western Australia and the agency responsible for mineral and petroleum title systems.

The level of exploration and development activity for mineral and petroleum resources is dependent on a number of factors, including the estimated chance of finding these resources, world commodity prices, Government fiscal, safety, environmental and land access statutes and policies, and community attitudes.

They are traditionally described as:

- Sovereign and country risks
- Financial risk
- Prospectivity (the likelihood of commercially recoverable resources being present).

With respect to sovereign risk, the Department is responsible for the development and administration of title systems that provide processes for allocation and maintenance of land title for exploration and development, security of tenure and surety that holders will meet the obligations that come with the title rights. The Department also assists in improving the prospectivity of Western Australia by publishing geoscientific maps, reports and promoting datasets that describe the geology and resource potential of the State, and by archiving and making available geoscientific data collected by companies during exploration.

The Department's initiatives are designed to contribute to a climate in which the industry sectors continue to be of significant benefit to the State.

The effectiveness of the Department's Outputs in achieving the desired Outcome is indicated by the:

- Timeliness of the systems in providing land and resource products and services to industry and Government, as measured by the average time to assess title applications (1.1) and the average time taken to produce framework geological maps of the State (1.2)
- Evaluation by customers of geological information products, as measured by a rating given by representatives of industry peak bodies (1.3)

* Optimum is defined, in the context of the Department's business goals, as the achievement of agreed set output targets - as measured by the indicators included in this report. These targets seek an appropriate balance between achieving economic benefits, through the discovery and development of the State's mining and petroleum resources, and meeting community standards for safety, health and environmental management. The Department's targets are considered appropriate when desired economic benefits are achieved within acceptable levels of environmental and social impact.

AUDITED KEY PERFORMANCE INDICATORS

OUTCOME 1: OPTIMUM USE OF LAND AND RESOURCES

- Attractiveness of the Western Australian land and titles systems as measured by the level of exploration in the State in the current investment climate quantified in absolute dollar terms and as a proportion of the national investment (relative effectiveness) (1.4)
- Mineral and petroleum resources available for future production and sale as measured by the inventory of known resources currently in the ground (1.5)

1.1 Timeliness of titles systems

For mineral titles, target times are the average times for processed applications computed over a number of years prior to the introduction of the *Commonwealth Native Title Act 1993*. The aim is for the majority of services (75 per cent) to meet this average, despite the increasing complexity of title grant processes. Target times for mineral title applications apply where there is no disputation and the application does not affect private land.

For petroleum titles, target times were developed several years ago, seeking to improve on previous performance.

The measures are for:

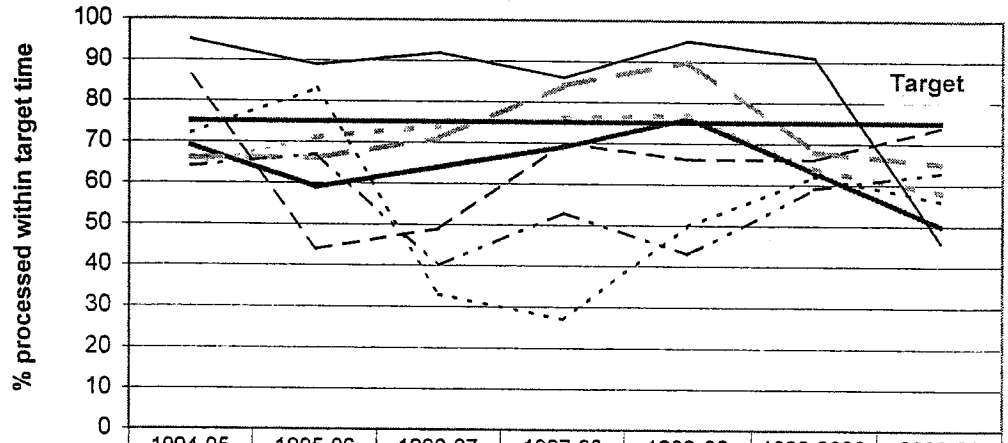
- Prospecting Licences and Exploration Licences (mineral): Percentage of applications that are finalised or submitted to Native Title Act procedures within the target periods
- Mining Leases: Percentage of applications granted or for which a determination on the right of grant is made within the target period
- All petroleum titles and field operations: Percentage of applications granted or refused within the target time, including any periods for Native Title Act processes

The target performance for these measures is given in Table KPI 1.1 below and the results are displayed in Figure KPI 1.1.

Table KPI 1.1 Target performance for processing of applications

Application type		Elapsed time	% of applications processed in time
Prospecting Licence (PL)		4 months	75
Mining Lease (ML)		7 months	75
Exploration Licence (EL)		7 months	75
All petroleum titles		3 months	75
Petroleum title dealings		3 months	75
Petroleum wells	Commonwealth State	45 days 30 days	75 75
Petroleum surveys	Commonwealth State	35 days 20 days	75 75

OUTCOME 1: OPTIMUM USE OF LAND AND RESOURCES



	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01
PL	69	59	64	69	76	63	50
ML	66	66	71	84	90	68	65
EL	64	71	74	76	77	64	58
Petroleum titles	86	44	49	70	66	66	74
Petroleum dealings	95	89	92	86	95	91	46
Petroleum wells	72	83	33	27	50	62	56
Petroleum surveys	64	67	40	53	43	59	63
Target	75	75	75	75	75	75	75

Figure KPI 1.1 Percentage of applications processed within target elapsed times

For mineral titles, the measures are essentially the elapsed time for the Department to complete its processing services. The adoption in July 2000 of policy changes and new processing guidelines following the March 2000 Full Federal Court decision in the Miriuwung Gajerrong appeal case and the subsequent change in Government and policy in February 2001, which was to suspend determinations based on the Miriuwung Gajerrong decision, resulted in processing targets for mineral applications not being achieved for the year.

For petroleum titles, the measures relate to the total elapsed time, including external referrals and processes carried out in parallel and beyond the control of the Department. Circumstances such as environmental investigations, Native Title Act processes and heritage negotiations, continue to detract from achieving targets.

1.2 Timeliness of 1:100 000 geological maps

This measure is the average elapsed time to produce a 1:100 000 geological map sheet from commencement (ordering the compilation sheets), through field work and drafting, to publication. 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 1:100 000 geological map series is the framework for describing the geology of the State.

OUTCOME 1: OPTIMUM USE OF LAND AND RESOURCES

A target of 36 months was set following an independent customer satisfaction survey carried out in 1994, which showed some client dissatisfaction with the time taken to publish geoscientific maps.

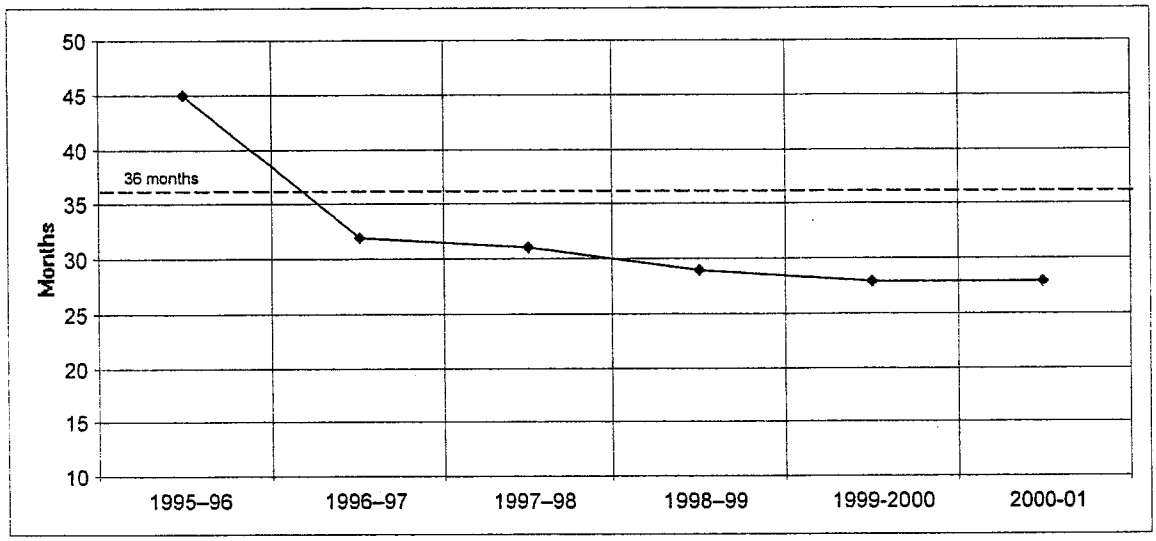


Figure KPI 1.2 Average time to produce 1:100 000 geological maps

Through the use of new technology and process improvement, the Department continues to meet the target average production time of less than 36 months, which was reached initially in 1996-97. Customer response from the 1998 customer survey report stated '... mean satisfaction on the product and rate dimensions improved impressively from 1994'.

In 2000-01, the average time needed to produce a 1:100 000 geological map was 28 months.

1.3 Ratings by customer representatives of interpretative geological products and data services

This measures the quality of interpretative geoscientific products (Output 3) and exploration data services (Output 4) through a customer rating given by industry-based Technical Advisory Subcommittees tabled through the Geological Survey Liaison Committee. This committee comprises industry representatives nominated by the Australian Petroleum Production and Exploration Association, the Chamber of Minerals and Energy of Western Australia, the Association of Mining and Exploration Companies, and other geoscience customers, such as the Australian Geological Survey Organisation and Western Australian universities. The Committee meets twice yearly to consider reports by its Technical Advisory Subcommittees and to provide guidance for future programs and feedback on past performance. Each report includes a rating of quality against a five-point scale for the products/services in its area of expertise.

A more rigorous approach to assigning the ratings was introduced during 1999-2000 to better capture the scope of activities. The 1999-2000 ratings now provide a benchmark for measurement of subsequent performance.

OUTCOME 1: OPTIMUM USE OF LAND AND RESOURCES

Table KPI 1.2
Ratings by customer representative committees of Outputs 3 and 4 products and services

Output (product & service area)	Technical Subcommittee	Quality rating of no. products and services (max 5)	
		1999-2000	2000-01
3	Regional Geoscience Mapping and Mineral Resources	3.9	3.9
	Petroleum Initiative	3.8	3.9
4	Exploration Data and Information	3.2	3.6

1.4 Investment in exploration

Investment in exploration is influenced by the title and geological Outputs of the Department, as well as external factors such as constraints on access to land, and local and global economic circumstances including commodity prices. The following measures indicate the success of the Department's Outputs in the context of these other factors. While there are differences between States in the perceived prospectivity and commodity production profile, the proportion of total expenditure in Australia attracted to Western Australia is indicative of the success of the Department's Outputs against other jurisdictions working within similar global conditions. Western Australia is particularly sensitive to factors in the gold market as expenditure on gold exploration accounts for more than 60 per cent of the State's total expenditure.

Total mineral exploration expenditure (excluding petroleum) in Western Australia rose slightly in 2000-01 after a three-year period of substantial falls in exploration activity. Exploration expenditure rose by an estimated 6.3 per cent ($26.2 million) from $415 million to $441.2 million (estimated) in 2000-01. The recovery was led by renewed interest in the still-dominant gold sector and continued strength in iron ore, partly offset by further falls in exploration for base metals, nickel–cobalt, diamonds, heavy mineral sands and other minerals. Overall, exploration activity is showing signs of stabilising at around this level, which is comparable to the recession in 1990-91. Despite the rapid decline in mineral exploration expenditure over the previous three years, the proportion of Australian mineral exploration expenditure spent within Western Australia continues to remain very high (59 per cent for 2000-01) and is only slightly down from the record level of 62 per cent in 1998-99.

OUTCOME 1: OPTIMUM USE OF LAND AND RESOURCES

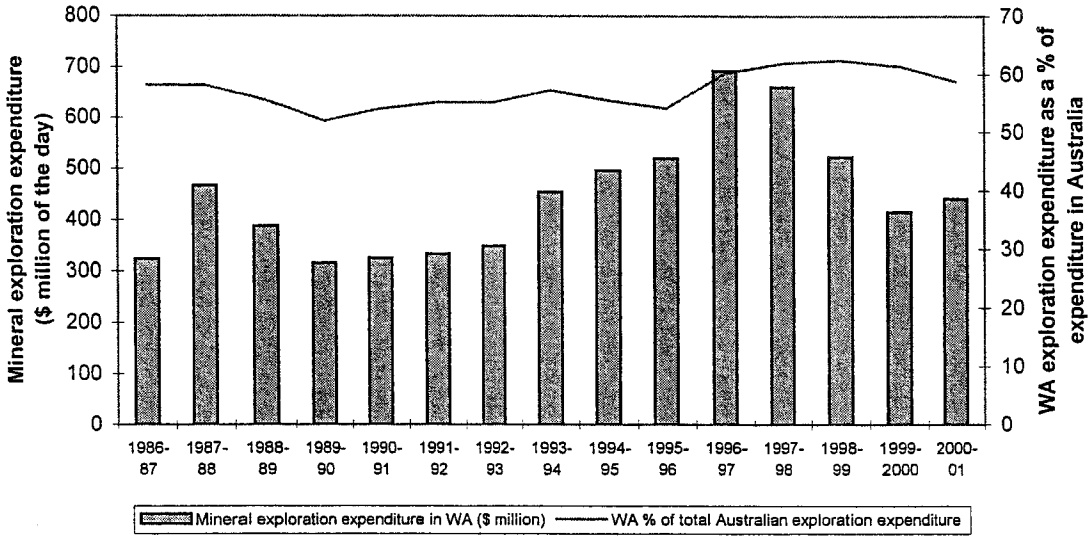


Figure KPI 1.3 Mineral exploration expenditure in Western Australia
Source: Australian Bureau of Statistics. Catalogue No. 8412.0
Note: 2000-01 contains an estimate for June 2001 quarter

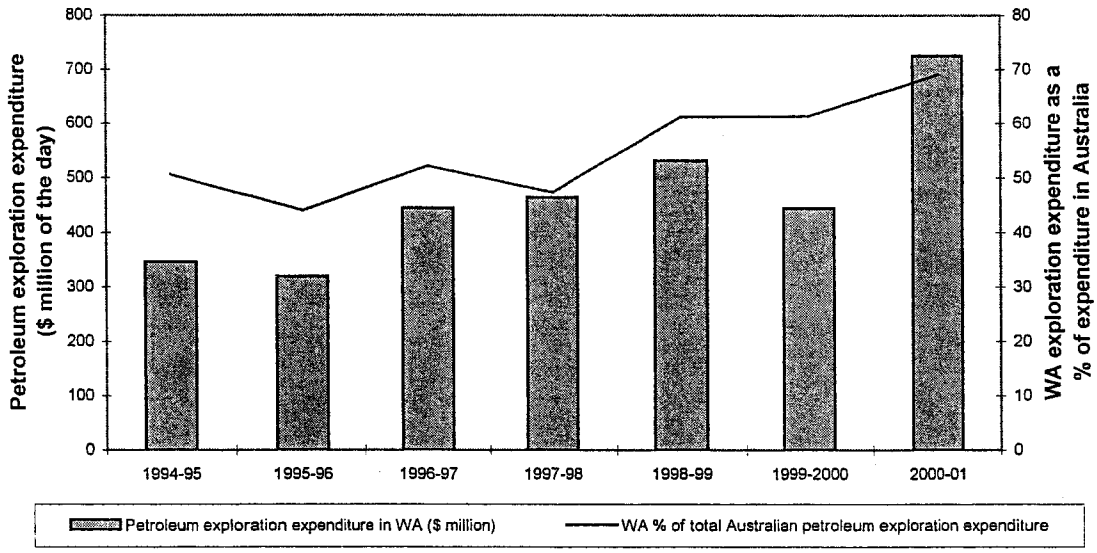


Figure KPI 1.4 Petroleum exploration expenditure in Western Australia
Source: Australian Bureau of Statistics. Catalogue No. 8412.0
Note: 2000-01 contains an estimate for June 2001 quarter

Total petroleum exploration expenditure in Western Australia rose very strongly by an estimated 63 per cent ($281.1 million) from $444 million in 1999-2000 to $725 million (estimated) in 2000-01. This follows the broad pattern of increased petroleum exploration activity in Western Australia (particularly offshore Western Australia) since the mid-1990s, with petroleum expenditure doubling since 1995. Concomitantly, the proportion of Australian petroleum exploration expenditure spent within Western Australia has climbed dramatically from 44 per cent in 1995-96, to a new record of 69 per cent during 2000-01.

OUTCOME 1: OPTIMUM USE OF LAND AND RESOURCES

1.5 Resources Inventory

The mineral resources inventory for the State comprises the estimated weight of major commodities that remain, as at 31 December 2000, in mines and deposits. For minerals, the resources inventory below only includes measured and indicated categories. No attempt is made to include inferred resources or show separately the portion of resources classified as reserves (economic to mine at present).

Gold resources (measured and indicated) increased for the eighth year in succession, despite continued high levels of production and a three-year fall in gold exploration expenditure. The rise results from continued exploration successes in recent years, initial resource estimates for major discoveries such as Thunderbox and Belleisle deposits, and the continued trend to near-mine (brownfields) exploration. Near-mine exploration is proving successful in the short-term, but the industry will not survive on that type of success alone. Low levels of grassroots (greenfields) exploration remains a concern.

The boom in nickel exploration during the mid-to-late 1990s is showing signs of slowing down - with exploration expenditure falling during 2000-01 and with a drop in the estimated measured and indicated resources. The drop in resources is mostly from a rise in the cut-off grade (from 0.5 per cent nickel up to 0.8 per cent nickel) for some of the major lateritic nickel projects, due to falling world nickel prices. Resources of diamonds have increased following another upgrade of resources at Argyle, whereas resource estimates of the other major commodities (iron ore, heavy mineral sands, and bauxite) changed little during 2000-01.

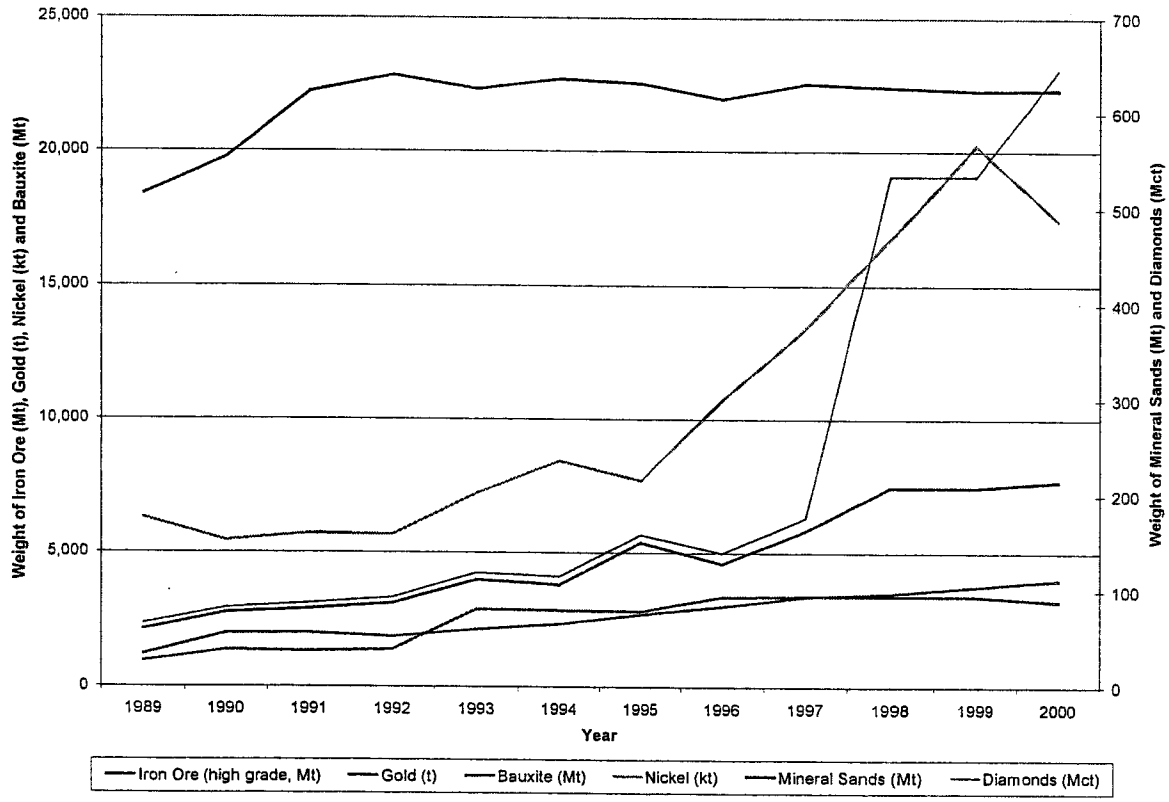


Figure KPI 1.5

Inventory of in situ minerals for Western Australia as at 31 December 2000, measured and indicated categories of the Joint Ore Reserves Committee Code. There is no implication that these resources are currently economic to mine.

Source: Australian Bureau of Statistics

OUTCOME 1: OPTIMUM USE OF LAND AND RESOURCES

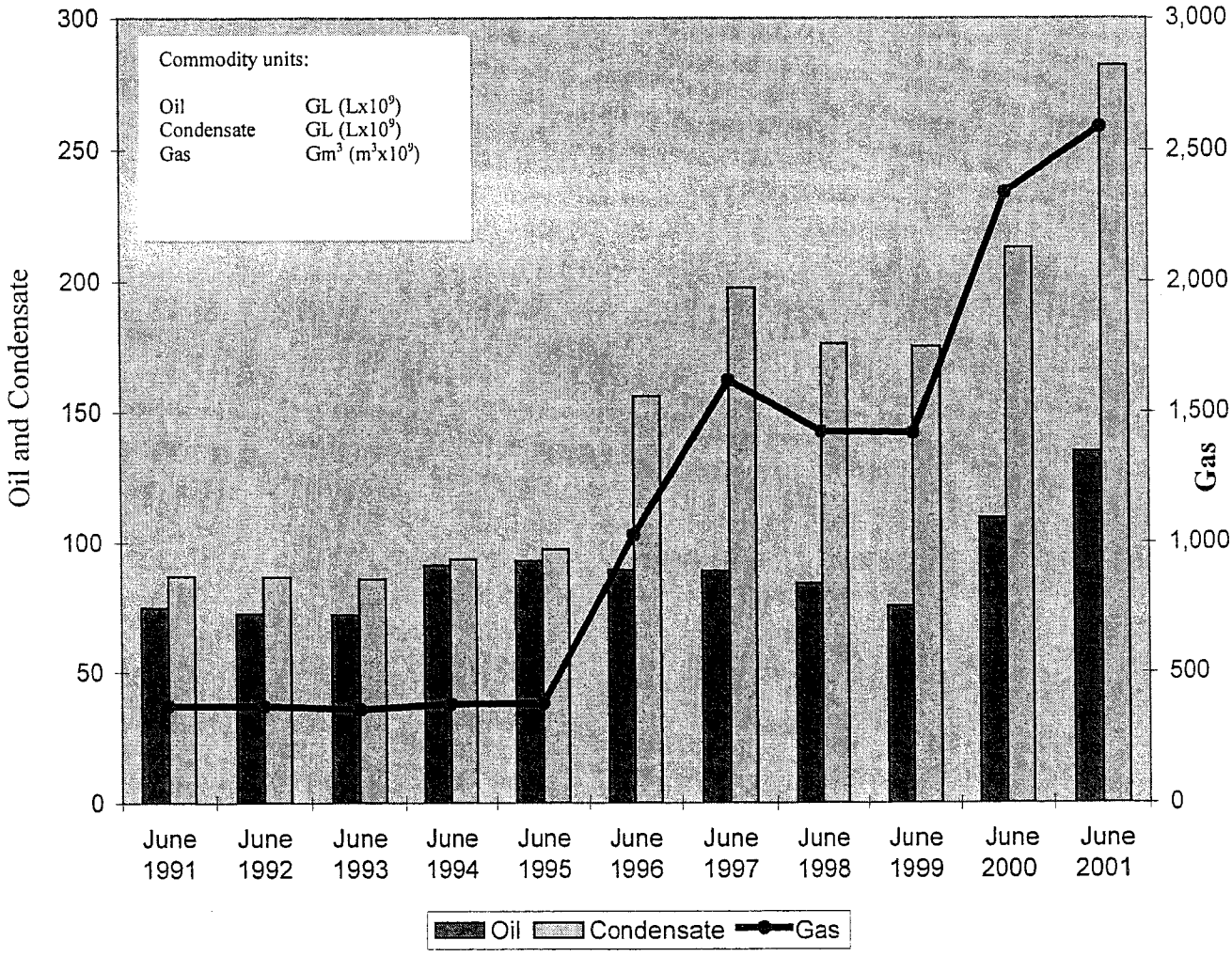


Figure KPI 1.6 Inventory of petroleum reserves at 50 per cent probability level

Petroleum reserves in the ground are not observable or measurable and therefore are estimated from models using geological, geochemical, production and other data. These models are based on probability techniques. The 50 per cent level means the estimated volume for which there is an equal choice of the reserve being greater or smaller: the nearest English phrase being the 'likely reserve'.

Oil reserves increased this year with the discovery of several small fields including Coaster Coniston Novara and Simpson-South Plato and the re-evaluation of previous discoveries including the area of the Vincent field within WA-155-P. Oil reserves rose from 109 gigalitres to 135 gigalitres. The production rate also increased significantly from an average of just over 34 000 kilolitres per day last year to over 40 000 kilolitres per day this year.

Booked gas and associated condensate reserves rose substantially mainly due to reassessment of the Goodwyn Field and discovery of the Brecknock South Field. The average daily gas production rate for 2000-01 was marginally higher than the previous year, however condensate production rates were slightly lower.

