

EXECUTIVE SUMMARY

AND RECOMMENDATIONS

Introduction

This inquiry was initiated in response to numerous leaks and spills at the four uranium mines in question and its terms of reference require the Committee to assess the adequacy and effectiveness of the current system of environmental regulation.

Debate centred on the extent to which these incidents have impacted on the environment and whether or not they are attributable to an over-reliance on self-regulation, unsatisfactory management practices and/or inadequate monitoring, reporting, oversight and enforcement by regulating authorities.

Authorities and mine operators acknowledge that there has been contamination from mining activity but argue that even though there have been hundreds of incidents, the number is not significant and that, in any case, environmental damage has not been proved.

It is the case however that a pattern of underperformance and non-compliance can be shown. The Committee also identified many gaps in knowledge and found an absence of reliable data on which to measure the extent of contamination or its impact on the environment.

Uranium mining at Ranger and Jabiluka in the NT raised different sociological, geophysical and operational issues and environmental challenges from Honeymoon and Beverly mines in South Australia. However, the shortcomings in the operations of all four mines suggests that short-term considerations have been given greater weight than the potential for permanent damage to the environment.

Uranium mining is contentious but the Committee was not asked to examine the validity of the industry's existence. It did seek to evaluate the arguments of industry, governments, indigenous groups and conservationists in making its recommendations and concluded that changes in were necessary in order to protect the environment and its inhabitants from 'serious or irreversible damage'.

Ranger and Jabiluka

The Alligator Rivers Region is invaluable — a World Heritage area of high conservation values, which has unique scenic and ecological importance and an Indigenous culture that has existed continuously for at least 50,000 years. Its Ramsar-listed wetlands – floodplains, swamps, estuaries, mangroves and mudflats - are the world's richest tropical breeding ground for waterbirds.

The Commonwealth has responsibility for the management of nuclear activities and matters of national environmental significance but the regulation and oversight of these mines is a joint Commonwealth and Northern Territory Government responsibility.

The Ranger Uranium Environmental (Fox) Inquiry (1977) identified serious regulatory inadequacies, in particular, the ability of the NT Government's regime to prevent pollution from mining. The Government of the day adopted the bulk of the Fox Inquiry recommendations, setting up a complex regulatory regime, transferring title to the land to the Northern Land Council, establishing a system of environmental requirements under the authority to mine, setting up the Office of the Supervising Scientist to monitor and peer review policing efforts by the NT administration and managing the area as a national park.

Many argued that Ranger and Jabiluka were heavily regulated but others said that in practice the mine operations are self-regulated. The current legislative and regulatory framework is certainly complex but it is also confusing and inadequate in many respects.

The independence and effectiveness of the Northern Territory Department of Business, Industry & Resource Development (DBIRD) was questioned and it was argued that this department had a conflict of interest in 'facilitating the mining industry' whilst performing a regulation function.

The Office of the Supervising Scientist (now the Supervising Scientist Division or SSD) argued that the fact that there have been no prosecutions of Energy Resources of Australia Ltd (ERA) was proof of the success of the regulatory framework. Given the more than 110 incidents at Ranger and numerous breaches of Environmental Requirements, the Committee considers this logic to be flawed.

The Committee considers that the NT Government should adopt specific strategies for improving the transparency, rigour and effectiveness in its management plans and authorisations for mining. A tougher enforcement policy is also called for where the test for taking legal action should be the significance of the breach.

The exclusion of the Traditional Owners

The Mirrar People, although Traditional Owners, have no direct role in the regulatory system and power of veto was removed in 1976 over both the Ranger and Jabiluka mining rights for the Mirrar and the NLC. This was despite Justice Woodward's statement in 1974 that 'to deny to Aborigines the right to prevent mining on their land is to deny the reality of their land rights'.

