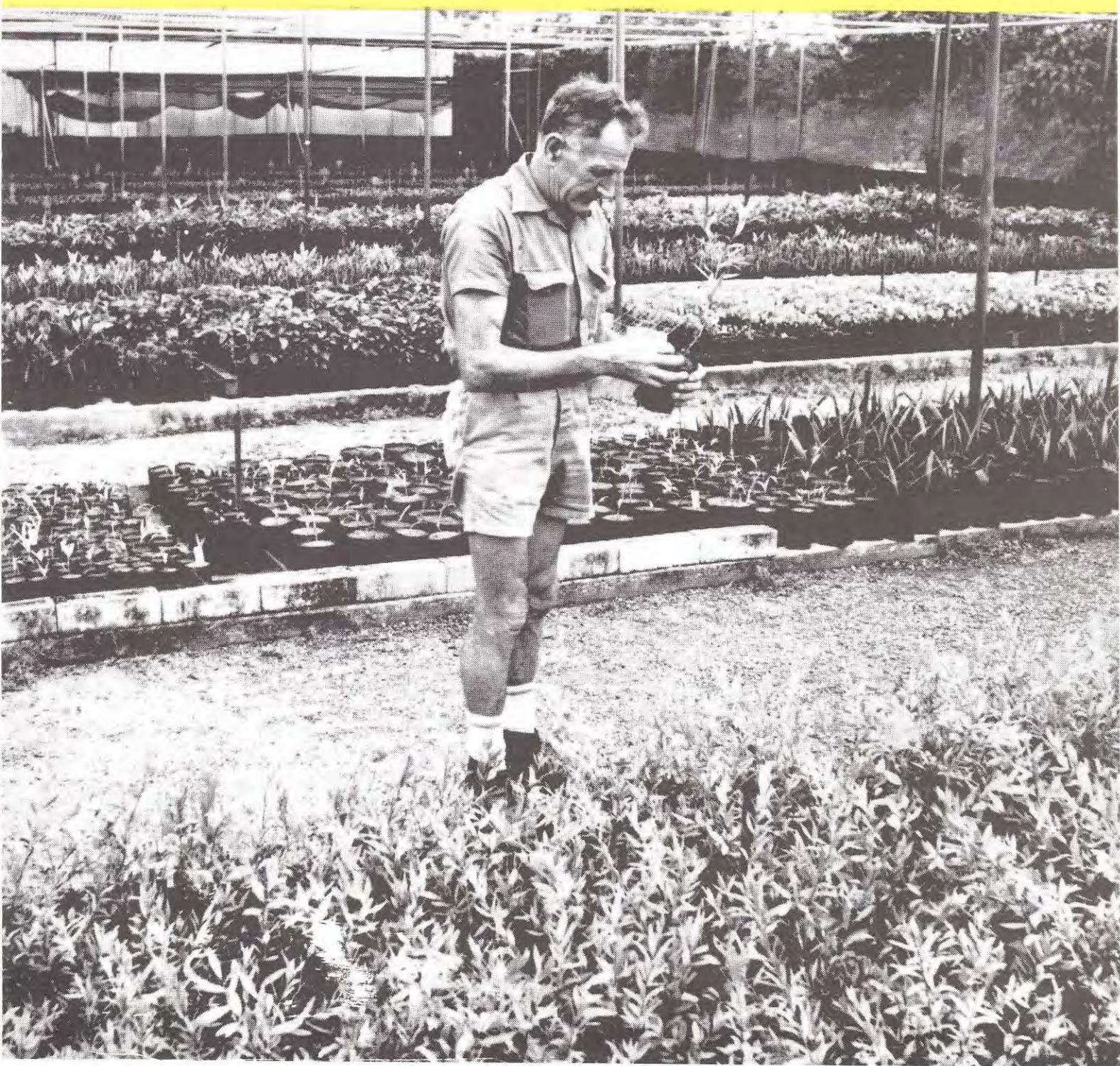


QUEENSLAND GOVERNMENT
MINING JOURNAL

VOLUME 79 No. 916 FEBRUARY 1978

PRICE 75c



Inside: Comalco releases regeneration film

NOTICE TO PROSPECTORS

FREE GOVERNMENT EXAMINATIONS AND ASSAYS

Prospectors finding minerals in Queensland which they believe to be of commercial value may send samples to the nearest Warden or Mining Registrar, who will forward them for identification or assay to the Department of Mines, Brisbane, or to the Government Assay Office at Cloncurry.

The samples will be examined or assayed free of charge, and the results sent to the finders through the Warden.

Each sample must be properly marked for identification; and a letter, giving the name and address of the prospector and the approximate locality of the find, should be posted separately.

Further details concerning the forwarding of samples are set out in a leaflet issued by the Department, and obtainable from the local Wardens or Mining Registrars.

R. E. CAMM,
Minister for Mines and Energy.

Mining Wardens are located at:

BIGGENDEN	CUNAMULLA	MOSSMAN
BLACKALL	EIDSVOLD	MT ISA
BOWEN	GEORGETOWN	MT MORGAN
BRISBANE	GLADSTONE	NANANGO
BUNDABERG	GYMPIE	ROCKHAMPTON
CAIRNS	HERBERTON	ROMA
CHARLEVILLE	INGHAM	SOUTHPORT
CHARTERS TOWERS	INNISFAIL	STANTHORPE
CHILLAGOE	IPSWICH	TOOWOOOMBA
CLERMONT	LONGREACH	TOWNSVILLE
CLONCURRY	MACKAY	THURSDAY IS.
COOKTOWN	MAREeba	WARWICK
	MARYBOROUGH	

QUEENSLAND GOVERNMENT MINING JOURNAL

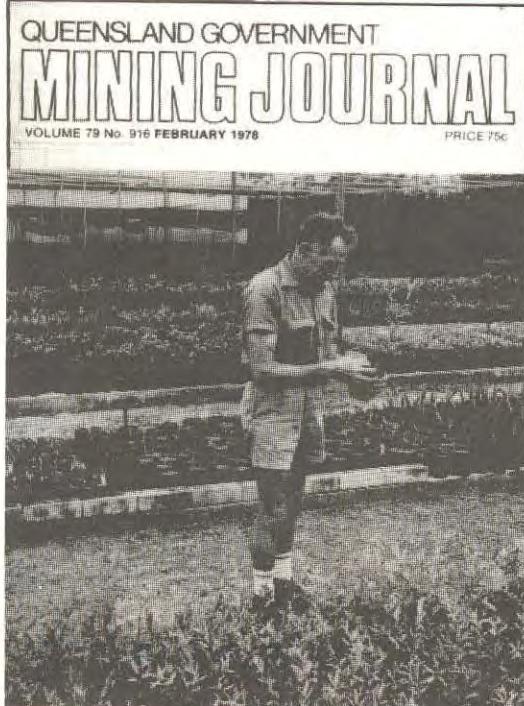
February 1978
Volume 79 No. 916



Published every month by the
Department of Mines
18th Floor, Watkins Place
288 Edward Street
Brisbane 4000
Telephone 224 4904

AUTHORITY: The Minister for
Mines and Energy

Editor: Joe Colgan



Comalco plant nursery, Weipa, is the heart of the bauxite mining company's regeneration programme. More than 100,000 trees are raised each year for planting during the wet season.

Contents

Power station orders for coal	59
Bernard Cox is State Mining Engineer	59
New Comalco film	60
Well-known figures for Canberra conference	61
Coal shipping record	62
Dillingham release	62
New mine loaders	63
Safety in the pit	64
Notice of land available for petroleum exploration	66
New Rules on coal mine safety	67
Company reports put on open file	77
Kaffir Chief Gold Mine — Pikedale Mining Field, near Stanthorpe	78
Notice of land available for mineral exploration	84
Mount Turner copper-molybdenum prospect, Departmental Area 71D	85
Metal prices	94
Galilee Basin — Review of petroleum prospects ..	96
So what's new	113
Reports from Wardens and Inspectors	116

THE RAINS CAME

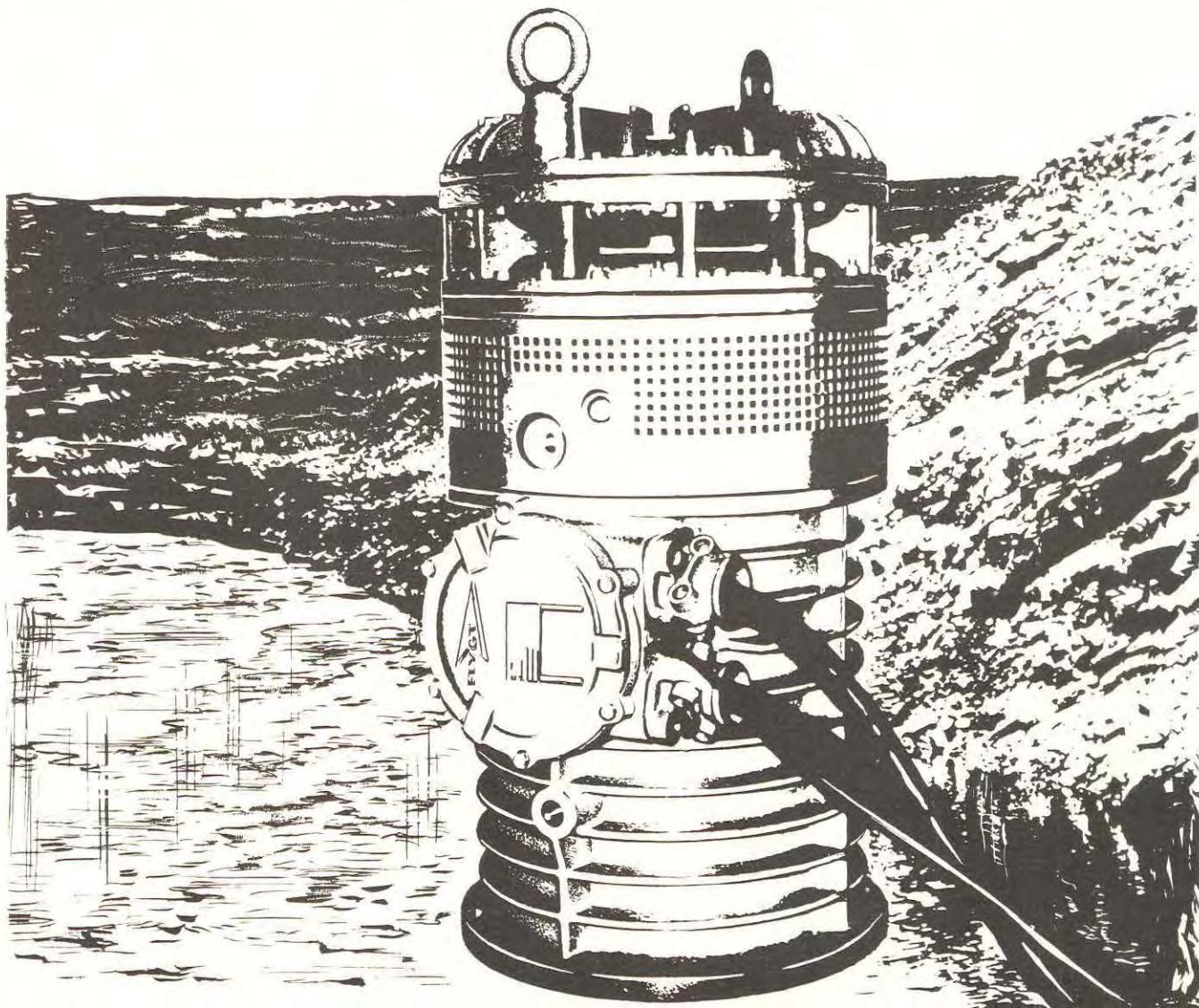
Then came the B2400~Flygt's new submersible mine pump

The Rains Came. Buckets full. Work stopped. Time lost. Not the best of positions for anyone to be in.

Then came the B2400, the newcomer from Flygt to get things moving. Now you have the B2400 you know it's possible to dewater most open cut mines in one stage.

Now you're confident again. Operations (the profit-making part what's more) will soon re-commence. Flygt's B2400 new submersible pump will see to that. With a total head of more than 160m, its ideal for mineshaft dewatering too.

Contact Flygt today — it pays.



FLYGT AUSTRALIA LIMITED

A member company of the world-wide Flygt Organisation.

29 Hope St., Ermington, N.S.W. 2115. Telephone: 858 2399

AUSTRALIA WIDE DISTRIBUTION NETWORK

BRISBANE
59 0566

MELBOURNE
560 5333

HOBART
34 3781

LAUNCESTON
31 4077

ADELAIDE
278 2532

PERTH
65 5111

KALGOORLIE
21 2635

Power station orders help to ensure work for coal miners

Recently announced arrangements to supply coal to power stations will help to ensure continuing jobs for mine workers in the Bundamba-Ipswich area and at Thiess Brothers' Callide mine in Central Queensland.

The Minister for Mines, Energy and Police (Mr R. E. Camm) said the Queensland Electricity Generating Board had agreed to accept 16 million tonnes of coal for Swanbank station, near Ipswich, over the next 15 years.

The order, aggregating about \$300 million, would be filled mainly from Box Flat, New Hope, Southern Cross, Rhondda and Westfalen collieries, with a small amount coming from Aberdare Colliery over a limited period.

Swanbank used 2 million tonnes of coal during 1977, but the burn is expected to be less this year as new capacity becomes available at Gladstone station.

Mr Camm said that a contract for the supply of 16,350,000 tonnes of coal to Gladstone and Callide power stations during the next 15 years had been signed by the Generating Board and Thiess Brothers and would begin immediately.

Annual coal deliveries from Callide would build to a peak of 1,200,000 tonnes in 1981, with 700,000 tonnes going to Gladstone power station and 500,000 tonnes to Callide station.

Total quantities to be supplied to the two power stations during the next 15 years are 9,950,000 to Gladstone and 6,400,000 to Callide.

Mr Camm said Gladstone power station would be supplied by rail from a new coal processing plant at the Callide mine. Present arrangement for the delivery of coal to the adjacent Callide power station by truck would continue.

He said the supply of nearly 10 million tonnes of steaming coal to Gladstone power station was necessary to meet increasing demand as the station expanded to six 275 megawatt generating units in the early 1980s.

Callide coal would augment the current Gladstone

supply from the Utah Development Company Blackwater mine.

Mr Camm said the State Electricity Commission, which had been involved in the contract discussions, was currently investigating further supplies of coal for Gladstone.

Included in these investigations is the evaluation of the Curragh coal deposits north of Blackwater.

BERNARD COX BECOMES STATE MINING ENGINEER

Mr Bernard J. Cox, 45, has been appointed State Mining Engineer and Chief Inspector of Mines, succeeding Mr Angun Norrie, who retired this month.

Mr Cox has been Assistant State Mining Engineer for the past year.

He holds degrees of Bachelor of Engineering in Mining from Adelaide University and Bachelor of Economics from Queensland University. He also holds a New South Wales First Class Mine Manager's Certificate in Metalliferous Mining, which has been approved by the Queensland Board of Examiners for use in Queensland.

Mr Cox is an Associate Member of the Australasian Institute of Mining and Metallurgy.