AUDITED KEY PERFORMANCE INDICATORS

OUTCOME 1: OPTIMUM USE OF LAND AND RESOURCES

Efficiency Measures

	1998-99 $	1999-2000 $	2000-01 $
Output 1: A system for the grant and maintenance of titles to explore for and mine minerals			
Average cost per hectare of land under title of the mineral title system The grant and maintenance of mineral titles is a land management function where the size of the land holding is one of the primary determinants of the level of service required; for example, in assessing competing land-uses, complying with Native Title Act requirements and evaluating compliance with conditions in conducting exploration and mining activities, some of which are set by area. This indicator provides a measure of the cost of this land management per hectare. The average annual cost per hectare of issuing and maintaining titles is calculated as total cost of service divided by the area of titles current as at 30 June 2001. This measure shows an increase in the cost of the mineral title systems for current titles due to a combination of a reduction of land area held under title and an increase in service cost. Processing times (see KPI 1.1) took longer than target times in the first seven months of the year whilst examination of historical information was made as to whether native title had been extinguished by pastoral lease enclosure under the Miriuwung Gajerrong decision. Processing was impacted in the latter part of the year by a change in the Government's policy where land under the conservation estate is affected. A large number of applications are then subject to Native Title Act processes, which have not yet been completed and there has been no grant of a title. From 1994-95 to 1999-2000, the average time to grant Mining Leases has increased from 5.3 months to 32 months and to grant Exploration Leases from 8.2 months to 18 months. In 2000-01, the average time to grant Mining Leases and Exploration Leases remained relatively unchanged from 1999-2000 at 31.4 months and 18 months, respectively.	0.63	0.72	0.76
Average cost of mineral title services The average cost per title service, calculated as total cost of service divided by the number of services provided.			
Cost per title application processing service	2 575	3 440	2 848
Cost per monitoring or dealing service	122	179	205
Cost per information service	23	36	42

AUDITED KEY PERFORMANCE INDICATORS

OUTCOME 1: OPTIMUM USE OF LAND AND RESOURCES

	1998-99 $	1999-2000 $	2000-01 $
Output 2: A system for the grant and maintenance of titles to explore for and produce petroleum			
Average cost per title of the petroleum title system The grant and maintenance of petroleum titles, while a land management function, has significant costs in technical assessment related to resource management regulations and petroleum field activities such as wells and surveys, which are not proportional to the area of title. For the purposes of efficiency assessment, the base unit is therefore taken to be the title. The average annual cost per title of issuing and maintaining titles is calculated as total cost of service divided by the number of titles active during the year. The increase in unit cost this year is due in part to greater demand for policy and legislative services and an increase in spending to promote onshore exploration opportunities.	7 497	8 425	10 414
Output 3: A geological framework of the State and its resources			
Average cost per unit of published geological product Various types of published products (e.g. maps and books) have each been assigned a weighting that attempts to quantify the relative effort required to proceed from their respective initial field work to final publication. A 1:100 000 geological map is weighted at one unit. The average cost per unit of published product is calculated by dividing the total cost of service by the number of units of product published within the year. This result reflects efficiency gains made as a result of continuous process improvement and strategic use of new technology.	201 865	196 289	185 095
Output 4: An archive of geoscientific and resource exploration data			
Average cost per (weighted) exploration data transaction unit 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 into the total cost of service.	45.76	39.43	34.47

OUTCOME 2

SAFE AND HEALTHY MINERAL AND PETROLEUM INDUSTRY WORKFORCES

Output		1999-2000 Expenditure ($ million)	2000-01 Expenditure ($ million)
6	A system for regulating and promoting health and safety in the minerals industry	11.212	11.763
7	A system for regulating and promoting health and safety in the petroleum industry	1.720	1.937
	Total	12.932	13.700

The Department administers safety legislation to safeguard and promote safety and occupational health in the mining and petroleum sectors.

Advice is also given to Government and industry on engineering and occupational safety and health matters related to underground and surface mining operations and petroleum exploration and production operations, mineral processing, smelting and refining, transportation and storage.

NOTE: WorkSafe is responsible for safety management in most workplaces that are not mine sites or upstream petroleum operations.

OUTCOME 2: SAFE AND HEALTHY MINERAL AND PETROLEUM INDUSTRY WORKFORCES

Output 6:

A system for regulating and promoting health and safety in the mineral industry

Output Description

The ongoing management, revision and provision (or contracting) of products and services to facilitate a healthy environment and safe systems of work for mineral exploration and mining activities. The key elements include the provision of regulatory, technical and policy advice, audit and education services, together with safety and health information systems. Where appropriate, prosecutions are initiated for breaches of the legislation.

Expenditure in 2000-01: $11.763 million

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Corporate Group

Mineral Titles Division

Petroleum Division

Geological Survey Division

Mining Operations Division

Explosives and Dangerous Goods Division

The Operational Year

The year 2000-01 was one of consolidation for the Western Australian mining industry, with its return to a long-term downward trend in injury statistics following a marginal increase in 1999-2000.

Investigations

Despite industry's continuing efforts to reduce accidents, the Department conducted 46 serious accident investigations and inquiries into five confirmed work-related deaths during 2000-01. Investigations into some of the fatalities are still continuing.

The five fatalities were separate incidents, with four occurring on the surface and one underground. The incidents are summarised as follows:

- A drill-jumbo operator died when a rockfall, associated with a nearby seismic event, fell on his machine at an underground gold mine
- An underground manager of a nickel operation died when he was struck by lightning while inspecting a tailings disposal facility on the surface
- The operator of an integrated tool carrier unit died when the crane boom attachment being carried on the forks of the machine was dislodged, causing the vehicle to roll on its side, trapping the man between the cab and the ground
- An electrician carrying out modifications to an electrical supply at a limestone quarry received a fatal shock when his head contacted a live portion of a switchboard
- A bulldozer operator at an open pit nickel operation sustained fatal injuries when his machine fell from a bench and slid down a steep slope of broken rock for a distance of about 100 metres

It is the Department's belief that no fatality is acceptable and that the mining industry can achieve a zero fatality rate. The Department is working actively with industry and unions, through the Mines Occupational Safety and Health Advisory Board (MOSHAB) to achieve this goal.

During the year, the Department continued to implement its program of greater self-regulation by industry. In doing so, the Department still maintained a high degree of visibility and interaction with industry. This regulatory transition is underpinned by a move from compliance inspections to field audits.

Throughout the year, there were 11 occupational health audits, 25 management safety systems audits and 233 high impact function audits by the Department. The audits were complemented by 1 901 inspections and another 747 site visits for other purposes. The program of audits, accident investigations and inspections resulted in 384 incidents of plant and machinery being stood down, 92 site closures, and the preparation of eight prosecution briefs.

Education and information

The Department continued to play an important role in providing education, training support and information to industry. During the year, 291 safety meetings and presentations to mine site employees, along with 1 413 briefings to industry safety and health representatives, were conducted by the Department. These activities were complemented by a range of publications and a much-appreciated telephone information and advisory service provided by the Department's occupational health and safety professionals.

The Department also investigated 148 safety, health and environmental complaints from both public and mineral industry employees, regarding certain mining activities.

MOSHAB

The Mines Occupational Safety and Health Advisory Board (MOSHAB) is a tripartite body (Government, industry and unions) which develops occupational health and safety policy for the mining industry and advises the Minister responsible for mining safety.

Following a triple fatality at the Bronzewing mine on 26 June 2000, MOSHAB held an urgent special meeting on 4 July 2000 at the request of the Minister for Mines. As a result of the meeting, MOSHAB developed a three-year strategic plan to improve mine safety performance across the industry. Its *Priority Areas Report* was released in September 2000 identifying four priority areas and 33 specific recommended actions.

The four priority areas are:

- Risk management
- Workplace communication and cultural change
- Skills, standards and capability
- Information, compliance and program review

MOSHAB's member organisations then commenced implementation of the recommended actions, starting with a meeting between the Minister for Mines and industry Chief Executive Officers in November 2000. The purpose of this meeting was to seek industry support for the development of a strategy to improve risk management across all levels of the workforce.

As part of this strategy, MOSHAB established the Risk Management Working Group, comprising industry and Department representatives. This group conducted nine one-day information workshops on risk management across the State, attended by over 300 mine managers and support staff.

Work also commenced on a number of the other *Priority Areas Report* recommendations, including:

- Review of the resources required by the Department to implement the recommendations
- Development of an enforcement and prosecution policy
- Survey of industry safety and health representatives

A guideline for *Occurrence, Accident and Occupational Disease Reporting under the Mines Safety and Inspection Act 1994* and *Mines Safety and Inspection Regulations 1995* was also produced and released in May 2001.

The *ThinkSafe MineSafe* campaign, initiated by MOSHAB to foster development of an improved safety culture across the industry, was again actively and successfully promoted during the year. Promotional material, including a range of posters and pamphlets, was also displayed at the Goldfields Mining Expo in Kalgoorlie in November 2000.

During the year, the Department produced a second series of pamphlets and posters addressing mining industry hazards. The pamphlets, featuring West Coast Eagles footballer Glen Jakovich, focused on mining activity in the Pilbara, addressing issues such as working at height, drill rig operations, remote work, hot processes and structural safety. These publications were officially presented to industry representatives at the Chamber of Minerals and Energy's South-west Regional Occupational Safety and Health Conference in Bunbury in July 2001.

Legislation and policy

In December 2000, the Minister for Mines appointed Senior Industrial Commissioner Gavin Fielding to undertake a review of the *Mines Safety and Inspection Act 1994,* with submissions to close by 30 March 2001. Section 110 of the Act requires that as soon as practicable after the expiration of five years from its commencement, the Minister shall carry out a review of the Act. The Act was proclaimed in December 1995.

With the impending retirement of Commissioner Fielding, the new Minister for State Development appointed former Industrial Commissioner Robert Laing to continue the review. Consequently, the submission process was reopened with the lodgement of submissions closing on 30 June 2001. It is expected that Commissioner Laing's report will be submitted to the Minister by October 2001.

A review of *Mines Safety and Inspection Regulations* is also underway and should be completed during 2002. Proposed amendments include a continuation of devolution of directive responsibility from the Department to mine operators. These amendments will enhance self-regulation through a progressive removal of the need for specific directions and approvals by the regulatory authority on a range of functions and activities.

Another proposed amendment would see qualification-based, front-line management competencies for persons appointed to management and supervision positions under the *Mines Safety and Inspection Act 1994.* Other proposed amendments include the removal of provisions considered to be impractical or superseded, as well as additional improvements, clarifications and minor corrections.

Process plant risk management

Most of the large complex mineral-processing plants in Western Australia increased production during the year, either through plant upgrades or resolution of commissioning problems. However, in several instances, potentially serious toxic or flammable gas releases occurred as plant utilisation improved, or modified components of the plant came on line.

These incidents have raised industry's awareness of the need to change managerial procedures and the value of appropriate risk-assessment protocols.

Industry has increasingly developed more formalised safety management systems. The most complex sites, such as those with large toxic or flammable gas inventories, are required to implement a safety case approach to risk management. The safety case model places the onus on the operator to identify and reduce risks through engineering changes and the implementation of safety-management systems.

While taking considerable resources to develop and implement, companies which adopt the safety case approach achieve better safety management systems, including appropriate and effective safety assessments. Another benefit is better plant operation through improved employee training, operating and maintenance procedures.

Safety and health information systems

The Health Surveillance Program for Mine Employees (MINEHEALTH), established under the *Mines Safety and Inspection Act 1994*, has been operating since December 1995. MINEHEALTH collects regular health status data from existing mining industry employees, as well as workers applying for employment in the industry. The program also includes information about work history, respiratory disease history, lung function, hearing and in some cases, a chest X-ray.

More than 60 000 people are now included on the database. About 2 000 have now completed their first periodic assessment, as on-going health assessments are required every three to five years. The number of existing mine employees undergoing a periodic health assessment in 2001-02 is expected to be between 10 000 and 15 000. The MINEHEALTH database will provide the information on the long-term health effects of employees in the industry.

MINEHEALTH is delivering significant benefits to industry. For example, employee audiometric test results from the surveillance program show an increase in noise-induced hearing loss in the mining workforce. This finding has prompted the Department to propose that industry establish a monitoring system to more frequently gather noise exposure data from employees who are at high risk of hearing loss. This data would help mine management undertake preventative or corrective action more promptly.

The additional noise exposure data would also be entered into MINEHEALTH and linked to the employee's audiometric test results, further enhancing the effectiveness of the database. Provisions for this new monitoring system are contained in a proposed amendment to the *Mines Safety and Inspection Regulations,* which is expected to go to the Western Australian Parliament by the end of 2001.

As part of the *Mining Safety Inspection Act 1994*, companies are required to monitor atmospheric contaminants in the workplace to ensure levels remain lower than established Australian standards. In 2001, a risk assessment was performed at each minesite where the types of exposures to atmospheric contaminants and the number of employees from each

occupation group were investigated by the responsible ventilation officer. Sampling quotas were then reviewed and recorded as part of the Workforce Survey. As part of the new CONTAM system, companies are now required to complete a Workforce Survey every two years. A new survey is also required when a mining operation significantly changes its operations.

The CONTAM system to record atmospheric contaminant levels was introduced to the mining and exploration industries in July 2000, with half-day information sessions held in Perth and Kalgoorlie. Industry involvement and feedback has been encouraging and underlined the need to provide better training to ventilation officers so the quality of atmospheric monitoring is improved industry-wide. Ventilation officers attending nationally-accredited, competency-based training courses were also given specific information about the changes.

By the end of 2001, the CONTAM homepage will be available to industry through the Department's website. The homepage will explain CONTAM's system features including the forms available for downloading and associated procedures, how to view reports on the Internet, and how to lodge sample records to the Department electronically.

Trend analysis reports will be provided to the Department showing exposure of different occupation groups to atmospheric contaminants, which will then be compared against different commodity groups, and to the whole of the mining industry. Reports will be available for online viewing on CONTAM's report database by September 2001. Companies will also be able to access their own reports using a security code. The codes will allow access to reports generated by all of the Department's on-line health and safety database systems.

The Mining Operations Division's Audit Management System (MODAMS) was further developed to process and arrange larger amounts of audit data collected by the Department. MODAMS collates safety audit compliance reports for the minerals industry and the reports are then made available via the Internet.

Mining industry health and safety statistics

The safety performance statistics are derived from the Department's AXTAT database based on available data at the time of the report's preparation*. This information is used by the Department as an indicator of safety performance in the mineral industry expressed either as a total injury frequency rate (TIFR), or a lost-time injury rate (LTIFR) for each one million hours worked in accordance with *Australian Standard 1885.1-1990* indicators. However, the LTFR is a lag indicator and may not reflect current safety management initiatives.

Incidence of lost-time injury underground in metalliferous mining moved from 2.4 to 1.7 during the year while the frequency moved from 9.3 to 6.6. On the surface in the metalliferous sector, lost-time injury incidence moved from 1.4 to 1.1 and frequency moved

* 23 October 2001

from 6.5 to 5.0. The coal sector incidence moved from 2.9 to 4.7 while frequency went from 15.9 to 26.6.

Total serious injury fell from 241 in 1999-2000 to 202 in 2000-01, and the number of minor injuries fell from 353 from to 275 for the same period. The total decrease injuries represented a 20 per cent improvement on last year.

The number of employees in mining rose by five per cent to 439 778.

There were five confirmed fatal accidents during the year – one in the iron ore sector, two in the nickel sector, one in the gold sector and one in the dimension stone sector.

The Department's view is that no fatal accident is acceptable and that a fatal incident rate is achievable and must remain a top priority for industry.

Table 6.2: Lost-Time Injuries

Mineral Being Produced	No of Employees	Fatal	Serious	Minor	Total
Gold	11,466	1	69	87	157
Iron Ore	8,897	1	29	36	66
Bauxite and Alumina	6,266	0	16	14	30
Nickel	5,297	2	28	31	61
Mineral Sands	2,308	0	13	24	37
Base Metals	1,317	0	10	9	19
Diamonds	956	0	8	9	17
Coal	696	0	7	26	33
Salt	685	0	3	4	7
Construction Materials	414	0	5	3	8
Other	1,476	1	10	22	33
Total for Mining	39,778	5	198	265	468
Exploration	713	0	4	10	14

Table 6.1: Lost-Time Incidence and Frequency Rates

	1999-00		2000-01		% Reduction	
	Incidence	Frequency	Incidence	Frequency	Incidence	Frequency
Surface Metalliferous	1.4	6.5	1.1	5.0	21	23
Underground Metalliferous	2.4	9.3	1.7	6.6	29	29
Total Metalliferous	1.5	6.8	1.1	5.2	27	24
Coal	2.9	15.9	4.7	26.6	-62	-67
Total Mining	1.5	7.0	1.2	5.5	20	21

OUTCOME: SAFE AND HEALTHY MINERAL AND PETROLEUM INDUSTRY WORKFORCES

Output 7:

A system for regulating and promoting health and safety in the petroleum industry

Output Description

The ongoing management, revision and provision (or contracting) of products and services to facilitate safe facilities design and systems of work in petroleum operations. The most important elements are development and application of safety legislation, assessment of safety cases and operations proposals, audits of facilities and safety management systems, investigation of incidents and communication of information on health and safety issues.

Expenditure in 2000-01: $1.937 million

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Corporate Group

Mineral Titles Division

Petroleum Division

Geological Survey Division

Mining Operations Division

Explosives and Dangerous Goods Division

The Department administers the petroleum industry in State areas, and the Commonwealth offshore adjacent areas in conjunction with the Commonwealth Department of Industry, Science and Resources (DISR).

To ensure a safe working environment, the Department regulates safety performance to the upstream petroleum industry through a legislative regime that uses the safety case approach to achieve a safe working environment. The safety case model, as set out in the Commonwealth *Petroleum (Submerged Lands) Act 1967*, uses a contemporary objective-based methodology that places the onus on the operator to identify and reduce risk through engineering changes and implementing safety-management systems. The model was adopted following the Piper-Alpha disaster in the North Sea off the coast of Scotland in 1988 that killed 167 people.

Legislation and safety management

Safety compliance in the petroleum sector is achieved through industry's adherence to both State and Commonwealth legislation.

During the year, significant progress was made in developing strategies for implementing recommendations from an external review into safety administration within the Commonwealth offshore adjacent areas. The review entitled *Role of Commonwealth Government in Offshore Petroleum Exploration and Development* was presented to the National Oil and Gas Safety Advisory Committee (NOGSAC) in May 2000. It provided recommendations on legislative reform and suggestions on alternative structures where the States, Territories and DISR could work together to achieve the reforms. The review also provided guidelines on how national consistency could be achieved in the administration of safety in Australia's petroleum industry. Throughout the year, the Department worked with DISR, and other relevant State and Territory authorities to progress strategies for the implementation of the recommendations. In addition, the Department participated on the steering committee for the review, as well as providing representation for NOGSAC. At the end of the reported period, DISR was finalising its report on the review. At this stage, the Commonwealth Minister has indicated a preference for the creation of a national safety authority.

The second drafting of new regulations to go with the proposed Western Australian *Petroleum Safety Act* was also completed this year. The Act will be proclaimed in Parliament once the regulations have been finalised. The new Act will officially apply the Safety Case regime, currently active on petroleum facilities and operations located within State and Commonwealth waters, to Western Australian onshore petroleum and exploration sites.

New guidelines for *Preparation and Submission of Safety Cases* for production facilities were also amended, following a review of previous editions. The new edition includes Mobile Offshore Drilling Units (MODU) guidelines developed through a system of working groups under the auspices of the Australia and New Zealand Minerals and Energy Council (ANZMEC). The Department played a major role in developing these guidelines.

The Department also participated in a number of working groups to develop pipeline and diving regulations as part of a review of the *Commonwealth Petroleum (Submerged Lands) Act 1967*. It is anticipated that during 2002, an additional working group will examine how the regulations can be consolidated for inclusion in the Act. In addition, the Department has been an active member of the Australian Standards Committee that oversees the development of national pipeline standards.

Another highlight for the year was the Department's development and issuing of the WESTPLAN Offshore Petroleum Operations (Exploration and Production) Emergency Management Plan on behalf of the State Emergency Management Committee (SEMC). The plan provides an emergency management strategy for the State's offshore petroleum operations, including the Commonwealth Adjacent Area. By placing legislative responsibilities on the

agencies, including the Department and operators, WESTPLAN ensures adequate emergency plans are put in place. WESTPLAN also replaces SEMC's previous emergency plan.

During the year, the Commonwealth Government also developed a legislative regime for the safe launching of rockets from Australian sites during the year. Of concern to the Department were the intended flight paths of the proponents, as they passed over petroleum facilities located in the Carnarvon Basin and Timor Sea. The Department has been actively involved in assessing aspects of the proposal and establishing a risk- management framework for its approval.

Coordinated by DISR, the Department has actively contributed ideas and strategies to national safety workshops conducted during 2000-01. Outcomes from these workshops aided the development of new safety key performance indicators (KPIs) for the industry. KPI statistics provide annual insights into the overview performance of the petroleum industry, covering such aspects as legislative compliance and safety performance.

Present safety KPIs, such as Lost Time Injury Frequency Rate (LTIFR) and Total Injury Frequency Rate (TIFR) are lag indicators. That is, they measure past performance such as the number of incidents. Alternatively, lead indicators measure the current situation, and may indicate the potential for future incidents, and are therefore of more value to industry.

Industry liaison

During May 2001, the second National Oil and Gas Safety Advisory Committee's (NOGSAC) Industry Health, Safety and Environment Representatives (HSER) national forum was held in Victoria. Hosted by Esso-BHP, the forum was attended by about 100 delegates, including occupational safety and health officers, operators, contractors, and Government regulators. At the forum, a Departmental representative participated on an industry panel to provide industry with an insight into the regulator's view on the role of health and safety representatives in industry.

The Department sponsored Industry and Environment Conference (ISEC) is planned for November 2001. The conference, created with a high degree of industry input, will address current major safety and environment issues facing industry.

Throughout the year, Departmental representatives also made a number of safety issues presentations at industry forums, including the AustralAsian Oil and Gas 2001 and the Australian Institute of Petroleum (AIP) conferences.

A publication highlight for the Department during 2000-01 was the release of the booklet *Safety and Environmental Leadership for the Offshore Oil and Gas Industry*. The Department also included articles on safety issues in its publication *Petroleum in Western Australia.*

Safety assessments and audits

During 2000-01, a number of safety management documents including Safety Cases, Safety Management Systems and Bridging Documents were assessed by the Department, including:

- Four development projects at Legendre, Gipsy, Echo Yodel, on the North West Shelf and a production test at Rough Range near Exmouth
- Five existing North West Shelf production facilities at Buffalo oil field, North Rankin A, Stag, Varanus Island and Barrow Island
- Two Mobile Offshore Drilling Units of Sedco 702 and Ron Tappmeyer
- 35 seismic operations
- 19 petroleum pipelines
- 56 exploration and production wells
- 34 diving operations

Also conducted throughout the year were Safety Management Systems audits of facilities and operations that included joint audits with operators and other Government agencies, such as the Northern Territory's Department of Mines and Energy.

In addition, the Department continued its internal audit program for major operations procedures including the operators' procedures for auditing, safety case assessment and incident investigation.

Industry safety performance

Injuries

During 2000-01, no fatalities occurred in the Western Australian oil and gas exploration and production industry.

The last offshore fatality occurred in July 1994 and the last onshore fatality occurred in March 1996. Injury frequency rates for the year were consistent with the past three years but were slightly lower than last year. However, this year's figure was substantially lower when compared to the injury frequency rates prior to July 1992, when safety case regimes were introduced to industry. Since then, there has not been any significant reduction in annual injury frequency rates.

Significant incidents

The documenting of significant incidents provides valuable information about how accidents occurred, or situations where they were narrowly avoided, and helps the Department develop and prescribe risk-management strategies to significantly reduce the likelihood of accidents. Below is a selection of significant incidents for the 2000-01 period.

- In September 2000, an incident occurred near Woodada, 80 kilometres south of Dongara, when a mineral exploration rig drilled a number of bores in the vicinity of a gas pipeline.

- Hydrogen sulphide gas was detected during an extended production testing of an onshore well at Rough Range near Exmouth in December 2000. The production was suspended until remedial action was taken. No one was injured. Hydrogen Sulfide monitoring equipment was installed to prevent further occurrences.

- A crew member on a diving support vessel returning to Dampier from a petroleum operation sustained severe injuries to his right hand when a diving compressor exploded. Although the incident did not occur on a petroleum site, the Department and Worksafe, assisted the operator and contractor in investigating the incident. The incident was similar to a number of overseas incidents that resulted in international regulatory action.

- In January 2001, three vessels ventured into a safety zone which had not been officially declared around a newly installed production facility on the North West Shelf. However, the location of the facility had been communicated to shipping in the area. As result, the Australian Maritime Safety Authority (AMSA) and Dampier Port Authority reviewed shipping notification procedures.

- In March 2001, a collision occurred between an offtake tanker and a floating storage-offtake facility on the North West Shelf during transfer operations. No injuries occurred. However, a towline used to hold the tanker in position failed below its normal capacity due to chemical exposure.

- During May 2001, a North West Shelf production facility was found to be venting substantial amounts of gas while a helicopter was in close proximity. When the company was informed of the dangers of this practice, the venting of gas stopped.

In general, the overall statistics for the year showed that injuries to hands and fingers continued to make up a quarter of all injuries, with back, eyes, hips and leg injuries making up most of the remainder at 43 per cent. As in previous years, almost one-third of injuries were due to sprains and strains. In addition, accidents involving open wounds accounted for one-fifth of all injuries while injuries involving contusions and foreign bodies accounted for 10 per cent.

Injuries involving muscular stress, which had decreased over the past three years from 26 per cent to 12.5 per cent, increased to 21 per cent of all medically treated injuries. Contrary to the statistics of previous years, accidents resulting in injury from being hit by an object decreased during 2000-01 from 31 per cent to 16 per cent.

The portion of injuries resulting from hitting objects remained similar to previous years at 16 per cent. However, there was a significant number of incidents resulting from immediate or prolonged contact with chemicals, an increase from two per cent in 1999-2000 to 16 per cent for 2000-01.

OUTCOME 2: SAFE AND HEALTHY MINERAL AND PETROLEUM INDUSTRY WORKFORCES

OUTPUTS (*)

6. A system for regulating and promoting health and safety in the mineral industry
7. A system for regulating and promoting health and safety in the petroleum industry

EFFECTIVENESS

The Department of Minerals and Energy provides a regulatory framework within which mining and petroleum operators have a duty of care to provide a safe and healthy work environment for their workforces.

The effectiveness of the Department's safety Outputs is indicated by the:

- Improvement in the mining industry's level of compliance with the *Mines Safety and Inspection Act 1994* as measured by the change over time in compliance with standards in audits conducted by the Mining Operations Division (presented as an index with 1998-99 as the base year) (2.1)
- Change in the level of safety in the mining and petroleum workforces as measured by the change over time of the lost-time injury frequency rates (2.2)
- Relative level of safety as measured by comparison of Workers' Compensation Insurance premium rates with other high-risk industries in Western Australia (2.3)

2.1 Compliance with the Mines Safety and Inspection Act 1994 and Best Practice Safety Management Systems

The level of safety and health in the industry relies on good management systems. These are guided by the regulatory framework which outlines the expected minimum level of efficacy of such systems. The Department's Mining Operations Division audits these systems to ensure industry compliance with regulatory standards and best practice. This indicator reports on the relative level of compliance as represented by an index where 1998-99 is the base year.