The Mirrar still say 'no' to uranium mining at Jabiluka, however, the Northern Land Council, is the principal party to NT mining agreements and the Mirrar are barely consulted about mining operations. As the report of the Committee's inquiry into Jabiluka points out:

The provisions of the Land Rights Act, in which Traditional Owners are not parties to contracts negotiated on their behalf, already create scope for those rights to be unfairly alienated within contracts which may otherwise be technically legal

The Committee holds the view now as did the previous Committee report in 1999 that there is a prima facie case for reviewing the 1982 Jabiluka Agreement and for the Land Rights Act to be reformed to remove the ‘national interest’ provisions and ensure that Traditional Owners are fully consulted and informed about developments on their land, that their views are allowed to prevail and that their agreement to significant changes in scope is required.

Despite the existing Agreements which provide for participation of Traditional Owners on committees, the involvement of the Mirrar is at best dysfunctional. The Mirrar argue that it is their right to protect and manage their land and that they should play a significant role in the environmental regulation, monitoring and reporting regimes at Jabiluka and Ranger.

Overhaul of legislation

The Committee found inadequacies in the existing legislative arrangements and calls for an overhaul of the separate and joint roles and responsibilities of the Commonwealth and Northern Territory governments.

Despite the history of incidents, there has been a reluctance on the part of Federal agencies to publicly challenge the NT Government or to hold ERA to account. Regulatory frameworks in the NT were said have too little legislative clout to be effective in discouraging incidents and breaches and the *Atomic Energy Act* was never designed for regulating uranium mining. Complexity and the inconsistent mix of Commonwealth and NT responsibilities added to the ineffectiveness of the laws governing mining. Furthermore, there is no Environment Protection Agency and, until recently, no FOI laws in the NT that might provide greater scrutiny over the operation of these mines.

The Committee concluded that new legislation needs to establish and clearly set out the roles and functions of the SSD; the Environmental Research Institute of the Supervising Scientist (ERISS); the Alligator Rivers Technical Committee (ARRTC); Alligator Rivers Region Consultative Committee (ARRAC), and the Minesite Technical Committees (MTC).

Monitoring

The intense and highly seasonal wet season of the NT makes the dispersion of mine waste waters the main threat to ecosystems surrounding these sites. For this reason, comprehensive environmental monitoring is necessary and, for these two mines, that monitoring is focussed almost entirely on aquatic ecosystems.

ERA is required to conduct ground, potable and surface water as well as atmospheric monitoring at Ranger and to conduct groundwater, site water, creeks and billabongs, soil, meteorology and blasting emission monitoring at Jabiluka. DBIRD is responsible for checking the veracity of ERA's monitoring and reporting. Since the Ranger tailings leak in 2000, SSD has been required to assess changes to biological diversity of aquatic ecosystems and ensure adequate early warning systems were in place.

Monitoring at Jabiluka and Ranger was said to be lacking in rigor and independence, periodic rather than continuous, insufficient for assessing intermittent and accumulative impacts and too often used as a mechanism to downplay operational problems.

The Gundjehmi Aboriginal Corporation (GAC) argued that the upstream monitoring point for Ranger, with which downstream data is compared for natural variation, was too close to potential impacts from the mine. They criticised the fact that at Jabiluka the Swift Creek monitoring point is one kilometer to the east of the site and point out that any breach at this point would mean contamination had already occurred within the World Heritage Area.

The Committee was persuaded of the need to increase the number of monitoring sites to allow ongoing analysis and checks on the source, loads, dilution, reactions and uptake of contaminants by the ecosystems.

The adoption of event-based monitoring where samples are rapidly collected in heavy rain events or leak incidents (both on-site and off-site), was recommended to allow all components of the water management system to be tested for compliance with set limits.

The International Science Panel (ISP) in its 2000 examination of whether the Kakadu World Heritage status was at risk from impacts of uranium mining, recommended landscape and ecosystem analyses and called for a comprehensive risk assessment, including ecological, biochemical and hydrological factors at a landscape/catchment scale for both Ranger and Jabiluka, within the context of the Kakadu World Heritage Area.

Trigger system

A three-levels response system is in place whereby limits are based on mean or average background concentrations. One standard deviation from background triggers a watching brief, two an investigation and corrective action, and three or a concentration deemed to be ecologically toxic, triggers corrective action and advice to the Minister on whether or not this constitutes a breach of environmental requirements.