His professional experience includes five years at Broken Hill as an underground worker, surveyor and mine planning engineer, three years at Stradbroke Island as superintendent of a sand mining company, three years in Western Australia as production superintendent of a sand mining company, two years as a mining consultant, five years as managing director of sand mining companies, one year as a consultant and one year as general manager of a sand mining company.

QUEENSLAND MINERAL PRODUCTION

Page 12 of the January issue carried figures for Queensland mineral production in the September quarter of 1977.

The tables were incorrectly headed as "June Quarter."

The Editor regrets any inconvenience which might have been caused by this error.

R. J. FORREST CONSULTING GEOLOGIST

For geological appraisals, regional and detailed mapping, core and chip logging and reserve calculations.

17 Gatwick St., Stafford Heights, Brisbane, Queensland, 4053.
Telephone BRISBANE (07) 59 4455 (all hours)

NEW COMALCO FILM CARRIES A "DOWN-TO-EARTH" STORY

A new colour film telling the story of plant regeneration on bauxite mining areas on Cape York Peninsula was released in Brisbane this month by Comalco Limited.

The company began open cut mining at Weipa in 1963 and started planting trials on mined areas in 1966. Since then the rate of land rehabilitation has risen progressively so that the area planted each year now matches the mining rate of about 250 to 280 hectares.

The Comalco lease area totals 1,000 square miles, of which about 10 square miles has been mined and revegetated to date.

The film, "Regrowth at Weipa", deals in simple terms with the mining operation. It then covers the replacement of topsoil, site preparation, fertilizing, planting and care for the newly developing landscape, a process which costs Comalco some \$2,500 a hectare (2½ acres).

Painstakingly shot by Edwin Scragg, of Scope Films, "Regrowth at Weipa" is a highly professional production running for 15 minutes. However, no professional actors appear. Two members of the Weipa regeneration staff tell the story of their job in their own words. The effect is good.

They deliver the message that factors which make up the natural environment have an important bearing on the scope and type of regeneration work undertaken at Weipa.

Much of the Cape York Peninsula is covered with an open forest. With the open forest there are numerous small areas of closed rain forest usually associated with fresh water swamps, stream beds and coastal dunes. Low-lying areas close to the coast and estuaries are covered with mangrove and salt marsh vegetation.

The principal species of trees in the open forest are Messmate or Darwin Stringybark (*Eucalyptus tetrodonta*), Bloodwood (*Nesophila*), Ironwood (*Eryphrophloem clorostachys*), Wattles and Shea Oak (*Casuarina*). Of these species, the Messmate is predominant.

HARSH CLIMATE

The Messmate and Bloodwood are heavily infested with termites, whereas the Ironwood, Wattle and Shea Oak are highly resistant. A feature of the indigenous open forest is that the larger trees are highly resistant to fire which is a frequent hazard.

The Weipa climate may be described as harsh in as much as there are long periods of rain and high temperatures and even longer periods of very dry, hot weather. The wet, hot months are very favourable to plant growth, whereas the dry, hot months pose considerable stress for small trees and plants.

The soil, even in an undisturbed condition, is poor. There is a major deficiency of phosphate and lesser deficiencies of potassium and nitrogen. These

disadvantages must be compensated for by the addition of suitable mineral fertilisers. The soil and the floor of the mined areas also present physical problems. The soil is light and free-draining. It does not hold moisture long after the end of the wet season.

The light soil structure does not provide adequate support for tree roots during periods of high winds and the ironstone capping which lies below the bauxite is too hard to allow root penetration. The floor therefore must be mechanically ripped before planting to assist root penetration.

TERMITE PROBLEM

During the wet season the water table rises to the surface in certain areas, causing ponding. The mine floor in these areas must be contoured to provide drainage.

The presence of termites in the surrounding forest seriously limits the range of tree species which can be grown.

Variables affecting the regeneration programme make a long-term fixed programme impractical. Guidelines are therefore reviewed and revised at about two-year intervals so the regeneration programme can be varied to accommodate changes in mining sequence and community attitudes and at the same time respond to changes in regeneration procedures shown to be necessary by the results of earlier plantings.

A two-year programme which ended in March, 1977, was directed at increasing the regeneration rate well in excess of the mining rate. This eliminated a backlog which had developed while earlier technical problems were being solved.

The two-year programme was also directed at developing mechanical direct seeding techniques. Both objectives were met.

The current two-year programme is directed at developing mechanical direct-seeding techniques for local indigenous species of trees previously found difficult to propagate and, at the same time, to maximise the planting of African Mahogany in areas allocated to large-scale commercial plantings.

Comalco officials hope that "Regrowth at Weipa" will be used extensively by community groups and educational organisations. Inquiries may be directed to Comalco offices in Brisbane, Melbourne and Sydney.

Joint conference in Canberra

Some of the best-known figures on the mining scene will address a joint conference of the Australasian Institute of Mining and Metallurgy and the American Institute of Mining, Metallurgical and Petroleum Engineers to be held in Canberra from May 15 to 18.

The conference programme suggests that the meeting could be a most informative and stimulating event for those engaged directly in the mining and mineral processing industries as well as for traders and public administrators who are involved with those industries.

The conference will meet for two sessions on each of the three days, dealing with a particular subject during each session.

The subjects and the keynote speakers are as follows:

1. The Mineral Equation — Sir Ian McLennan, Chairman, The Broken Hill Proprietary Co. Ltd.

2. The Energy Equation — Ian K. MacGregor, Chairman, Amax Inc.
3. Environmental and Social Responsibilities — W. H. C. Simmonds, National Research Council of Canada.
4. Producer Groups and Commodity Agreements — Simon D. Strauss, Vice-Chairman, ASARCO Inc.
5. Role of Governments — Sir Charles Court, Premier of Western Australia.
6. Relations with Public, Profession and Governments — F. F. Espie, Chairman, Bougainville Copper Ltd.

For convenience, the sessional programme with the names of Chairmen and other speakers is set out below.

The organisers have offered delegates a pre-conference tour of New Zealand and the choice of five post-conference tours within Australia.

Information on the joint conference can be obtained from Miss B. E. Jacka, Clunies Ross House, 191 Royal Parade, Parkville, Victoria. 3052.

SESSION		CHAIRMAN	KEYNOTE ADDRESS	PAPER 1	PAPER 2	PAPER 3
MONDAY, MAY 15, 1978	1. THE MINERAL EQUATION	H. Arthur Nedom* President & Managing Director, Weeks Petroleum Limited	Sir Ian McLennan Chairman, A.N.Z. Banking Group Ltd	P. Malozemoff* Chairman, Newmont Mining Corporation	G. Frank Joklik* Vice-President, Exploration, Kennecott Copper	Sir James Foots Chairman, MIM Holdings Ltd.
	2. THE ENERGY EQUATION	H. K. Worner formerly Chairman, National Energy Advisory Committee	Ian K. MacGregor* Chairman, Lehman Bros. Ltd.	G. A. Mackay Managing Director, Electrolytic Zinc Co. of A/asia Ltd.	Sir Willis Connolly Chairman, Australian National Committee, World Energy Conference	W. M. McCardell* Executive Vice-President, Esso Eastern, Inc.
TUESDAY, MAY 16, 1978	3. ENVIRONMENTAL & SOCIAL RESPONSIBILITIES	J. H. Ingram Managing Director, N.Z. Steel Ltd.	W. H. C. Simmonds* Nat. Research Council, Canada	L. C. Brodie-Hall Director, Western Mining Corp. Ltd.	G. Paul Phillips Executive Director, Australian Mining Industry Council	Donald O. Rausch* Vice-President, N.L. Industries, Inc.
	4. PRODUCER GROUPS & COMMODITY AGREEMENTS	Sir Arvi Parbo Chairman, Western Mining Corporation Ltd.	Simon D. Strauss* Vice-Chairman, ASARCO Inc.	J. Scully Secretary, Department of Trade and Resources	R. T. Madigan Chairman, Hammersley Holdings Ltd.	John C. Duncan* Chairman, St. Joe Minerals Corporation
WEDNESDAY, 5. MAY 17, 1978	ROLE OF GOVERNMENTS	Dr. J. Boyd* President, Materials Association	Sir Charles Court Premier of Western Australia	Charles W. Robinson* Vice-Chairman, Blyth Eastman Dillon & Co. Inc.	A. M. Wilson* President, Utah International	J. Scully Secretary, Department of Trade and Resources
	6. RELATIONS WITH PUBLIC, PROFESSION & GOVERNMENTS	Wayne L. Dowdley* Executive Vice-President, Envirotech Corporation	F. F. Espie Chairman, Bougainville Copper	Paul W. Cane* Vice-President, Bechtel Corporation	James F. McCloud* President, Kaiser Engineers Inc.	R. H. Myers Vice-Chancellor, University of New South Wales

* AIME Chairman or author.

L. R. BASTER & ASSOCIATES CONSULTING MINING ENGINEER

Mining Property and Ore Reserve Evaluations, Development and Operational Planning.
Feasibility Studies with Underground or Open-cut Designs, Mine Plant Design, Associates Mineral Exploration, Metallurgical and Management Services.

2nd Floor, 163-165 Collins Street
MELBOURNE 3000

Telephone: 63 5013/4

After Hours: 99 4670

IMM Congress at Hong Kong

The Eleventh Commonwealth Mining and Metallurgical Congress, which is being organized by the Institution of Mining and Metallurgy, will be held at the Convention Centre, Hong Kong, from 6 to 12 May, 1978.

More than 60 preprinted papers, by authors in some 16 countries, covering many aspects of economic geology, mining engineering, mineral processing and extractive metallurgy, will be presented.

Details of the Congress — papers, technical and cultural tours, social events and the International Mining and Metallurgical Exhibition — are available from: The Secretary, Institution of Mining and Metallurgy, 44 Portland Place, London W1N 4BR, England.

ANOTHER WORLD RECORD FOR HAY POINT

The bulk carrier Lake Arrowhead sailed from Hay Point last month with the world's biggest single coal shipment.

Drawing 17.68 metres, the ship departed for Taranto, Italy, with 151,271 tonnes of coking coal from the Saraji mine in Central Queensland.

Lake Arrowhead broke the record set by Nordic Clipper which sailed from Hay Point on October 30, 1977, with 143,370 tonnes of Saraji coal for Taranto.

A spokesman for Utah Development Company, operators of the Saraji mine, said a king tide which coincided with the berthing and sailing schedule of Lake Arrowhead permitted the large tonnage to be loaded. Under normal tidal conditions such a load would not be possible.

INTERNATIONAL MINING EXHIBITION

An international exhibition, MINERALS 79 INTERNATIONAL, will take place in Hall 3A of the National Exhibition Centre, Birmingham, England, from Monday, June, 18 to Friday, June 22, 1979. The exhibition will include actual minerals (but not metal-bearing ores or fossil fuels) as well as the machinery used to extract and process them.

Equipment for drilling, refining, separating, classifying, crushing, grinding, calcining, drying and storing minerals will be seen alongside high-precision analytical and quality-control instruments.

The exhibition will also provide a unique marketplace for the display of the minerals themselves — from rare earths and purified metal salts and oxides to non-metallic materials for use in the steelmaking, foundry, paint, plastics, rubber, construction, ceramic and chemical industries.

Suppliers, manufacturers and traders from all over the world will occupy some 4 500 square metres of actual display space.

For further information contact Mike McIntyre, Publicity Officer, International Symposia & Exhibitions Ltd., Queensway House, 2 Queensway, Redhill, Surrey RH1 1QS, England.

McELROY BRYAN & ASSOCIATES PTY. LIMITED GEOLOGICAL & ENVIRONMENTAL CONSULTANTS

A group of nine professional geologists and environmentalists involved in coalfield geology, special stratigraphic studies, management and supervision of exploration programmes, base mineral and industrial mineral evaluations and environmental studies of mining projects.

68 Alfred Street,
Milsons Point. N.S.W. 2061
Phone (02) 922-2477

444 Queen Street,
Brisbane. QLD. 4000
Phone (07) 221-9269

Dillingham Release

Dillingham Corporation last month made the following news release from its headquarters in Honolulu, Hawaii: Dillingham Corporation is going out of the mineral sands mining business in Australia. In its 1977 financial statements, the company will provide for a loss of about \$3.3 million for discontinuing its mining operation in New South Wales and a further write-down of mineral sands inventories of about \$2.7 million.

These estimates are subject to year-end audit. The company wrote down mineral sands inventories \$3.2 million in the third quarter of 1977 and in 1976 made an extraordinary charge of \$6.5 million to provide for losses resulting from the cessation of mining at Fraser Island, Queensland, as a result of Federal Government action.

The current provision for discontinuance, inventory write-downs and losses from 1977 operations aggregate approximately \$10.3 million of which \$6.3 million is a fourth quarter 1977 charge. The company continues to expect overall operations for the year to be profitable.

Commenting, E. L. Carter, Dillingham executive vice president, said: "The government of New South Wales announced in 1977 that it would ban future mining in areas designated as national parks. This will prevent us from mining most of the areas where we now have leases and will severely reduce the remaining mining life of our operations. After a thorough review of the options available to us, we have concluded that the N.S.W. Government action, combined with the Federal Government action on Fraser Island, makes it impossible for us to continue mineral sands mining in Australia.

"As a result of the shutdown on Fraser Island and in N.S.W., we have been forced to terminate about 350 employees and discontinue a business we first entered in 1967. Liquidation of inventories continues, but more slowly than we would like due to a currently weak market and our inability to offer continuity of supply to a buyer.

"Dillingham has a US \$25 million claim now before the Australian government to recover losses resulting from the government's action in closing down the Fraser Island operation. That action and the N.S.W. Government action represent unprecedented reversals of long-standing policy and practice in Australia's dealings with the mining industry and we will make every effort to obtain fair treatment.