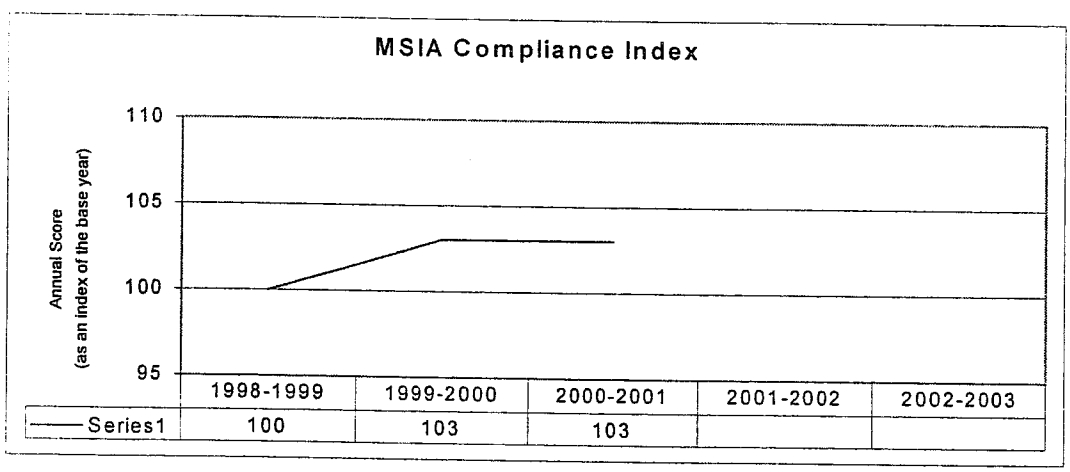


Figure KPI 2.1 Mines Safety and Inspection Act 1994 compliance index

- Note: the following Output numbers in this report have been numbered to reflect the 2000-01 Treasury Budget Statements Output structure. Output 5 has been omitted in this annual report.

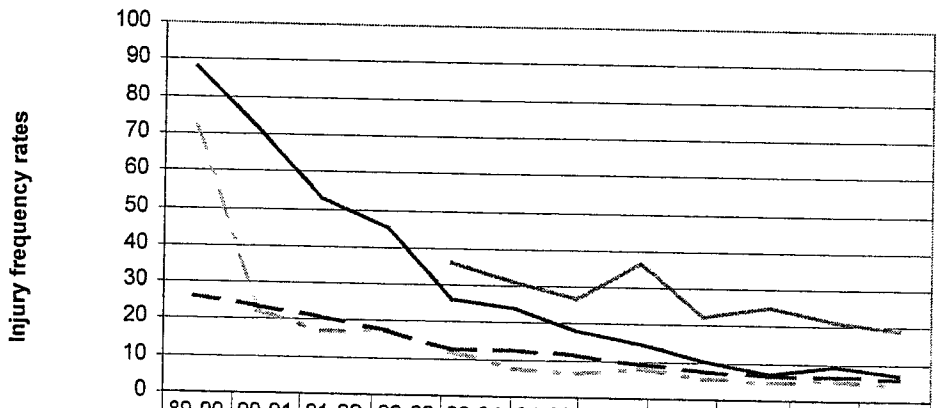
OUTCOME 2: SAFE AND HEALTHY MINERAL AND PETROLEUM INDUSTRY WORKFORCES

Data for this measure is obtained from the Mining Operations Division Audit Management System (MODAMS) which records the outcomes of mine site audits. MODAMS and the audits have been developed and applied over a number of years and a time-series of reliable statistics is now available.

2.2 Injury frequency rates

The injury frequency rates (IFR) are the number of occurrences of injury or disease (total (TIFR) or lost-time (LTIFR)) for each one million hours worked as defined in Australian Standard AS 1885.1-1990. LTIFR is a lag indicator of industry performance and may not reflect current safety management initiatives.

Data for this measure is obtained from statutory reports submitted by companies of hours worked and injuries sustained for each mineral or petroleum operation in Western Australia. The data is stored in computer databases and analysed according to the Australian Standard. Results of previous years have been updated using all available data.



	89-90	90-91	91-92	92-93	93-94	94-95	96-97	97-98	98-99	99-00	00-01
Petroleum TIFR	NA	NA	NA	NA	35.9	31.2	36.7	22.5	25.3	21.5	18.9
Petroleum LTIFR	71.5	22.2	16.9	17.4	12.1	7.9	8.2	5.4	4.93	5.7	4.6
Mining - underground LTIFR	88	70.8	52.8	45.5	26	24.1	14.9	10.4	7	9.3	6.9
Mining - surface LTIFR	26.4	23.5	20.8	17.7	12.8	12.3	9.2	7.9	6.5	6.7	5.9

Figure KPI 2.2 Injury Frequency Rates for the mineral and petroleum sectors

(Note: 2000-01 figures for 12 months ending 31 March 2001. Final figures provided in September)

Safety is improving in the long-term in the mineral sector, as measured by the number of lost-time injuries per million hours. Safety performance in the petroleum sector appears to have levelled over the past three years, after the initial improvement observed following the introduction of the Safety Case regime in 1990 (required from July 1992).

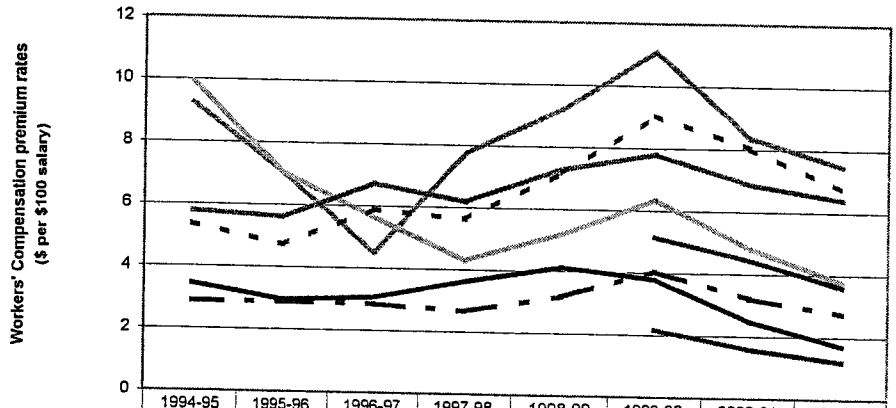
2.3 Comparative safety: Workers' Compensation Insurance premium rates

The workers' compensation premium rates were selected as a consistent measure to compare safety levels between industries. The premium rates are expressed as a percentage of salary (dollars of insurance premium per $100 of salaries) and are given for mining and general

OUTCOME 2: SAFE AND HEALTHY MINERAL AND PETROLEUM INDUSTRY WORKFORCES

industry sectors. The premium rates are published by the Premium Rates Committee in the Government Gazette.

Insurance premium rates are lower for the mining and petroleum sectors than for many comparable heavy industry sectors.



	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02
Mining (average)	2.89	2.89	2.86	2.67	3.2	4.05	3.22	2.74
Structural steel manufacture	9.26	7.04	4.49	7.74	9.23	11.11	8.37	7.48
Non-residential construction	9.92	7.04	5.63	4.31	5.2	6.34	4.82	3.76
Forest/logging	5.78	5.61	6.72	6.19	7.29	7.81	6.87	6.4
Agriculture/sheep farming	5.36	4.71	5.89	5.62	7.18	9.06	8.03	6.73
Gas supply	3.45	2.96	3.08	3.62	4.12	3.79	2.48	1.71
Oil & gas extraction on-land						2.17	1.58	1.2
Oil & gas extraction offshore						5.15	4.44	3.6

Figure KPI 2.3 Comparative Workers' Compensation premium rates

Efficiency Measures

	1998-99 $	1999-2000 $	2000-01 $
Output 6: A system for regulating and promoting safety and health in the mineral industry			
Average cost of safety services per mineral industry employee This is calculated as the total cost of service, divided by the average number of employees over the year - estimated to be 38 464.	260	287	302
Output 7: A system for regulating and promoting safety and health in the petroleum industry			
Average cost per unit of petroleum safety services Safety services, such as assessment of safety plans, have each been assigned a weighting that attempts to quantify the relative weight of effort required to complete it for the base year (1997-98). The average cost per unit of safety service is calculated by dividing the total cost of service by the number of units of service provided during the year.	1 221	1 004	1 046

OUTCOME 3

ACCEPTABLE ENVIRONMENTAL STANDARDS FOR MINERAL AND PETROLEUM EXPLORATION, DEVELOPMENT, PRODUCTION AND PROJECT COMPLETION

Output		1999-2000 Expenditure ($ million)	2000-01 ($ million)
8	A system for regulating and promoting environmental management in the mineral industry	1.880	1.824
9	A system for regulating and promoting environmental management in the petroleum industry	0.637	0.539
	Total	2.517	2.363

The Department of Minerals and Energy plays an integral role in setting and monitoring the performance of mining and petroleum operations against established environmental standards and conditions of title.

The Department provides regulatory, technical and policy advice services, assessments and audits of environmental management plans and their implementation, and related information products. This has resulted in continued improvements in industry performance.

The annual Golden Gecko Awards for Environmental Excellence in the Minerals and Petroleum Industries 2000 held in September 2000, acknowledged the growing commitment of the minerals and energy sector to environmental management, as part of the successful development of Western Australia's resources industry.

A Golden Gecko Award symbolises company or individual commitment to go beyond compliance with regulations and provides recognition for efforts in achieving excellence and leadership in environmental management.

Awards for Environmental Excellence were made to Cockburn Cement Ltd and Alcoa World Alumina Australia, with Placer (Granny Smith) and the Botanic Gardens and Parks Authority winning consecutive awards in 1999 and 2000. Certificates of merit were issued to North Mining, Western Diamond Drillers and the Barrow Island Coastal Care Group .

With a record of 24 applicants in 2000, the awards continue to be a sought after recognition of excellence in environmental performance.

OUTCOME 3: ACCEPTABLE ENVIRONMENTAL STANDARDS FOR MINERAL AND PETROLEUM EXPLORATION, DEVELOPMENT, PRODUCTION AND PROJECT COMPLETION

Output 8:

A system for regulating and promoting environmental management in the mineral industry

Output Description

The provision of a system for the management of risk to the environment from mineral industry operations. The system includes regulatory, technical and policy services, the assessment and audit of environmental management reports and their implementation, and the provision of information.

Expenditure in 2000-2001: $1.824 million

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Corporate Group

Mineral Titles Division

Petroleum Division

Geological Survey Division

Mining Operations Division

Explosives and Dangerous Goods Division

OVERVIEW OF OPERATIONS

In recent years, there have been significant improvements in responsible environmental management by the State's mining industry, in line with increased community awareness and expectations. Industry efforts in environmental management are recognised by the Department through its annual Golden Gecko Awards for Environmental Excellence.

To ensure the impact of mining on the environment is minimised, mining is only allowed on an appropriate mining tenement subject to specified conditions and strict environmental controls imposed by the Department and other Government agencies, such as the Environmental Protection Authority.

Before mining can begin, the tenement holder must submit a *Notice of Intent* (NOI) to the Department outlining the proposed operations, strategies to minimise environmental impact and a proposed rehabilitation program. Commitments made by the tenement holders are subsequently included in operating conditions imposed on the tenement under the *Mining Act 1978*.

The Department inspects operations, reviews company activities and revises unconditional performance bonds to secure the appropriate rehabilitation of mining sites.

An unconditional performance bond is a contract between the Minister responsible for mining and a tenement holder, where the tenement holder or an approved financial institution is required to unconditionally pay an agreed sum to the Minister following a failure to meet previously agreed environmental commitments.

The Department can also issue work directions or stop work orders where a company is not complying with environmental requirements. This is often dependent on the security of the environmental impact.

Environmental management process

The environmental management process for mining operations occurs in three distinct phases:

- Approval to commence mining operations
- Management of ongoing operations
- Decommissioning of operations

State environmental legislation gives primary responsibility for all environmental matters to the Environmental Protection Authority (EPA). A *Memorandum of Understanding* between the EPA and the Department of Minerals and Energy provides a cost-effective management process in which the degree of scrutiny and management by Government is related to the potential environmental impacts of any given operation.

The development of close working relationships with other agencies, such as the Department of Environmental Protection (DEP), Conservation and Land Management (CALM) and the Water and Rivers Commission (WRC) has further enhanced the management of environmental issues in the mining industry.

REGULATORY ACTIVITIES

The Department's environmental regulatory activities are grouped under three categories:

- Approval actions
- Inspection and review of ongoing operations
- Initiating sanctions for unacceptable activities

In 2000-01, the Department received 275 Notices of Intent and approved 243 of these, conducted 280 Annual Environmental Reviews, carried out 395 General Environmental Inspections and received 1 333 Ground Disturbing Approval Applications for exploration activities.

During the year, the Department also dealt with 45 complaints of an environmental nature, ranging from unauthorised mining to environmental incidents. Sanctions initiated during the year included four work directions and four stop-work orders.

PROMOTIONAL ACTIVITIES

In conjunction with its regulatory role, the Department undertakes promotional activities to raise environmental awareness and improve management practices in the mineral industry to reduce impacts on the environment. The Department's major promotional activity for the year is the Golden Gecko Awards for Environmental Excellence. The awards, first presented in 1991, recognise outstanding environmental achievements in the mineral and petroleum industries.

In addition, the Department produces the twice yearly *Rehab Blab* magazine distributed to industry representatives, other Government agencies, universities, conservation and community groups.

Golden Gecko Awards for Environmental Excellence

The 2000 Golden Gecko Awards for Environmental Excellence received enthusiastic support from the minerals and petroleum industry with 24 nominations. In September, Golden Gecko Awards were presented to:

- Placer Granny Smith for the Wallaby project
- Cockburn Cement for its seagrass transplanting projects at Owen Anchorage and Success Bank
- Alcoa for its land management program at the Pinjarra Alumina Refinery
- Botanic Gardens and Parks for its restoration of Airlie Island near Onslow

A Certificate of Merit was awarded jointly to North Mining and Westralian Diamond Drillers for their development of equipment to efficiently remove all potentially damaging drill spoil and saline water. A Certificate of Merit was also awarded to the Barrow Island Coastal Care Group for their work in restoring the island.

Minerals and Environment Liaison Committee

The Minerals and Environment Liaison Committee (MELC) was established in 1991 by the Minister for Mines. This interagency committee, chaired by the Department's Director General, provides a regular forum in which the Department can be kept up-to-date with the environmental concerns of industry and the conservation community. MELC meetings provide an active exchange of information between key stakeholders that assists industry achieve steady improvements in performance and increases opportunities for cooperation with environmental issues.

During 2000-01, MELC's program included discussion of the following issues:

- Investigations into Pilbara conservation reserves, metropolitan regional parks, Perth's Bushplan, resources strategies for basic raw materials, lime and road-building materials
- Unconditional Performance Bonds
- Commonwealth Environment Protection and Biodiversity Conservation Act
- Changes to environmental assessment under the Western Australian Environmental Protection Act

- Rangeways Project, a five-year Commonwealth land-use planning project for semi-arid Australia
- Greenhouse response
- Reports from Australian and New Zealand Mining and Energy Council (ANZMEC) national taskforce meetings and the Mineral Industry Council of Australia
- A strategic framework for mine closure
- Pastoral leases and proposed conservation
- Abandoned mine sites program
- National environmental protection measures
- Minerals industry Code for Environmental Practice
- Assessment of exploration in major nature reserves
- Environmental Weed Strategy and the State Weed Strategy

Abandoned mine sites

An inventory of the State's abandoned mine sites commenced in 1999-2000 to determine potential safety or environmental risks. The inventory results will provide a sound basis for advice on remedial action and rehabilitation of high-risk sites.

During the year, the Department designed and tested an innovative database for palm-top computer use in the field. The system collated accurate spatial information on mine site locations via a link to satellite navigation equipment. The database has been very successful in the field, with equivalent departments in the Northern Territory, South Australia and Queensland showing interest in adopting a similar approach.

As of 30 June 2001, the total potential hazards identified by the inventory was 33 184, including hazards completely or partially rehabilitated by mining tenement holders.

Fieldwork during 2000-01 was conducted at high-priority sites around Sandstone, Meekatharra, Wiluna, Leonora, Laverton and Kalgoorlie. Priority for field inspection was given to sites within 10 kilometres from a townsite or one kilometre from a main road. About 35 per cent of all abandoned mine sites fall into this category. At 30 June 2001, about 50 per cent of known high-priority sites had been inspected during the first two years of the program.

A substantial quantity of historic production data was also captured in 2000-01, including the office-based capture of locations of historic sites using tenement information. This part of the project was almost completed during 2000-01.

An innovative system for attributing aggregate risk to a site, based on the data collected, has been developed and is being tested. A sum of $350 000 per annum has been allocated over four years to this project.

Galena Mining Heritage Area Management Plan

In June 2001, Northampton Shire Council adopted the Galena Mining Heritage Area Management Plan, covering approximately 160 square kilometres along the banks of the Murchison River, 110 kilometres north of Geraldton.

Development of a management plan for this area of cultural, historical and environmental significance was coordinated by the Galena Management Plan Steering Committee (GMPSC). Established in April 1994, the committee comprises representatives from community groups, State Government agencies and the Northampton Shire Council. The Department's Mining Operations Division is also represented on the committee.

The Galena Mining Heritage Area has varying land tenure and contains a wide range of cultural and natural heritage values, some of which are:

- Highly significant sites associated with the first European mining activities in Western Australia, in particular the remains of the Geraldine Mine and Warribano smelter dating from the 1840s
- Sites of significance for the Aboriginal history of the region, including pre and post European archaeological sites and other places which have traditional and continuing social and spiritual significance for the Aboriginal community
- Areas which have been used for pastoral, agricultural and other economic activities since the 19th century
- Places which are identified with historically significant persons
- Cultural and natural places visited by locals and other tourists

Adoption of the management plan is an outstanding example of Government agencies working with community groups to achieve a mutually agreed outcome. The Steering Committee and the Northampton Shire Council subsequently formed the Galena Mining Heritage Advisory Committee in July 2001.

ENVIRONMENTAL PERFORMANCE

Unconditional Performance Bonds

At the end of December 2000, the Department held 2 591 Unconditional Performance Bonds with a total value of $254.2 million to cover the cost of post-operational rehabilitation should the operators fail to meet their commitments and conditions of approval. As of 30 June 2001, the number of bonds had reduced to 2 520 with a total value of $276.9 million. Based on the December 2000 figure, an average bond of $3 188 is held for each hectare of disturbance on sites covered by the *Mining Act 1978*.

In the 2000-01 financial year, there was no requirement to access bond moneys to undertake rehabilitation.

The Department's preferred type of security is an Unconditional Performance Bond guaranteed by a bank or other financial institution. In agreement with industry, personal securities will replace personal sureties as an accepted form of security on mining tenements.

Land disturbed

The following statistics are for 2000 and relate to reports received from companies conducting mining operations under the *Mining Act 1978*, the various State Agreement Acts and some operations carried out on pre-1899 title land.

A total of 132 500 hectares had been disturbed to the end of 2000 with some 10 988 hectares of new disturbance in calendar year 2000. Of the total disturbance, rehabilitation had commenced on 26 192 hectares and been completed on 18 368 hectares to the end of calendar year 2000. During 2000, rehabilitation commenced on 3 484 hectares and was completed on 2 992 hectares. This indicates that 19.8 per cent of total mine disturbance to the end of calendar year 2000 was in the process of rehabilitation.

The above numbers show considerable effort is being made by mine operators to rehabilitate waste dumps, with work commenced on 46 per cent of the dumps. Exploration activities reported are confined to those taking place close to mining operations, often referred to as brownfields exploration.

Table 7.1: Area of disturbance, rehabilitation land-forming and revegetation for mineral activity in Western Australia

	2000 ANNUAL (ha)			CUMULATIVE TOTAL TO 31-12-2000 (ha)			
ACTIVITY	DISTURBED BY MINING OPERATIONS	PRELIMINARY REHABILITATION LAND-FORMING	REVEGETATION	DISTURBED BY MINING OPERATIONS	PRELIMINARY REHABILITATION LAND-FORMING	REVEGETATION	PERCENTAGE OF DISTURBED AREA WHERE REHABILITATION HAS BEEN INITIATED
Bore fields and pipelines	162	59	13	1 566	200	40	12.8
Campsites	121	42	18	1 319	303	270	23
Exploration	309	170	216	4 524	1 317	772	29.1
Mine site infrastructure	2 696	468	391	42 957	3 450	2 283	8
Open pits	3 622	716	1 576	27 828	4 770	4 706	17.1
Tailings facilities and evaporation ponds	1 624	262	261	22 957	1 798	1 420	7.8
Waste dumps	2 454	1 767	517	31 349	14 354	8 877	45.8
TOTAL	10 988	3 484	2 992	132 500	26 192	18 368	19.8
SAA sites				52 836			
Mining Act Sites				79 664			

OUTCOME 3 ACCEPTABLE ENVIRONMENTAL STANDARDS FOR MINERAL AND PETROLEUM EXPLORATION, DEVELOPMENT, PRODUCTION AND PROJECT COMPLETION

Output 9:

A system for regulating and promoting environmental management in the petroleum industry

Output Description

The ongoing management and provision (or contracting) of a set of products and services to ensure exploration and production activities meet the environmental standards as defined in the legislation and current Government policy. The system comprises policy, regulatory and information services, interagency agreements and processes, and performance guidelines.

Expenditure in 2000-01: $539 000

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Corporate Group

Mineral Titles Division

Petroleum Division

Geological Survey Division

Mining Operations Division

Explosives and Dangerous Goods Division

OVERVIEW OF OPERATIONS

In conjunction with other Government agencies, the Department is responsible for regulating and monitoring the environmental performance of the Western Australian petroleum industry.

The Department's main tasks in this area are to:

- Assess the environmental impacts of petroleum proposals
- Undertake environmental management audits to assess performance
- Review relevant legislation and environmental management procedures
- Promote environmental awareness in the industry

Environmental assessment and audits

The Department is responsible for assessing the environmental aspects of petroleum proposals in Western Australia, including the acceptability of Environmental Management Plans (EMP), Environment Plans (EP) and Oil Spill Contingency Plans (OSCP).

Proposals deemed as having a significant impact are referred to the EPA. Audits of petroleum operations environmental systems and plans are conducted by the Department to ensure compliance with approval conditions. Audits of OSCP are also conducted to ensure oil spill response plans are effective. In addition, the Department also investigates environmental incidents to determine the underlying causes, and provide recommendations to prevent similar recurrences.

In 2000-01, the Department assessed 341 environmental submissions, compared to 330 in 1999-2000. This included 56 Environmental Plans for Commonwealth Adjacent Area operations, 46 Environmental Management Plans for proposals in State jurisdiction, and 17 Oil Spill Contingency Plans. Other environmental documentation subject to assessment included exploration and production applications, environmental compliance audit reports, applications for renewals or relinquishments, rehabilitation and monitoring reports and Government submissions.

The Department conducted 22 environmental management audits of facilities, operations and systems during 2000-01. These included joint audits with petroleum operators and other Government agencies, as well as audits of submissions for the Department's Golden Gecko Awards for Environmental Excellence. In the previous year, 15 audits were conducted.

During the year, the Department also distributed the results of an internal review of Environment Plan assessment procedures to Government agencies in other states and territories. This procedure has been distributed to enhance inter-Government EP assessment consistency and transparency. In August 2001, the Department developed a similar internal assessment procedure for OSCP.

Measuring industry and environmental performance

One measure of environmental performance is the frequency and consequence of hydrocarbon spills and leaks. Other performance measures include the degree of compliance with approval conditions and commitments, level of activity and initiatives beyond compliance and other measures of environmental responsibility.

During 2000-01, a total of 16 hydrocarbon spill incidents were reported. There were no major oil spills to the marine environment. There were six crude oil spills - five onshore and one offshore - totalling 88 cubic metres. Four onshore crude oil incidents were caused by flowline leaks affecting a total area of about 600 square metres. Subsequent to the incidents, the Department implemented rehabilitation of these areas. One onshore spill, 17.5 cubic metres in size, was the result of interference by a person or persons unknown. Most of this spill was retained within the facility area with 5.5 cubic metres recovered.

Five streamer fluid spills, similar to kerosene, totalling 1.5 cubic metres in size were reported from offshore seismic operations. These occurred from streamer damage caused by shark attacks or streamer fouling. The environmental effect of these spills was limited as kerosene

evaporates rapidly, usually within a few hours. Three minor diesel spills totalling 0.24 cubic metres were reported. One condensate spill of 500 litres containing a mixture of waste oil and condensate was lost during transfer from an offshore facility to a vessel. One hydraulic fluid spill of 120 litres was also reported during the year.

The Department is pursuing a prosecution relating to a 25-cubic-metre crude oil spill that occurred in State waters near Varanus Island in July 1999. In October 2001, the defendant pleaded guilty and was ordered to pay costs of $5 000 by the Court of Petty Sessions.

Legislation and environmental management

The Commonwealth *Petroleum (Submerged Lands) (Management of Environment) Regulations 1999* came into effect on 1 October 1999 to regulate petroleum activity within Commonwealth waters. In June 2000, in order to achieve consistency of regulation between Commonwealth and State jurisdictions, the Minister for Mines endorsed development of new Western Australian environmental regulations for the *Petroleum (Submerged Lands) Act 1982,* the *Petroleum Act 1967* and the *Petroleum Pipelines Act 1969.*

Subsequently, a working group consisting of representatives from the Conservation Council, Department of Environmental Protection (DEP), Conservation and Land Management (CALM), Australian Petroleum Production Exploration Association (APPEA) and the Department was established in December 2000. The working group has focused on developing environmental regulations for the Western Australian *Petroleum (Submerged Lands) Act 1982.* The regulations are planned to be consistent with the objective risk-based Commonwealth *Petroleum (Submerged Lands) (Management of Environment) Regulations 1999.*

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) came into effect on 16 July 2000. Since then, the Department has provided information regarding the relationship between the requirements of the EPBC Act and petroleum legislation for industry. These relationships were clarified in a revised version of the Department's document *Environmental Assessment Processes for Petroleum Activities in WA* (Revision 2) in December 2000.