Whilst SSD argues that this system is scientifically defensible and produces a very high standard of protection, others said the limit levels were too high and did not represent background levels. The third level response for uranium contamination, for

instance, was set at 5.8 ppb whereas GAC argued that this was too high at 580 times the background level of 0.01 ppb and called for limit for Ranger to be 0.5 ppb and for Jabiluka 0.05 ppb.

Environmental Management Complaints

Former ERA employee and environmental chemist, Mr Geoffrey Kyle, made serious complaints about environmental management at Ranger including under-reporting and misreporting of discharge water, failure to clean up spilled tails material, ad hoc water management strategies and laboratory practices that compromised results. The Committee found fault with the handling of these complaints by ERA, SSD and ERISS and recommended that a thorough independent investigation be conducted.

Social and Cultural Impact Monitoring

ERA is required to protect cultural as well as natural values and it must protect *the health of Aborigines* but the current system was said to be outdated and lacking in accountability. Social impact monitoring has not been conducted since 1997 because Traditional Owners have been reluctant to participate or to accept the royalties held in trust from Jabiluka, arguing that to do so would be to give legitimacy to the mine. It is the Committee's view that a culturally appropriate forum should be established to allow dialogue with Traditional Owners and commission independent research on the social impacts of Ranger.

Ranger - Groundwater, wetlands, stockpile, tailings management and rehabilitation

The challenge of physically isolating uranium mill tailings from the environment for more than 10,000 years is significant but management to do so is nonetheless a requirement of the ERs.

It was argued that the many changes and extensions in the operational life of Ranger Pit #3 have placed strains on tailings storage capacity and have implications for rehabilitation. Whether ERA should be permitted to store tailings in pits above RL 0 (sea level) is contentious and ERA has been allowed ten years to research and justify a case for rehabilitating the above ground dam without removing the tailings.

Although there is evidence in internal ERA and SSD reports of seepage from tailings dams via fault zones into shallow and deep aquifers, the matter is not adequately researched, monitored or reported. The Committee sees the need for more specialist research on groundwater flowpaths, groundwater bores and rigorous monitoring and reporting of groundwater contamination.

GAC argue that low grade ore has long term environmental risks and wants to see this material backfilled into mined out pits but there is no regulatory requirement on ERA to do so.

The reliance on wetlands at Ranger to retain uranium and other contaminants, was questioned because wetland filters are limited in that salts such as Mg and SO₄ are only minimally reduced and uranium is captured within the plants and sediment. It was also argued that once wetlands are fully saturated, unfiltered contaminants may flow downstream causing irreversible harm to waterways and associated biota. The contaminant retention capacity of wetlands is not clear and the Committee recommends further research to determine their effectiveness. It would appear that plants and sediment material should be considered radioactive waste and excavated at the completion of mining to be dealt with as part of rehabilitation works.

The practice of disposing of contaminated water through irrigation was also criticised for the lack of certainty about the capacity of the soil to retain contaminants and the lack of load limits, sampling and monitoring.

There is much evidence that the management of existing stockpiles has been inadequate—a prime example is the 2002 incident where approximately 84,000 tonnes of ore was incorrectly placed on the No 2 stockpile for more than a month with the runoff draining freely into waterways. This was not described by SSD as a breach of ERs although the Committee was persuaded that this was indeed the case.

A rigorous and independent inspection and check monitoring program is required for all stockpiles especially pre-, during and post- wet season rains. The untreated run-off from the stockpiles, especially the highly mineralised ones, needs to be monitored and controlled to prevent it entering Alligator Rivers Region (ARR) waterways.

ERA is required to prepare an Environmental Management Plan to rehabilitate the site to the point where it could be incorporated into the Kakadu National Park however this will be a major exercise and the forms rehabilitation might take and the practicalities of ensuring protection of the environment over timeframes of hundreds of years once the mine is closed are as yet unclear.

Jabiluka – water management and rehabilitation

Work stopped at Jabiluka in September 1999 and the only substantive activity onsite is management of the water in the decline and rainfall on the site in the wet season.