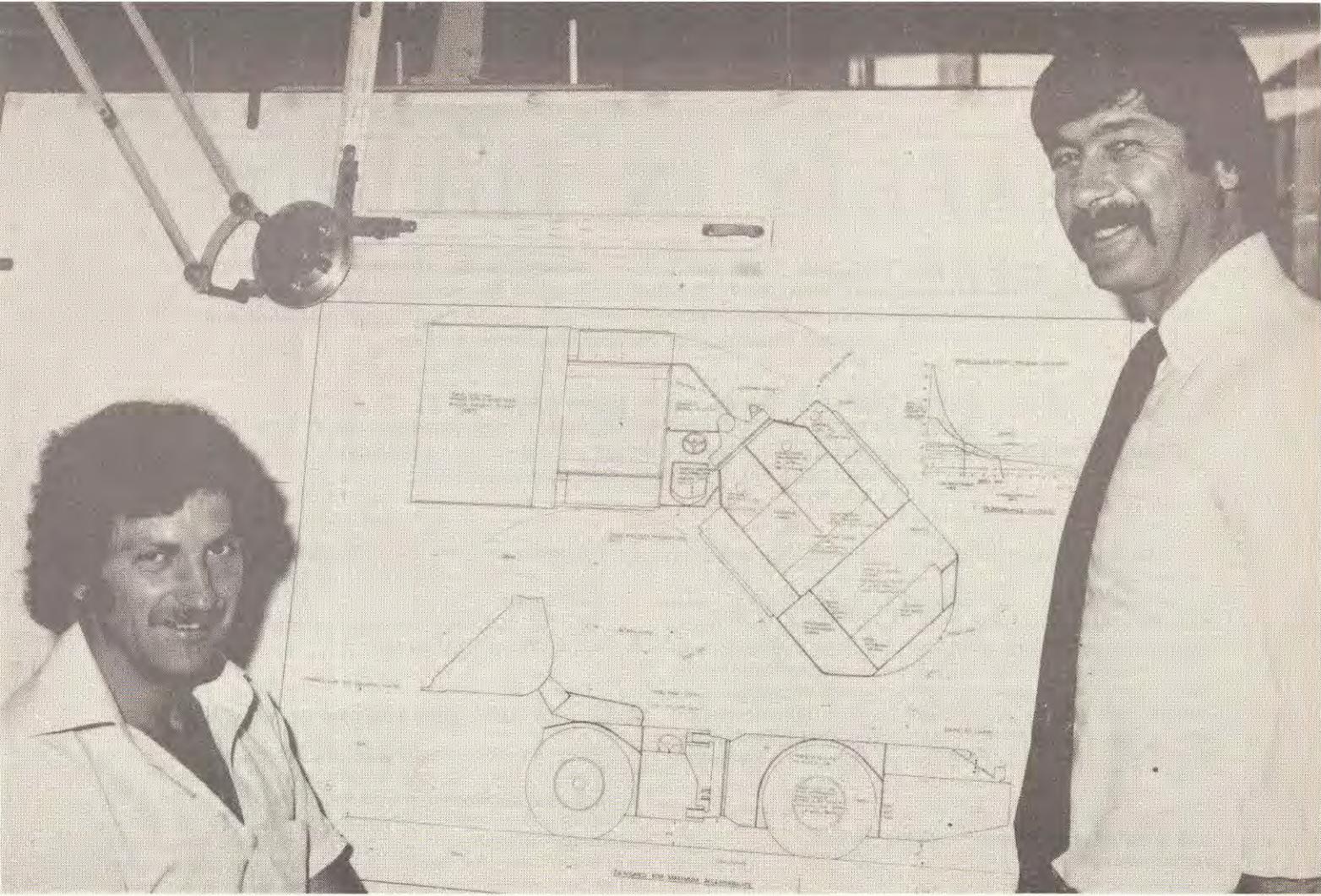
"Dillingham's other Australian activities, primarily maritime and construction, are unaffected by the mining decision."

Phone 829 & 113
P.O. Box 253

22 DALRYMPLE RD
CHARTERSTOWERS. Q. 4820

RON EDGAR LEANDA DRILLING PTY. LTD.

DIAMOND AND PERCUSSION DRILLING
WATER WELLS



Underground loaders designed for Australian conditions

Details of two new underground mine loaders designed specifically for Australian conditions have been announced by Horwood Bagshaw Ltd. They are a low profile articulated diesel loader, designed specially for coal mines, and an electric loader for metalliferous mines.

The manager of Horwood Bagshaw Mining and Industrial Division (Mr. R. G. F. Andrews) said the two new machines had been designed at the company's Edwardstown, SA, head office, to meet the needs of Australian miners, the coal loader design being finalised only after 12 months close liaison with mining companies to determine specifications.

The main design requirements were for extra-low profile, high capacity and good manoeuvrability, stability and safety. Previously available machines had been most based on conversions of metalliferous loaders or agricultural tractors.

Two versions of the machine are available — one with mechanical drive and the other with hydrostatic.

Features include a machine height of 1295 mm, overall length of 7420 mm, ground clearance of 270 mm, 45° articulation, outside turning radius of 5050, and discharge height of 1845mm.

Power is by a fully flame proofed Caterpillar 3304 engine developing 74.6 kw (100 hp), driving through enclosed axles.

The self-levelling bucket is 2134 mm wide with a capacity of 2.24 cubic metres and is fitted with an ejector plate.

Other features include orbitrol steering, centre slew ring bearing (for oscillation) to reduce height and length, and easy accessibility to all components.

The HB4E electric loader was designed following a successful conversion of a diesel powered loader to electric power.

The machine is the first designed in Australia specifically for electric power and features a 550 volt, 40 Hz motor developing 74.6 kw (100 hp).

The bucket capacity is 1.9 cubic metres, with a breakout force of 7,718 kg (17,000 lb.). Other features include machine height of 1450 mm, length of 7000 mm, two-speed forward and reverse and retractable reel holding 100 metres of cable.

Above: Mr. Andrews (right) and design engineer Angelo Di Cesare with plans of the coal loader.

CONSULTING COAL GEOLOGIST

G. E. Allen

12 Westridge St.,
Brookfield, Q. 4069

Tele: (07) 374 1615

SAFETY IN THE PIT

Few would argue with the proposition that mining is an inherently dangerous occupation, irrespective of the methods used or whether the workings be underground or in an open pit. Open pit workers need to be every bit as safety conscious as men who win a living hundreds of metres below the surface.

These notes are based on a paper prepared by G. H. HUTCHINSON, District Mining Engineer and Inspector of Mines, Mount Isa, for the guidance of open cut personnel, particularly truck drivers and plant operators.

The first question is "Who is responsible for safety in, on or about a mine?"

Throughout the Mines Regulation Act and Regulations made under the Act, there are many references to requirements that the mine manager shall do this or do that. Clearly the legal responsibility rests with the manager (and, through him, his supervisors) to provide safe working conditions for all persons employed in the mine. However, this responsibility is not one-sided. Consider Section 41 of the Mines Regulation Act 1964-1968:

"41. Employees to inspect equipment and report accidents.

- (1) Every person employed in, on or about a mine—
 - (a) shall, before commencing his work, and during the course of his work, take reasonable care to ascertain that all machinery and equipment to be used, or being used, by him and the place in which he is to work, or is working, is not unsafe;
 - (b) shall not use any machinery or equipment, or work in any place which is unsafe;
 - (c) who notices in, on or about that mine anything likely to produce danger of any kind to any person shall forthwith report the same to the manager;
 - (d) who has knowledge of the occurrence of an accident in, on or about that mine shall report such accident to the manager as soon as possible after its occurrence.
- (2) A person who fails to comply with the provisions of subparagraphs (a), (c) or (d) of subsection (1) of this section or, in the case of subparagraph (b) thereof, knowingly contravenes the provisions of that subparagraph, commits an offence against this Act."

In other words—

- an employee who fails to check on the safety of machinery and equipment and his working place commits an offence
- an employee who uses unsafe machinery or equipment or who works in any place which is unsafe commits an offence
- an employee who notices anything likely to produce danger and does not report it commits an offence; and finally

- an employee who has knowledge of the occurrence of an accident and does not report same promptly commits an offence.

So the familiar slogan "Safety is everybody's business" has a basis in law.

OPERATION OF HAUL TRUCKS ON BENCHES

Many benches are not wide enough for one haul truck to pass another or any other vehicle. This condition applies more particularly as benches approach their final position in the overall pit design. If there does happen to be a wider section at or near the loading area, then trucks may drive in empty, position themselves for loading, then drive out, proceeding both ways in the forward direction.

If, however, there is not sufficient width, then drivers must reverse in empty and drive out forward when loaded.

When turning vehicles on benches, one most important rule which drivers must observe is: Never reverse towards the brow or edge of the bench. This applies to ALL vehicles from haul trucks to mini mokes.

When turning, always back into the toe of the bench. See Figure 1.

Another golden rule is always to keep well inside the line of white drums marking the brow. Occasionally, one or two drums may be set in further from the brow than others.

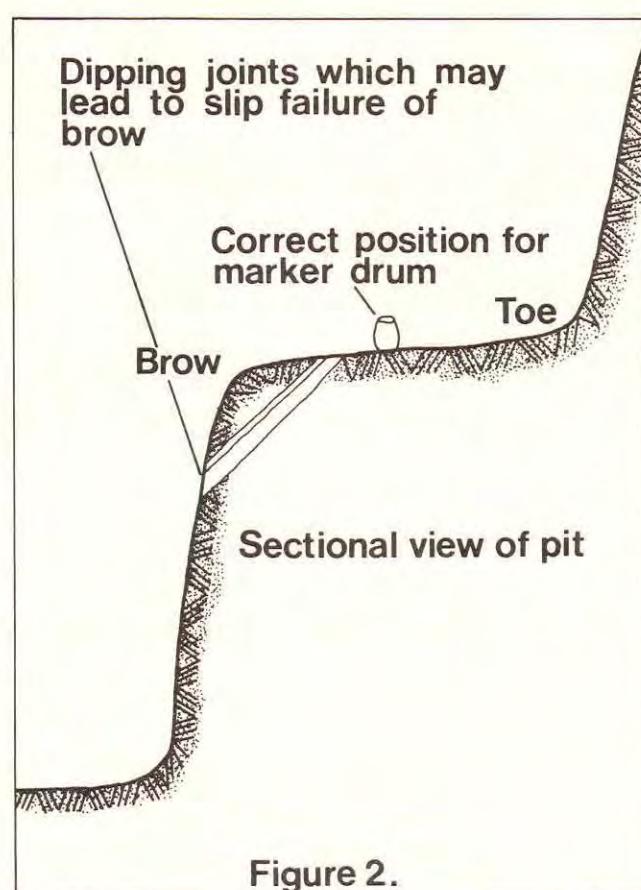
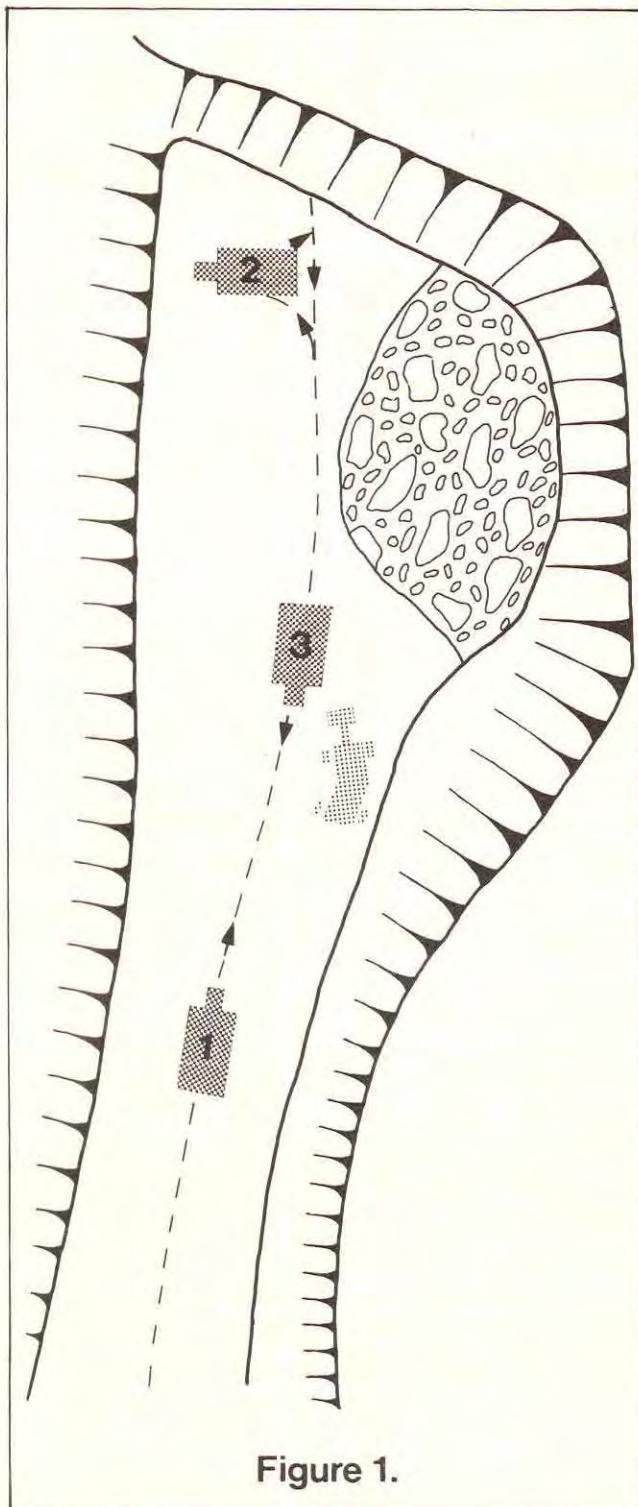
Drivers should accept that the drums have been so positioned for safety reasons and give them clearance. There is no place in a pit for a driver who plays skittles with safety markers.

The reason some drums may be set in more than others from the brow is that in an orebody it is not uncommon to encounter a dipping joint system. (See Figure 2). In these circumstances the only safe place to locate the marker drum is well back from the brow.

With narrower benches, drivers should develop the practice of hugging the toe when travelling along benches — whether in forward or reverse.

LOADER OPERATION ON BENCHES

Many of the points already made about haul trucks also apply to loader operation. When working a muck pile in a restricted area, attack it from the end, not near the middle which may be dangerously close to the brow.



Regular chaining and barring down of bench faces must improve safety for those men required to work at the toes of benches. But it is the responsibility of every man to ensure that his work place is safe.

Always keep an eye on the face above. When you spot a loose rock bring it down if you can.

Drillers can often use their machines to do this just as loader operators can use their buckets. But if it means taking personal risks or possibly causing damage to a machine, give the rock a wide berth until arrangements can be made to deal with it safely.

After chaining or barring down, fallen material that collects along the toes must be cleaned up promptly so that trucks and other vehicles using the bench are not forced to travel too close to the edge. In any case this is just another example of good housekeeping. A tidy pit is a safe pit.

TIDINESS AND SAFETY

Some of the larger open cuts employ a man whose full time job is to work around the benches barring down loose rocks. Chaining is a good system but it cannot dislodge everything that needs to be brought down in the interests of safety on the bench below.

REPORTING DEFECTS

If any driver or operator becomes aware of any defect in his truck or machine which in his opinion may affect the safe operation of the unit, he must report it to his foreman. Ideally, all such reports should be recorded in writing by the maintenance section which should also record what action was taken.

DEPARTMENT OF MINES

Notice of Land Available for Taking Up under Authority to Prospect for Petroleum

The lands described in the following Schedule have become available for taking up under Authority to Prospect for Petroleum.

Any company or person interested in conducting a programme of exploration for petroleum over any part of these lands is invited to apply for an Authority to Prospect under "The Petroleum Acts, 1923 to 1976".

Reports and other information about these lands are lodged with the Geological Survey of Queensland. Available information may be examined and copied by arrangement with the Chief Government Geologist, Mineral House, 2 Edward Street, Brisbane. 4000.

All applications received by the Under Secretary, Department of Mines, Brisbane, by June 1, 1978, for Authorities to Prospect for Petroleum over the lands described in the following Schedule will then be considered without priority for the order in which they are received.

In addition to application for the lands described in the following Schedule, applications are invited for lands previously notified as being available. Applications for these lands will receive immediate consideration.

An application for an Authority to Prospect for Petroleum, should be made in writing to the Under Secretary, Department of Mines, 18th Floor, Watkins Place, 288 Edward Street, Brisbane, 4000.