The document defines both the Commonwealth and State environmental assessment processes for exploration and development proposals, and has been well received by the petroleum industry. This document can be downloaded from the Department's website at *www.dme.wa.gov.au*

PROMOTIONAL ACTIVITY

Industry liaison

The Department initiated and is chairing the organising committee for the Industry Safety and Environment Conference to be held in Perth in November 2001. The conference program will address the major safety and environment issues facing the industry.

Throughout the year, Department officers gave presentations on environmental issues at industry forums, including the Montebello-Barrow Island Marine Conservation Reserve

working group. In addition, the Department also participated on the selection committee for Woodside Offshore Petroleum's 2001 internal environmental awards.

The Department also participated in the Joint Venture Management and Technical Advisory Committees of the Strategic Research Fund for the Marine Environment and contributed to the State-Government-funded North West Shelf Joint Environmental Management Study.

During 2000-01, the Department produced the booklet *Safety and Environmental Leadership for the Offshore Oil and Gas Industry* and published a number of articles on environmental issues in the Department's *Petroleum in Western Australia* magazine.

Golden Gecko Awards for Environmental Excellence

In September 2000, the Botanic Gardens and Parks Authority was presented with a Golden Gecko Award for Environmental Excellence in recognition of its restoration work at Airlie Island, offshore from Onslow in the State's North-West.

Multi-disciplinary research conducted by scientists from the Botanic Gardens and Parks Authority led to a process to remove buffel grass from the island. WMC Resources Ltd, Novus and Apache Energy funded the research.

Buffel grass, an invasive weed, was introduced early last century to the Airlie Island nature reserve and the eradication of the grass has been a priority objective for a number of years.

As well as identifying many aspects of buffel grass ecology, which led to its successful removal from Airlie Island and replacement with native species, the knowledge gained from the research can be directly applied to other parts of Australia that experience similar problems.

A Certificate of Merit was also presented to the Barrow Island Coastal Care Group, supported by Chevron Australia, in recognition of its work in cleaning up the island's beaches. The island fauna, particularly nesting turtles, will significantly benefit from the successful clean-up.

OUTCOME 3: ACCEPTABLE ENVIRONMENTAL STANDARDS FOR MINERAL AND PETROLEUM EXPLORATION, DEVELOPMENT, PRODUCTION AND PROJECT COMPLETION

OUTPUTS

8. A system for regulating and promoting environmental management in the mineral industry
9. A system for regulating and promoting environmental management in the petroleum industry

EFFECTIVENESS

The Department of Minerals and Energy provides regulatory, technical and policy advice services, assessments and audits of environmental management plans and their implementation, and information products.

The effectiveness of the Department in achieving acceptable standards of environmental performance by industry is indicated by the:

- Changes over time in the industry's Annual Environmental Review assessment scores (presented as an Environmental Compliance Index) (3.1)
- Level of compliance with environmental criteria set for petroleum operations as measured by the percentage of audited projects with no major corrective action recommendations (3.2)

3.1 Annual Environmental Review assessment scores for mine sites

On completion of the Annual Environmental Review for each mine site, scores are allocated in a number of categories to reflect the operator's performance in managing environmental issues. This performance indicator measures the trend in the overall annual average of these scores for the industry and is presented as an index, with 1998 as the base year.

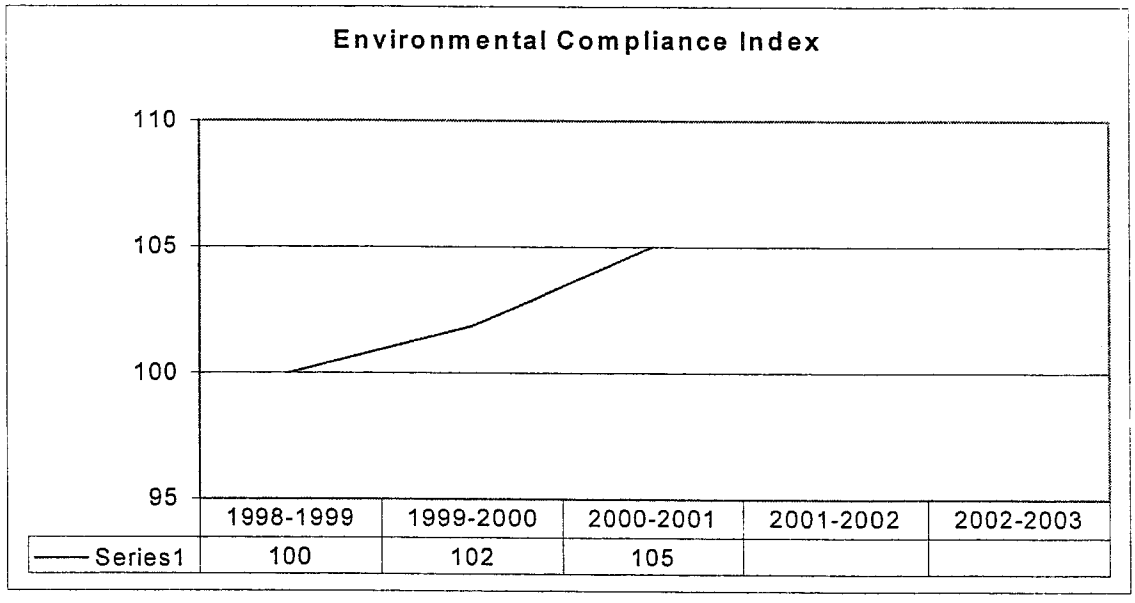

Figure KPI 3.1 Environmental Compliance Index

OUTCOME 3: ACCEPTABLE ENVIRONMENTAL STANDARDS FOR MINERAL AND PETROLEUM EXPLORATION, DEVELOPMENT, PRODUCTION AND PROJECT COMPLETION

3.2 Compliance with the Department's environmental management criteria for petroleum operations

Non-compliances are defined as:

- Specific infringements of commitments made in project environmental documentation (Environmental Management Plans or EMPs)
- Specific infringements of conditions of approval
- Practices not in accord with the Commonwealth and State Petroleum Acts and Regulations and Schedules of Directions issued under these Acts

Non-compliances are identified in field audits. Audits are conducted on a cross-section of projects and are selected on a risk-assessment basis, which may introduce variability into the results between years. Non-compliances can be segregated into minor and major categories. An example of a minor non-compliance may be the presence of litter at an operation and while still requiring the generation of a Corrective Action Recommendation (CAR), minor non-compliances are not considered to have a reasonable risk of significant environmental impact. A major non-compliance, however, is defined as an item where, if no CAR is identified and implemented, there is a reasonable risk of significant environmental impact.

Audit activity increased this year and while there was a slight increase in the proportion of the audited projects for which no major CARs were issued, compliance remained reasonably high.

Table KPI 3.2 Compliance with the Department's environmental management criteria for petroleum operations

	1996-97	1997-98	1998-99	1999-2000	2000-01
Number of active projects	89	174	158	165	184
Number of active projects audited	7	9	12	13	16
Percentage of audited projects for which no major CARs were issued	71%	89%	83%	77%	87.5%

Efficiency Measures

	1998-99 $	1999-2000 $	2000-01 $
Output 8: A system for regulating and promoting environmental management in the mineral industry			
Average cost per mine site of annual environmental performance reviews This is calculated as the total cost of service, divided by the	5 165	6 179	6 514

OUTCOME 3: ACCEPTABLE ENVIRONMENTAL STANDARDS FOR MINERAL AND PETROLEUM EXPLORATION, DEVELOPMENT, PRODUCTION AND PROJECT COMPLETION

	1998-99 $	1999-2000 $	2000-01 $
number of mines for which an annual environmental review has been undertaken. This means that an annual environmental report has been received from the company, the report has been reviewed, a site inspection has been completed and an inspection report returned to the company. For comparison with previous years, this figure excludes an amount of $350 000 which is assigned to a specific data take-up project for the State's abandoned mine sites.			
Total environmental bond score in relation to the cost of environmental services This measure shows the total cost of service as a percentage of the total value of bonds that would be held on all areas disturbed by mining operations. This value is used to represent the risk to the environment and is represented by the bond amount held by the Department for Mining Act sites, plus an amount calculated at standard Departmental rates for State Agreement Act sites that are not currently bonded. The indicator is represented as cost per $1 million in total bonds. This represents 0.42 per cent of the total value of bonds held by the Department.	New measure	4 444	4 116
Output 9: A system for regulating and promoting environmental management in the petroleum industry			
Average cost per unit of petroleum environmental service Environmental services, such as assessment of environmental submissions and audits, have each been assigned a weighting that attempts to quantify the relative weight of effort required to complete it for the base year (1997-98). The average cost per unit of environmental service is calculated by dividing the total cost of service by the number of units of services provided during the year. The method of allocating expenditure to this Outcome changed from last year and the two results are not directly comparable.	503	846	580

OUTCOME 4

APPROPRIATE RETURNS TO THE COMMUNITY FOR THE EXPLOITATION OF ITS MINERAL AND PETROLEUM RESOURCES

Output		1999-2000 Expenditure ($ million)	2000-01 Expenditure ($ million)
10	A system to establish royalty rates and ensure appropriate royalties are paid when due	1.140	1.150
	Total	1.140	1.150

The Department is responsible for developing royalty policies to cover a wide range of mineral and petroleum production and for the collection of royalties.

A royalty is a payment to the community in exchange for the use of its natural resources. This is different to a tax which is a contribution to State revenue levied on individuals or companies based on earnings.

Royalties are directed into the State Government's Consolidated Fund to help pay for Western Australia's schools, police, health system, roads and other community infrastructure and services.

OUTCOME 4:APPROPRIATE RETURNS TO THE COMMUNITY FOR THE EXPLOIATION OF ITS MINERAL AND PETROLEUM RERSOURCES

Output 10:

A system to establish royalty rates and ensure appropriate royalties are paid when due

Output Description

Recommendations are made for mineral and petroleum royalty rates and systems. Royalty legislation is developed and new royalty arrangements established. Compliance with these requirements is monitored and financial returns audited. Information on current and predicted royalty returns to the State is compiled and distributed. This information is used to monitor the success of rates, conditions and arrangements in achieving a fair return to the community and in developing new policy.

Expenditure in 2000-01: $1.15 million

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Corporate Group

Mineral Titles Division

Petroleum Division

Mining Operations Division

Explosives and Dangerous Goods Division

ROYALTY SYSTEMS

Under the Western Australian legal system, most mineral and petroleum resources belong to the community. As such, the State Government determines the appropriate level and form of royalties to be paid by developers for the right to extract these non-renewable resources. Revenues raised through the royalty system compensate all Western Australians via the provision of public infrastructure and other community benefits and services.

A royalty is a payment to the community in exchange for the use of its natural resources. This is different to a tax, which is a contribution to State revenue levied on individuals or companies.

To ensure the greatest benefit for the whole community, the Department provides royalty policy advice to the State Government and performs the assessment, collection and verification of royalty payments by developers.

Five royalty systems are used to determine the royalty to be paid in areas of State jurisdiction. Three are used for mineral production and two for petroleum production.

The different royalty systems are:

Specific-rate royalties

Quantity of mineral produced. This system is generally applied to low-value products such as sand or construction materials. Rates are generally 30 or 50 cents per tonne

Ad valorem royalties

Value of mineral produced and sold. This system is applied to most minerals such as iron ore, nickel, mineral sands and base metals. Rates under the *Mining Act* range from 2.5 per cent to 7.5 per cent depending on the extent of value-adding by producers before the sale point

Profit-based royalties

Net profit from the mining operation. Currently, one operation has a 22.5 per cent profit-based component included in its royalty system

Well-head royalties

Value of petroleum recovered at the well-head

Resource rent royalties

Percentage of net cash flow. This system is currently used for one petroleum operation to which a rate of 40 per cent is applied

ROYALTY LEGISLATION

Mineral royalties are levied under either the *Mining Act 1978* or State Agreement Acts, which apply to a limited number of large projects.

Royalties for petroleum are implemented through the State *Petroleum Act 1967*, Commonwealth *Petroleum (Submerged Lands) Act 1967*, Commonwealth *Petroleum (Submerged Lands) (Royalty) Act 1967*, State *Petroleum (Submerged Lands) Act 1982* or the *Barrow Island Royalty Variation Agreement Act 1985*.

Amendments to legislation

Regulation 86 of the *Mining Act 1978* includes a table that lists mineral categories and the associated royalty rates. The table was amended as follows:

- The royalty rate applying to minerals, other than those specifically listed under the Table, was changed from 5 per cent of realised value to 5 per cent of realised value if sold as a concentrate and 7.5 per cent of realised value if sold as crushed or screened material

- An additional mineral category known as agricultural limestone was added which included lime sands and shell sands with a royalty rate of 30 cents per tonne

Amendments to the *Petroleum (Submerged Lands) Act 1982* and *Petroleum (Submerged Lands) Act 1967* are being considered as a result of a memorandum of understanding between the State and Commonwealth to streamline administrative arrangements for offshore petroleum royalties.

MINING ACT 1978 ROYALTIES STEERING COMMITTEE

A Royalties Steering Committee, including representation from the Department, Treasury and the Department of Resources Development, produced its first report in January 2000. The report addressed changes to the base metals royalty system and was endorsed by Cabinet and implemented on 1 July 2000.

ARRANGEMENT AND ISSUES

Although royalty systems and rates are defined under legislation, the Department advises producers on how to calculate royalty payments, what information is required in royalty returns, and performs audits to verify royalties due.

Issues that arise through the royalty assessment process are resolved in consultation with producers. During the year, 177 issues arose regarding interpretation of legislation, assessment arrangements, audit queries, late payment of royalties, royalty system reviews, disputed sales values and deductions, and royalty calculation procedures.

Actions taken during the year in relation to these issues included:

- Nine applications for royalty relief were received from projects in financial difficulty. Eight of the applications were found to comply with the criteria and were granted royalty relief. The relief takes the form of a reduction or suspension of royalty payments which can be extended to producers under special or extenuating circumstances. Included in the criteria for royalty relief are special transition provisions relating to gold producers

- A memorandum of understanding between the State and the Commonwealth was signed to streamline administrative arrangements for offshore petroleum royalties

- A customer survey was circulated to industry to gain information on the profile of the Department's Royalties Branch within the mineral and petroleum industry and other Government departments. The survey provided feedback on what customers viewed as being the most important services provided by the Department and the level and quality of service. The responses to the survey have been reviewed and areas requiring attention are being addressed

- The Department worked with the Commonwealth Department of Industry, Science and Resources (DISR) to review the requirements of a United Nations resolution dealing with world trade in rough diamonds and armed conflict. A procedure is required to meet the requirements of the United Nations resolution without imposing undue burden on Government or industry

- New petroleum royalty arrangements for two projects were negotiated. Petroleum royalty rates generally apply to the value of petroleum at the well-head and royalty schedules that define well-head value are prepared for each project. A new royalty schedule was drafted for one project and draft amendments to another royalty schedule have been prepared

- Although the majority of royalty payments are collected electronically, opportunities for further electronic payment options are being considered

ASSESSMENT, COLLECTION AND VERIFICATION

During the year, a total of 286 companies or individual projects paid royalties. A total of 1 088 royalty returns were received and assessed and 213 audit visits were made to royalty payers. Adjustments to royalty collections from audit activities resulted in an additional $8 million in royalty payments.

A total of $1 435.9 million was collected for the year, an increase of 50.5 per cent on 1999-2000, comprising $609.6 million for minerals and $826.3 million for petroleum. From this, $315.6 million was paid to the Commonwealth Government under petroleum royalty-sharing arrangements.

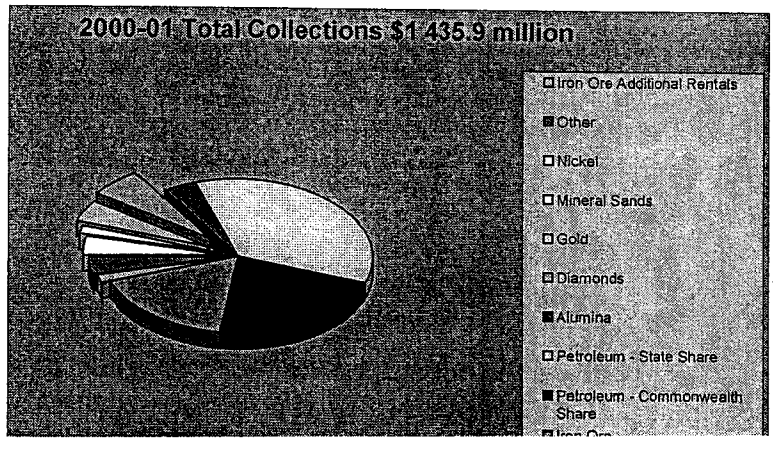
There were 53 late payments of royalty. Apart from a few payments, these late payments were generally received within three days of the due date. Special payment arrangements were approved for three projects experiencing severe cash flow problems.

Arrangements agreed with the Commonwealth to administer the collection of Christmas Island royalties continued during the year. The Department assesses, collects, and verifies the royalty payments and then transfers them to the Commonwealth.

Table 10.1: 2000-01 Royalty Collection ($million)

		Revenue State	Revenue Commonwealth	Total	Paid Into Consolidated Fund
State Legislation					
	Minerals	609.6		609.6	609.6
	Petroleum	46.3	76.4	122.7	62.3
	Sub-total	**655.9**	**76.4**	**732.3**	**671.9**
Commonwealth Legislation					
	Petroleum	464.4	239.2	703.6	464.4
Total	2000-01	**1 120.3**	**315.6**	**1 435.9**	**1 136.3**
	1999-00	763.7	190.6	954.3	776.7
	1998-99	597.5	95.4	692.9	605.4
	1997-98	606.9	123.2	730.1	622.2

The increase in the value of royalty collections, compared to the previous year was mainly due to higher petroleum, iron ore, nickel and diamond prices and a lower exchange rate of the Australian dollar. In particular, petroleum royalties increased 58 per cent for the year, partly due to an increase in production. Iron ore had an increase in royalties following an increase in exports. Gold royalties also increased due to the application of the full royalty rate activated by higher Australian dollar gold prices.
Figure 10.1



OUTCOME 4: APPROPRIATE RETURNS TO THE COMMUNITY FOR THE EXPLOITATION OF ITS MINERAL AND PETROLEUM RESOURCES

OUTPUT

10. A system to establish royalty rates and ensure appropriate royalties are paid when due

EFFECTIVENESS

The Department of Minerals and Energy makes recommendations on legislation and policy regarding royalty arrangements and administers the relevant State and Commonwealth Acts.

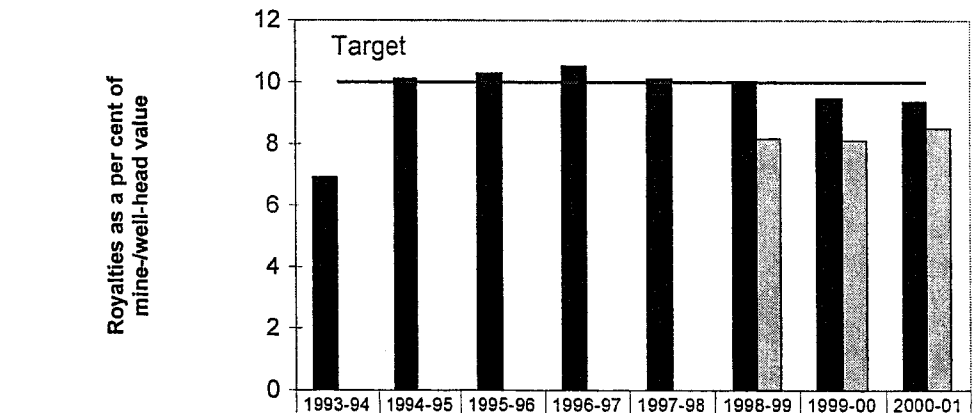
The effectiveness of the Department in achieving the Government target of 10 per cent of mine-head or well-head value when due is indicated by the:

- Average royalty rate as measured as a percentage of estimated mine-head or well-head value (4.1)
- Timeliness of royalty collection as measured by the percentage (by value) of royalties due and paid by the required date (4.2)

4.1 Average royalty rate

Determining a fair return to the community is a complex issue. Royalty rates under the *Mining Act* were derived by adopting a benchmark, set by Cabinet in 1981, of 10 per cent of the mine-head value. Royalty rates levied on petroleum projects are generally either 10 per cent or 12.5 per cent of well-head value. Mine-head and well-head values are defined as the value of the product at a specified point just after extraction from the ground, which on average depends to a large degree on prices and processing costs of the various commodities at various operations.

The average royalty rate calculated in years prior to 1998-99 did not include (excluded) gold royalty, as this was only introduced in July 1998.



	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
% of mine-/well-head value excluding gold	6.9	10.1	10.3	10.5	10.1	10	9.5	9.4
% of mine-/well-head value including gold	NA	NA	NA	NA	NA	8.2	8.1	8.5
Target	10	10	10	10	10	10	10	10

Figure KPI 4.1: Average royalty rate

OUTCOME 4: APPROPRIATE RETURNS TO THE COMMUNITY FOR THE EXPLOITATION OF ITS MINERAL AND PETROLEUM RESOURCES

4.2 Percentage of royalty due and paid by the required date

The percentage by value of royalties due and paid by the required date.

1998-1999: 96.4 per cent

1999-2000: 98.1 per cent

2000-2001: 97.5 per cent

Of 1 088 royalty returns, there were 53 late payments of royalties in 2000-01. The majority of these late payments were received within three days of the due date.

Efficiency Measure

	1998-99 $	1999-2000 $	2000-01 $
Output 10: A system to establish royalty rates and ensure appropriate royalties are paid when due			
Average annual cost per royalty payer of the royalty system The average annual cost per royalty payer of all royalty services; calculated as total cost of service, divided by the number of royalty payers. This includes the cost of royalty assessment (the verification and auditing of returns) and issues management (such as examining requests for variations to rates or setting arrangements for new projects). A project royalty payer is defined as: • A company or individual that remits royalty for a single project; or • Each participant of a project if separate royalty remittances are made for a single project; or • The number of people for which a single company or individual remits a royalty.	4 024	3 986	4 021
Average assessment cost per royalty payer The assessment of royalty returns comprises around 40 per cent of the total royalties work. The average annual cost of assessment services per royalty payer is calculated as the total cost of assessment services divided by the number of royalty payers.	1 621	1 629	1 646

OUTCOME 5:

A COMMUNITY CONFIDENT THAT IT IS SAFE FROM HAZARDS ASSOCIATED WITH THE STORAGE, HANDLING AND TRANSPORT OF DANGEROUS GOODS

Ouput		1999-2000 Expenditure ($ million)	2000-01 Expenditure ($ million)
11	A system for regulating the storage, handling and transport of dangerous goods	2.799	2.945
	Total	2.799	2.945

Chemicals, fuels, plastics, paints, pharmaceuticals and metals play a vital part in modern society by contributing to employment, the economy, and the high standard of lifestyle experienced by Western Australians. However, our community can only fully utilise these benefits if the production, transportation and use of these goods does not compromise community standards for health, safety and the environment.

The Department's role is to ensure industry, through regulatory controls and information services, takes full responsibility for health, safety and environmental outcomes in the management of dangerous goods. By doing so, the community can be confident it is safe from the hazards associated with the storage, manufacture, transport and use of dangerous goods.

The Division's work program is designed to achieve Outcome 5 and is focused on succeeding in the following two business priorities:

Priority 1 - To achieve high compliance levels by industry and the public with regard to dangerous goods safety legislation.

Priority 2 - To develop and implement new dangerous goods legislation.

OUTCOME5: A COMMUNITY THAT IT IS SAFE FROM HAZARDS ASSOCIATED WITH THE STORAGE, HANDLING AND TRANSPORT OF DANGEROUS GOODS

Output 11:

A system for regulating the storage, handling and transport of dangerous goods

Output description

To provide a legislative framework, information services and compliance assurance programs to regulate the transport, storage, manufacture, use and handling of dangerous goods in industries, as well as in public places in order to meet community standards for workplace and public safety and environmental management.

An important feature of dangerous goods safety management is that associated risks extend beyond the occupational environment to potentially impact on the general public. Dangerous goods are transported on public roads and manufactured, stored and processed close to residential areas, with goods often used by people unaware of the associated risks.

The regulation for the storage, handling, and transport of dangerous goods occurs through the compliance assurance program comprised of inspection, audit, and assessment procedures. The assessment program allows for the approval of new explosives, dangerous goods containers, tanks and safety procedures and the issuing of the following licences and permits:

Under the *Explosives and Dangerous Goods Act 1961*

- Licence to import explosives and permit to import explosives
- Licence to manufacture explosives
- Licence to manufacture blasting agents
- Licence to manufacture fireworks
- Licence to sell explosives
- Licence to store explosives
- Permit to purchase explosives
- Permit to display fireworks
- Shotfirer's permit for the following categories: blasting explosives, outdoor fireworks, indoor theatrical fireworks, Chinese fire-crackers, model rockets and miscellaneous purposes
- Licence to store dangerous goods

Under the *Dangerous Goods (Transport) Act 1998*

- Explosives driver licence
- Explosives vehicle licence
- Dangerous goods bulk driver licence
- Dangerous goods bulk vehicle licence

The Explosives and Dangerous Goods Division comprises 24 staff in four branches with three operational branches staffed by inspectors. These are:

- Policy and Explosives Branch
- Transport and Storage Branch
- Major Hazards Branch

The Client Services Branch issues licenses and permits, answers telephone inquiries and provides general administrative support to the Division.

Expenditure in 2000-2001: $2.945 million

Contact: Mr Malcolm Russell
Director
Explosives and Dangerous
Goods Division
Mineral House
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Corporate Group

Mineral Titles Division

Petroleum Division

Geological Survey Division

Mining Operations Division

Explosives and Dangerous Goods Division

PROGRESS TOWARDS A NEW DANGEROUS GOODS ACT

The development and implementation of a new national standard based *Dangerous Goods Act* and associated performance-based regulations is the cornerstone to the Division's strategic plan for the next five years.

After extensive consultations, all stakeholders, including private industry, local government, community groups and other Government agencies, reached agreement on the intent and form of the Bill, with Cabinet giving approval on 31 July 2000 to draft a Dangerous Goods Bill.

The Bill will provide the regulation-making powers necessary to adopt national standards for the *Control of Major Hazard Facilities*, and *Storage and Handling of Workplace Dangerous Goods*, as well as reform outdated explosives safety requirements and in particular, the out-of-date fireworks regulations.