It is argued that the retention pond is inadequate, the impact on groundwater of storing water in the decline in early 2001 was poorly understood and analysed, that seepage (30 ML/year containing 200 kg of uranium) pumped from the decline is a major source of contamination and that consultation and reporting of water management has been poor. Irrigation of contaminated water is also blamed for heightened uranium levels in surface water.

Water management at Jabiluka is under review and, according to SSD legal enforcement of the water quality trigger system will be sought.

As for Ranger, ERA is required to rehabilitate Jabiluka so it can be incorporated into Kakadu National Park and a plan of rehabilitation (#6) has been prepared backfilling

the decline and removing the pond. According to Rio Tinto, a closure plan existed and would be updated in the light of new knowledge and circumstances.

(An announcement has since been made (1 August 2003) that the NT Government has approved ERA's 'long term care and maintenance' proposal including backfilling the mine - returning the mineralised stockpile and waste rock to the decline in the current dry season - and a water management plan for the site.)

Reporting

Technical language, insufficient context to reports and poor understanding of the reporting system are barriers to public acceptance of reporting however it is also the case that many reports have been withheld on grounds of confidentiality or are inadequate, leading to lack of trust in ERA and regulatory authorities.

Calls have been made for the release of short and long term plans for mining including timing of tailings management, reports and data on known environmental problems at treatment areas such as wetlands and irrigation sites, quantities of ore and uranium grade, use of industrial chemicals and reagents at Ranger, the Ranger Mining Manual and stockpile and groundwater data.

ERA argued that the context of incidents should be reported so that the significance of leaks or spills is better understood and not always assumed to be major. Communications and relations between ERA and the Mirrar were said to be in a parlous state which ERA said it was trying to improve.

The Committee welcomes this commitment however it is the case that ERA failed to inform stakeholders, failed to follow correct procedures and did not take timely action on a number of major incidents. Until their operational performance is significantly improved, efforts at improving relations will founder.

Beverley and Honeymoon

Much of the debate surrounding the two South Australian uranium mining operations dealt with the *in situ* leach (ISL) mining method which is employed at both projects. This is what distinguishes them from the Olympic Dam uranium mine in South Australia that uses conventional mining techniques, and which was not included in the Committee's terms of reference. The Committee is concerned that the ISL process, which is still in its experimental state and introduced in the face of considerable public opposition, was permitted prior to conclusive evidence being available on its safety and environmental impacts. The Committee believes that, at the very least, strict regulation of the use of the ISL technique is required, with mandatory monitoring by independent bodies, to assure the community that the technique does not have a significant impact on the environment.

Independent monitoring

The frequency of leaks and spills is evidence that self-regulation by the mining companies has failed to prevent incidents which have the potential to cause significant environmental damage. The Committee believes that the evidence overwhelmingly points to the need for a comprehensive system of independent monitoring.

Role of Commonwealth and State Government and their agencies

The Committee was concerned that the day-to-day environmental regulation of the two projects falls to the South Australian Department of Primary Industries and Resources (PIRSA) rather than the State's environment agency, the Environmental Protection Authority. The Committee feels that PIRSA is an inappropriate agency to monitor the environmental performance of the two mines as it also actively promotes industry development. There is a clear conflict of interest between those two roles. Likewise it is the Commonwealth Department of Industry Tourism and Resources rather than Environment Australia that is responsible on the federal front. The Committee recommends that oversight responsibility for both the Beverley and Honeymoon mines should be transferred to the South Australian EPA and Environment Australia.

The Committee also believes that the Commonwealth needs to play a far more prominent and assertive role in assessing and regulating ISL mining within South Australia.

Incident reports and investigations

As already noted, there have been a large number of incidents at both sites since trial and full-scale mining commenced. The mining companies should be required to prepare written reports on all incidents regardless of their severity, and all stakeholders should be immediately informed as soon as an incident occurs.