In the application, the following information should be given:—

- (1) Description of area required.
- (2) Name of company or person to whom it is requested that the Authority to Prospect be granted.
- (3) If a company, whether registered in Queensland.
- (4) Name and address for reply.
- (5) Proposed programme of exploration, if granted the Authority to Prospect. This should be set out in as much detail as possible for each year of the proposed programme.
- (6) Minimum expenditure for each year of the proposed programme.
- (7) Technical, and financial ability of the applicant to carry out the proposed programme.

Applications should be submitted in sealed envelopes with "Application for an Authority to Prospect for Petroleum for (describe area, eg. Ex 217P)" on the outside.

SCHEDULE

The land in the State of Queensland within the boundaries of the Blocks as defined and shown on Department of Mines Block Identification Map — Series B (copies of which may be purchased from the Department of Mines, Brisbane) and as set out hereunder.

EX. 220P — 10 BLOCKS BLOCK IDENTIFICATION MAP — SERIES B BRISBANE

Blocks

2095—2099 (both incl.)
2167—2171 (both incl.)

EX. 220P — 12 BLOCKS BLOCK IDENTIFICATION MAP — SERIES B BRISBANE

Blocks

2388—2391 (both incl.)
2460—2463 (both incl.)
2532—2535 (both incl.)

EX. 220P — 2 BLOCKS BLOCK IDENTIFICATION MAP — SERIES B BRISBANE

Blocks

2601
2673

NEW EUCLID REAR-DUMPER

A new 100-ton rear-dump hauler developed by Euclid, Inc. will go into production later this year.

The makers say the key design feature of the new unit, known as the R-100, is an all-hydraulic braking system that eliminates air valves, air tanks, pressure intensifiers and other hardware associated with an air-over-oil actuation system.

The new brake system is free floating, internal expanding, two shoe type with automatic adjusters. Front brakes measure 36in. diameter by 8½in. wide, with rear brakes sized 36in. diameter by 12in. wide.

The all-hydraulic actuation provides increased braking force and speeds up system response, reducing the possibility of operator "overbraking". A primary accumulator stores oil under sufficient pressure so that 100 per cent braking pressure is always available.

With a capacity of 76.6 cubic yards, the R-100 body has side panels made of ½in. steel plate of 100,000 psi yield strength. The body floor and tail chute are made of ¾in. thick 100,000 psi yield steel plate. The floor and tail chute have additional vertical impact resistance provided by closely spaced box section floor stiffeners on the body underside.

The unit has a 75ft. turning circle, while the two-man cab offers excellent visibility with its forward placement and over 22 sq. ft. of glass area. The closed loop exhaust system combined with the cab's position high above the engine and full cab insulation assure comprehensive noise control.

The R-100 will be offered with a choice of two engines: Detroit Diesel 12V-149T with 1000 gross H.P. (SAE), and the Cummins KTA-2300-C with 1050 gross H.P. (SAE).

NEW RULES ON COAL MINE SAFETY

New Rules under the Coal Mining Act 1925-1976 were notified in the Queensland Government Gazette of Saturday, January 21. The new Rules are designed to improve mine safety through more stringent ventilation requirements, control of ventilation machinery, and provisions on flammable gas content, gas detectors, monitors and self-rescuers. The notice is as follows:—

COAL MINING ACT 1925-1976

MAKING OF RULES

Department of Mines,
Brisbane, 19th January, 1978.

His Excellency the Governor, acting by and with the advice of the Executive Council, having, in pursuance of Section 111 of the *Coal Mining Act 1925-1976*, made amendments to Rules in the Second Schedule to the Act as set forth in the Schedule hereto, such amendments are published for general information.

R. E. CAMM,
Minister for Mines, Energy and Police.

THE SCHEDULE

The Second Schedule to this Act is amended by rescinding Rules 1 to 5 and inserting the following Rules:—

"VENTILATION"

Rules 1 to 1H — General Provisions for Underground Coal Mines;

Rules 2 to 2D — Prevention of Leakages of Air in Underground Coal Mines;

Rules 3 to 3K—Distribution of Air in Underground Coal Mines;

Rules 4 to 4A—Ventilating Machinery for Underground Coal Mines; and

Rules 5 to 5P—Provisions relating to flammable Gas Content, Gas Detectors, Monitors and Self-rescuers.

1. General Provisions for Underground Coal Mines.

(1) The manager of an underground coal mine shall take such steps as are necessary for ensuring that there is constantly produced in all parts of the mine belowground ventilation adequate for the following purposes, namely—
 (a) providing air containing a sufficiency of oxygen amounting to at least nineteen per cent by volume of the general body of the air;
 (b) diluting gases that are flammable or noxious so as to render them harmless and removing them; and
 (c) restricting the concentration of any noxious gas in the general body of the air so that it does not exceed the maximum allowable in the following table:—

TABLE

Gas	Maximum allowable Concentration	
	Percentage by Volume	Parts per Million
Carbon Dioxide (CO ₂)	0.5%	5,000
Carbon Monoxide (CO)	0.005%	50
Oxides of Nitrogen (Expressed as NO ₂)	0.0005%	5
Hydrogen Sulphide (H ₂ S)	0.001%	10

Provided that the Chief Inspector, on receiving a written application from the manager of a mine, may grant exemption from the maximum allowable concentration of the above gases under such conditions as he may impose.

(2) Nothing in sub-rule (1) of this rule shall be construed as requiring the production of ventilation—

- (a) in any part of a mine which is stopped off in a manner approved by the Chief Inspector; or
- (b) in any waste where access thereto is restricted to a deputy or holder of a higher certificate granted under this Act.

(3) Where, in any part of a mine required by the foregoing provisions of this rule to be ventilated the ventilation is interrupted or ceases to be adequate for the purposes mentioned in sub-rule (1) of this rule, the manager of the mine shall ensure that, until such ventilation is restored—

- (a) access to that part of the mine is restricted so as to prevent any person from entering it who is not authorised by a deputy or holder of a higher certificate granted under this Act to do so; and
- (b) no person is permitted to remain in or pass through such part except for the purpose of restoring the ventilation.

1A. In the discharge of the duty imposed on him by rule 1 the manager of an underground coal mine shall ensure the maintenance in the mine of working conditions in relation to:—

- (a) Temperature and humidity;
- (b) Minimum air velocity; and
- (c) Amount of dust in the atmosphere

which comply with the requirements of the rule made under this Act in respect of working places. The manager of an underground coal mine shall ensure that no person is employed in any part of such mine which does not comply with such requirements, except for the purpose of restoring the ventilation to comply with the prescribed requirements.

- 1B.** (1) This rule applies to waste other than—
 (a) waste which is stopped off to the satisfaction of the inspector; or
 (b) waste other than as aforesaid with respect to which it is proved and recorded by the manager that there is therein—
 (i) no flammable gas; and
 (ii) no noxious gas in a concentration higher than the maximum allowable in rule 1.
 (2) The manager of an underground coal mine which contains waste to which this rule applies shall ensure either—
 (a) that there is adequate ventilation constantly produced in that waste for the purpose mentioned in rules 1 and 1A; or
 (b) that appropriate steps are taken to prevent the dangerous emission from that waste of flammable and/or noxious gas into places in which persons work or travel.

1C. (1) The manager of an underground coal mine shall ensure that there is provided and maintained on the surface of such mine mechanically-operated apparatus capable of producing an amount of ventilation sufficient (apart from any ventilation produced by a mechanically operated apparatus belowground) to enable all the persons who are belowground in the mine at any one time to leave it safely; and any apparatus provided in pursuance of this sub-rule shall, if it is not normally used to produce ventilation, be used once at least in each week and be kept constantly available for use.

(2) A mechanical appliance for ventilation other than an underground installation shall be in such position and placed under such conditions as will tend to ensure its being uninjured by an explosion.

(3) Compressed air shall not be used for the purpose of diluting or removing flammable or noxious gas, except where an inspector by notice in writing given to the manager of the mine directs or allows compressed air to be used for that purpose.

1D. If an inspector is of opinion, with respect to a part of a mine that is by rule 1 hereof required to be ventilated, that, in the interests of the safety of health of the persons employed in that part of the mine, it is necessary to improve the ventilation produced therein, he may give to the manager of the mine a notice specifying that part and stating that he is of opinion aforesaid with respect thereto and requiring (according as may be specified in the notice) either—

- (a) that ventilation which, after the expiration of such period beginning with the day on which the notice becomes operative as shall be specified therein, is produced in that part of the mine in pursuance of the said rule 1, shall conform to such requirements as may be specified in the notice; or
 (b) that such works for the purpose of improving the ventilation in that part of the mine as may be specified in the notice shall be executed before the expiration of the period set forth in paragraph (a) hereof: Provided that the manager may within seven days object in writing to the Chief Inspector against any such requisition of an inspector and the Chief Inspector may confirm, vary or cancel any such requisition.

1E. (1) Where a diesel engine is operated below-ground in any part of an underground coal mine the manager shall ensure—

- (a) That the quantity of fresh air in all mine workings where the diesel engine is operated does not contain combustible or other contaminating gases in such concentration as to affect combustion in the diesel engine and significantly increase the emission of noxious or other objectionable gases; and
 (b) That a diesel engine is not operated at any place where the concentration of any noxious gas exceeds the maximum allowable concentration in the following table:—

TABLE

Gas	Maximum allowable Concentration	
	Percentage by Volume	Parts per Million
Methane (CH_4)	1.25%	12,500
Carbon Dioxide (CO_2)	0.5%	5,000
Carbon Monoxide (CO)	0.005%	50
Oxides of Nitrogen (Expressed as NO_2)	0.0005%	5

(c) That if it is found that concentration of a noxious gas exceeds the maximum allowable in paragraph (b) of this sub-rule the diesel engine shall be stopped immediately and shall not be re-started until the concentration has been reduced to within the limit specified in such paragraph.

Provided that the Chief Inspector, on receiving written application from the manager of a mine, may grant an exemption from the maximum allowable concentration of carbon dioxide under such conditions as he may impose.

(2) The manager shall by systematic sampling ensure that no diesel engine is operated belowground if the undiluted and unconditioned exhausted gas of the engine is found to contain any noxious gas in excess of the percentage by volume in the following table:—

TABLE

Gas	Percentage by Volume	Equivalent in Parts per Million
Carbon Monoxide (CO)	0.15%	1,500
Oxides of Nitrogen (Expressed as NO_2)	0.10%	1,000
Aldehydes (Expressed as HCHO)	0.005%	50

(3) The manager shall ensure that no diesel engine is operated belowground if such engine has any defect which may cause danger to persons.

1F. (1)—

- (a) Subject to this rule—

- (i) A person shall not be employed in a working place underground if the effective temperature of such working place is or exceeds 29.4 degrees on the Celsius scale;

- (ii) A person shall not be employed at a working face underground if the minimum air movement maintained at such working face is less than 15.24 metres per minute.
- (b) The provisions of paragraph (a) of this sub-rule shall not apply in cases of emergency which shall include the case of any person or persons employed in work designed to reduce the effective temperature of a working place below 29.4 degrees, or to increase air movement at a working face to not less than 15.24 metres per minute.
- (c) Subject to sub-paragraph (ii) of paragraph (a) of this sub-rule, a person may be employed in a working place underground if the effective temperature in such working place exceeds 27.2 degrees but does not attain or exceed 29.4 degrees on the Celsius scale. The working time of any person employed in a working place where the effective temperature is within the above-mentioned limits shall be reduced by forty minutes for each 0.56 degree by which the effective temperature exceeds 27.2 degrees provided that the total reduction in working time shall not exceed one-third of the time actually spent in such working place.
- (d) For the purposes of this rule—
 - (i) "Working time" means the duration of the shift as prescribed by the appropriate industrial award less the time normally taken in travelling from the surface of the mine to the working place and from the working place to the surface of the mine;
 - (ii) "Working face" means that part of a working place where coal or earth is being extracted, and that part of a working place adjacent thereto where operations necessary for the extraction of such coal or earth are being carried out.
- (e) The effective temperature shall be calculated and taken from the Tables set forth in the Schedule to this rule viz.: Table A which shows the effective temperature under "still air conditions" and Table B which shows the deductions to be made from the "still air effective temperature" scale according to air movement in metres per minute recorded in the working place concerned.
- (f) A sling or whirling psychrometer shall be used to measure all wet bulb and dry bulb temperatures for the purposes of using Table A. The effective temperature accepted shall be the average of three determinations of effective temperatures made with an interval of five minutes each between the first and second determinations and between the second and third determinations. Each determination shall be made at a distance of not less than 1.52 metres from any other determination and in the case of a working face the determination shall extend across such working face.
- (g) A Kata-thermometer or other suitable device approved by the Chief Inspector shall be used in calculating air movements for the purpose of subparagraph (ii) of paragraph (a) of this sub-rule and also for the purpose of using Table B. The accepted air movement shall be the average of three determinations of air movement made with intervals of five minutes each between the first and second determinations and the second and third determinations. Each determination shall be made at a

distance of not less than 1.52 metres from any other determination and in the case of a working face the determinations shall extend across such working face.

SCHEDULE

TABLE A

Showing "still air effective temperatures" nearest tenth degree Celsius

Wet Bulb Temp. In Deg. C.	Dry Bulb Temperatures In Deg. C.										
	29.4	28.9	28.3	27.8	27.2	26.7	26.1	25.6	25.0	24.4	23.9
29.4	29.4										
28.9	29.1	28.9									
28.3	28.6	28.6	28.3								
27.8	28.3	28.0	28.0	27.8							
27.2	28.0	27.8	27.5	27.5	27.2						
26.7	27.8	27.5	27.2	26.9	26.9	26.7					
26.1	27.2	26.9	26.9	26.7	26.4	26.4	26.1				
25.6	26.9	26.7	26.4	26.4	26.1	25.8	25.8	25.6			
25.0	26.7	26.4	26.1	26.1	25.8	25.5	25.5	25.3	25.0		
24.4	26.1	26.1	25.8	25.8	25.6	25.3	25.0	24.7	24.7	24.4	
23.9	25.8	25.8	25.6	25.3	25.3	25.0	24.7	24.4	24.1	24.1	23.9
23.3	25.5	25.3	25.3	25.0	24.7	24.7	24.4	24.1	23.9	23.9	23.6
22.8	25.3	25.0	25.0	24.7	24.4	24.1	24.1	23.9	23.6	23.6	23.3
22.2	25.0	24.7	24.7	24.4	24.1	23.9	23.9	23.6	23.3	23.0	22.8
21.7	24.7	24.4	24.1	24.1	23.9	23.3	23.3	23.3	23.0	22.8	22.5
21.1	24.4	24.1	24.1	23.9	23.6	23.3	23.3	23.0	22.8	22.5	22.2

TABLE B

Correction to be applied to "still air effective temperature" obtained from Table A for air movement.

Air Movement in Metres per Minute

From—	To—	Correction to be Subtracted in Deg. C.
0.00	2.74	0.00
3.05	7.93	0.28
8.23	12.80	0.55
13.10	17.98	0.83
18.29	23.77	1.10
24.08	30.48	1.38
30.79	38.41	1.65
38.71	46.94	1.93
47.24	57.00	2.20
57.30	67.36	2.48
67.67	78.03	2.75
78.34	89.00	3.04

(2) The owner of an underground coal mine shall provide a barograph and a thermometer which shall be placed above ground in a conspicuous place near the entrance to the mine.