The proposed reforms contained in the Bill are intended to introduce new safety standards for the manufacture, processing, disposal, storage and use of dangerous goods where standards do not exist or are grossly inadequate. Reforms will also introduce a modern approach to risk management that shifts responsibility for dangerous goods management from Government to industry. These two reforms are intended to achieve a higher level of public, workplace and environmental safety in a more cost-effective way.

The new Act also intends to merge the provisions of the outdated *Explosives and Dangerous Goods Act 1961* with the *Dangerous Goods (Transport) Act 1998* to create a single consolidated *Dangerous Goods Act*.

Since July 2000, there has been little progress in implementing the Bill, as the previous Government was unable to give it the necessary drafting priority. In June 2001, the Department was awaiting approval to draft the Bill by the new Labor Government.

Amendments to the transportation of explosives regulations

Following extensive consultations with other Government agencies and industry, a number of amendments to the *Dangerous Goods (Transport)(Explosives by Road and Rail Regulations) 1999* became law on 18 August 2000. The amendments resulted in:

- Adoption of the second edition of the *Australian Explosives Code*

- Relaxation of licensing requirements for the transport industry to carry small quantities of low-hazard explosives

- Exclusion of explosives from the Graham Farmer Tunnel

Adoption of the Australian Explosives Code

In March 2000, the Commonwealth Government published the second edition of the *Australian Explosives Code.*

The Code provides a uniform basis for Commonwealth, State and Territory legislation for the transport of explosives. The second edition of the code is being adopted by all Australian jurisdictions.

Driver exemption for the transport of a small quantity of explosives

The fireworks industry has made the Department aware of the difficulty in transporting fireworks in Western Australia for legitimate purposes. To address this issue, drivers employed specifically by the transport industry to carry small quantities of low-hazard explosives were exempted by the Department from the normal licensing and authorisation requirements for the transport of dangerous goods. This action will not diminish public safety and is in accordance with national practice.

Explosives banned from Graham Farmer Tunnel

During 1999-2000, a regulatory amendment was proposed to exclude vehicles carrying dangerous goods loads, except small quantities of explosives, from the Graham Farmer Tunnel. This amendment came into effect on 18 August 2000 and removes the previous legal uncertainty about this requirement.

Progress in the development of new dangerous goods port regulations

The Department has undertaken extensive consultation concerning the development of new regulations for the transport, handling and transient storage of dangerous cargoes within Western Australia.

Current regulations governing the management of dangerous goods at Western Australian ports are outdated and vary from port to port. The adoption of the new port regulations, based on Australian Standard *3846-1998, Handling and Transport of Dangerous Cargoes in Port Areas,* will give Western Australia a set of modern, nationally agreed standards.

However, a changeover to the national standard would have resulted in a set of prescriptive regulations not covering all the hazards associated with dangerous goods. Changes in technologies and management practices have also made it necessary for berth operators to be extra vigilant with the management of dangerous goods. Therefore, to ensure the maintenance of a higher level of safety, the Department complemented the prescriptive requirements with additional performance-based regulations that have a risk-management approach to the handling of dangerous goods.

Once corrections are made to the fifth draft, in accordance with public comment and intensive industry consultations, the new *Dangerous Goods (Transport and Dangerous Goods in Ports) Regulations 2001* are expected to be proclaimed in late 2001.

Major Hazard Facilities

As part of the Division's strategic five-year plan, and resulting from the Longford Royal Commission into the Esso Longford gas-plant explosion, the Department has begun taking measures to adopt the national

standard for *Control of Major Hazard Facilities*. Major Hazard Facilities (MHFs) are premises containing large quantities of dangerous goods for the purpose of storage or manufacturing.

In Western Australia, the national standard is already being applied under the administrative direction of the Chief Inspector. The next step is the formal adoption of the national standard into the regulations by the Department.

Western Australia has 24 facilities classified by the national standard as MHFs.

To ensure consistent implementation of the national standard, the Department will continue to work cooperatively with other states and territories.

A key obligation for each MHF is the development of a safety report, which outlines the operator's commitment to the Department for the continued safe operation of the facility. All classified MHFs in Western Australia have finalised, or are finalising safety reports. By the end of the reported period, the Department had eight completed MHF safety reports. All MHF safety reports are expected to be completed by early 2002.

The Department has four staff in its Major Hazards Branch who monitor safety at MHFs and meet regularly with MHF operators. At these meetings, staff ensure the facilities are maintained and safely operated.

Fire at Bellevue Waste Solvent Recycling Facility

On the night of 15 February 2001, a fire broke out at a liquid waste, solvent recycling facility in Bellevue operated by Waste Control Pty Ltd. The fire resulted in a high-level emergency response from the Fire and Emergency Services Authority, the Police Service, Health Department, Department of Environmental Protection and the Department.

The incident was the most significant fire involving dangerous goods in the history of Western Australia, with about half a million litres of mainly flammable and some toxic liquids, most notably perchlorethylene (a dry-cleaning solvent), consumed in the fire.

Several 200-litre drums exploded during the fire, with some of the drums thrown into the air and landing up to 150 metres away from the facility. A number of scrub fires resulted from the exploding drums and were brought under control by volunteer fire officers.

Approximately 50 people were evacuated from nearby homes with the incident resulting in significant community outrage and media attention. In particular, the community questioned the toxic effects of the combustion products and why the facility was located close to a residential area. As a result, Government authorities were heavily criticised at a public meeting organised by Bellevue residents and action groups. Their concerns resulted in the Government announcing a Parliamentary Inquiry into the fire.

Prior to the fire, previous inspections by Departmental officers found a number of deficiencies in the operation of the facility. The manager of the facility was aware of these non-compliances, but repeatedly failed to upgrade facilities to meet required standards.

Throughout 2000, the Department made a concerted effort to prosecute the company for non-compliance with the *Explosives and Dangerous Goods Act 1961*. In December 2000, successful prosecution action was instigated with the issuing of a summons to Waste Control Pty Ltd for 10 breaches of the *Explosives and Dangerous Goods (Dangerous Goods Handling and Storage) Regulations 1992*. The charges included insufficient bunding for the containment of potential spills, failure to adequately segregate incompatible dangerous goods, and not having an appropriate emergency response plan.

On 19 April 2001, the Midland Court of Petty Sessions convicted the operator on all ten complaints and fined the company $20 000 in respect of each charge, a total of $200 000.

The incident has prompted the Department to review its inspection procedures, enforcement policies, and legislation, as well as assist the Parliamentary Inquiry into the fire.

Quality management of the administration

One of the Department's important strategies to gain high industry compliance with dangerous goods legislation is the development of a Quality Management System (QMS) for the administration of dangerous goods legislation.

The Department's dangerous goods and explosives administration is involved in issuing a variety of permits and licences.

The Department is aware that the issue of licences and permits needs to be improved to ensure clients receive fair, consistent and efficient service that will enhance the safety of their operations. The Office of the Auditor General identified non-compliances in the administration of the outdated *Explosives and Dangerous Goods Act 1961* and associated regulations related to the issue of licences and permits for the use of explosives. A high priority has been placed on achieving full compliance.

Each licence and permit issued to control the safety and security of explosives has been reviewed and reformed. This has involved the need to develop and issue:

- Ministerial and Chief Inspector exemptions from legislation to remove outdated requirements that have no safety benefit and impede the efficient operation of industry
- New procedures for clerical staff and inspectors
- New application forms for permits and licences
- New licences and permits
- Letters to all affected licence and permit holders to communicate the changes
- Changes to the computerised licence database, Internet information and guidance notes.

Most notable was the Ministerial exemption gazetted on 22 December 2000 which absolved all authorised explosives arriving from another State or Territory in Australia from a licence to import. Furthermore, a large number of low hazard unauthorised explosives are also exempted from a permit to import.

In May 2001, the Department provided the Auditor General with a report entitled *Remedial actions taken in the administration of the Explosives and Dangerous Goods Act 1961.*

While these actions address all non-compliances, there is also an ongoing program to establish all divisional procedures as part of a QMS. This is regarded as an essential initiative and will identify opportunities to further streamline administrative procedures.

Optimum streamlining of administrative procedures is also dependent on the introduction of the new explosives and dangerous goods legislation.

On road enforcement

The on-road enforcement project aimed at increasing transport industry compliance with the *Dangerous Goods (Transport) (Road and Rail) Regulations 1999* has been operating since 1999. As part of this joint project, officers from the Department of Transport were trained and authorised by the Department to carry out road-side compliance inspections on dangerous goods vehicles.

During 2000-01, 34 infringement notices and four prosecutions were initiated when officers detected serious non-compliances.

It is encouraging to note that inspections for 2000-01 indicate an improvement in compliance compared to the previous year. The project will be reviewed during 2001.

OUTCOME 5: A COMMUNITY CONFIDENT THAT IT IS SAFE FROM HAZARDS ASSOCIATED WITH THE STORAGE, HANDLING AND TRANSPORT OF DANGEROUS GOODS

OUTPUT

11. A system for regulating the storage, handling and transport of dangerous goods

EFFECTIVENESS

This Output aims to improve community confidence in public safety with respect to dangerous goods. The Department of Minerals and Energy has responsibility under *the Explosives and Dangerous Goods Act 1961* and the *Dangerous Goods (Transport) Act 1998*, for public safety in the handling of dangerous goods during storage and transport.

The traditional regulatory and policy approach of the Department's administration is gradually being phased towards a system that places more responsibility on those operating within the dangerous goods industry and is aimed at improving community confidence in public safety with respect to dangerous goods in Western Australia.

The Department has surveyed community confidence levels four times over the past six years and the results are showing a slight upward trend. Last year, the same survey was run in Victoria to put the State's performance into a national context. The community confidence level in Victoria was 61 per cent compared to Western Australia's 65 per cent, and at least one other state has indicated an intention to follow Western Australia's lead in this matter.

The next Western Australian community survey will be conducted in 2002 and for information, the results from the last four surveys are reproduced below.

Percentage of population confident of dangerous goods management

June 1996	June 1997	June 1998	June 2000
59%	63%	61%	65%

Last year, the Department continued its strategy of working on the identified drivers of community confidence: knowledge of the rules and regulations, and ensuring that the regulations are followed. One of the actions implemented this year increased the resources allocated to suburban inspectoral work.

The effectiveness of the Department's dangerous goods regulatory Output is indicated by the:

- Degree to which the regulations are being followed as measured by the level of compliance with the standards of the Explosives and Dangerous Goods (Dangerous Goods Handling and Storage) Regulations 1992 and the Dangerous Goods (Transport) (Road and Rail) Regulations 1999 (5.1)
- Level of safety in dangerous goods storage and transport activities, as displayed by the accident record (5.2)

OUTCOME 5: A COMMUNITY CONFIDENT THAT IT IS SAFE FROM HAZARDS ASSOCIATED WITH THE STORAGE, HANDLING AND TRANSPORT OF DANGEROUS GOODS

5.1 Compliance with safety standards

5.1.1 Compliance with safety standards in the transport of dangerous goods

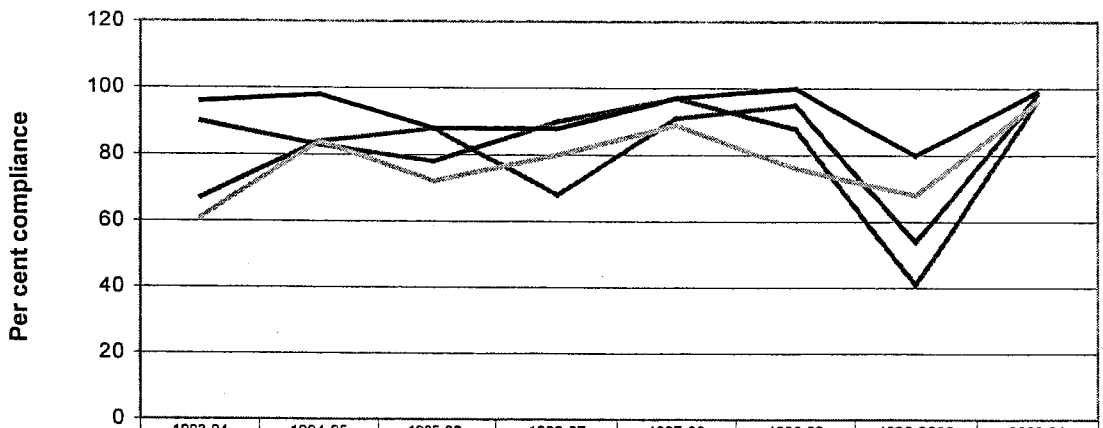
This year, the data used to measure the compliance levels comes from on-road enforcement conducted by authorised officers of the Department of Transport on behalf of this Department. Compared to previous years, a larger number of both package and bulk vehicles were measured.

In 1999-2000, the compliance levels appeared to drop significantly because the method of data analysis was modified to eliminate bias associated with:

- Inspection of bulk dangerous goods vehicles only, which display higher compliance levels than packaged dangerous goods vehicles
- Inclusion within the sample of licensing inspections of new dangerous goods vehicles (which are not good indicators of on-road compliance)
- Use of inappropriate vehicle types within the sample (e.g. prime movers used to provide compliance figures on load restraint, and trailers used to provide compliance figures on documentation).

This year, the method of collection and analysis of data also minimised any bias associated with the above points because the data was based on the vehicle as it was found during the transport operation, whereby each trailer and the prime mover as part of a vehicle combination is considered as one vehicle. All requirements for that transport operation to occur is considered collectively, without the bias associated with inspecting and recording each trailer and part of the vehicle separately.

Consequently, the data for 2000-01 is a more representative sample of the transport industry than in previous years and it is encouraging to see an improvement on the previous year's results.



	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01
Documentation	90	83	78	90	97	88	41	96
Safety equipment	67	84	88	68	91	95	54	98
Emergency equipment	61	84	72	80	89	76	68	96
Vehicle load	96	98	88	88	97	100	80	99

Figure KPI 5.1.1 Compliance with standards for transport of dangerous goods

Note: The data has not been sourced from an interrogation of the DEXIS licensing database as was conducted prior to 1999-2000. The sample is of transport inspections conducted on-road during the 2000-01 financial year.

OUTCOME 5: A COMMUNITY CONFIDENT THAT IT IS SAFE FROM HAZARDS ASSOCIATED WITH THE STORAGE, HANDLING AND TRANSPORT OF DANGEROUS GOODS

Data relates to non-compliances detected during inspections and it should be noted that if two elements of non-compliance are detected within the same compliance measure category (e.g. emergency equipment), only one non-compliance for that category is registered for overall compliance percentages.

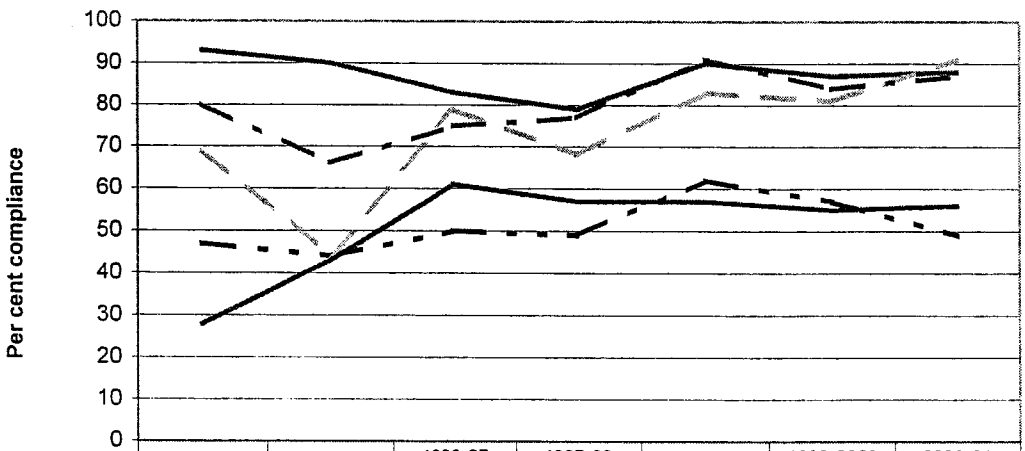
5.1.2 Compliance with safety standards in the storage of dangerous goods

The level of compliance with regulations observed at premises where dangerous goods are stored and handled indicates a positive trend for increased safety.

In general, the compliance levels observed at premises has slightly increased. It should be noted that this year, as was the case for the 1999-2000 financial year, focused inspections were mainly on high-risk sites, such as warehouses, previously identified poor compliance sites, sites storing poisonous gases, agricultural storage sites and other sites that had not been previously inspected.

When comparing the 2000-01 results with similar samples with high-risk bias (e.g. 1999-2000, 1997-98 and 1996-97), it can be seen that compliance levels have initially risen and then in more recent years have been maintained at a relatively high level. There will be a continued focus on those sites that pose the highest risk to community safety.

Figure KPI 5.1.2 Compliance with standards for storage of dangerous goods



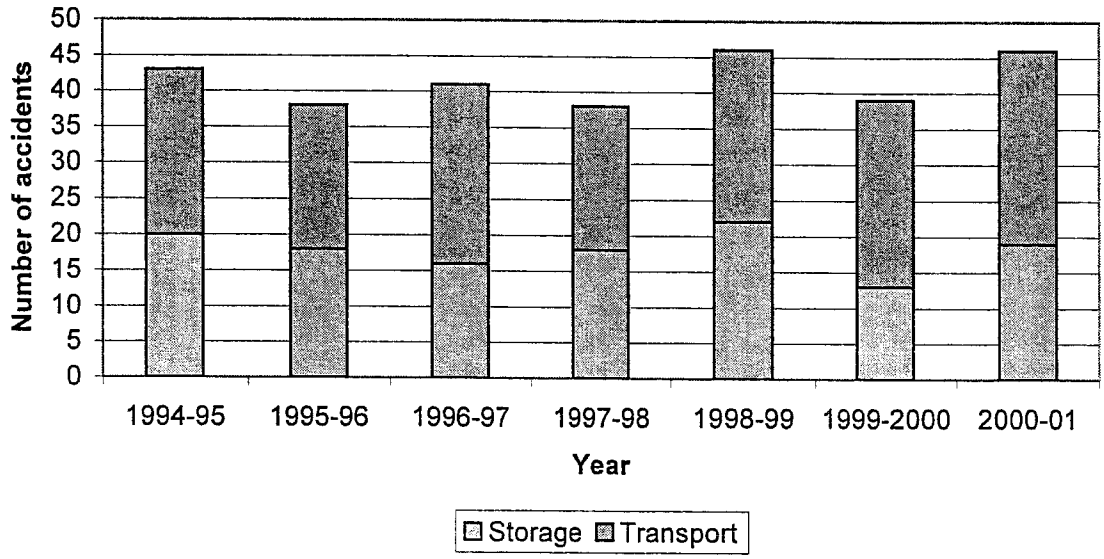
	1993-94 general	1995-96 general	1996-97 (high-risk) bias	1997-98 (high-risk) bias	1998-99 general	1999-2000 (high-risk) bias	2000-01 (high-risk) bias
Placarding of premises	47	44	50	49	62	57	49
Location of stores	93	90	83	79	90	87	88
Secondary containment	69	44	79	68	83	81	91
Fire protection	80	66	75	77	91	84	87
Emergency plans	28	43	61	57	57	55	56

Note: Data has been sourced from an interrogation of the DEXIS licensing database, and in particular, inspections of 389 storage sites conducted in the 2000-01 financial year.
Data relates to non-compliances detected during inspections and it should be noted that if two elements of non-compliance relating to the same measure of safety are detected at a particular storage site (e.g. fire protection), only one non-compliance for that category is registered for overall compliance percentages.

OUTCOME 5: A COMMUNITY CONFIDENT THAT IT IS SAFE FROM HAZARDS ASSOCIATED WITH THE STORAGE, HANDLING AND TRANSPORT OF DANGEROUS GOODS

5.2 Safety record

The safety record is illustrated by the number of accidents reported to the Department during the year for the storage, handling or transport of dangerous goods.



The total number of accident numbers over the past seven years have varied between 38 and 46 per financial year, with the total number of storage accidents ranging from 13 to 22, and transport accidents ranging from 20 to 27. The collection and analysis of accident data to determine the causal factors and aid the development of appropriate, preventative strategies to minimise recurrences will continue as a high priority.

Efficiency Measure

	1998-99 $	1999-2000 $	2000-01 $
Output 11: A system for regulating the storage, handling and transport of dangerous goods			
Average cost per storage site of administering the Explosives and Dangerous Goods Act 1961 The average annual cost per storage site subject to dangerous goods regulations is calculated as the total cost for dangerous goods site regulation divided by the number of sites at the end of the year.	264	285	297

CORPORATE GOVERNANCE AND COMPLIANCE STATEMENTS

Understanding the needs of both customers and staff has been of primary concern to the Department. The aim has always been to create and maintain a healthy environment for individuals within the Department, the State's resource industry and the wider community of Western Australia.

The Department's vision is to achieve economic benefits for all Western Australians through the discovery and development of the State's mineral and petroleum resources while meeting the community's standards for safety, health and environmental management.

The Department strives to maintain and continually improve standards of corporate behaviour within the industry and to ensure Departmental staff act in the best interests of all stakeholders. In order to achieve these goals, the Department is continually working to improve its legislative framework, information systems and administrative processes.

LEGISLATION

During 2000-01, the Department of Minerals and Energy was responsible to the Minister of Mines for the administration of 18 Acts of Parliament:

The main Acts are:

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

The remaining Acts are:

- *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*
- *Coal Mines Legislation Amendment and Revival Act 1998*
- *Dangerous Goods (Transport) Act 1998*
- *Miners' Phthisis Act 1922*
- *Mining on Private Property Act 1898*
- *Mining (Validation and Amendment) Act 1986*
- *Petroleum Pipelines Act 1969*
- *Petroleum Safety Act 1999*
- *Petroleum (Registration Fees) Act 1967*
- *Petroleum (Submerged Lands) Act 1982*
- *Petroleum (Submerged Lands) Registration Fees Act 1982*

The following Commonwealth legislation is administered by the Department through the Commonwealth-Western Australian Offshore Petroleum-Minerals Joint Authorities:

- *Petroleum (Submerged Lands) Act 1967*
- *Petroleum (Submerged Lands) (Registration Fees) Act 1967*

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

In addition, the Department undertakes a number of functions under various State Agreement Acts for major projects. Amendments to the relevant Acts and regulations proclaimed during the year, as well as legislation currently before or ready for introduction to Parliament, are listed in Appendix 1.

ORGANISATIONAL STRUCTURE

The Department of Minerals and Energy is organised into six Divisions covering:

- Mineral Titles
- Mining Operations
- Geological Survey
- Explosives and Dangerous Goods
- Petroleum
- Corporate Group, which includes:
    - Policy Development and Coordination
    - Mineral and Petroleum Royalties
    - Land Access
    - Planning and Review
    - Finance and Administration Services
    - Information Services
    - Web Services
    - Employee Relations and Services
    - Facility Services
    - Corporate Communications and Marketing
    - Occupational Safety and Health Coordinator

CORPORATE PLANNING

During 2000-01, the Department held its annual corporate retreat to review the five-year operational strategy. However, the election of the new Labor Government in February 2001 put many of the Department's short-term plans on hold.

Instead, during the first six months of 2001, much of the corporate executive's energy was expended in determining how the Department of Resource Development and the Chemistry Centre of Western Australia (CCWA) would be merged with the Department of Minerals and Energy to create the new Department of Mineral and Petroleum Resources, from 1 July 2001.

Again, the Department achieved a five per cent productivity milestone and is reviewing the future of the productivity model to meet Government policy and management reporting systems requirements.

EXTERNAL CUSTOMER LIAISON

Customer liaison committees

The Department coordinates, and is represented on, a number of interagency and industry committees on safety, environmental management and infrastructure planning. Some of the key committees the Department was involved in during 2000-01 were:

Australian Resources Research Centre (ARRC) Advisory Committee

CEO's Greenhouse Committee

Coordination Committee on Science and Technology

CSIRO Mineral Exploration and Mining Sector Advisory Committee

Environment and Natural Resources Management Committee (WA Planning Commission)

Galena Management Plan Steering Committee

Industry Safety and Environment Conference Organising Committee

Infrastructure Coordinating Committee (WA Planning Commission)

Marine Science Working Group

Minerals and Environment Liaison Committee

Mines Occupational Safety and Health Advisory Board (MOSHAB)

Mining Act 1978 Royalties Steering Committee

Mining Industry Liaison Committee

Petroleum (Submerged Lands) Act 1982 Working Group

Strategic Research Fund for the Marine Environment (Joint Venture Management and Advisory Committees)

Western Australian Land Information System (WALIS) Council and Executive Policy Committee

Western Australian Greenhouse Council and Technical Panels

ECONOMIC POLICY

The major focus of policy work in 2000-01 was in the area of mineral royalties, including major contributions to the work of an inter-departmental working group examining anomalies in the royalty system.

Work continued in response to the State's National Competition Policy obligations, including finalisation and approval of the *Mining Act 1978* and progression of the *Petroleum Pipelines Act 1969* to comply with the policy guidelines.

The Department also gave consideration to international treaties and Commonwealth Foreign Investment Review Board proposals, and made submissions to regional Cabinet meetings and meetings between the Government and the Chamber of Minerals and Energy.

INFORMATION AND PROMOTION

Key functions of the Department are to:

- Provide geological information to the mineral and petroleum industries
- Promote the activities of the industry, including its improved safety and environmental management

Publications and other information

Two editions of the Department's flagship publication on the State's mining industry *Statistics Digest,* were released and the resources section of the Digest was published in a downloadable format on the web at www.dme.wa.gov.au. The Digest contains official figures on output, employment and exports from the State's mining and petroleum industry, and also an in-depth analysis of these in an international and national context.

During the year, the Department's Geological Survey Division continued to enhance understanding of Western Australia's mineral and petroleum potential through the provision of pre-competitive geoscience information and data to its customers – both exploration companies and potential investors.

The Department also produced 33 maps at various scales, 38 manuscripts and 18 digital datasets. These included geological, geochemical, geophysical, geochronological, mineral occurrence, and petroleum potential data. The number of digital datasets released is increasing each year in response to technological advances, and a number of datasets were published in 2000-01 in hardcopy and digital formats, either on CD-ROM or on the Department's website.

Major advances were made in the availability and use of the Department's data, particularly in relation to on-line capability. For more information on these activities and other data acquired during the year, please see Output 3 and 4 of this report.

Corporate communications and marketing

During the year, the Corporate Communications and Marketing Branch generated external and internal stakeholder communication products which increased understanding of the Department's role in developing and regulating Western Australia's minerals, petroleum and dangerous goods industries.