The Committee recommends that Environment Australia should be responsible for comprehensively investigating all serious leaks and spills and that the South Australian Chief Inspector of Mines, in collaboration with EA, should be responsible for investigating more minor incidents. Given that different reporting requirements attach to these different categories, the Committee also recommends that the definitions as to what constitutes a "major" or a "minor" spill be the subject of public consultation, and be publicly available.

Reporting and Bachmann Review

Transparency of the uranium mining industry in South Australia would be aided by improved reporting procedures. The Committee is concerned about the current standard of reporting and it is recommending the public release of all reports and corresponding data. Such improved communication and transparency would assist restore the community's faith in the independence of government agencies and the honesty of the mine operators.

The South Australian Government's efforts to examine reporting procedures by way of the Bachmann Report is to be commended and the Committee strongly supports his recommendations with regards to upgrading and strengthening reporting procedures

Consultative Committees

The Committee believes that the existing consultative process at the Beverley mine is inadequate and that the Beverley Environmental Consultative Committee (BECC) should be made responsible to Environment Australia (EA). Likewise if the Honeymoon project commences full-scale mining, the corresponding consultative committee should also be the responsibility of EA.

Research

When compared to the Northern Territory, the amount of research into the environmental risk from the two South Australian mines is minimal. The Committee argues that, although the environment in the Alligator Rivers Region is considered more fragile than that of the Beverley and Honeymoon areas, it is no less important to the traditional owners, local residents and the broader community, and that the biota and water resources in these areas must also be protected to an appropriately high standard.

In the Committee's opinion the research and subsequent trials undertaken into the ISL technique and existing aquifers in question were inadequate and that a more comprehensive research effort needs to be undertaken, based on better organised and more systematic data collection. The success of these studies will be dependent on the most rigorous analyses being undertaken. They should be carried out individually and collaboratively with the mining companies, Commonwealth and State agencies and involve independently funded scientists.

Honeymoon

The Committee has grave reservations about the commencement of full-scale mining at Honeymoon. The use of the contentious ISL mining method coupled with the doubts surrounding the nature of the Honeymoon aquifer and its connectivity with other aquifers is reason enough for the Committee to recommend that the project should not proceed.

Schedule of Recommendations

Northern Territory

Recommendation 1

The Committee strongly supports the Mirrar in their wish to actively participate in their land's management and protection and recommends that they be given a position on the Minesite Technical Committee (para 2.30).

Recommendation 2

The Committee recommends that DBIRD adopt the recommendations of the David Lea Consulting *Review of Environmental Regulations at Ranger and Jabiluka Uranium Mines*, viz:

- The development of a comprehensive enforcement policy for Jabiluka;
- Devising mining management plans and authorisations for the mines; and
- Introducing information strategies for government agencies designed to address public perceptions (para 2.55).

Recommendation 3

The Committee recommends that:

- a. The joint and separate responsibilities of the Commonwealth and the Northern Territory be clearly outlined in relevant Commonwealth and NT legislation, particularly with respect to monitoring.
- b. The functions of the Alligator Rivers Region Consultative Committee (ARRAC), the Alligator Rivers Region Technical Committee (ARRTC) and the Minesite Technical Committees be clearly outlined.
- c. The Environmental Requirements attached to the mining lease and land rights agreement for Jabiluka be updated and enshrined in relevant NT legislation.
- d. The NT Government adopts specific strategies for improving the transparency, rigour and effectiveness in its management plans and authorizations for mining.
- e. The NT Government adopts a tougher enforcement policy where the test for taking legal action is the significance of the breach (para 2.58).

Recommendation 4

The Committee recommends that DBIRD updates the 'Revised Working Arrangements for Co-ordinating the Regulation of Environmental Aspects of Uranium Mining in the Alligator Rivers Region (para 2.59).

Recommendation 5

The Committee recommends that ERA complies with ISO 14001 as soon as possible (para 2.67).