(3) An inspector may require the manager of an underground coal mine to take such tests and readings of the atmospheric conditions in the mine as the inspector considers necessary or desirable. Every such requisition shall be in writing and shall specify the intervals at which the tests and readings are to be taken: Provided that the manager may within seven days object to the Chief Inspector, against such requisition and the Chief Inspector may confirm or cancel such requisition.

(4) Every instrument provided at a mine in pursuance of the foregoing provisions of this rule shall be properly maintained so as to give accurate readings at all times.

Unless otherwise approved by the Chief Inspector such instruments shall be maintained to the standards of the National Standards Laboratory.

- 1G.** The manager of an underground coal mine shall ensure that, in the event of a stoppage of the mechanically operated ventilating apparatus situated on the surface—
- All electrical power supply belowground to a gassy mine or in a gassy place (as those terms are defined in the Underground Coal Mines Electrical Rules of 1971) is switched off automatically and concurrently with the stoppage of such apparatus;
 - All persons are withdrawn from belowground and brought to the surface on the expiration of 30 minutes following the stoppage of such apparatus;
 - A person, other than a deputy or holder of a higher certificate granted under this Act, does not go belowground after withdrawal of persons in accordance with paragraph (b) hereof until an examination has been made by a deputy and it has been found safe for persons to proceed belowground; and
 - Electrical power supply is not restored to any part of the mine until a deputy or holder of a higher certificate granted under this Act has ensured by examination that there is less than one and one-quarter per centum flammable gas in the general body of the air in that part of the mine where electrical apparatus or cable is installed.

1H. (1) The manager of an underground coal mine shall ensure that the average concentration of respirable dust in the mine atmosphere to which any person is exposed during any shift—

- does not, after 1st January, 1978, exceed 3.00 milligrams per cubic metre of air;
- does not, after 1st July, 1978, exceed the average concentration fixed pursuant to sub-rule (2).

(2) Subsequent to the 1st day of July, 1978, the Chief Inspector shall establish a schedule reducing the average allowable concentration of respirable dust in a mine atmosphere. Such schedule shall be based on statistics including hygienic standards for contaminants of the air of the workplace as issued by the National Health and Medical Research Council of Australia.

(3) Reference to concentration of respirable dust in this rule means the average concentration of respirable dust if measured with an MRE instrument for the time specified by the Chief Inspector or an equivalent concentration if measured with another device approved by the Chief Inspector. The term "MRE instrument" used in this rule means the gravimetric dust sampler with four channel horizontal elutriator developed by the Mining Research Establishment of the National Coal Board, England.

(4) For the purpose of this rule the term "Average concentration" means a determination which accurately represents the atmospheric conditions with regard to respirable dust to which each person is exposed as measured over a single production shift or over a number of continuous production shifts as specified by the Chief Inspector.

(5) The dust resulting from drilling rock shall be controlled by the use of approved dust collectors, or by water or water with a wetting agent, or by any other method or device approved by the Chief Inspector.

(6)—

- Respiratory equipment in accordance with Australian Standards 1715-1975, Code of practice for respiratory protection, and 1716-1975, Specification for respiratory protective devices, as amended from time to time, shall be made available by the manager to each person who is exposed to a concentration of respirable dust in excess of that allowed by this rule.
- Such respiratory equipment shall be made available by the manager to each person who, in the opinion of an inspector, is exposed to an inhalation hazard from dust, gas, fumes or mist.

(7) The respiratory equipment referred to in sub-rule

- shall be used for the purpose of providing additional respiratory protection and not as a substitute for the environmental control measures referred to in sub-rules (1) and (2).

2. Prevention of Leakages of Air in Underground Coal Mines.

The owner shall provide and maintain an efficient air-lock at each shaft or outlet which is directly connected to a fan on the surface of an underground coal mine.

2A. The manager of an underground coal mine shall ensure that a road not required for the working of the mine, and which connects airways which as regards any working face are intake and return airways, is stopped off forthwith so as to minimise leakage of air through it.

2B. (1) The manager of an underground coal mine shall ensure that air doors, stoppings, crossovers, and sheets or other ventilating appliances are installed where necessary for the regulation of ventilating air currents, and that all of them are flame-resistant material and are kept in good order and condition.

(2) For the proper conduct of air into and along the working places and roads, all doors, sheets, stoppings and walls shall be kept as air tight as practicable.

(3) All stoppings between intake and return airways shall be constructed of masonry, brickwork, concrete or other flame-resistant material of adequate strength as may be approved from time to time by the Chief Inspector.

(4) The face of every stopping shall be kept clear for the purpose of inspection.

(5) The floor and walls of all air-crossings in intake or return airways shall be constructed of masonry, brickwork, or concrete or other flame-resistant material of adequate strength as may be approved from time to time by the Chief Inspector.

(6) Every ventilating sheet shall be of flame-resistant material approved by the Chief Inspector and shall be properly maintained.

2C. (1) In every road which is required for the working of an underground coal mine and which is a connection between a main intake airway and a main return airway, the manager shall ensure that at least two suitable doors constructed of flame-resistant material are installed to minimise the leakage of air. Such doors shall be self-closing and of substantial construction so that they are not damaged by normal usage, and shall be properly maintained. The requirements of this sub-rule shall not apply to a man-door not exceeding 0.6 square metres in area.

(2) In any other road the ventilation in which is to be restricted by means of any doors or sheets for the purpose of preventing short circuiting of an air current, the

manager shall ensure that there are installed and properly maintained at least two doors, or if that is impracticable, at least one door and one sheet, or two sheets.

(3) Doors and sheets installed in pursuance of this rule shall be so spaced that, whenever one door or sheet is opened, at least one other door or sheet can be kept shut.

(4) Doors and sheets installed in pursuance of this rule shall not be left in an open position except where and for so long as it is necessary to allow persons or equipment to pass through.

(5) Any person who opens any such door or sheet shall ensure that it is closed as soon as possible.

2D. (1) In every underground coal mine the manager shall ensure that stoppings are erected to seal off—

- (a) a mine fire or a heated area;
- (b) a goafed area in a seam liable to spontaneous combustion; or
- (c) a goafed area which could be subject to heating from another seam.

The manager shall ensure that each such stopping constructed as a final seal shall comply with the following minimum requirements:—

- (i) The stopping shall be capable of withstanding a pressure of at least 345 kPa;
- (ii) The stopping shall be sited to allow for the construction of a pressure chamber, whether required immediately or at some future time;
- (iii) The stopping shall be fitted with an air sampling pipe and valve to allow sampling of the atmosphere inside the stopping to be made from a position outside of the sealed area. Such pipe and valve shall be positioned equidistant from the sides of the stopping and as high as practicable from the floor; and
- (iv) The stopping shall be constructed in accordance with the requirements of an inspector in respect of the materials used and the standard of workmanship.

(2) Where stoppings required in sub-rule (1) are constructed in a part of the mine where—

- (a) it is known that leakage of air across the sealed area is likely; or
- (b) an inspector is of opinion that leakage of air across the sealed area is likely to occur,

the manager shall ensure that means are provided to maintain a satisfactory balance of the pressures at the outer faces of the stoppings.

(3) Means of balancing pressures at the outer faces of stoppings as required by sub-rule (2) shall include one or both of the following arrangements:—

- (a) Equalising roads or ducts connecting the outer faces of stoppings to equalise the pressure at the outer faces of those stoppings; or
- (b) Pressure chambers adjacent to the outer face of the stoppings which will enable adjustment of pressure therein to be made equal to the pressure in the sealed areas behind the stoppings.

(4) For the purpose of this rule a seam at any time shall be taken to be liable to spontaneous combustion if there has been in that seam a heating or fire the cause of which has not been proved to be other than spontaneous combustion.

(5) Notwithstanding anything contained in this rule, every stopping erected to seal off a fire or heating shall be constructed in accordance with the requirements of an inspector in respect of the materials used and the standard of workmanship. A device shall be fitted to permit sampling of the atmosphere within the sealed area from the outside.

3. Distribution of Air in Underground Coal Mines. The manager of an underground coal mine shall ensure that intake air does not travel through any place where it is likely to be affected by steam, stagnant water, stables or abandoned workings.

3A. The manager of an underground coal mine shall ensure that intake air travels clear of any stoppings used to seal any area which has contained a fire or heating or which has been abandoned: Provided that in a mine existing at the date of commencement of this rule wherein intake air does not travel clear of stoppings used to seal any such area, on the recommendation of the inspector, exemption may be granted by the Chief Inspector subject to conditions specified therein.

3B. (1) In an underground coal mine commencing after 1st July, 1978, provision shall be made by the manager for an intake airway other than a roadway containing a belt conveyor. This requirement shall apply to any part of such mine other than a panel or sub-panel where the method of working limits the number of roadways to less than three: Provided that in the initial development of a new mine the belt conveyor roadway may serve as the only intake airway for such time as is reasonably required to provide a second intake airway.

(2) All belt conveyor roadways shall be segregated from other intake airways and from return airways to a standard satisfactory to the Inspector.

3C. The manager of an underground coal mine shall ensure that airflow is maintained in every part of an underground coal mine in which a person works or travels. Neutral areas (being areas without perceptible air movement) created by pressure equalization or inefficient air distribution shall not be allowed.

3D. The manager of an underground coal mine shall ensure that intake air to a coal production unit or drivage in operation travels clear of any other coal production unit or drivage in operation.

3E. (1) The manager of an underground coal mine shall ensure that at least once in every calendar month the velocity and quantity of air in the main current and in every split and at such other points as may be required by an inspector, are measured and entered in the record book.

For the purposes of this sub-rule the measuring points shall be:—

- (a) In every intake airway at a point as near as practicable to the surface to determine the total intake air quantity;
- (b) In every return airway at a point as near as practicable to the surface to determine the total return air quantity; and
- (c) In every split at a point in the return airway where the total quantity of air ventilating the working face can be determined.

(2) The manager of an underground coal mine in which a seam liable to spontaneous combustion is being

mined, shall ensure that—

- (a) The CO/O₂ deficiency ratio is determined in respect of each district return airway at least once in each calendar month;
- (b) For at least one week prior to, and during, pillar or other block extraction operations the district return is either continuously monitored or analysed daily for carbon monoxide. A record of every monitoring and analysis shall be maintained at the office of the mine;
- (c) During pillar or other block extraction operations weekly measurements of air quality and quantity in the district return are made to establish the volume of flammable gas and of carbon monoxide being emitted and the CO/O₂ deficiency ratio. A record of such data shall be maintained at the office of the mine; and
- (d) Before pillar or other block extraction in any district is commenced, preparations for the rapid erection of a seal in each entrance to that district have been completed. Such preparation shall consist of the installation and supply of all necessary materials so that seals that are, as near as practicable, air-tight may be erected in all such entrances within a period not exceeding three hours.

3F. At least once in every calendar month the wet and dry bulb registration of the temperature of the atmosphere as well as the effective temperature in the working places of each ventilating district in every underground mine shall be taken by a person authorised by the manager. The highest registration so observed as well as that in the first place on the intake end of the ventilating district and in the last place on the return end of such ventilating district shall be recorded in the mine record book.

3G. (1) An inspector may take such ventilation measurements as he thinks fit and may, in writing, require such measurements to be made by the manager or other specified employee in the mine at stated intervals in workings in which he considers such measurements necessary. The results of all such measurements shall be recorded in the record book.

(2) Where an inspector considers it necessary for the safety or the health of the persons employed in any part of a mine he may by requisition in writing addressed to the manager, require that an additional quantity of air be circulated.

3H. The manager of an underground coal mine may within seven days object in writing to the Chief Inspector against any requisition of an inspector under rule 3G and the Chief Inspector may confirm, vary or cancel any such requisition.

3J. Where it is intended to make any alteration in the main system of ventilation of an underground coal mine, the manager shall, prior to making any such alteration, notify an inspector in writing and give full particulars of the proposed alteration.

3K. Notwithstanding anything contained in rules 3 to 3J (inclusive), whenever any alteration is made in the arrangements for ventilating a mine which affects or may affect substantially the quantity of air passing any point at which measurements thereof are required to be taken, a measurement of the quantity of air at each such point shall be taken as soon as any substantial change is apparent in the quantity of air flowing.

4. Ventilating Machinery for Underground Coal Mines.

(1) The manager of an underground coal mine shall ensure that there is provided and maintained in connection with every ventilating fan driven by mechanical power (other than an auxiliary fan) a water gauge and instrumentation to record either the power consumption of the fan or the ventilating pressure. The water gauge or an instrument recording the ventilating pressure shall be installed in a position where it can be conveniently read by any person.

(2) The manager of the mine shall give directions as to the speed at which any machinery driving such a fan is to be run and, where applicable, the angle at which the fan blades are to be set, to the persons appointed in writing by the manager to be in charge of that machinery. No person other than the manager shall give such directions.

(3) During the time that any person is belowground the person in charge of the machinery driving such a fan shall observe the water gauge or instrument recording the ventilating pressure at intervals not exceeding eight hours or such other intervals as an inspector may direct or allow by written notice given to the manager.

(4) During the time that any person is belowground and where an instrument recording the ventilating pressure is not in use the person in charge of the machinery driving such a fan shall at the end of each period of four hours enter in a book provided for the purpose by the owner of the mine the power consumption of the fan and the pressure shown by the water gauge at the end of that period.

(5) The person in charge of the machinery driving such a fan shall forthwith report to the official of the mine under whose direction he works—

- (a) any damage to or defect or derangement in or stoppage of that machinery; and
- (b) any unusual variation in the pressure shown by the water gauge.

4A. Ventilating fans belowground. (1) The manager of an underground coal mine shall ensure that an auxiliary fan is not used belowground unless it is of a type approved by the Chief Inspector. An auxiliary exhaust fan shall be of such a design that the electric motors are at all times ventilated by air drawn from outside the external casing of the fan.