Particular emphasis in communications was placed on the contribution made by the mining and petroleum industries in meeting the community's economic, social and environmental needs.

Corporate Communications supported many of the initiatives undertaken by the Department, in addition to carrying out core activities such as media liaison, Ministerial speech writing, communications issues management, developing and promoting the corporate identity, internal communications, and producing a large number of Departmental publications and products.

In particular:

- Over 500 media requests for information received prompt attention (average of two inquiries each working day)
- Comprehensive writing and editorial services were provided, including 125 media releases distributed throughout Western Australia (average of one media release every two working days)
- The Minister for Mines/State Development was provided with 37 speeches promoting the mining and petroleum industries (average of one speech every seven working days)
- Media publications were monitored daily for issues relating to the Department and industry.
- Advice on communications and media relations was provided to the Department and the Office of the Minister
- Internal and external communications strategies were developed and implemented
- Customer service training was provided to all staff
- A full in-house publishing service for internal and external publications was provided, producing a wide range of reports, booklets, pamphlets, posters and other collateral
- A comprehensive corporate database of stakeholder contacts was maintained

- Major events were organised, including the annual Golden Gecko Awards for Environmental Excellence in the Mining and Petroleum Industries; and the launch in Margaret River by the then Minister for Mines of the first of a series of landuse maps

- As well as providing briefings to current journalists throughout the year, new journalists were provided with factual information on the industry during the annual cadet journalist visit to the Department

- The Department's 2000 Annual Report received a bronze award in the WS Lonnie Awards for Excellence in Annual Reporting. The awards promote excellence in accountability and encourage clear and concise communication to both Parliament and the community.

Golden Gecko Awards

The annual Golden Gecko Awards for Environmental Excellence are a key event on the Department's promotional calendar. The Awards acknowledge efforts by the industry to improve environmental management beyond basic compliance with regulations. A Golden Gecko Award is the highest State-based environmental accolade achievable in the Western Australian mining and petroleum industries.

Advertising and promotions

During 2000-01, the Department spent $323 617 on advertising and market research, dispersed as follows, in compliance with Section 175ZE of the *Electoral Act* 1907:

Advertising agencies	$
Morgan and Banks Ltd	6 934
Marketforce Productions	204 308
ANZ Cards	24 876
Deloitte Touche Tohmatsu	12 750
Media Decisions WA	8 783
Goldfields Mining Expo	300
Discus	3 068
Petromarketing (Aust) Pty Ltd	5 000
The Digital Document Co (WA) Pty Ltd	2 465
Australian Institute of Geoscientists WA Branch	950
Australian Geological Survey Organisation	19 199
Novotel Langley Perth	1 839

Advans Exhibition Services		740
Corporate Theatre Productions Pty Ltd		3 265
Exhibit Exhibitions and Publishing Ltd		3 000
Designer CD Pty Ltd		8 260
Diggers and Dealers Mining Forum		259
Promaco Conventions Pty Ltd		210
King's Park Function Centre		8 936
Toucan Display Systems		400
Australia's Mining Monthly		1 629
Geological Society of Australia, Inc.		1 035
Ausdoc on Demand Pty Ltd		1 782
The Kimberley Echo		151
The Plastic Sandwich Company		3 471
	Total	323 617

Market research organisations	*Nil*
Polling organisations	*Nil*
Direct mail organisations	*Nil*

RISK MANAGEMENT

Ongoing work aimed at achieving optimum levels of risk controls and effective business continuity plans by Divisional and Corporate risk-management teams has been monitored by the Department's Internal Audit Branch. Results of this audit monitoring work will form the basis of a more detailed audit approach in 2001-02.

Future audit testing will examine the adequacy of the adopted control measures and business continuity plans.

FINANCIAL MANAGEMENT

Activity throughout the year focused on preparation for implementation of the Internet version of the Financial Management Information System, along with the Internet-based procurement system introduced by the Department of Contract and Management Services known as the Government Electronic Market (GEM).

During the last quarter of the year, considerable effort went into preparing for the merger of the Department of Minerals and Energy, Department of Resources Development and Chemistry Centre of Western Australia into the new Department of Mineral and Petroleum Resources. This was done in a way that would enable the new agency to operate on the one financial system that has served the needs of the Department of Minerals and Energy in recent years.

With accrual budgeting and the capital user charge systems being introduced for all Government agencies from 2001-02, accrual-based reports have been provided throughout the 2000-01 year, along with training, so that staff within the Department's business units will be ready to manage budgets in the new environment.

A new system was introduced to automate the reporting of Departmental productivity improvements against each of the productivity milestones specified within the Enterprise Bargaining and Workplace Agreements under which staff of the Department are employed. The new system improved efficiency and enabled more rapid production of monthly reports.

The Department's Quality Assurance Certification to ISO 9002:1994 was renewed at the end of the financial year, following a successful audit by NATA Certification Services International.

Several procedures were enhanced to streamline revenue and expenditure processing, and some fine tuning of systems and procedures undertaken to ensure the Department's compliance with all of its taxation requirements relating to fringe benefit tax (FBT) and GST. Monthly Business Activity Statements relating to GST are lodged electronically with the Australian Taxation Office.

INFORMATION SYSTEMS AND SERVICES

An extensive information review during 2000 led to a pilot project to improve management of the Department's electronic and paper documents. Introduction of the latest generation electronic document management software will also replace the existing manual records system. Quality documentation for all areas within Information and Records Services is now in place and has been acclaimed by external organisations such as the State Records Office and Curtin University of Technology.

State legislation aimed at establishing parity between paper-based and electronic transactions – closely modelled on the *Commonwealth Electronic Transactions Act 1999* – was anticipated but did not eventuate. Nonetheless, the Department's business units have revised their information technology plans to include increased use of technology in anticipation of greater customer demand for electronic access for information inquiries and business purposes. Other legislation expected to significantly affect the Department's activities is the *State Records Act 2000*, currently awaiting proclamation. This Act seeks to introduce improved standards for Government record keeping. With initiatives such as the quality records procedures and documentation already developed, the Department is well placed to meet the challenges this proposed legislation presents.

FREEDOM OF INFORMATION

During 2000-01, the Department was able to satisfy all requirements for information requests.

For details of the Department's Freedom of Information process or an Information Statement, please contact the Department's Freedom of Information Officer on 9222 3554, or by writing to the Department, at Mineral House, 100 Plain Street, East Perth 6004.

INTERNAL AUDIT

The Department's Internal Audit program for 2000-01 again focused on higher risk categories, including royalty collection and various information technology control issues identified through ongoing risk-management processes.

Also during the year, a new internal audit analysing the effectiveness of legislative administration was introduced with an examination of the administration of safety legislation in the Mining Operations and Petroleum divisions. Lower risk compliance audit work was again contracted out to private accounting firms.

HUMAN RESOURCES MANAGEMENT

Statement of compliance with Public Sector Standards

In the administration of the Department of Minerals and Energy, I have complied with the Public Sector Standards in Human Resource Management and the Western Australian Public Sector Code of Ethics.

I have:

- Maintained a self-assessment program through the Department's internal auditor
- Continued to review policies and guidelines that have been made available to staff in both hard copy and electronic form
- Developed checks and controls for the Standards, in particular the Recruitment, Selection and Appointment Standard

Applications made for breach of Standards review and the corresponding outcomes for the period are:

Number lodged	4	Applications under review	0
Breaches found	2	Multiple breaches	0
Material breaches	2		

L C Ranford
DIRECTOR GENERAL

Staffing

The Department had an annual average staffing level of 602 at the end of 2000-01, of whom 125 (20.8 per cent) were on fixed-term contracts. Staff on fixed-term contracts were employed to undertake tasks of a limited duration on the basis of either finite levels of funding, or for specific projects. Appropriate action took place in the latter part of 2000-01 to convert eligible contract staff to permanent status in accordance with relevant Government policy.

Turnover for permanent staff for the year to date has been 8.4 per cent and 25.7 per cent for contract staff (5.4 per cent and 22.5 per cent respectively in 1999-2000).

Work and family issues

The Department continues to offer conditions of employment that allow staff to balance work and family life. Part-time and home-based work have been utilised by a number of employees, and the carer's room has permitted staff to carry out their duties at Mineral House while looking after a family member.

Equal opportunity

The Department commenced a comprehensive review of the effectiveness of its EEO/Diversity Management Plan during 2000-01. A revised plan has been drafted and is being considered further in line with the Government's reform agenda.

Equal Employment Opportunity awareness training was undertaken throughout the Department during the year, with recruitment and selection processes, reflecting an equity approach, reviewed regularly.

The Grievance Management and Contact Officer System allows employees to raise items of a sensitive nature and ensures these issues are handled carefully to a satisfactory conclusion for employees. The EEO and Diversity Steering Committee monitored the implementation and progress of this system.

Occupational Safety and Health

During 2000-01, the Corporate Occupational Safety and Health Branch was formed as a sub-unit of Corporate Policy and Planning Services. Its function is to promote safe working practices within the Department and address workers' compensation and rehabilitation claims and issues.

Highlights for the year include:

- Staff perception survey on how safe is the working environments
- Introduction of module training for occupational safety and health awareness
- Promotion of Worksafe Week via a 'spot the hazard' competition, information sessions on ergonomics, injury management, systems safety and duty of care
- Development of an Intranet site to improve awareness of occupational safety and health activities within the Department.

- A Review of Hazard Management systems, policies and procedures
- Ergonomic assessments of office workstations

Workers' Compensation

The Department values the need for rehabilitation and injury management of any affected employees, as well as the need for early intervention so that both staff and the Department benefit from the program.

For 2000-01, the Department received fewer claims than the previous reporting year with the registering of seven new claims. However, the cost of claims increased slightly to $0.46 per $100 wage-roll with the premium at 0.54 per cent.

Employee development

Improvements continue to be made to the Performance Enhancement Program (PEP), including the establishment of a process that allows any employee who is aggrieved in relation to their formal assessment rating, to have a panel review their claim. A major review of PEP and the associated bonus payment was undertaken during the year.

The Principles of Management training program continued successfully and further workshops on Covey's *Seven Habits of Highly Effective People* program were held with a view to enhancing the personal effectiveness of Departmental managers.

Staff consultation

The Staff Consultative and Improvement Committee (SCIC) represents staff in discussions with the Directorate on Departmental issues affecting employees. Group representatives come from a cross-section of staff levels, elected from the operating Divisions and regional areas. To provide direct input on concerns of the committee, the chairperson attends Corporate Management meetings.

SCIC provides a forum for staff to be involved in and influence decisions affecting their work. The resulting outcomes benefit both management and staff by improving staff-management consultation and communication, by increasing productivity, and improving customer service.

Issues raised by SCIC during 2000-01 include:

- Coordination of staff suggestions for WPA 2000
- Fringe Benefit Tax on vehicles (regional issues)
- Staff recruitment, selection and appointment standards
- Review of the Performance Enhancement Program

- Travel allowance policy
- Staff survey on "Are we living up to our Corporate Statement"
- Improving the exit interview process to provide management with staff feedback
- Review of the EEO and Diversity Management Plan
- Improving the workplace culture with a diverse range of lunchtime speakers

Along with other staff representative groups, SCIC will continue to perform an important role in the new, amalgamated Department of Mineral and Petroleum Resources (MPR). SCIC will also continue to assist management in the vital areas of staff communication and developing a healthy culture of equal opportunity and diversity.

FACILITIES SERVICES

The Facility Services Branch provides building and facilities-related services to the staff of the Department of Minerals and Energy.

During the year, the Building Service Request System continued to operate successfully and is now accessible from the Department's Intranet site.

The Branch has increased its customer service focus, with all staff attending customer service training. Customer surveys were also distributed during the year to provided quantitative feedback for measuring customer service performance.

Key staff have also completed training in risk management, energy management, and other facilities services activities.

To further protect customers and staff, a security upgrade was undertaken in key parts of the building.

Disability services

In accordance with its Disability Services Plan, the Department has continued to customise its services and facilitate access by people with disabilities. The plan takes into account the requirements of disabled persons with respect to existing facilities and premises, as well as the need for refurbishment programs and new facility designs to accommodate these requirements.

The program to widen service ways and passageways within the Mineral House to facilitate access for disabled persons also continued throughout the year. Where specific requirements exist, for instance in leased premises or certain regional offices, customer service staff are to make special arrangements to conduct business with disabled customers.

The new Geological Survey Regional Headquarters and Drill Core Library in Kalgoorlie, which has level access and toilets for disabled persons incorporated into their design, commenced operations at the start of the year.

A review of the Department's Mineral House Evacuation Warning System led to a number of recommendations, including the installation of flashing lights to supplement audible emergency warning signals in the toilets. This recommendation was formally adopted in 2000-01.

Energy Management

A review of Mineral House's energy demands indicated potential energy cost savings through automatic control. Equipment installed to achieve this should be operational by the end of 2001.

An automatic voltage reducing transfer system, claiming to offer power savings on fluorescent lighting systems was tested at Mineral House. The system was found to offer no benefit above the savings achievable by selectively removing some fluorescent tubes. As a result, a tube-removal trial is currently underway.

Monitoring the Department's energy management performance through Western Power's 'One-to Five' program has led to further significant energy efficiency improvements during the year. Other energy management strategies and initiatives are being implemented, including energy management training for key personnel.

This section reports the results for performance measures cited in the 2000-01 Budget Papers.

OUTCOME 1: APPROPRIATE USE OF LAND AND RESOURCES

Output 1: A system for the grant and maintenance of titles to explore for and mine minerals.

	2000-01 Budget	2000-01 Actual	Reasons for significant variation
QUANTITY			
Title applications processed (Mining Act)	4 200	3 457	
Title monitoring and dealing services	44 318	27 295	
Customer information services (counter-based)	76 502	69 441	
QUALITY			
Customers satisfied with information services	90%	85%	
Titles issued in compliance with statutory procedures	100%	99.8%	
Compliance with reporting requirements	92%	83%	
TIMELINESS			
Average time taken (months) to determine each major title category			
- Prospecting Licences	–	17	Impact of *Native Title Act 1993* processes.
- Mining Leases	–	32	
- Exploration Licences	–	18	
Searches completed within 24 hours	90%	94.5%	
Titles processed in target time	75%	65%	
Monitoring and dealing services registered within 1 month	90%	73%	
COST			
Average cost per title processed	$2 198	$2 809	
Average cost per monitoring or dealing service	$133	$201	
Average cost per information service	$27	$41	

Output 2: A system for the grant and maintenance of titles to explore for and produce petroleum.

	2000-01 Budget	2000-01 Actual	Reasons for significant variation
QUANTITY			
Title applications processed	295	234	
Title maintenance application and monitoring services	1 545	1 708	
Operations application and monitoring services	124	146	
Resource assessment and information services	441	808	
QUALITY			
Customer satisfaction with title services	85%	Ranked equal 3rd in Australia	The Department was ranked equal third against other similar State and Commonwealth organisations for performance in regulation in an independent national survey.
TIMELINESS			
Customer satisfaction with timeliness of services	80%	Ranked equal 3rd in Australia	
COST			
Average cost per title application	$2 860	$3 462	
Average cost per title maintenance service	$564	$702	
Average cost per operational service	$1 503	$1 776	
Average cost per resource assessment and information unit	$820	$994	

Output 3: A geological framework of the State and its resources

	2000-01 Budget	2000-01 Actual	Reasons for significant variation
QUANTITY			
Weighted total published products (WTPP)	74.81	75.41	
QUALITY			
Rating (1-5) of product quality by Geological Survey Liaison Committee	4.0	3.9	
Ratio of geoscientific papers published compared to number submitted to international, peer-reviewed journals	70%	70%	
TIMELINESS			
Average time for production of 1:100 000 maps released during the year (target: <36 months)	30 months	28 months	
COST			
Average cost per weighted total published product	$198 169	$185 095	

Output 4: An archive of geoscientific and resource exploration data

	2000-01 Budget	2000-01 Actual	Reasons for significant variation
QUANTITY			
Weighted data transaction units (WDTU). Transactions include data receipt, accessioning, capture, storage and retrieval	55 000	87 300	
QUALITY			
Rating (1-5) of archive processes by the Exploration Data and Information Sub-Committee of the Geological Survey Liaison Committee	3.0	3.6	
TIMELINESS			
Open-file reports made available for viewing within 24 hours of request	100%	100%	
COST			
Average cost per WDTU	$45	$34	

Output 5: Discontinued

OUTCOME 2: SAFE AND HEALTHY MINERAL AND PETROLEUM INDUSTRY WORKFORCES

Output 6: A system for regulating and promoting health and safety in the mineral industry.

	2000-01 Budget	2000-01 Actual	Reasons for significant variation
QUANTITY			
Number of operating mines regulated (based on record book numbers)	630	714	
QUALITY			
Customers with formal safety roles, involvement in safety and health committees or managerial or supervisory responsibilities that are satisfied or very satisfied with services	NA	80%	Measured biannually
TIMELINESS			
Customers (defined as above) who rate timeliness of service delivery as good or very good	NA	97%	Measured biannually
COST			
Average cost per operating mine	$17 327	$16 475	

Output 7: A system for regulating and promoting health and safety in the petroleum industry

	2000-01 Budget	2000-01 Actual	Reasons for significant variation
QUANTITY			
Weighted units of audits and assessment	2 066	1 851	
QUALITY			
Customers satisfied with services	85%	Ranked equal 3rd in Australia	The Department was ranked equal third against other similar State and Commonwealth organisations for performance in regulation in an independent national survey.
TIMELINESS			
Customer satisfied with the timeliness of services	85%	Ranked equal 3rd in Australia	
COST			
Average cost per unit of audit and assessment	$1 095	$1 046	

OUTCOME 3: ACCPETABLE ENVIRONMENTAL STANDARDS FOR MINERAL AND PETROLEUM EXPLORATION, DEVELOPMENT, PRODUCTION AND PROJECT COMPLETION

Output 8: A system for regulating and promoting environmental management in the mineral industry.

	2000-01 Budget	2000-01 Actual	Reasons for significant variation
QUANTITY			
Mine sites regulated (based on record book numbers)	630	714	
New measure: Abandoned mine sites added to the inventory	5 250	24 264	The initial estimate of 12 000 sites has been revised upwards to 80 000 based on field inspections (*). An average of seven sub-sites per location has been found to exist.
QUALITY			
Customers satisfied or very satisfied with services	85%	–	Measured biannually
Per cent of abandoned identified mine sites for which preliminary risk rating has been determined	75%	75%	A methodology for determining aggregate risk rating for each site has been developed.
TIMELINESS			
Customers satisfied with timeliness of service delivery as good or very good	85%	–	Measured biannually
Percentage of abandoned mine sites (estimate) in primary risk areas identified in year	35%	35%	About 50% of all high-priority have been inspected after 2 years.
COST			
Average cost per mine site	$2 382	$2 064	
Average cost per abandoned mine site identified	$67	$14	

* Note: Following the first year's field inspection program, the initial estimate of 12 000 abandoned mine sites/locations was revised upwards to 80 000 based on the multiple number of actual sites found to exist at each location (average of seven). The project has focused on the high priority locations near populated areas. With current resources the project is expected to complete the inspection of high priority sites within 4 years.

Output 9: A system for regulating and promoting environmental management in the petroleum industry.

	2000-01 Budget	2000-01 Actual	Reasons for significant variation
QUANTITY			
Environmental Management Plans/Reports assessed	390	432	
Environmental Audits (person-audits)	32	22	
QUALITY			
Customers satisfied with environment services	85%	Ranked equal 3rd in Australia	The Department was ranked equal third against other similar State and Commonwealth organisations for performance in regulation in an independent national survey.
TIMELINESS			
Customers satisfied with the timeliness of DME services	85%	Ranked equal 3rd in Australia	
Percentage of DME assessments made within target time (15 working days)	97%	97%	
COST			
Average cost per environmental plan/report assessed	$1 096	$1 121	
Average cost per environmental audit	$2 401	$2 492	

OUTCOME 4: APPROPRIATE RETURNS TO THE COMMUNITY FOR THE EXPLOITATION OF ITS MINERAL AND PETROLEUM RESOURCES

Output 10: **A system to establish royalty rates and ensure that appropriate royalties are paid when due.**

	2000-01 Budget	2000-01 Actual	Reasons for significant variation
QUANTITY			
Issues resolved	130	177	
Royalty returns verified and audited - production value projects	710	879	
Royalty returns verified and audited - net value projects	235	209	
QUALITY			
Number of internal and external audit queries			
- Minor	0	0	
- Major	0	0	
TIMELINESS			
Percentage of audits completed within target plan	95%	79%	More time spent on issues resolved than originally estimated
COST			
Average cost per issue resolved	$2 305	$2 970	A review and redistribution of the percentage of time spent on each class of activity was undertaken during the year resulting in more accurate unit costs which may not compare directly with previous years
Average cost per royalty return - production value projects	$610	$407	
Average cost per royalty return - net value projects	$1 606	$1 277	

OUTCOME 5: A COMMUNITY CONFIDENT THAT IT IS SAFE FROM HAZARDS ASSOCIATED WITH THE STORAGE, HANDLING AND TRANSPORT OF DANGEROUS GOODS

Output 11 – A system for regulating the storage, handling and transport of dangerous goods

	2000-01 Budget	2000-01 Actual	Reasons for significant variation
QUANTITY			
Policy and information service units	6 030	4 413	
Call-centre services	57 500	62 802	
Safety system services, including audits and investigations	1 950	1 368	
Regulatory enforcement services, including inspections	1 200	967	
Licence renewals	12 600	11 566	
QUALITY			
Regulatory enforcement services satisfactorily completed	70%	70%	
Number of days per annum that renewals do not go out on time.	8	8	
Number of complaints regarding standard of advice	10	10	
Number of caller complaints....	40	40	
Safety system services satisfactorily completed	70%	70%	
TIMELINESS			
Percentage of regulatory enforcement service actions completed within 20 days	90%	90%	
Percentage of letters answered within 10 working days	90%	90%	
Average number of days to process routine (95%) licence renewals	3	3	
Average number of days to deliver majority (85%) of safety system services	15	15	
Proportion of calls answered within 4 rings	75%	75%	

Output 11 – A system for regulating the storage, handling and transport of dangerous goods

continued

	2000-01 Budget	2000-01 Actual	Reasons for significant variation
COST			
Average cost per policy and information service	$146	$212	A review of the internal weighting factors used for the various quantity items in this Output was undertaken in 2000. Therefore the new average cost values may not be directly comparable with previous budget estimates.
Average cost per call centre service	$14	$20	
Average cost per safety systems service	$327	$189	
Average cost per regulatory enforcement service	$111	$124	
Average cost per licence renewal	$11	$33	

AUDITOR GENERAL

To the Parliament of Western Australia

DEPARTMENT OF MINERALS AND ENERGY
FINANCIAL STATEMENTS FOR THE YEAR ENDED JUNE 30, 2001

Scope

I have audited the accounts and financial statements of the Department of Minerals and Energy for the year ended June 30, 2001 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 Accounting Standards, other mandatory professional reporting requirements and the Treasurer's Instructions so as to present a view which is consistent with my understanding of the Department's financial position, the results of its operations and its cash flows.

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 Statement of Financial Performance, Statement of Financial Position, Statement of Cash Flows, Output Schedule of Expenses and Revenues 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 financial position of the Department at June 30, 2001 and the results of its operations and its cash flows for the year then ended.

D D R PEARSON
AUDITOR GENERAL
October 11, 2001

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DEPARTMENT OF
MINERALS AND ENERGY
WESTERN AUSTRALIA

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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 2001 and the financial position as at 30 June 2001.

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

J Limerick
Accountable Officer

P Palmer FCPA
Principal Accounting Officer

15 August 2001

DEPARTMENT OF MINERALS and ENERGY

Statement of Financial Performance

for the year ended 30 June 2001

	Note	2000-2001 ($'000)	1999-2000 ($'000)
COST OF SERVICES			
Expenses from Ordinary Activities			
Employee expenses	4	37 312	35 963
Supplies and services	5	10 915	11 325
Depreciation	6	2 017	1 912
Administration expenses	7	4 317	3 710
Accommodation expenses	8	3 651	3 540
Grants and subsidies	9	56	42
Net loss on disposal of non-current assets	10	-	19
Total cost of services		58 268	56 511
Revenues from Ordinary Activities			
User charges and fees	11	9 249	7 912
Trading Profit	12	2 192	1 383
Net gain on disposal of non-current assets	13	24	-
Total revenues from ordinary activities		11 465	9 295
NET COST OF SERVICES		46 803	47 216
REVENUES FROM GOVERNMENT			
Appropriations	14	41 498	41 592
Resources received free of charge	15	755	679
Liabilities assumed by the Treasurer	16	2 567	3 233
Total revenues from Government		44 820	45 504
Change in Net Assets		(1 983)	(1 712)
Net increase in asset revaluation reserve		4 264	-
TOTAL CHANGE IN EQUITY OTHER THAN THOSE RESULTING FROM TRANSACTIONS WITH OWNERS AS OWNERS		2 281	(1 712)

The Statement of Financial Performance should be read in conjunction with the accompanying notes.

DEPARTMENT OF MINERALS and ENERGY
Statement of Financial Position
as at 30 June 2001

	Note	2000-2001 ($'000)	1999-2000 ($'000)
CURRENT ASSETS			
Cash assets	17	4 243	8 250
Inventories	18	3 529	2 863
Receivables	19	170	126
Prepayments	20	147	290
Total current assets		8 089	11 529
NON-CURRENT ASSETS			
Property, plant, equipment and vehicles	21	40 670	36 641
Works in progress	22	4 424	3 528
Total non-current assets		45 094	40 169
Total assets		53 183	51 698
CURRENT LIABILITIES			
Payables	23	2 755	3 677
Accrued salaries	24	659	636
Provisions	25	4 931	4 159
Total current liabilities		8 345	8 472
NON-CURRENT LIABILITIES			
Provisions	25	2 900	3 605
Total non-current liabilities		2 900	3 605
Total liabilities		11 245	12 077
EQUITY	26		
Accumulated surplus		15 841	17 788
Asset revaluation reserve		26 097	21 833
Total equity		41 938	39 621
Total liabilities and equity		53 183	51 698

The Statement of Financial Position should be read in conjunction with the accompanying notes.