Recommendation 6

The Committee holds the view that contaminants from these mine sites must be measured accurately and kept within broadly accepted limits whether adverse effects are demonstrated or not. Accordingly it recommends:

- a. That adequate and appropriate resources are made available for the technical staff and laboratory to carry out the necessary monitoring.
- b. An increase in the number of monitoring sites and compliance points, especially along critical drainage features such as Gulungul, Corridor and Georgetown Creeks and Coonjimba and Djalkmarra Billabongs to allow ongoing analysis and checks on sources of contaminants, loads, dilution, reactions and uptake by the ecosystem, and therefore possible impacts.
- c. The adoption of broad event-based monitoring to ensure all necessary water management system components are compliant with limits set.
- d. More rigorous horizontal and vertical monitoring and reporting of all groundwater units around tailings facilities
- e. Increased check soil monitoring programs by SSD and DBIRD, more sampling points located in areas of active water treatment and more field studies to quantify the long-term containment retention characteristics of soils.
- f. That ERISS adopts the ISP recommendations for its proposed 'landscape-scale program' (para 2.152).

Recommendation 7

The Committee recommends:

- a. The Commonwealth commence dialogue with the Northern Land Council and the Traditional Aboriginal Owners of the Ranger and Jabiluka sites to, as a matter of priority, fund and establish a culturally-appropriate forum for Traditional Aboriginal Owners and other local Aboriginal people to monitor and commission independent research in relation to social and environmental impacts of mining operations and to develop policy recommendations in response to the findings.
- b. The forum should be accorded full legal standing and be incorporated into the contractual arrangements that exist between the Commonwealth and Energy Resources of Australia.

- c. Provision should also be made for this forum to instigate sanction processes where breaches of the existing Commonwealth Environmental Requirements occur (para 2.165).

Recommendation 8

In relation to water quality management, the Committee recommends that:

- a. the re-incorporation of load limits into water quality criteria which are no more than twice the average natural loads in a system (preferably lower)
- b. the limit for uranium at gauging station 8210009 in Magela Creek lowered from 5.8 µg/L to 0.5 µg/L
- c. a separate system of trigger levels at important discharge sites such as Corridor Creek, RP1 and Gulungul Creek
- d. the trigger system for water quality to be expanded to include other contaminants from Ranger such as NO₃, PO₄, Cu, Pb, Zn, radium Al, Mn, P and Re,
- e. The trigger levels for NO₃ should be re-assessed, including the addition of NH₄ trigger levels, utilising a data set which includes sufficiently low detection limits and the effects of blast residues leaching removed to provide concentrations more closely representative of natural NO₃ and NH₄ in Swift Creek.
- f. the trigger system to include the loads of contaminants as well as concentrations
- g. the trigger system to be enhanced to include statistical analysis of difference between upstream and downstream water quality monitoring locations.
- h. Greater emphasis be placed on collecting hydrology data for joint interpretation with water quality data (para 2.185).

Recommendation 9

The Committee recommends that groundwater should be better protected by:

- a. more groundwater bores to allow the checking and analysis of groundwater quality
- b. the conduct of more detailed field studies aimed at quantifying groundwater flow paths to enable more accurate short and long term modelling.
- c. greater emphasis on identifying potentially permeable rock units, especially carbonate features as identified by Haylen (1981);

-
- d. more rigorous monitoring and reporting of different components of groundwater, both vertically and horizontally;
 - e. investigation of methods needed to ensure low permeability of tailings liners, especially where the pit walls are in more permeable strata (especially above RL 0 m) (para 2.193).

Recommendation 10

The Committee recommends that the ARRTC becomes involved in the rehabilitation planning process for both Jabiluka and Ranger and works closely with operators and the Traditional Owners in formulating and implementing rehabilitation and closure plans (para 2.209).

Recommendation 11

The Committee is concerned that the management of radioactive uranium mill tailings at Ranger has been inadequate and makes the following recommendations:

- a. That a deadline be set in Authorisation 82/3 and the ERs for removing the tailings from the above ground dam.
- b. That detailed analysis be made of the existing contamination of groundwater by seepage from tailings storage facilities above ground dam and Pit #1.
- c. A more suitable technique be developed and applied to measure tailings density in Pit #1, incorporating known mill data.
- d. Any application to vary the current RL 0m limit for Pit #1 triggers a new EIS.
- e. That detailed field studies are undertaken by SSD to quantify radon flux, microbiological behaviour and the physical properties of tailings, particularly permeability.
- f. That specialist research is undertaken by SSD on groundwater flowpaths, such as fracture zones and faults zones, to allow more detailed quantification of contaminant migration rates (para 2.227).