The manager shall observe and comply with the following conditions in respect of the operation of an auxiliary fan:—

- (a) The quantity of air of the main ventilating current at the site of the auxiliary fan shall be at least thirty per centum greater than the quantity of air which the auxiliary fan is capable of producing in open circuit. Such main ventilating current shall be determined when the auxiliary fan is not in operation;
- (b) The manager shall ensure that, as far as practicable, air re-circulation does not occur;
- (c) An auxiliary fan shall be automatically stopped immediately in the event of any failure of the main ventilation system; and
- (d) In the event of any failure of an auxiliary fan other than a momentary stoppage, unless other means are provided to adequately ventilate the part of the mine served by the auxiliary fan, the following provisions shall apply in respect of that part of the mine:—

- (i) All persons shall be withdrawn immediately from that part of the mine;
- (ii) Electric power shall be cut off immediately from all cables and apparatus in that part of the mine; and
- (iii) A person other than a deputy or the holder of a higher certificate granted under this Act shall not re-enter that part of the mine, and electric power shall not be restored to the cables or apparatus therein, until the ventilation system has been restored and the deputy has ensured that the ventilation is adequate;
- (e) A person other than the deputy in charge of a district affected or an official of the mine authorised by the manager or a person authorised by such a deputy or official shall not start, stop, remove or alter a fan installed belowground at a mine;
- (f) A deputy or other official shall not start or authorise any person to start such a fan on any occasion unless the deputy or official is satisfied that it is safe for the fan to be so started;
- (g) In the event of a fan having to be used to remove an accumulation of gas, the tubing in that place where such accumulation exists shall be disconnected back at a point where one and one-quarter per centum or greater percentage of flammable gas cannot be detected using a locked oil flame safety lamp or other device of a type approved by the Chief Inspector. If this point is not closer to the fan than 20 metres, the fan may be re-started, and the tubing extended to dilute the flammable gas and render it harmless;
- (h) A forcing auxiliary fan shall be installed on the intake side of the place to be ventilated by it or an exhausting auxiliary fan shall be installed on the return side of the place to be ventilated by it;
- (i) An auxiliary fan shall not be installed at a point which is less than 4.5 metres from the nearer side of the entrance to the place to be ventilated by it: Provided that in the case of two or more fans installed in series this requirement shall apply only to one of them;
- (k) An auxiliary fan, whether driven electrically or otherwise, shall be effectively earthed in accordance with Australian Standard 1020-1970, Static Electricity Code, as amended from time to time; and
- (l) There shall be installed and maintained in connection with an auxiliary fan a suitable air duct to ensure adequate ventilation of the working place served by the fan and to minimize leakage.

(2) The manager shall notify an inspector within 24 hours of the installation of an auxiliary fan belowground. An inspector may impose such further conditions, not inconsistent with the provisions of sub-rule (1), as he may consider necessary in relation to the installation and operation of an auxiliary fan, having regard to the circumstances of the particular working place: Provided that the manager may within seven days object in writing to the Chief Inspector against any conditions imposed by an inspector and the Chief Inspector may confirm, vary or cancel any such conditions.

(3) Not more than one auxiliary fan shall be used at any time in a ventilating split without the written permission of an inspector.

(4) The manager shall ensure that at least once in every week a competent person appointed for that

purpose by him measures the quantity of air being delivered or exhausted by an auxiliary fan and determines whether any air is being re-circulated by that fan. Particulars of the quantity measured shall be recorded forthwith by the manager or the competent person, as the case may be, in the record book.

(5) A fan other than an auxiliary fan shall not be installed below ground without the written authority of the Chief Inspector. Application for such authority shall be made in writing by the manager giving full details of a survey of the ventilation of every part of the mine which would or might be substantially affected and a report upon the appropriate type, size and location of the proposed fan, being a survey and report made by a person or persons experienced in those matters appointed for the purpose by the owner of the mine or the manager.

(6) For the purposes of these Rules "auxiliary fan" means a fan used or intended to be used below ground wholly or mainly for ventilating a heading, drift or blind end.

(7) An inspector may in respect of a particular working place require that additional auxiliary fans be provided and kept working.

5. Provisions relating to flammable gas content, gas detectors monitors and self-rescuers. (1) Without prejudice to the generality of Rules 1 to 1H hereof the manager of every underground coal mine shall take such steps as are necessary for ensuring that every airway therein which as regards any working face is an intake airway shall normally be kept free from flammable gas:

Provided that the requirements of this rule shall not apply to any part of such an airway within 100 metres of the first working place at that working face.

(2) For the purposes of this rule an intake airway shall be deemed not to be normally kept free from flammable gas if the average percentage by volume of flammable gas found in six samples of air taken by an inspector in the general body of the air in that airway at intervals of not less than fourteen days exceeds one quarter per centum.

(3) An underground coal mine in which flammable gas has been ignited or has been found by approved gas detector and or air analysis in the general mine atmosphere in an amount of one quarter per centum or more, shall be deemed for the purposes of this Act and the Rules made thereunder to be a GASSY MINE as that term is defined in The Underground Coal Mines Electrical Rules of 1971.

(4) In every underground coal mine any portion of a ventilating district situated in an intake airway within 100 metres of the first working place of such district and any portion of all return airways in that mine shall be deemed for the purposes of this Act and the Rules made thereunder to be a GASSY PLACE as that term is defined in The Underground Coal Mines Electrical Rules of 1971.

(5) In the case of an underground coal mine which has been declared to be a GASSY MINE by virtue of sub-rule (3) hereof the manager of such mine may make application to the Chief Inspector to have such declaration cancelled if, but only if—

(a) the manager has established to the satisfaction of the inspector that in the six months period preceding the date of application flammable gas in an amount of one quarter per centum or more has not been found

- in determinations made at intervals not exceeding 28 days; and
- (b) flammable gas has not been ignited in that mine at any time during the two years immediately preceding the date of the application.
- The Chief Inspector may grant the application if he is satisfied the conditions in the mine and in its projected workings do not warrant the continuance of the declaration of the mine as a GASSY MINE but nothing in this sub-rule shall prevent the future application of sub-rule (3) to the mine.
- 5A. Determinations of flammable gas content.** The manager of an underground coal mine shall ensure that determinations of the percentage of flammable gas present in the general mine atmosphere of the air in such mine (in these rules referred to as "the flammable gas content") are made in accordance with the following provisions—
- (a) Determinations of the flammable gas content shall be made—
 - (i) by a competent person appointed by the manager for that purpose and by the use of an apparatus of a type approved by the Chief Inspector; or
 - (ii) by means of samples of air taken by a competent person so appointed and analysed within seven days of the taking thereof;
 - (b) Where determinations of the flammable gas content in any part of a mine which comprises a working face other than a longwall face are made, those determinations shall be made at suitable points fixed by the manager in respect of each air current in that part of the mine;
 - (c) An inspector may, if he is of opinion that any point so fixed is unsuitable, give to the manager a notice requiring him to fix some other point in substitution therefore and may give to the manager a notice requiring determinations to be made at some other point specified in the notice in addition to those required by the preceding paragraph (b);
 - (d) Where determinations of the flammable gas content in any part of a mine which comprises a longwall face are made, those determinations shall be made at or as near as is practicable to the point in each airway serving that face 10 metres from the nearest working place at that face;
 - (e) An inspector may give to the manager of the mine a notice requiring determinations to be made also at one or more additional points at any such longwall face or in any airway serving such a longwall face as are specified in the notice;
 - (f) In every gassy mine determinations of the flammable gas content shall be made at every point required by or under paragraphs (b), (c), (d) and (e) hereof at intervals not exceeding 7 days: Provided that—
 - (i) If any determination at any such point shows a flammable gas content exceeding one per centum by volume determination shall be made at the corresponding point at intervals not exceeding twenty-four hours so long as the content is shown to exceed or to have exceeded that percentage and for the seven next following working days, unless an inspector by notice given to the manager directs otherwise;
 - (ii) If every determination made during a period of 28 days at any such point shows a flammable gas content not exceeding 0.8 per centum by volume it shall be sufficient to make determinations at the corresponding point at intervals not exceeding 28 days for as long as the flammable gas content shown thereby does not exceed that percentage;
 - (g) Notwithstanding anything in paragraph (f), whenever any alteration is made in the arrangements for ventilating a mine which affects or may affect substantially any part of the mine in which determinations of the flammable gas content have to be made, a determination of the flammable gas content at each point in that part of the mine shall be made as soon as any substantial effect of the alteration would be apparent.
 - (h) Any determination of the flammable gas content shall be made during the latter half of the shift normally producing the most coal:
 - Provided that if it appears to the manager or an inspector that the flammable gas content is normally greatest at any point at any other stage of mining operations, determination at that point may be made at that stage if an inspector by notice given to the manager so allows and shall be made at that stage if an inspector by notice given to the manager so directs; and
 - (i) In an underground coal mine other than a gassy mine a determination of the flammable gas content shall be made in the atmosphere in each district return airway at intervals not exceeding three months.
- 5B.** On every occasion on which a determination of flammable gas is required to be made at or as near as is practicable to the point in an airway serving a longwall face 10 metres from the nearest working place at that face, being an airway which as regards that face is a return airway, a determination of flammable gas content shall also be made as near as is practicable to the point in that airway 10 metres from the junction thereof with any other return airway.
- 5C.** The manager shall ensure that, on each occasion when a determination of flammable gas is made in accordance with the requirements of Rules 5A to 5B, the air quantity passing the point of gas determination is measured at the time of such determination.
- 5D.** (1) Particulars of every determination of flammable gas content made in accordance with these rules together with the quantity of air passing at the time of such determination shall be recorded forthwith in the mine record book.
- (2) If any determination other than one made pursuant to rule 5B hereof shows a flammable gas content at any point exceeding one per centum by volume the manager of the mine shall forthwith give notice thereof to an inspector unless the inspector by notice given to the manager has otherwise directed.
- 5E.** The manager of an underground coal mine shall ensure that, where the general body of the air in any part of the mine is found to have a flammable gas content of one and one-quarter per centum or more by volume—
- (a) the electric power is cut off immediately from all cables, switchgear and machinery in that part of the mine; and

- (b) the electric power is not restored until the general body of the air therein has been improved to the extent that it contains less than one and one-quarter per centum of flammable gas by volume.

5F. The manager of an underground coal mine shall ensure that, where the general body of the air in any part of the mine is found to have a flammable gas content of two and one-half per centum or more by volume.

- (a) all persons are withdrawn immediately from that part of the mine; and
- (b) no person, other than persons working to re-establish adequate ventilation, is permitted to re-enter until the general body of the air therein has been improved to the extent that it contains less than two and one-half per centum of flammable gas by volume.

5G. (1) The owner of an underground coal mine shall provide at the mine appliances for detecting the presence of flammable or noxious gas. Such appliances shall be of a type approved by the Chief Inspector for use in mines and shall be provided in such number as will enable the provisions of these rules to be complied with. Such appliances are hereinafter called "detectors".

(2) Every detector (other than a flame safety lamp) used at an underground coal mine shall be checked and calibrated to the standards of the National Standards Laboratory at intervals of not more than six months. The test certificate for each such check and calibration shall be kept at the office of the mine.

The manager of the mine shall ensure that no such detector is used unless it has been tested as required by this sub-rule. Such test certificates shall be produced to an inspector upon demand.

(3) Every flame safety lamp used as a detector at an underground mine shall be of a type that complies with the rules made under this Act in relation to safety lamps.

5H. (1) The manager of an underground coal mine shall ensure that—

- (a) detectors are used in accordance with rules 5J and 5K; and
- (b) each detector required to be in use is in the personal charge of a person authorised by him for that purpose.

(2) In the case of any person appointed under this rule to be in charge of a detector which is a flame safety lamp, such person shall be the holder of a deputy's certificate under this Act or a competent person appointed in writing by the manager to carry a flame safety lamp.

5J. Subject to rule 5K, the detectors required to be in use in a part of an underground coal mine, and the places where such detectors are to be used, shall be as follows:—

- (a) At each place where a coal-getting or coal-cutting machine is in use, one detector;
- (b) At each other working face (including a drift or heading in stone), one detector; and
- (c) At each longwall face, one detector for each eight persons wholly or mainly employed at that face during the shift, in addition to that required by paragraph (a).

5K (1) Where electric power is used at a working face and the average of six determinations of flammable gas content made at a point on the return side of that face exceeds one-half per centum by volume in the general body of the return air—

(a) there shall be at each place where a coal-getting machine or coal-cutting machine is in use, one automatic flammable gas detector. Such automatic detector shall be installed on the coal-getting or coal-cutting machine so that the sensing device is situated in the air ventilating that electrical equipment which is closest to the working face. The detector shall be arranged to provide audible and visual warning should the flammable gas content at the sensing device be one per centum by volume in the atmosphere at that point. The detector shall also be arranged to de-energise automatically the equipment on which it is installed when—

- (i) such detector is not operating properly; or
- (ii) the flammable gas content at the sensing device is two per centum by volume in the atmosphere at that point;

(b) in the case of a longwall face the requirements of paragraph (a) hereof shall apply together with the additional requirement that an automatic detector shall be installed on any electrical equipment situated at the return airway end of the longwall face.

Such detector shall be installed so that the sensing device is situated in the air current ventilating the electrical equipment, and shall be arranged to provide audible and visual warning should the flammable gas content at the sensing device be one per centum by volume in the atmosphere at that point. The detector shall also be arranged to de-energise automatically the electrical equipment when—

- (i) such detector is not operating properly; or
- (ii) the flammable gas content at the sensing device is one and one quarter per centum by volume in the atmosphere at that point; and

(c) Following the de-energising of electrical equipment by an automatic detector, power shall not be restored to that equipment until the flammable gas content in the atmosphere has been determined to be less than one and one quarter per centum by volume.

(2) For the purposes of this rule, the six determinations of flammable gas content shall mean the last six determinations made under rules 5A, 5B and 5C or the last six determinations made by an inspector at intervals of not less than fourteen days.

(3) The manager of every mine at which detectors are required to be in use shall give directions to the persons who are to have charge of detectors (other than detectors which operate automatically) as to the minimum number of tests for flammable gas to be made by them.

5L. A person in charge of a detector which is a flame safety lamp shall not when testing for flammable gas raise the lamp higher than is necessary to allow the presence of gas to be detected.

5M. Nothing done in pursuance of the preceding rules relating to detectors shall affect any obligations imposed on any deputy or shotfirer to make any inspection or any obligation to test for flammable gas.

5N. Where the percentage of flammable gas in any return airway of an underground coal mine exceeds one-half of one per centum by volume, a continuous monitoring system approved by the Chief Inspector shall be installed by the owner of the mine so that the

percentage of flammable gas in the general body of the air in that return airway shall be automatically recorded.

5P. (1) In this rule a "self-rescuer" means a self-rescuer of a type approved by the Chief Inspector, subject to any conditions he may impose in relation to its use.

(2) The owner of an underground coal mine shall provide at the mine a sufficient number of self-rescuers for use by persons who go below ground. The manager shall ensure that all self-rescuers are maintained in serviceable condition and that a self-rescuer is issued to every person who goes belowground.

(3) A person shall not be belowground in an underground coal mine at any time unless:—

(a) He is carrying a self-rescuer or has one available within one metre of his person, ready or immediate use;

(b) he has been fully instructed in its use; and

(c) he has examined the self-rescuer, and, before proceeding belowground, satisfied himself and it has not suffered external damage and that any external seal is in position and intact.

(4) A person who has been issued with a self-rescuer shall be responsible for its safe keeping and for ensuring that, as far as practicable, it is not damaged whilst in his possession or control.

(5) The manager of a mine shall ensure that all self-rescuers are used in the mine in accordance with any conditions imposed in relation to their use by the Chief Inspector."

MINING ACT 1968-1976

EXEMPTION FROM LABOUR CONDITIONS — MINING LEASES

As from December 24, 1977, Regulations Nos. 48, 49 and 50 and Form 15 of the Second Schedule of such Regulations, relating to the obtaining of exemptions from labour conditions attaching to mining leases and extensions thereof, have been repealed.

The main effects are the abolition of the requirements for posting and advertising of the application by the applicant and the hearing of such application in the Warden's Court.