DEPARTMENT OF MINERALS and ENERGY
Statement of Cash Flows
for the year ended 30 June 2001

	Note	2000-2001 ($'000) Inflows (Outflows)	1999-2000 ($'000) Inflows (Outflows)
CASH FLOWS FROM GOVERNMENT			
Recurrent appropriations		40 365	39 842
Capital appropriations		1 133	1 750
Net cash provided by Government		41 498	41 592
Utilised as follows:			
CASH FLOWS FROM OPERATING ACTIVITIES			
Payments			
Employee costs		(34 655)	(30 748)
Supplies and services		(19 007)	(19 995)
GST payments on purchases		(2 138)	(24)
GST Payments to taxation authority		(3 812)	-
Receipts			
Receipts in Suspense		-	954
Sale of goods and services		1 526	1 254
User charges and fees retained under a net appropriation agreement		9 249	8 071
GST receipts on sales		5 950	138
Net cash used in operating activities	28	(42 887)	(40 350)
CASH FLOWS FROM INVESTING ACTIVITIES			
Purchase of non-current assets		(2 664)	(4 182)
Proceeds from sale of non current assets		46	3
Net cash used in investing activities		(2 618)	(4 179)
Net increase/(decrease) in cash held		(4 007)	(2 937)
Cash assets at the beginning of the financial year		8 250	11 187
Cash assets at end of financial year	29	4 243	8 250

The Statement of Cash Flows should be read in conjunction with the accompanying notes.

DEPARTMENT OF MINERALS and ENERGY

Output Schedule of Expenses and Revenues

for the year ended 30 June 2001

OUTPUT	**Output 1:** Grant and maintenance of titles to explore for and mine minerals		**Output 2:** Grant and maintenance of titles to explore for and produce petroleum		**Output 3:** A geological framework of the State and its resources		**Output 4:** An archive of geoscientific and resource exploration data	
	2000-2001 $'000	**1999-2000 $'000**	**2000-2001 $'000**	**1999-2000 $'000**	**2000-2001 $'000**	**1999-2000 $'000**	**2000-2001 $'000**	**1999-2000 $'000**
COST OF SERVICE								
Expenses from ordinary activities								
Employee expenses	11 430	10 663	1 972	1 720	8 524	9 235	1 838	1 564
Supplies and services	3 431	2 818	609	485	3 000	3 393	647	574
Depreciation	886	851	88	67	410	397	88	67
Administration expenses	1 076	1 642	164	104	1 270	1 128	274	191
Accommodation expenses	1 228	1 101	236	140	741	804	160	136
Grants and subsidies	20	15	3	2	13	10	2	2
Net loss on disposal of non-current assets	-	8	-	1	-	4	-	1
Total cost of service	18 071	17 098	3 072	2 519	13 958	14 971	3 009	2 535
Revenues from ordinary activities								
User fees & charges	2 621	3 150	3 143	2 182	-	280	-	48
Sale of goods	537		66		460		99	
Net gain (loss) on disposal of non-current assets	2	-	(3)	-	6	-	1	-
Total revenues from ordinary activities	3 160	3 150	3 206	2 182	466	280	100	48
Net cost of service	14 911	13 948	(134)	337	13 492	14 691	2 909	2 487
Revenues from Government								
Appropriations	11 545	12 014	398	1 853	13 270	11 278	2 216	1 909
Resources received free of charge	718	642	3	3	13	14	3	2
Liabilities assumed by the Treasurer	781	980	134	154	617	854	133	145
Total revenues from Government	13 044	13 636	535	2 010	13 900	12 146	2 352	2 056
CHANGES IN NET ASSETS	(1 867)	(312)	669	1 673	408	(2 545)	(557)	(431)

OUTPUT	Output 6: Regulating and promoting health and safety in the mineral industry		Output 7: Regulating and promoting health and safety in the petroleum industry		Output 8: Regulating and promoting environmental management in the mineral industry	
	2000-2001 $'000	1999-2000 $'000	2000-2001 $'000	1999-2000 $'000	2000-2001 $'000	1999-2000 $'000
COST OF SERVICE						
Expenses from ordinary activities						
Employee expenses	8 070	7 275	1 242	1 176	1 211	1 273
Supplies and services	1 757	2 075	384	330	299	316
Depreciation	302	300	56	46	49	48
Administration expenses	1 021	886	104	70	186	144
Accommodation expenses	603	667	149	95	78	98
Grants and subsidies	10	7	2	2	1	1
Net loss on disposal of non-current assets	-	2	-	1	-	-
Total cost of service	11 763	11 212	1 937	1 720	1 824	1 880
Revenues from ordinary activities						
User fees and charges	-	104	1 978	1 490	-	14
Sale of goods	167		42		22	
Net gain (loss) on disposal of non-current assets	17	-	(2)	-	2	-
Total revenues from ordinary activities	184	104	2 018	1 490	24	14
Net Cost of service before abnormal items	11 579	11 108	(81)	230	1 800	1 866
Revenues from Government						
Appropriations	9 941	8 414	398	1 265	1 691	1 417
Resources received free of charge	10	10	2	2	1	1
Liabilities assumed by the Treasurer	529	626	85	117	81	102
Total revenues from Government	10 480	9 050	485	1 384	1 773	1 520
CHANGES IN NET ASSETS	(1 099)	(2 058)	566	1 154	(27)	(346)

*** The Mineral Processing Laboratory facilities were leased to CSIRO from 1 September 1998. Since that date, the Department has not been producing in its own right any significant level of products or services in the field of mineral processing

DEPARTMENT OF MINERALS and ENERGY

Summary of Consolidated Fund Appropriations and Revenue Estimates

for the year ended 30 June 2001

		2000-2001 Estimate $'000	2000-2001 Actual $'000	2000-2001 Variation $'000	1999-2000 Estimate $'000	1999-2000 Actual $'000	1999-2000 Variation $'000
RECURRENT							
	Amount required to fund outputs for the year	50 307	51 100	793	49 491	48 996	(495)
	Less retained revenue- Section 23A Financial Administration and Audit Act	10 028	10 905	(877)	10 128	9 320	808
Item 54	**Amount provided to fund outputs for the year**	**40 279**	**40 195**	**(84)**	**39 363**	**39 676**	**313**
	Amount authorised by other statutes						
	- Salaries and allowances Act 1975	**170**	**170**	**-**	**166**	**166**	**-**
	- Petroleum (Submerged Lands) Act 1982	**12 800**	**13 844**	**1 044**	**8 400**	**13 587**	**5 187**
	Sub total	53 249	54 209	960	47 929	53 429	5 500
Item 55	**Administered grants and transfer payments**	**2 115**	**3 635**	**1 520**	**2 115**	**6 210**	**4 095**
	Total recurrent services	**55 364**	**57 844**	**2 480**	**50 044**	**59 639**	**9 595**
CAPITAL							
	Amount provided for capital services for the year	1 133	1 133	-	1 750	1 750	-
	Less retained revenue- Section 23A Financial Administration and Audit Act 1995	-	46	(46)	-	-	-
Item 151	**Amount provided for capital services for the year**	**1,133**	**1,087**	**(46)**	**1 750**	**1 750**	**-**
	Grand total	56 497	58 931	2 434	51 794	61 389	9 595

DEPARTMENT OF MINERALS and ENERGY

Summary of Consolidated Fund Appropriations and Revenue Estimates

for the year ended 30 June 2001

	2000-2001			1999-2000		
	Estimate $'000	Actual $'000	Variation $'000	Estimate $'000	Actual $'000	Variation $'000
Details of Expenditure						
RECURRENT						
Outputs						
A system for the grant and maintenance of titles to explore for and mine minerals	15 005	15 505	500	14 228	14 510	282
A system for the grant and maintenance of titles to explore for and produce petroleum	2 082	2 827	745	2 210	2 264	54
A geological framework of the State and its resources	13 649	13 086	(563)	13 810	13 902	92
An archive of geoscientific and resource exploration data	2 277	2 822	545	2 130	2 354	224
A system for regulating and promoting health and safety in the mineral industry	10 051	10 902	851	10 087	10 340	253
A system for regulating and promoting health and safety in the petroleum industry	2 082	1 780	(302)	2 166	1 546	(620)
A system for regulating and promoting environmental management in the mineral industry	1 704	1 725	21	1 669	1 710	41
A system for regulating and promoting environmental management in the petroleum industry	464	498	34	533	574	41
A system to establish royalty rates and ensure that appropriate royalties are paid when due	1 021	1 040	19	1 076	1 043	(33)
A system for regulating the storage, handling and transport of dangerous goods	2 387	2 696	309	2 307	2 574	267
Recurrent expenditure	50 722	52 881	2 159	50 216	50 817	601
Less retained revenue	10 028	10 905	877	10 128	9 320	(808)

DEPARTMENT OF MINERALS and ENERGY

Summary of Consolidated Fund Appropriations and Revenue Estimates

for the year ended 30 June 2001

	2000-2001			1999-2000		
	Estimate $'000	Actual $'000	Variation $'000	Estimate $'000	Actual $'000	Variation $'000
Change in operating account (recurrent)	(245)	(1 611)		(559)	(1 655)	
Sub-total - Recurrent	**40 449**	**40 365**	**(84)**	**39 529**	**39 842**	**313**
CAPITAL						
Asset replacement/maintenance	850	1 768	918	850	1 438	588
Asset expansion	283	896	613	900	1 594	694
Change in Operating Account (Capital)		(1 531)			(1 282)	
Total value of investment	**1 133**	**1 133**	**-**	**1 750**	**1 750**	**-**
Less retained revenue	**-**	**46**	**46**	**-**	**-**	**-**
Sub-total - Capital	**1 133**	**1 087**	**(46)**	**1 750**	**1 750**	**-**
Appropriations for administered expenses	14 915	17 479	2 564	10 515	19 797	9 282
GRAND TOTAL OF APPROPRIATIONS	**56 497**	**58 931**	**2 434**	**51 794**	**61 389**	**9 595**

DEPARTMENT OF MINERALS and ENERGY

Summary of Consolidated Fund Appropriations and Revenue Estimates

for the year ended 30 June 2001

	2000-2001			1999-2000		
	Estimate $'000	Actual $'000	Variation $'000	Estimate $'000	Actual $'000	Variation $'000
Revenues disclosed as administered revenues						
Territorial						
Royalties:						
Iron ore	224 500	270 188	45 688	232 500	198 952	(33 548)
Petroleum	382 500	526 715	144 215	205 500	344 897	139 397
Alumina	45 500	55 513	10 013	38 500	40 738	2 238
Diamonds	36 000	88 055	52 055	27 000	62 496	35 496
Mineral sands	24 000	24 262	262	23 000	20 013	(2 987)
Nickel	47 000	56 743	9 743	24 000	34 815	10 815
Gold	62 000	65 639	3 639	37 500	33 446	(4 054)
Other	43 500	49 211	5 711	40 500	41 325	825
Lease rentals	37 000	35 740	(1 260)	40 000	35 667	(4 333)
Total Territorial	**902 000**	**1 172 066**	**270 066**	**668 500**	**812 349**	**143 849**
Law courts						
Infringement penalties	120	36	(84)	-	29	29
	120	36	(84)	-	29	29
GRAND TOTAL	**902 120**	**1 172 102**	**269 982**	**668 500**	**812 378**	**143 878**

The Summary of Consolidated Fund Appropriations and Revenue Estimates should be read in conjunction with the accompanying notes.

This Summary provides the basis for the Explanatory Statement information requirements of Treasurer's Instructions 945

1 Departmental mission and funding

The Department's mission is to provide a legislative framework, information systems and administrative processes for the mineral, petroleum and dangerous goods industries in Western Australia in order to:

* Promote the potential for resource exploration
* Facilitate access to land and provide secure title for resource exploration and development
* Meet community standards for environmental management and health and safety, and
* Ensure the community receives appropriate resource royalties.

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 Department to retain its operating revenue. Details of expenditure and revenues retained as per the agreement are disclosed in the Summary of Consolidated Fund Appropriations and Revenue Estimates.

	($'000)
Department's gross expenditure - Recurrent	51 270
- Capital	1 133
	52 403
Revenues retained	10 905
Department's net expenditure against appropriation	41 498

The financial statements encompass all funds through which the Department controls resources to carry on its functions.

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 Urgent Issues Group (UIG) Consensus Views as applied by the Treasurer's Instructions. Several of the standards 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.

These statements have been prepared on the accrual basis of accounting using the historical cost convention, with the exception of certain non-current physical assets which have been introduced at written down current cost as at 30 June 1995 and other non-current assets which, subsequent to initial recognition, have been measured on the fair value basis in accordance with the option under AAS38(5.1) (see notes 2(m) and 21). Additions to non-current physical assets since valuation are stated at cost.

Administered assets, liabilities, expenses and revenues are not integral to the Department in carrying out its functions and are disclosed in schedules to the financial statements, forming part of the general purpose financial report of the Department. The administered items are disclosed on the same basis as is described above for the financial statements of the Department. The administered assets, liabilities, expenses and revenues are those which the Government requires the Department to administer on its behalf. The assets do not render any service potential or future economic benefits to the Department, the liabilities do not require the future sacrifice of service potential or future economic benefits of the Department, and the expenses and revenues are not attributable to the Department. As the administered assets, liabilities, expenses and revenues are not recognised in the principal financial statements of the Department, the disclosure requirements of Australian Accounting Standard AAS33, 'Presentation and Disclosure of Financial Instruments' are not applied to administered transactions.

2 Significant accounting policies (continued)

(a) 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 deposited into the Department's bank account.

(b) Net appropriation determination

Pursuant to Section 23A of the *Financial Administration and Audit Act* the net appropriation determination by the Treasurer provides for retention of the following moneys received by the Department:

- Proceeds from user fees and charges (The majority of revenue earned is from licences)
- Proceeds from sale of maps and publications

Retained revenue may only be applied to the outputs specified in the 2000-2001 Budget Statements.

Details of retained revenues are disclosed in the Summary of Consolidated Fund Appropriations and Revenue Estimates.

(c) Operating Accounts

Amounts appropriated are deposited into the account and any revenues which are the subject of net appropriation determinations are also deposited into the account. Revenues not subject to net appropriation determinations are deposited into the Consolidated Fund. All payments of the Department are made from the Operating Account.

(d) Depreciation of non-current assets

All non-current assets having a limited useful life are systematically depreciated over their useful lives in a manner which reflects the consumption of their future economic benefit.

Depreciation is provided as follows:

	Years	Method
Buildings	50	Straight line
Furniture	10	Straight line
Office equipment	5	Straight line
Computer equipment	5	Diminishing value up to January 2001
	3	Straight line since January 2001
Computer software	3-5	Straight line on written down value

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.

(e) Employee Entitlements

1. Annual Leave

This entitlement is recognised at current remuneration rates and is measured as the amount unpaid at the reporting date with respect to employees' service up to that date.

2. Long service leave

Under Australian Accounting Standard AAS 30 "Accounting for Employee Entitlements", a liability for long service leave is recognised, and is measured, as the present value of expected future payments to be made in respect of services provided by employees up to the reporting date. Consideration is given, when assessing expected future payments, to expected future wage and salary levels including relevant on-costs, experience of employee departures and periods of service. Expected future payments are discounted using appropriate interest rates to obtain the estimated future cash outflows.

It will often be possible for employers to estimate the present value of the future cash outflows associated with their long service leave liabilities by using "short-hand" measurement techniques.

The Department has used the relevant short-hand method for measurement of long service leave liability. This is the sum of unconditional long service leave for all employees at current remuneration rates (including on-costs) plus pro-rata long service leave for all employees with six or more years of service at current remuneration rates (including on-costs).

This method of measurement of the liability is consistent with the requirements of Australian Accounting Standard AAS 30 "Accounting for Employee Entitlements".

2 Significant accounting policies (continued)

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 defined benefits pension scheme now closed to new members), or to the Gold State Superannuation Scheme (a defined benefit lump sum scheme now also closed to new members). 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 with 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
(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 2001 in respect of current employees is $11.709m (1999 $10.744 million).

(f) Leases
The Department has entered into an operating lease arrangement for motor vehicles where the lessor effectively retains all of the risks and benefits incident to ownership of the items held under the operating lease. Equal instalments of the lease payments are charged to the Statement of Financial Performance over the lease term as this is representative of the pattern of benefits to be derived from the leased property.

(g) Receivables
Receivables are recognised at the amounts receivable as they are due for settlement no more than 30 days from the date of recognition.

No provision for doubtful debts is made as all outstanding debts are considered recoverable. A debt will only be considered bad once all avenues of collection have been exhausted. Bad debts are written off in the period in which they are identified. Previous write-offs have been of small value and therefore, based on material value, no provision has been warranted.

(h) Accrued salaries
The accrued salaries suspense account consists of amounts paid annually into a suspense account over a period of 10 financial years to largely meet the additional cash outflow in each eleventh year when 27 pay days occur in that year instead of the normal 26. No interest is received on this account.

Accrued salaries represent the amount due to staff but unpaid at the end of the financial year as the end of the last pay period for that financial year does not coincide with the end of the financial year. Accrued salaries are settled within a few days of the financial year-end. The Department considers the carrying amount approximates net fair value.

(i) Payables
Payables, including accruals not yet billed, are recognised when the Department becomes obliged to make future payments as a result of a purchase of goods or services. Payables are settled in accordance with Government policy.

(j) 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.

(k) Resources received free of charge or for nominal value

Resources received free of charge or for nominal value which can be reliably measured are recognised as revenues and as assets or expenses as appropriate, at fair value.

(l) Revenue recognition

Revenue from the sale of goods and disposal of other assets and the rendering of services, is recognised when the Department has passed control of the goods or other assets or delivery of the service to the customer.

(m) Revaluation of land, buildings and infrastructure

Certain non-current assets have been revalued from time to time as disclosed in the financial statements. Other assets are recognised at cost.

Of the total value held of land and buildings, 98 per cent are based on Integrity 3 (kerbside) valuations by the Valuer General. The remainder are mainly decommissioned explosive reserves, having negligible future economic value and have been based on Integrity 1 and 2 "desktop" valuations. All properties are held on the Government Property Register at these valuations.

The Department has a policy of valuing land, buildings and infrastructure at fair value. The annual revaluations of the Department's land and buildings undertaken by the Valuer General's Office for the Government Property Register are recognised in the financial statements. The transitional provisions in AAS 38 (10.9) (b) have been applied to infrastructure assets.

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

(n) Comparative figures

Comparative figures are, where appropriate, reclassified so as to be comparable with the figures presented in the current financial year.

3 Outputs of the Department

Information about the Department's outputs and the expenses and revenues which are reliably attributable to those outputs is set out in the Outputs Schedule. Information about expenses, revenues, assets and liabilities administered by the Department are given in the schedule of Administered Expenses and Revenues and the schedule of Administered Assets and Liabilities. The mineral processing laboratory (Output 5 in previous reports) has been discontinued and subsequent Outputs renumbered.

Outcome: Optimum use of land and resources.

Output 1: A system for the grant and maintenance of titles to explore for and mine minerals.

The ongoing management of mining legislation and a mineral titles system that provides information on land availability for mineral exploration and mining encourages exploration on titles and ensures security for title holders.

Output 2: A system for the grant and maintenance of titles to explore for and produce petroleum.

The ongoing management, revision and provision (or contracting) of a set of products and services for Government and industry to manage access to land for petroleum exploration and production, ensure security for title holders, and encourage effective exploration and production within titles.

Output 3: A geological framework of the State and its resources.

Publish maps, reports and datasets to maintain an up-to-date geological framework of the State and its mineral and petroleum resources.

Output 4: An archive of geoscientific and resource exploration data

An archive of geoscientific and resource exploration documents, samples and data.

3 Outputs of the Department (continued)

Outcome: Optimum use of land and resources

Output 5: Mineral processing, test-work, project and consultancy services

Provision of mineral processing, testwork, project and consultancy services to industry. The Mineral Processing Laboratory facilities were leased to CSIRO from 1 September 1998. Since that date, the Department has not been producing in its own right any significant level of products or services in the field of mineral processing and the Output has been discontinued.

Outcome: Safe and healthy mineral and petroleum industry workforces.

Output 6: A system for regulating and promoting health and safety in the mineral industry.

The ongoing management, revision and provision (or contracting) of products and services to facilitate a healthy environment and safe systems of work in mineral exploration and mining activities.

Output 7: A system for regulating and promoting health and safety in the petroleum industry.

The ongoing management, revision and provision (or contracting) of products and services to facilitate safe facilities design and systems of work in petroleum operations.

Outcome: Acceptable environmental standards for mineral and petroleum exploration, development, production and project completion.

Output 8: A system for regulating and promoting environmental management in the mineral industry.

The provision of a regulatory environment for management of risk to the environment from mineral industry operations.

Output 9: A system for regulating and promoting environmental management in the petroleum industry.

The ongoing management and provision (or contracting) of a set of products and services to ensure petroleum exploration and production activities meet environmental standards and are in accordance with Government policy.

Outcome: Appropriate returns to the community for the exploration of its mineral and petroleum resources.

Output 10: A system to establish royalty rates and ensure that appropriate royalties are paid when due.

Recommendations are made for mineral and petroleum royalty rates and systems. Royalty legislation is developed and new royalty arrangements established. Compliance with these requirements is monitored and financial returns audited.

Outcome: A community confident that it is safe from hazards associated with the storage, handling and transport of dangerous goods.

Output 11: A system for regulating the storage, handling and transport of dangerous goods.

An audit and inspection program for premises storing, and vehicles transporting, dangerous goods.

	2000-2001 ($'000)	1999-2000 ($'000)
4 Employee expenses		
Wages and salaries	32 935	30 983
Superannuation	2 567	3 233
Change in employee entitlements	67	(25)
Other related expenses	1 743	1 772
	37 312	35 963

The notional superannuation expense is made up of the movement in the unfunded superannuation liability balance with respect to current employees

	2000-2001 ($'000)	1999-2000 ($'000)
5 Supplies and services		
Consultants and contractors	6 633	7 216
Advertising and promotion	129	93
Other administration costs	2 280	2 385
Travel	1 118	952
Resources received free of charge (see note 15)	755	679
Total expense for the year	10 915	11 325
6 Depreciation		
Buildings at fair value	586	386
Buildings at cost	2	2
Furniture	65	59
Computer software	293	287
Office equipment	102	96
Other equipment	102	102
Computer equipment	863	980
Communication equipment	4	-
	2 017	1 912
7 Administration expenses		
Communication	752	847
Consumables	1 452	1 188
Repairs and maintenance	801	678
Lease payments	766	640
Other administration expenses	546	357
	4 317	3 710
8 Accommodation expenses		
Lease rentals	102	139
Repairs and maintenance	1 002	748
Other accommodation expenses	2 547	2 653
	3 651	3 540
9 Grants and subsidies		
Recurrent	56	42
10 Net loss on disposal of non-current assets		
Computing equipment	-	19
Gross proceeds		3
11 User charges and fees		
Petroleum permits and licences	5 672	4 146
Prospecting exploration and other mining licences	2 613	2 771
Explosives regulations	8	163
Dangerous goods regulations	956	832
	9 249	7 912
12 Sale of goods (gross)		
Explosives	548	443
Mineral Titles	179	191
Geological Survey	253	193
Mining Operations	19	22
Petroleum	31	31
Administration	630	503
	1 660	1 383
Trading profit		
Sales (gross)	1 660	1 254
Cost of sales:		
Opening inventory	(2 863)	(2 542)
Purchases	(134)	(192)
	(2 997)	(2 734)
Closing inventory	3 529	2 863
Cost of Goods sold	532	129
Trading profit	2 192	1 383

	2000-2001 ($'000)	1999-2000 ($'000)
13 Net gain on disposal of non-current assets		
Sale of equipment	24	-
Gross proceeds	47	-
14 Appropriations		
Recurrent	40 195	39 676
Other Statutes - salaries and allowances	170	166
Capital	1 133	1 750
	41 498	41 592
15 Resources received free of charge		
Administration expenses		
Resources received free of charge have been determined on the basis of the following estimates provided by agencies.		
Office of the Auditor General		
- audit services	55	55
Government Property Office		
- property management services	2	3
Department of Land Administration		
-land registration dealings, land information and products	698	621
	755	679
16 Liabilities assumed by the Treasurer		
Superannuation	2 567	3 233
17 Cash and amounts in suspense		
Suspense account	199	1 182
Accrued salaries suspense account	820	702
Operating account	3 224	6 366
	4 243	8 250
Accrued salaries suspense account is represented by a cash balance and is therefore equivalent to the net fair value.		
The balance in the suspense account represents administered funds received close to end of year but not transferred to Treasury until after year's end (Refer Note 23)		
18 Inventories		
Geological Survey	3 529	2 863
19 Receivables		
Accounts receivable for goods and services supplied	80	75
Other debtors	4	27
GST receivable	86	24
	170	126
The Department does not have any significant exposure to any individual customer or counterparty.		
The Department considers the carrying amount of accounts receivable approximates their net fair values.		
20 Prepayments		
Prepayments	147	290
21 Property, plant, equipment and vehicles		
Land - at valuation	18 930	16 543
Buildings - at fair value	20 313	18 435
Accumulated depreciation	(2 268)	(1 681)
	18 045	16 754
Buildings - at cost	803	827
Accumulated depreciation	(14)	(12)
	789	815
Total buildings	18 834	17 569

21 Property, plant, equipment and vehicles (continued)	2000-2001 ($'000)	1999-2000 ($'000)
Furniture - at cost	1 010	908
Accumulated depreciation	(612)	(549)
	398	359
Computer software - at cost	2 378	2 287
Accumulated depreciation	(2 293)	(2 001)
	85	286
Office equipment - at cost	986	848
Accumulated depreciation	(667)	(592)
	319	256
Other equipment - at cost	1 457	1 403
Accumulated depreciation	(1 244)	(1 145)
	213	258
Computer equipment - at cost	9 618	8 915
Accumulated depreciation	(7 794)	(7 606)
	1 824	1 309
Communication equipment - at cost	22	12
Accumulated depreciation	(4)	
	18	12
Total equipment	2 857	2 480
Vehicles - at cost	49	49
Total of property, plant, equipment and vehicles	40 670	36 641

Reconciliation of non-current assets

Reconciliations of the carrying amounts of property, plant, equipment and vehicles at the beginning and end of the current and previous financial year are set out below:

	Carrying amount at start of year	Additions	Disposals	Revaluation	Deprecation for the year	Carrying amount at end of year
As at 30 June 2001						
Land	16 543			2387		18 930
Buildings at fair value	16 754			1877	586	18 045
Buildings at cost	815		24		2	789
Furniture	359	104	0		65	398
Computer software	286	92			293	85
Office equipment	256	168	3		102	319
Other equipment	258	58	1		102	213
Computer equipment	1 309	1396	18		863	1 824
Communication equipment	12	10			4	18
Vehicles	49					49
Work in progress	3 528	896				4 424
	40 169	2 724	46	4 264	2 017	45 094

The revaluation of freehold land, land improvements and buildings was performed in June 2001 in accordance with an independent valuation by the Valuer General's Office. Fair value has been determined on the basis of the lesser of current use and market value. The valuation was made in accordance with a regular policy of annual revaluation.