Recommendation 12

The Committee recommends:

- a. the incorporation of maximum cumulative load limits into specific areas for disposal, specific to the use of irrigation or wetlands,
- b. more rigorous sampling under the requirements of Authorisation 82/3 and the ERs of wetland and irrigation areas including more sites and frequencies

- c. check monitoring and analysis of wetlands and irrigation sites by OSS and DBIRD and a reduced reliance by those authorities on company data and assertions in managing these contaminated areas.
- d. investigation of the Corridor Creek wetlands to discover whether they have any capacity to continue to perform as wetland filters in the future.
- e. detailed studies and analyses to be prepared of the capacity of wetland filters to retain uranium and other contaminants (including Mg, SO₄, Mn, U, ²²⁶Ra, etc.), the ultimate fate of those contaminants and the long-term cumulative impacts on plants and animals within the wetlands until rehabilitation (para 2.244).

Recommendation 13

The Committee agrees that there are serious inadequacies in the management of the various stockpiles of material at Ranger and makes the following recommendations:

- a. That SSD and DBIRD develop a rigorous, independent inspection and checking program for all stockpiles which is ongoing rather than random, particularly prior to, during and immediately after each wet season.
- b. That all necessary steps be taken to prevent discharge from runoff from the southern stockpile entering the Corridor Creek system until the wetlands have been ascertained to be suitable for the remainder of Ranger's operation and improved environmental monitoring is in place (para 2.254).

Recommendation 14

The Committee regards these allegations as serious and is not satisfied that they have been properly investigated. It recommends:

- a. The appointment of an independent body to make a thorough investigation of all aspects of Mr Kyle's April 2002 statement and the adequacy of responses provided by ERA, SSD and ERISS.
- b. That this body should make recommendations on any action to be taken with regard to breaches of licence conditions and agreements and determine what if any changes are required to be made to current monitoring and reporting systems (para 2.324).

Recommendation 15

- a. the Committee can see no legitimate argument for reports to be withheld from public scrutiny and calls for them to be released without delay; and
- b. the Committee also recommends that ERA and SSD provide a comprehensive response and action to address the many criticisms of reporting, detailed in this report.

The Committee is persuaded that there are many areas in which reporting should be more thorough and more open to scrutiny. It recommends that:

- c. the short and long term plans for mining are publicly stated each year including the timing of tailings management, ores mined compared with predicted quantities, heap leaching and/or beneficiation and the potential for underground mining;
- d. all detailed studies and reports that already exist within ERA, DBIRD and SSD and those prepared in future, are made publicly available including all reports and data on known environmental problems at treatment areas such as wetlands and irrigation sites;
- e. the annual reports of ERA and SSD include:
 - i. quantities of ore, low grade ore and non-mineralised rock mined from Ranger Pit #3 including uranium grade and other minerals such as sulfide and copper, and
 - ii. the annual use of industrial chemicals and reagents used in the ranger processing mill.
- f. the Ranger Mining Manual (and its successor the Mining Management Plan (MMP) under new NT legislation) to be made publicly available;
- g. more thorough reporting of stockpile locations, plans and quantities by ERA, SSD and DBIRD, including water management aspects for each site; and
- h. more thorough reporting of groundwater data, both horizontally and vertically by ERA, SSD and DBIRD, including cross-sections, plume maps and groundwater elevations.

Monitoring recommendations specific to Jabiluka:

- i. Statutory monitoring point for determination of the impact of Jabiluka downstream on Swift Creek be moved to within the Jabiluka Mineral Lease
- j. Separate trigger levels applied for the North and Central Tributaries at the sampling locations closest to the site (ie JSCTN2, JSCTC2)
- k. The statutory program for Jabiluka to include upstream monitoring of water quality in the North and Central Tributaries, including radium activities
- l. An additional statutory monitoring location established within the West Branch of Swift Creek
- m. The frequency for statutory water quality monitoring (for parameters currently listed as monthly as per the authorisation) be changed to at least weekly during

the first month, followed by at least three samples per month for the remainder of the wet season.