The repealed Regulations have been replaced by the following administrative procedures:—

- (a) All applications for exemption and extensions thereof shall be lodged in writing (in duplicate) with the Warden for the Mining District in which the lease is situated together with the prescribed fee of \$5.00 per month. Such applications shall give full details of the grounds on which the application for exemption or extension is based and the period required.
- (b) All exemptions commence from the date of grant by the Minister or the Warden, as the case may be, unless it is desired that the exemption commence from a future date, in which case, such date should be stated in the application.
Extensions cannot be granted retrospectively and applications should be lodged in sufficient time to permit grant before the expiry of the original exemption.
- (c) Written objections (in duplicate) on relevant grounds may be lodged with the Warden at any time for consideration by the Minister or the Warden as the case may be. Such grounds shall be fully stated.

COMPANY REPORTS PUT ON OPEN FILE, JANUARY, 1978

COAL:

171C	NW of Cooktown	Utah Development Company	Report on area relinquished 29th November 1975	6248
183C	N of Coen	Utah Development Company	Report for 6 months ended 3rd December 1975	5548
183C	N of Coen	Utah Development Company	Report on area relinquished 3rd June 1976	6242
183C	N of Coen	Utah Development Company	Final report	6243
185C	Cooktown	Utah Development Company	Report on area relinquished 25th July 1976	6250
195C	W of Cooktown	Utah Development Company	Report on area relinquished March 1977	6252

MINERALS:

1650M	N of Mount Isa	Union Miniere Development and Mining Corporation Ltd	Annual report for 1976	6097
1651M				
1652M				
1650M	N of Mount Isa	Union Miniere Development and Mining Corporation Ltd	Final report, by Brian B. Guy; November 1977	6241
1651M				
1652M				

PETROLEUM:

190P	Jackson area	Consolidated Fuels	Application for subsidy, Damson Oil (Aust), Cypress Downs 1 Well	4510
228P	S of Moonie	XLX N.L.	Final report on areas relinquished 1st December 1977, by G. Sykes	6245

QUEENSLAND PUBLIC SERVICE**DEPARTMENT OF MINES*****Inspectors of Mines (Metalliferous)***

QUALIFICATIONS: Degree in Mining Engineering from the University of Queensland or other approved Degree, Diploma or other qualification. Either a Queensland First Class Mine Manager's Certificate of Competency for metalliferous mines or the qualifications and experience necessary to obtain such a certificate. At least 5 years mining experience.

LOCATION: The successful applicants may be required to serve in any part of the State. If stationed at Mount Isa, a Departmental house, suitable for a married man and family, will be available for rent.

SALARY RANGE: \$19,166 to \$19,376 per annum.

APPLICATIONS quoting position reference number 122 V 78 and containing full particulars of name, address, telephone number, date of birth, marital status, qualifications, experience and present employment and furnishing copies of testimonials and the names of two referees should be forwarded to the Chief Administration Officer, Department of the Public Service Board, Box 59, Post Office, Brisbane, North Quay, Queensland, 4000, by 6 March 1978. (3856).

KAFFIR CHIEF GOLD MINE — PIKEDALE MINING FIELD NEAR STANTHORPE

By J. R. KAY
Geological Survey of Queensland

SUMMARY

Gold mineralisation at the Kaffir Chief mine in the Pikedale Mining Field, 35 km northwest of Stanthorpe, occurs in a discordant quartz fissure vein less than 40 cm wide, within the Devonian to Carboniferous Texas Beds. Gold is present in dark grey banded material near the margins of the vein and as rare scattered grains in white quartz. Following dewatering in 1973, the old workings were mapped and the well-exposed vein was systematically sampled. Low assay results, averaging 5.9 g/t of gold, show that the rich ore shoot reported by Skertchly (1897) has been largely worked out. Deepening the inclined shaft and trenching the surface are suggested for the further exploration of the deposit.

A narrow quartz vein at the Southern Star gold prospect contains only trace amounts of gold and is of no economic significance.

INTRODUCTION

In the period 1973–76, several inspections of the Kaffir Chief gold mine were made by officers of the Geological Survey of Queensland following a request by the lease applicants for geological advice and Departmental drilling assistance. A plane-table survey of the surface was carried out and a plan of the underground workings was prepared (Kay, 1973). Subsequent inspections were reported by Siemon (1975) and Kay (1976).

LOCATION AND ACCESS

The mine is located approximately 35 km northwest of Stanthorpe on Portion 28, Parish of Herries (lat. 28°26'19"S, long. 151°41'33"E). Access is via Amiens, 16 km by road from Stanthorpe, thence a further 22.5 km northwesterly to a gate on the boundary of Portion 28. A vehicle track leads from the gate to the mine, 1.6 km distant (Fig. 1). The total distance by road from Stanthorpe is 40.1 km.

The Southern Star Prospect is situated on the same portion, 0.5 km from the gate (Fig. 1).

TENURE

In January 1973, Messrs R. G. Wilson and R. W. Walshe applied for a lease of 4.55 ha (M.L.A. 446, Stanthorpe) to cover the Kaffir Chief gold mine; Mr Wilson transferred his share to Mr C. J. Ashenden in December, 1973. The lease application has since been rejected. A claim was held to cover the Southern Star prospect.

HISTORY AND PRODUCTION

The **Kaffir Chief** deposit was discovered and first worked about 1874 (Maitland, 1895). At that time, shallow vertical shafts were sunk to intersect the gently dipping quartz vein, which was then stoped to the surface. Production during this period is unknown.

In 1894, the main workings were re-opened and extended below the 25-m level. Reports on these operations were made by Maitland (1895) and Skertchly (1897). Full production figures are not available, but it is recorded that 139.7 t of ore were crushed for a yield of 6.53 kg of gold bullion (estimated to contain 5.57 kg of fine gold) in the period January 1895 to June 1896 (Skertchly, 1897). In 1897 an attempt was made to raise finance in London for the erection of a cyaniding plant. This presumably failed because the mine was abandoned in 1898 (**Ann. Rep. Dep. Mines Qd, 1897**, 88 and **1898**, 80).

The workings were re-opened from 1914 to 1916 and 1.7 kg of gold bullion (estimated to contain 1.41 kg of fine gold) was recovered from 73.2 t of ore (**Ann. Rep. Dep. Mines Qd, 1915**, 124 and **1916**, 125). Fraser (1915) reported that underhand stoping was being carried out at the 60-m level.

In 1936–37, the inclined shaft was deepened by 1.5 m and a winze was sunk 2.1 m below the 60-m level on "a small shot of richer ore" (Williams, 1937). However, only 3.66 t were crushed to give 65.3 g of fine gold during this period. (**Ann. Rep. Dep. Mines Qd, 1937**, 118).

Recent operations commenced early in 1973 when the lease applicants dewatered and reconditioned the workings. Apart from bulk sampling in various parts of the mine, no mining took place. The treatment plant erected near the inclined shaft was capable of producing a concentrate only, and no gold had been recovered when the mine was abandoned in 1976.

The **Southern Star** is one of many small quartz-vein deposits in the Pikedale Mining Field. It is believed that the old shafts were sunk in the 1930's, but no information has been found in the records of the Department of Mines.

REGIONAL GEOLOGY

The deposits are situated within the outcrop area of the Devonian to Carboniferous Texas Beds, which consist of interbedded sandstones and mudstones with intraformational conglomerate, chert, jasper, andesite and limestone. These sediments have been extremely deformed by intense folding and fracturing (Olgers, Flood and Robertson, 1974).