21 Property, plant, equipment and vehicles (Continued)

	Carrying amount at start of year	Additions	Disposals	Revaluation	Deprecation. for the year	Carrying amount at end of year
As at 30 June 2000						
Land	16 543					16 543
Buildings at fair value	17 140				386	16 754
Buildings at cost	145	672			2	815
Furniture	363	55	0		59	359
Computer software	573				287	286
Office equipment	239	117	4		96	256
Other equipment	226	134	0		102	258
Computer equipment	1246	1061	18		980	1 309
Communication equipment		12				12
Vehicles	49					49
Work in progress	1393	2135				3 528
	37 917	4 186	22	-	1 912	40 169

22 Works in progress

Mining Registrar/Magistrate Chamber - Meekatharra	18	18
State Drill Store - Carlisle	3 855	3 141
Kalgoorlie Explosives Reserve roadwork	101	101
Mungarri Explosive Reserve	289	268
Upgrade of FMIS	161	
	4 424	3 528

23 Payables

Amounts payable for goods and services received	2 556	2 357
GST payable	-	138
Suspense Account	199	1 182
	2 755	3 677

The Department considers the carrying amounts of accounts payable approximates their net fair values.

24 Accrued salaries

Amount owing for six working days from 22 June 2001 to 30 June 2001 was $659 000 (23 June 2000 to 30 June 2000, six working days was $636 000). The Department considers the carrying amount of accrued salaries is equivalent to the net fair value.	659	636

25 Provisions

(a) Current liabilities		
Liability for annual leave	2 774	2 922
Liability for long service leave	2 157	1 237
	4 931	4 159
(b) Non-current liabilities		
Liability for long service leave	2 900	3 605
	2 900	3 605
(c) Employee Entitlements		
The aggregate employee leave entitlement liability recognised and included in the financial statements is as follows:		
Current	4 931	4 159
Non-current	2 900	3 605
	7 831	7 764

The Department considers the carrying amount of employee entitlements is equivalent to the net fair value.

40 Schedule of Administered Items

Output	Note	Output 1: Mineral Titles		Output 2: Petroleum Titles		Output 3: Geological Framework		Output 9: Royalty rates		Output 10: Dangerous Goods		TOTAL	
		2000-2001 $'000	1999-2000 $'000	2000-2001 $'000	1999-2000 $'000	2000-2001 $'000	1999-2000 $'000	2000-2001 $'000	1999-2000 $'000	2000-2001 $'000	1999-2000 $'000	2000-2001 $'000	1999-2000 $'000
ADMINISTERED EXPENSES & REVENUE	(I)												
EXPENSES													
Petroleum (Submerged Lands) Act 1982		-	-	-	-	-	-	14 938	13 172	-	-	14 938	13 172
Refunds of Previous Years' Revenue		3 313	4 933	-	-	-	-	231	24	1	1	3 545	4 958
Aboriginal Lands Trust		91	210	-	-	-	-	-	-	-	-	91	210
Total administered expenses		3 404	5 143	-	-	-	-	15 169	13 196	1	1	18 574	18 340
REVENUES													
Taxes, fees and royalties		-	-	-	-	-	-	1 209 908	855 533	-	-	1 209 908	855 533
Law Courts										36	29	36	29
Revenues from Government		2 115	6 185	-	-	-	-	15 364	13 611	-	1	17 479	19 797
Total administered revenues		2 115	6 185	-	-	-	-	1 225 272	869 144	36	30	1 227 423	875 359
ADMINISTERED ASSETS & LIABILITIES	(II)												
ASSETS													
Operating account		(# 479)	1 042			-	-	954	954	-	-	475	1 996
Accounts receivable		-	-	-	-	-	-	191 278	153 435	-	-	191 278	153 435
Cash		-	-	-	-	-	-	-	-	-	-	-	-
Restricted cash		933	934	3 533	2 328	370	376	-	5 576	65	-	4 901	9 214
Total administered current assets		454	1 976	3 533	2 328	370	376	192 232	159 965	65	-	196 654	164 645
Administered non-current assets		-	-	9	-	-	-	-	-	-	-	9	-
Total administered assets		454	1 976	3 542	2 328	370	376	192 232	159 965	65	-	196 663	164 645
LIABILITIES													
Payments received in advance		878	879	3 532	2 528	383	376	-	5 576	-	-	4 793	9 159
Accounts payable		55	55	1	1			1 308	1 734	-	-	1 364	1 790
Total administered liabilities		933	934	3 533	2 329	383	376	1 308	7 310	-	-	6 157	10 949

(I) Administered expenses and revenues

	2000-2001 ($'000)	1999-2000 ($'000)
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		
Petroleum (Submerged lands) Act 1982	14 938	13 172
Consolidated Fund appropriation payments made during the year was $15.364m (1999/2000 $13.587m) and expenditure due but not paid was $1.308m (1999/2000 $1.092m).		
An appropriation is also made for refunds of previous years' revenues and a remuneration to the Aboriginal Lands Trust.		
Refunds of previous years' revenues are made to tenement holders who have paid excess rentals on their holdings and to mineral/petroleum companies who have paid excess royalties	3 545	4 958
Aboriginal Lands Trust is a reappropriation of rents and royalties collected on mining and petroleum tenements situated on Aboriginal reserves.	91	210
	18 574	18 340
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 $1136.325m (1999/2000 $812.349m) and revenues due but not collected were $191.278m (1999/2000 $153.434m).		
Royalties		
Iron ore	279 038	208 668
Petroleum	533 864	361 344
Diamonds	83 182	66 687
Alumina	62 086	42 289
Mineral sands	24 362	18 999
Nickel	62 732	42 013
Gold	78 339	33 861
Other	50 565	46 005
Lease rentals	35 740	35 667
Total Territorial	1 209 908	855 533
Law courts		
Infringement penalties	36	29
	36	29

	2000-2001 ($'000)	1999-2000 ($'000)
Revenues From Government		
Appropriation for Petroleum (Submerged Lands) Act 1982	13 844	13 587
Refunds of Previous Years' Revenue	3 544	6 000
Aboriginal Lands Trust	91	210
Total Administered Revenues	17 479	19 797

(II) 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	370	376
Special Projects Trust Fund	3 533	2 328
Deposits Mines Department account	933	934
Survey of Leases Under Mining Act account	65	
Infringement Penalties	-	5 576
Barrow Island Trust	4 901	9 214
Operating account	954	954
Unspent funds for Petroleum (Submerged Lands) Act 1982	(479)	1 042
Unspent funds for refunds of previous years' revenue	-	-
Cash	475	1 996
	191 278	110 251

Accounts receivable

This represents royalty not collected as at 30 June 2001 on production which occurred prior to balance date.

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.

	2000-2001 ($'000)	1999-2000 ($'000)
Administered non-current assets		
Property, plant, equipment and vehicles	9	-
	196 663	121 461
Administered current liabilities		
Payments received in advance	4 793	9 159
Accounts payable	1 364	1 790
	6 157	10 949

APPENDIX 1

Legislation and Changes to Legislation

The Department of Minerals and Energy is responsible to the Minister for Mines for administering 18 Acts of Parliament:

The main Acts are:

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

The remaining Acts are:

- *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*
- *Coal Mines Legislation Amendment and Revival Act 1998*
- *Dangerous Goods (Transport) Act 1998*
- *Miners' Phthisis Act 1922*
- *Mining on Private Property Act 1898*
- *Mining (Validation and Amendment) Act 1986*
- *Petroleum Pipelines Act 1969*
- *Petroleum Safety Act 1999*
- *Petroleum (Registration Fees) Act 1967*
- *Petroleum (Submerged Lands) Act 1982*
- *Petroleum (Submerged Lands) Registration Fees Act 1982*

The following Commonwealth legislation is administered by the Department through the Commonwealth/Western Australian Offshore Petroleum/Minerals Joint Authorities:

- *Petroleum (Submerged Lands) Act 1967*
- *Petroleum (Submerged Lands) (Registration Fees) Act 1967*
- *Petroleum (Submerged Lands) (Royalty) Act 1967*
- *Petroleum (Submerged Lands) Fees Act 1994*
- *Petroleum (Submerged Land) Amendment Act 2001*
- *Offshore Minerals Act 1994*
- *Offshore Minerals (Registration Fees) Act 1981*
- *Offshore Minerals (Mining Licence Fees) Act 1981*
- *Offshore Minerals (Exploration Licence Fees) Act 1981*
- *Offshore Minerals (Retention Licence Fees) Act 1994*
- *Offshore Minerals (Works Licence Fees) Act 1981*
- *Offshore Minerals (Royalty) Act 1981*

In addition, the Department undertakes a number of functions under the various State Agreement Acts.

Changes to Legislation

ACTS

Mining Act 1978

- **Rights in Water and Irrigation Amendment Act 2000 (No. 49 of 2000):** Assented to 28 November 2000 and proclaimed to operate from 10 January 2001. Minor amendment to Section 162(2) to delete the regulating power regarding the use of water.

- **Acts Amendment (Australian Datum) Act 2000 (No. 54 of 2000):** Assented to 28 November 2000 and proclaimed to operate from 16 December 2000. Removes reference to the old datum description and provides that a new datum may be prescribed in regulations.

- **Mining Amendment Act 2000 (No. 63 of 2000):** Assented to 4 December 2000 and proclaimed to operate from 3 February 2001. Provides for a permit system to enable the holder of a Miner's Right to prospect for minerals on Crown land that is the subject of an exploration licence.

- **Corporations (Consequential Amendments) Act 2001 (No. 10 of 2001):** Assented to 28 June 2001 and proclaimed to operate from 15 July 2001. Amends references to the Corporations Law as a result of the Commonwealth enacting the *Corporations Act 2001*.

Petroleum Act 1967

- **Acts Amendment (Australian Datum) Act 2000 (No. 54 of 2000):** Assented to 28 November 2000 and proclaimed to operate from 16 December 2000. Removes reference to the old datum description and provides that a new datum may be prescribed in regulations.

Petroleum (Submerged Lands) Act 1982

- **Acts Amendment (Australian Datum) Act 2000 (No. 54 of 2000):** Assented to 28 November 2000 and proclaimed to operate from 16 December 2000. Removes reference to the old datum description and provides that a new datum may be prescribed in regulations.

REGULATIONS

Mining Regulations 1981

- **Mining Amendment Regulations (No. 6) 2000:** Gazetted on 15 December 2000 to operate from 16 December 2000. Amendments to support the new geocentric datum for Australia including transitional provisions.

- **Mining Amendment Regulations (No. 7) 2000:** Gazetted on 5 January 2001 to operate from that date. Amends the rate of royalty for limestone/limesands used for agricultural purposes.

- **Mining Amendment Regulations 2001:** Gazetted on 2 February 2001 to operate from 3 February 2001. Amendments for the permit system which enables the holder of a Miner's Right to prospect for minerals on Crown land that is the subject of an exploration licence.

- **Mining Amendment Regulations (No. 2) 2001:** Gazetted on 2 February 2001 to operate from that date. GST-related amendments.

- **Mining Amendment Regulations (No. 3) 2001:** Gazetted on 27 April 2001 to operate from that date. Include a new royalty category for 'other minerals'.

- **Mining Amendment Regulations (No. 4) 2001:** Gazetted on 3 August 2001 to operate from that date. Increase the exemption fees and mining lease rentals.

Mines Safety and Inspection Regulations 1995

- **Mines Safety and Inspections Amendment Regulations 2000:** Gazetted on 27 July 2001 to operate from that date. Minor change relating to the geocentric datum for Australia.

Petroleum Regulations 1987

- **Petroleum Amendment Regulations (No. 3) 2000:** Gazetted on 15 December 2000 to operate from 16 December 2000. Amendments support the new geocentric datum for Australia.

Petroleum (Submerged Lands) Regulations 1990

- **Petroleum (Submerged Lands) Amendment Regulations (No. 3) 2000:** Gazetted on 15 December 2000 to operate from 16 December 2000. Amendments to support the new geocentric datum for Australia.

Explosives and Dangerous Goods (Explosives) Regulations 1963

- **Explosives and Dangerous Goods (Explosives) Amendment Regulations (No. 2) 2000:** Gazetted on 18 August 2000 to operate from that date. Amendments relate to the Australian Explosives Code and other consequential changes.

Dangerous Goods (Transport) (Explosives by Road and Rail) Regulations 1999

- **Dangerous Goods (Transport) (Explosives by Road and Rail) Amendment Regulations 2000:** Gazetted on 18 August 2000 to operate from that date. Amendments relating to the Australian Explosives Code and other consequential changes.

Dangerous Goods (Transport)(Explosives by Water) Regulations 1999

- **Dangerous Goods (Transport)(Explosives by Water) Amendment Regulations 2000:** Gazetted on 18 August 2000 to operate from that date. Amendments relating to the Australian Explosives Code and other consequential changes.

Dangerous Goods (Transport)(General) Regulations 1999

- **Dangerous Goods (Transport)(General) Amendment Regulations 2000:** Gazetted on 18 August 2000 to operate from that date. Amendments relating to the Australian Explosives Code and other consequential changes.

OTHER

Legislation currently before Parliament.

- **Offshore Minerals Bill 2001, Offshore Minerals (Registration Fees) Bill 2001 and the Offshore Minerals (Consequential Amendments) Bill 2001:** These Bills are to govern the exploration for and exploitation of minerals from the seabed within the first three nautical miles of the Territorial Sea and for related matters. The Bills have been passed by the Legislative Assembly and introduced into the Legislative Council.

Legislation passed by Parliament but not yet proclaimed or only partly proclaimed to operate.

- **Mining and Amendment Act 1996 (No. 54 of 1996):** Passed by Parliament on 31 October 1996 and Assented to 11 November 1996. A partial proclamation for Sections 5, 7, 10, 13 and 22 was published in the Gazette on 6 December 1996 to operate from 7 December 1996. The remaining sections relate to the registration of dealings and require further legislative changes and supporting regulations.

- **Petroleum Safety Act 1999 (No. 19 of 1999):** Passed by Parliament on 3 June 1999 and assented to 21 June 1999. The Act contains occupational safety and health provisions for the petroleum industry for both onshore and offshore areas and requires supporting regulations before it can be proclaimed to operate.

APPENDIX 2: Glossary of selected terms used in the mineral and petroleum industries

KEY – (*min* denotes mining term; *pet* denotes petroleum and/or gas term, *edg* denotes explosives and dangerous goods term)

adit *(min)* – horizontal tunnel from the surface giving access to underground workings.

AN – ammonium nitrate, a chemical used in explosives.

ANFO – explosive mixture of ammonium nitrate and fuel oil.

anticline – fold, generally convex upward, whose core contains the stratigraphically older rocks.

appraisal drilling *(pet)* – used to determine the physical extent, reserves and likely production rate of an oil or gas field.

Archaean – the earliest of the two great divisions of the Precambrian, i.e. earlier than 2 500 million years before present.

barrel *(pet)* – unit volume measurement used for petroleum and its products; 1 barrel = 42 US gallons, 35 Imperial gallons (approx.), or 159 litres (approx.); 7.3 barrels = 1 ton (approx.); 6.29 barrels = 1 cubic metre.

base metals – copper, lead and zinc.

beneficiation *(min)* – improvement of the grade of ore (by milling, flotation, etc) to produce concentrate.

blowout *(pet)* – gas, oil or salt water escaping in an uncontrolled manner from a well.

blowout preventer *(pet)* – see Christmas tree.

Bridging Document – a Bridging Document is the site-specific and operator-specific part of a Safety Case for a well (or wells) to be drilled with a Mobile Offshore Drilling Unit (MODU, i.e. offshore drilling rig). For efficiency, the MODU usually has a facility Safety Case and this is supplemented by the Bridging Document part of the site-specific Safety Case.

bring in a well *(pet)* – to complete a well to producing status.

brownfields – around or near existing mine sites and/or known mineral deposits.

bulk (transport) *(edg)* – (a) dangerous goods of Class 2 (gases) in a container greater than 500 litres; (b) liquid or a paste other than Class 2 in a container greater than 250 litres; or (c) solids in a container greater than 400 kilograms.

Christmas tree *(pet)* – pipes and valves fitted to a production well-head to control flow of oil or gas and prevent blowouts.

CIP *(min)* – carbon in pulp (also see pulp).

class *(edg)* – number assigned to dangerous goods with a common most significant risk.

craton – continental block of the Earth's crust that has attained stability and has been little-deformed for a prolonged period. Mostly composed of Precambrian rocks.

development wells *(pet)* – wells drilled after a field has been discovered (see discovery well).

directional drilling *(pet)* – well deliberately deviated from the vertical to reach a particular part of a reservoir.

discovery well *(pet)* – first oil or gas well drilled in a new field to reveal the petroleum-bearing reservoir (see development well).

drilling fluid *(pet)* – circulating fluid or gas that forces cuttings out of the well to the surface.

drilling mud *(pet)* – lubricating mixture of clays, water and chemicals that carry away rock cuttings and maintain pressure at the drill bit.

drive *(min)* – horizontal heading driven along strike parallel to, or in, an orebody.

dyke – narrow tabular body of igneous rock cutting across structure of the adjacent country rocks.

explosives reserve *(edg)* – secured area of Crown land vested in the Minister for Mines and used to store and manufacture explosives.

farm-in – arrangement where one company acquires an interest in an exploration or production licence by paying some of the past or future costs of another company which is relinquishing part of its interest.

grade *(min)* – the relative quantity of the percentage of ore-mineral content. Common units are grams per tonne, parts per million, and per cent.

greenfields – relatively unexplored areas.

greenstone – any altered or metamorphosed basic igneous rock.

hazchem *(edg)* – hazardous chemical. Those with a licence to store hazardous chemicals must place a sign at the entrance to their premises, alerting fire crews and other emergency response groups to the type of hazards inside.

incline or decline *(min)* – sloping mine working.

injection well *(pet)* – well used to inject gas or water into the reservoir rock in order to maintain reservoir pressure in secondary recovery or (in the case of gas) for conservation purposes.

intermediate bulk container (IBC) *(edg)* – transport container up to 3-cubic-metre capacity used for dangerous goods of other than Class 2 (gases); IBCs are performance-tested containers which are not built to a design specification.

iron ore fines – particles of iron ore, usually below 10 millimetres in diameter normally require sintering or pelletising before use in a blast furnace.

iron ore lump – ore, usually between 10 and 30 millimetres in diameter which can be fed directly into a blast furnace.

jacket *(pet)* – steel lattice structure supporting an offshore platform.

liquefied natural gas (LNG) – natural gas liquefied by refrigeration or pressure for easier storage and/or transport. Generally methane.

liquefied petroleum gas (LPG) – mixture of light hydrocarbons liquefied by refrigeration or pressure for easier storage and/or transport. Generally propane and butane. Sometimes known as condensate.

magazine *(edg)* – store used exclusively to keep explosives.

Magnetotelluric Survey – a survey that involves the simultaneous measurement of the electric and magnetic fields induced in the earth by fluctuating ionospheric currents and thunderstorm activity.

major hazard facility *(edg)* – chemical plant with a significant potential for long-distance, off-site, adverse public safety event.

megatonne – equivalent to million tonnes.

metamorphic rock – rocks which have formed in the solid state from pre-existing rocks in response to pronounced changes of temperature, pressure, shearing stress and chemical environment.

MSDS *(edg)* – (Material Safety Data Sheet) a document providing information on the identification, health hazards, precautions for the safe use and handling of a specific substance.

mullock or waste *(min)* – mined rock of no economic value.

oil trap – geological structure that traps migrating hydrocarbons, allowing an oil field to form.

open pit *(min)* – surface mining where ore is progressively extracted.

Optimum is defined, in the context of the Department's business goals, as the achievement of agreed set output targets - as measured by the indicators included in this report. These targets seek an appropriate balance between achieving economic benefits, through the discovery and development of the State's mining and petroleum resources, and meeting community standards for safety, health and environmental management. The Department's targets are considered appropriate when desired economic benefits are achieved within acceptable levels of environmental and social impact.

orebody – mass of mineralisation economically capable of being worked.

orogen – belt of deformed rocks often accompanied by metamorphic and plutonic rocks.

oxide ore – weathered economic mineralisation; usually near the surface and often easy to beneficiate.

package *(edg)* – packaging and contents prepared for transport.

placer – alluvial deposit of ore, usually as mineral-bearing gravel or sand.

plate tectonics – theory of large-scale movement in which the earth's crust is divided into a number of plates or slabs. Interaction at their boundaries causes earthquakes, volcanoes and/or mountain building.

platform *(pet)* – offshore structure from which development wells are drilled.

plugging *(pet)* – process of filling an unwanted well with concrete before abandoning.

possible resources *(pet)* – undeveloped oil and/ or gas resources, which might eventually be recoverable from untested geological structures.

pre-competitive (non-rival) information – The use of data by one explorer does not reduce the value or use of the same data by another explorer. Pre-competitive information is usually of a regional nature and because it is not efficient for companies to duplicate the collection of this type of information, it makes good economic sense for the information to be acquired by a single source (the Department) and made available to all explorers and investors.

pulp – fluid mixture of ground ore and water, specified either as solid-liquid ratio (by weight) or as a percentage of solids (by weight).

regolith – surficial layer of loose rock materials (volcanic ash, glacial drift, alluvium, windblown deposits, vegetal accumulations, and soils) forming the land surface over rocks at depth.

resource *(min)* – identified mineral occurrence from which valuable status may be inferred, indicated or measured – depending on the degree of confidence and extent of geological evaluation.

reserve – part of a measured or indicated mineral resource which can be economically mined. Status may be proven or probable – depending on degree of confidence and extent of evaluation.

recoverable reserves *(pet)* – proportion of oil and/or gas in a reservoir that can be removed using currently available techniques.

reservoir rock – porous and permeable rock, such as sandstone, which may contain significant oil or gas.

roaster *(min)* – plant where sulphide concentrate is heated and oxidised to remove the sulphur, producing loaded carbon for stripping and bullion recovery.

Safety Case Model The safety case model, as set out in the Commonwealth *Petroleum Submerged Lands Act 1967*, uses a contemporary objective-based methodology that places the onus on the operator to identify and reduce risk through engineering changes and implementing safety-management systems. The model was adopted following the Piper Alpha disaster in the North Sea in 1988 that killed 167 people.

sag mill *(min)* – semi-autogenous grinding mill that uses both grinding media, usually steel balls, and a large lump of ore itself to grind the ore.

sedimentary – rock formed of sediment (conglomerate, sandstone, and shale formed of fragments of other rock transported from their sources and deposited in water) or by precipitation (rock salt and gypsum), or organisms (limestone).

sedimentary basin – segment of the earth's crust which has been down-warped and infilled with sediment. Sediments increase in thickness toward the centre of a basin.

seismic – acoustic method of compiling geological profiles, either on land or at sea.

shaft *(min)* – a vertical or inclined excavation through which a mine is worked.

skip (*min*) – container used to hoist rock in shafts.

spudding in *(pet)* – to start drilling an oil well.

stope *(min)* – underground excavation formed by extraction of ore.

well-head *(pet)* – control equipment fitted to the top of a well casing, incorporating outlets, valves, blowout preventers, etc.

wildcat *(pet)* – exploration well drilled with limited or no knowledge of the contents of the underlying rock structure.

winze *(min)* – a steeply inclined underground mine opening, like a shaft, driven to connect one mine level with a lower level.

APPENDIX 3: Glossary of abbreviations and acronyms used in the annual report

AGD	Australian Geodetic Data (now replaced by GDA)
ANZMEC	Australian and New Zealand Minerals and Energy Council
APLA	Amalgamated Prospectors and Leaseholders Association
APPEA	Australasian Petroleum Producers and Explorers Association
CALM	Department of Conservation and Land Management
DEP	Department of Environmental Protection
DISR	Commonwealth Department of Industry, Science and Resources
DME	Department of Minerals and Energy (see MPR)
DOLA	Department of Land Administration
DRD	Department of Resources Development (see MPR)
EMP	Environmental Management Plan
EP	Environment Plans
EPA	Environmental Protection Authority
GDA	Geocentric Datum Australia
GPS	Global Positioning System
KPI	Key Performance Indicator
LNG	Liquefied Natural Gas
LPG	Liquefied Petroleum Gas
MELC	Minerals and Environment Liaison Committee
MILC	Mining Industry Liaison Committee

MPR	Department of Minerals and Petroleum Resources, newly created on 1 July 2001
MODU	Mobile Offshore Drilling Unit
MOSHAB	Mines Occupational Safety and Health Advisory Board
NOI	Notice of Intent
NOGSAC	National Oil and Gas Safety Advisory Committee
OSCP	Oil Spill Contingency Plans
PILC	Petroleum Industry Liaison Committee
WALIS	Western Australian Land Information System
WRC	Water and Rivers Commission

Appendix 4: Reader's Feedback

Survey for Department of Minerals and Energy Annual Report 2001

Thank you for taking the time to read the Department's Annual Report 2001.

With the view that we can always improve our report, we seek your comments and suggestions on the content and format. We would appreciate it if you could take a few moments to comment on the following:

(Please circle the rating that best reflects your view)

The scale we are using is 1- poor through to 5 - very good.

1. Overall, did you find the report easy to read?	1	2	3	4	5
2. Overall, did you find the report informative?	1	2	3	4	5
3. Did you find the effectiveness indicators easy to understand and suitable to give an indication of our performance?	1	2	3	4	5
4. Did you find the efficiency indicators easy to understand and suitable to give an indication of our performance?	1	2	3	4	5
5. Did you find the Director General's report informative and relevant?	1	2	3	4	5
6. Did you find the report on Operations informative and relevant?	1	2	3	4	5
7. Did you find the report on Output measures informative and relevant?	1	2	3	4	5
8. How well does the Outcome and Output structure clearly reflect our role in the minerals and energy sectors?	1	2	3	4	5
9. Did you find the Corporate Governance section covering organisational performance and compliance easy to read and understand?	1	2	3	4	5

10. Do you have any specific comments that you think would improve our report next year?_____

_____

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Please remove this page (or take a copy) and post/fax/email it to:

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Fax: +618 9222 3660 or use our Internet site to make your comments:
www.dme.wa.gov.au email: helpdesk@dme.wa.gov.au

(Please include your name and address if you would like us to respond to your comments)