- n. Analysis of radium included with metals
- o. A succinct and accurate location plan of sampling sites provided with all relevant reports, publications and scientific papers.
- p. Adequate resources allocated by ERA to allow personnel to be available at times of first flush or other necessary and opportune times to obtain water quality or other environmental samples.
- q. Provision of detailed electronic and automatic sampling equipment across the Swift Creek catchment (para 2.372).

South Australia

Recommendation 16

The Committee recommends that, owing to the experimental nature and the level of public opposition, the ISL mining technique should not be permitted until more conclusive evidence can be presented on its safety and environmental impacts.

Failing that, the Committee recommends that at the very least, mines utilising the ISL technique should be subject to strict regulation, including prohibition of discharge of radioactive liquid mine waste to groundwater, and ongoing, regular independent monitoring to ensure environmental impacts are minimised.

The Committee further recommends that the continuation of both the Beverley and Honeymoon projects should be contingent on the presentation of strong evidence supporting the conclusion that the natural levels of attenuation are consistent with existing projections. (para 3.40).

Recommendation 17

The Committee recommends a greater level of independent monitoring of the Beverley mine.

The Committee recommends the public release of all data and reports relating to monitoring and incidents (para 3.71).

Recommendation 18

Owing to the risks posed by the mine to the environment and the level of public concern, the Committee recommends that the Commonwealth and the South Australian Government play a more active and assertive role in assessing and regulating ISL mining at Beverley (para 3.74).

Recommendation 19

The Committee is of the view that uranium mining presents unique hazards and risks to both human health and the environment. Accordingly, its regulation at both the Commonwealth and State levels should be primarily the responsibility of environment agencies rather than agencies whose principal concern is with the advancement of mining interests (para 3.94).

Recommendation 20

The Committee supports the ACF recommendation that the BECC be made responsible to Environment Australia and that the BECC publicly report all reviews of environmental performance at Beverley (para 3.106).

Recommendation 21

The Committee recommends that mining companies are required to prepare written reports (as opposed to verbal) on incidents.

The Committee recommends that all serious leaks and spills be investigated by Environment Australia and that minor leaks and spills be scrutinised by South Australia's Chief Inspector of Mines in collaboration with EA. Given that different regulatory requirements attach to different categories of incidents, the Committee also recommends that the definitions as to categories of incidents be the subject of public consultation and be publicly available. A regulatory response, publicly available, should be provided following the investigation of an incident (para 3.109).

Recommendation 22

The Committee supports the recommendations of the Bachmann Review aimed at updating and strengthening reporting procedures, viz:

- Maintenance of a register of incidents at each site
- Revised secrecy/confidential clauses to ensure anonymity for concerned individuals
- Closer reporting liaison between the CIM, EA and the DITR
- All agencies to be informed of incidents at the same time
- The adoption by relevant agencies of a common incident reporting form
- The identification of a lead minister and agency to deal with a significant incident as soon as it occurs (para 3.130).

Recommendation 23:

In view of evidence of inadequate consultation in the past, the Committee recommends that Heathgate Resources should encourage and strengthen relations with the local Indigenous community through improved and open communications (para 3.142).

Recommendation 24

The Committee recommends that a more comprehensive research effort be made based on better organised and more systematic information collection and greater rigour in analysing data. Such research should be undertaken both individually and collaboratively by mining companies, the responsible Commonwealth and South Australian agencies, and independently funded scientists, both in Australia and abroad (para 3.174).

Recommendation 25

Given the seriousness of potential risks to the environment, the Committee recommends that mining operations at Honeymoon not proceed unless and until conclusive evidence can be presented demonstrating that the relevant aquifer is isolated (para 3.186).

John Cherry
Chair