FIGURE I

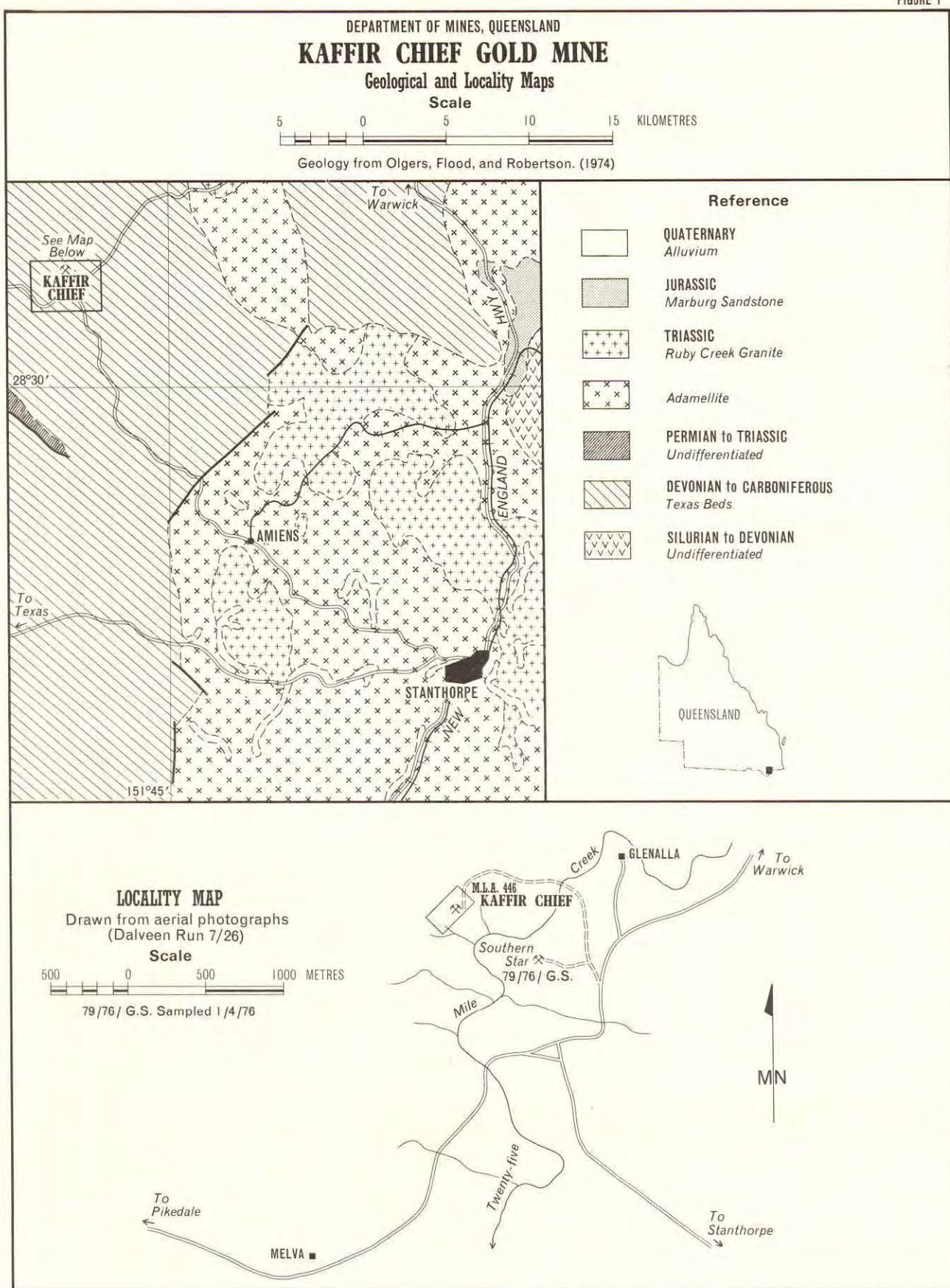


FIGURE 2

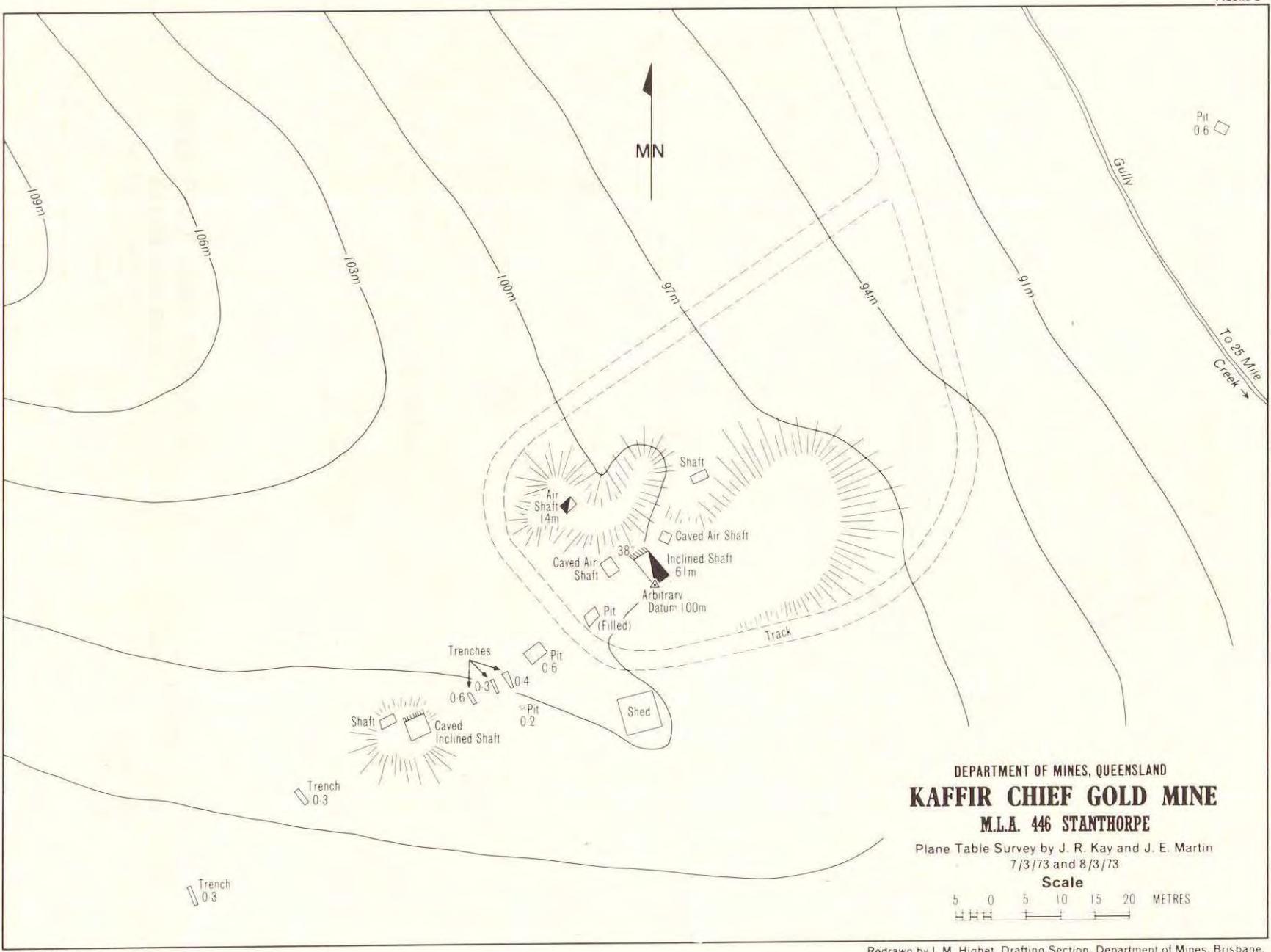
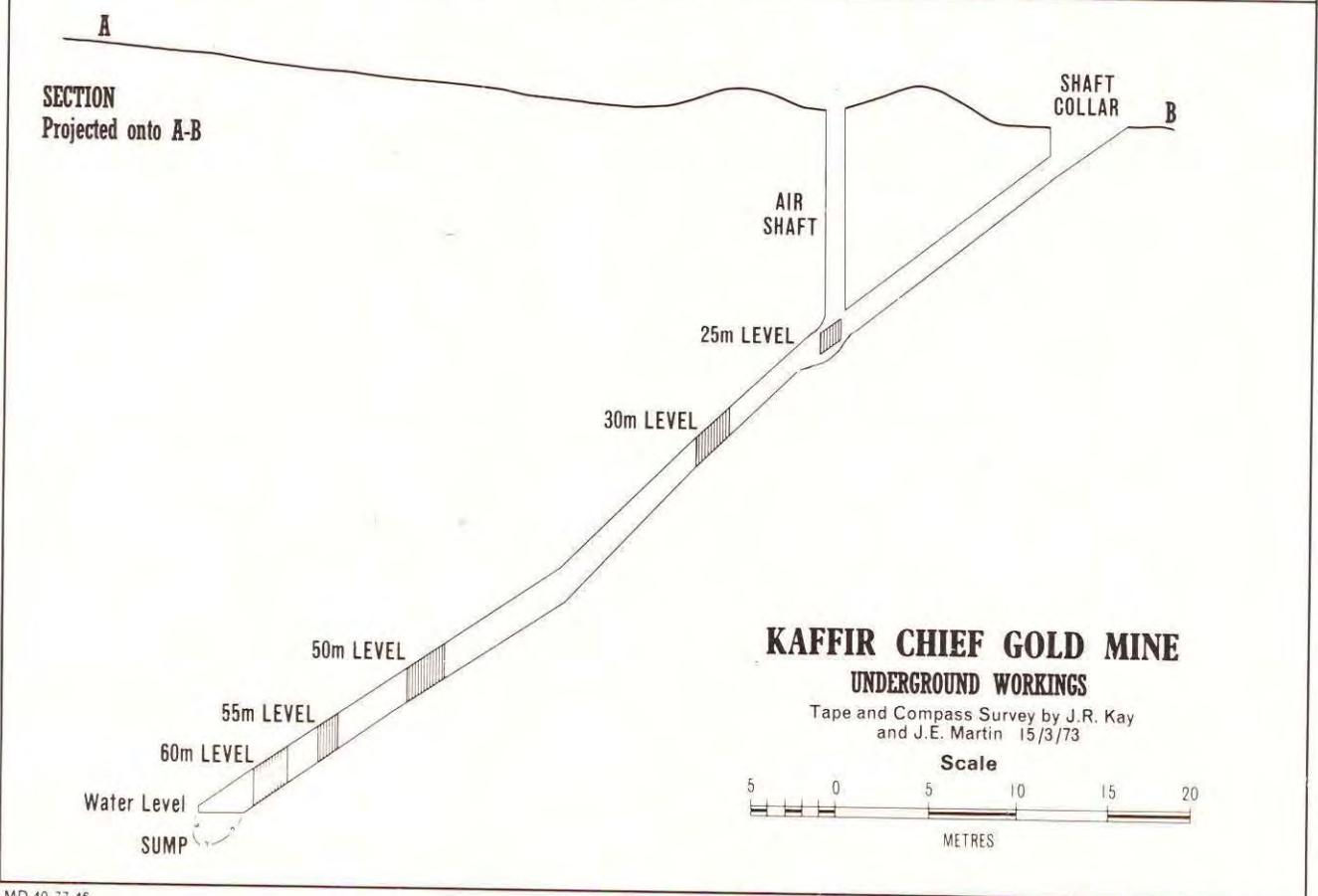
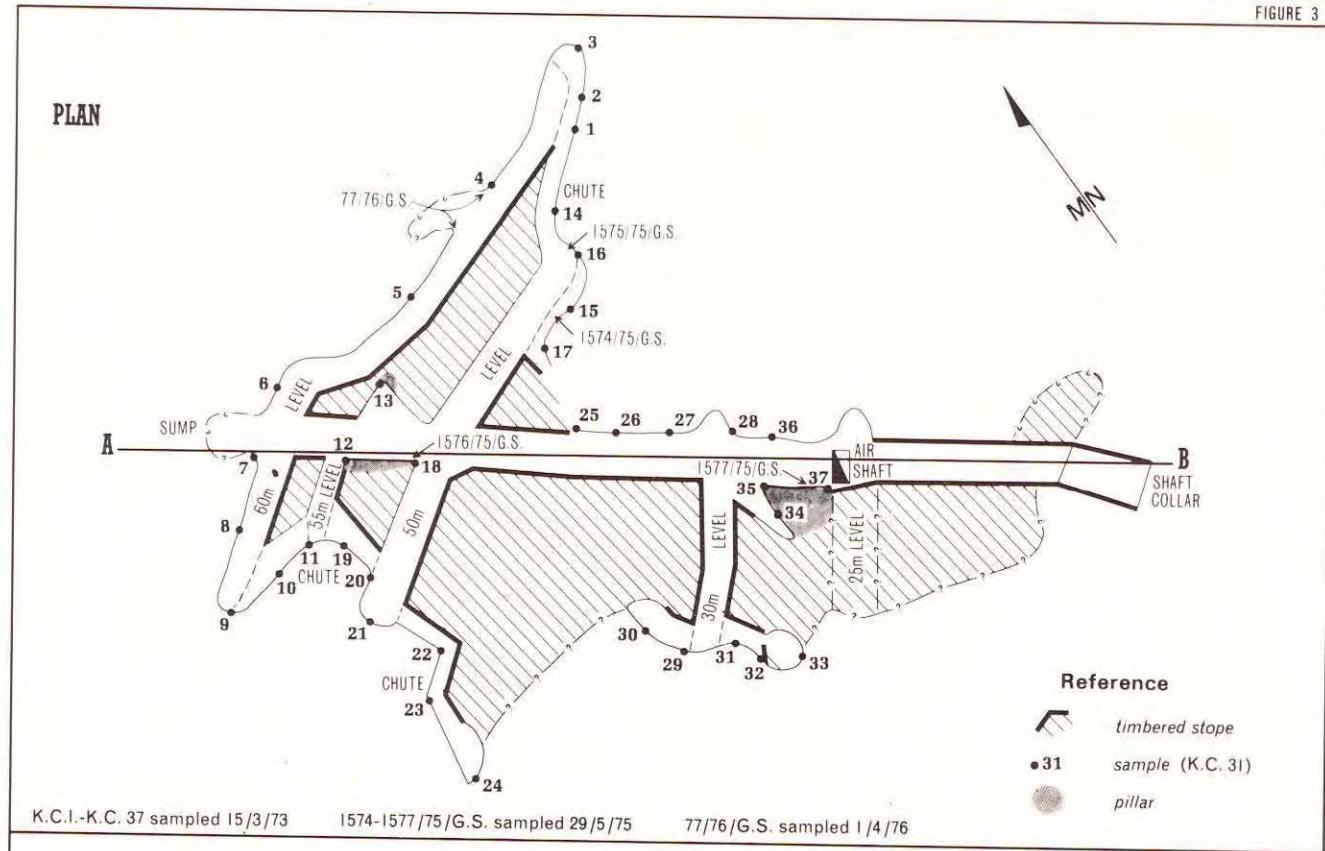


FIGURE 3



WORKINGS

Fig. 2 shows the line of shafts, pits and costeans that were dug by the early miners to expose the fissure vein. The shafts, other than the main workings, are now inaccessible.

Skertchly (1897) published a sketch plan and section of the mine workings. Problems arose when trying to relate these to the present workings and remapping of the mine was carried out (Fig. 3). The 50-m level is probably Skertchly's "180 foot level" and the inclined shaft has been deepened by 10 m since his visit. A new level at 60 m has been established by driving 26 m northeasterly and 9 m southwesterly.

The vein is adjacent to the floor of the drives and the inclined shaft, and the country rock on the hanging-wall side has been removed to provide access to it. On the southwesterly side of the inclined shaft, the vein has been stoped from the 60-m level to the surface and for a distance of as much as 15 m from the shaft. The main stope on the northeasterly side is between the 50-m and 60-m levels, and extends for 18 m from the shaft.

SOUTHERN STAR GOLD PROSPECT

A quartz vein, 25 cm wide, in weathered shale is exposed for 40 m along strike (025°); it dips westerly at 50° . The vein consists of white quartz with minor iron-staining and a 1-cm wide ironstained zone on the footwall. A report that gold was obtained from this zone during previous mining activity could not be substantiated. A sample of the vein and footwall zone (79/76/G.S.) from the side of an exposed shaft assayed 1.1 g/t of gold and 0.2 g/t of silver over 26 cm.

The old workings consisted of two caved shafts and a small pit. Recently, a trench 40 m long and 7 m wide has been bulldozed to a depth of 3 m. The quartz vein and one of the old shafts are exposed on the eastern wall of the trench.

CONCLUSIONS

When the Kaffir Chief mine was dewatered, two encouraging observations were made. Firstly, the vein was well exposed for the full extent of the 60-m level and was wider than in any other part of the mine. Secondly, the stopes at the 60-m level were more extensive than those in the upper levels. In addition, Skertchly had reported that the early miners had difficulties in gold extraction, almost 30 g/t of gold being lost because it was too fine grained or incorporated in pyrite. The lease applicants considered that such problems could be overcome by modern extraction methods. However, as the assay results are well below economic grade for such a narrow vein, it appears that the developed ore shoot was worked out, and the more extensive driving and stoping at the 60-m level probably represent an attempt by the early workers to find higher gold values. An analysis of the latest assay results gave no indication of where extensions of payable values might be found.

Diamond drilling is not considered an effective method for further investigation of the Kaffir Chief deposit because an extension of the rich ore shoot was not indicated by sampling, and gold distribution is very erratic. If further exploration were to be undertaken, the main inclined shaft or the sump on the northeasterly drive

should be deepened to test below the 60-m level. Trenching and sampling of the vein at the surface could also be considered as a method for locating further gold shoots.

Because of its narrow width and low grade, the Southern Star vein is regarded as having no economic value.

REFERENCES

- FRASER, J., 1915: Stanthorpe Mineral Field. Warden's quarterly report. *Qd Govt Min. J.*, **16**, 341-342.
 KAY, J. R., 1973: Kaffir Chief gold mine, M.L.A. 446 (Stanthorpe). Unpubl. rep., Geol. Surv. Qd.
 —, 1976: Kaffir Chief gold mine, M.L.A. 446 (Stanthorpe) and Southern Star prospect. Unpubl. rep., Geol. Surv. Qd.
 MAITLAND, A. G., 1895: Notes on the Pikedale Goldfield. *Publs Geol. Surv. Qd*, **105**, 7-8.
 OLGERS, F., FLOOD, P. G. and ROBERTSON, A. D., 1974: Palaeozoic geology of the Warwick and Goondiwindi 1:250 000 Sheet areas, Queensland and New South Wales. *Rep. Bur. Miner. Resour. Geol. Geophys. Aust.*, **164**.
 SIEMON, J. E., 1975: Kaffir Chief Mine, Stanthorpe. Unpubl. rep., Geol. Surv. Qd.
 SKERTCHLY, S. B. J., 1897: On the geology of the country around Stanthorpe and Warwick, south Queensland, with especial reference to the tin and gold fields and silver deposits. *Publs Geol. Surv. Qd*, **120**, 73-77.
 WILLIAMS, O. M., 1937: Inspector's reports for June. *Qd Govt Min. J.*, **38**, 245.

**ARCO
AUSTRALIA
LIMITED**



Atlantic Richfield Company's International Coal Department is pleased to announce that Don King, formerly with AAR Limited and Utah Development Company has agreed to act as geological consultant for ARCO Australia Limited in and for the State of Queensland, commencing on February 1, 1978.

DEPARTMENT OF MINES

NOTICE OF LAND AVAILABLE FOR TAKING UP UNDER AUTHORITY TO PROSPECT FOR MINERALS

The land described in the following Schedule has become available for taking up under Authority to Prospect for Minerals.

Any company or person interested in conducting a programme of exploration for minerals over any part of this land is invited to apply for an Authority to Prospect under The Mining Act 1968 to 1976.

A summary report on the geology of this land is contained in this issue of the Queensland Government Mining Journal. Other information is lodged with the Geological Survey of Queensland, and may be examined and copied by arrangement with the Chief Government Geologist, Mineral House, 2 Edward Street, Brisbane, 4000.

An application for an Authority to Prospect for Minerals should be made in writing to the Under Secretary, Department of Mines, 18th Floor, Watkins Place, 288 Edward Street, Brisbane 4000.

All applications received by 1st June, 1978, for Authorities to Prospect for Minerals over the land described in the following Schedule will then be considered without priority for the order in which they are received.

In the application, the following information should be given:-

- (1) Description of area required.
- (2) Name of company or person to whom it is requested that the Authority to Prospect be granted.
- (3) If a company, whether registered in Queensland.

- (4) Name and address for reply.
- (5) Proposed programme of exploration, if granted the Authority to Prospect. This should be set out in as much detail as possible for each year of the proposed programme.
- (6) Minimum expenditure for each year of the proposed programme.
- (7) Technical and financial ability of the applicant to carry out the proposed programme.

Applications should be submitted in a sealed envelope with "Application for Authority to Prospect for Minerals for Ex-71D" on the outside.

SCHEDULE

The land in the State of Queensland within the boundaries of Sub-Blocks as defined and shown on Department of Mines Block Identification Map — Series B (copies of which may be purchased from the Department of Mines, Brisbane) and as set out hereunder.

EX 71D — 20 SUB-BLOCKS
BLOCK IDENTIFICATION MAP — SERIES B

BLOCK	NORMANTON SUB-BLOCK
1937	t, u, y, z.
1938	q, r, s, v, w, x.
2009	d, e, j, k.
2010	a, b, c, f, g, h.

CRUDE OIL PRICES

The Minister for National Development (Mr Kevin Newman), announced last month the import parity prices to apply in the calculation of prices received by producers of indigenous crude oil between January 1 and June 30, 1978.

Mr Newman said that periodic adjustments were foreshadowed in the Deputy Prime Minister's statement on crude oil policy on August 16, 1977, in which it was indicated that import parity prices apply to a specified portion of production from each individual field.

The new import parity prices are:-

For **Gippsland** crude oil, delivered to Westernport, and for **Barrow Island** crude, delivered to Kwinana — \$12.62 a barrel.

The price of **Moonie** crude at Brisbane and all refinery feedstocks at Roma — \$12.99 a barrel.

Mr Newman said discussions between the industry and the Department of National Development were continuing to enable a more precise calculation to be carried out, particularly in respect of quality differential, as a basis for the next determination to apply from July 1, 1978.

OTL NATA REGISTERED LABORATORY
METALLURGICAL SERVICES
COMPREHENSIVE CHEMICAL AND INSTRUMENTED ANALYSIS
COMPLETE ANALYTICAL SERVICE FOR MINING AND EXPLORATION COMPANIES

D. T. LEMPRIERE & CO. LIMITED

31-41 Bowden Street, Alexandria, N.S.W. Phone 699 3555

and at Melbourne — Brisbane — Adelaide — Perth

Phone 259 2759 266 6411 276 8677 21 3062