

# Gundjeihmi Aboriginal Corporation

Submission to House of Representatives Standing Committee on Industry and  
Resources Inquiry into Developing Australia's Non-Fossil Fuel Energy Industry

May 2005

*Al-gangila al-Mirarr al-redweleng bolk-Mirarr ngalengarre gun-wok.*

**Foreword: Statement from Mirarr Senior Traditional Owner Yvonne Margarula**

*Ad arri-Mirarr arri-garrmi Balanda gure adberre gun-red barri-yawani dja barri-bolkgarungi uranium-gen. An-gare barri-bebmi gure ad arri-Mirarr, uranium barri-yawani.*

We Mirarr People have a long [over 30 years] experience with uranium exploration and mining on our traditional lands.

*Ad Bininj, arri-Mirarr arri-gudji arri-garrme Balanda an-gare-gen barri-yawani dja barri-bolkgarungi uranium-gen gure adberre gun-red.*

No other Aboriginal community in Australia has experienced the impacts of uranium mining for such a sustained period.

*Gerrngehgen Balanda barri-gihgimuk government andi-djawam adberre wanjh ad Bininj dja arri-Mirarr arri-warnyakminj bu Balanda gabarri-bolkgarung uranium-gen.*

Along with other Aboriginal people the Mirarr opposed uranium mining when the Government approached us in the 1970s.

*Dabbarrabolk adberre barri-geleni wardi gabarri-bolkgarung wanjh gabolkwarremen wanjh ad Bininj warridj arri-darrgidwarremen.*

The old people were worried about the damage mining would do to country and the problems that mining would bring for Aboriginal people.

*Dabbarrabolk adberre barri-woibukwong. Balanda marrek andi-bekkayi wanjh barri-djalbolkgarungi. Bolkkime ba-bolkwarreminj.*

The Government would not listen and forced the Ranger uranium mine on us, but the old people were right and today we are dealing with everything they were worried about.

*Balanda barri-wern barrim-wam gubehne, ba-bolkgimukminj, gunbang barrim-gang dja bolkkime ad Bininj munguih arri-dangwerren gun-wardde-gen.*

Uranium mining has completely upturned our lives – bringing a town, many non-Aboriginal people, greater access to alcohol and many arguments between Aboriginal people, mostly about money.

*Gure gabarri-bolkgarung, barri-bolkwarrewong. Gure an-gare anlabbarl ba-rri, bolkkime, gun-djorlokwarre gah-di. An-warddebang warridj barri-gurldjabnameng dja gun-red adberre ba-bolkborledmeng an-warrehwarre.*

Uranium mining has also taken our country away from us and destroyed it – billabongs and creeks are gone forever, there are hills of poisonous rock and great holes in the ground with poisonous mud where there used to be nothing but bush.

*Aye marrek nga-djare nga-bolknan gure gabarri-bolkgarung Ranger mine gure abbard aye ngarduk nuye gun-red.*

I do not like visiting the Ranger mine and seeing what has happened to my father's country.

*Barri-bolkwarrewong munguihmunguih. Arri-djare gabarri-bolknahnan gun-red rowk, marrek djala gubolkbuyiga nawu Balanda gabarri-bolkngeibun 'Kakadu National Park'.*

*Arri-djare gun-red rowk adberre gabarri-bolknahnan.*

*Bolkkime ga-bolkgimukmen gure gabarri-bolkwarrewon. Arri-djareni bu gu-bolkyahwurd gabarri-bolkwarrewon, bad larrk.*

This land has been ruined forever. We don't believe that the mining company should only be protecting the Kakadu National Park outside the Ranger area; we don't want the Ranger Project Area to be sacrificed.

We want the company to keep the impact of the mine as small as possible but it has been growing little by little ever since it began.

*Gabarri-bolkgarung gure adberre gun-red, arri-Mirarr. Minj ngaled gun-mak arri-nan bolkkime.*

Although the uranium mining at Ranger is taking place on Mirarr country, overall we have not truly benefited from the mine.

*Barri-bolkgarungi wanjh ad Bininj arri-darrgidwarreminj. Gerrngehgen nawu government barri-wokdi bu gabarri-bolkdurndiwe gure Bininj barri-redweleng gun-red bedberre wanjh Bininj barrimdurndi barri-mirnderi wanjh. Barri-bekakang warridj ga-wukbebme gun-wardde royalty nawu 1979 gabarri-bolkgarung dja Park gabarri-marnbun. Gerrngehgen arri-gudji ad arri-mud arrih-di gubehne. Bolkkime barri-wern barri-gukbulerri barri-bebmeng gubehne yiman ga-yime 500 barri-gukbulerri. Ad arri-Mirarr arri-redweleng dja barri-buyiga barri-gukbulerri arri-dangwerrinj gun-wern gun-wardde-gen.*

*Gun-wardde an-wukgimuk ba-bebmeng, bad marrek ngaled gun-mak garri-nan adberre Bininj.*

Our lives are worse since the government decided to allow uranium mining. When the government started the mine and the national park at the same time in 1979, a lot of Aboriginal people came into the area for the first land claim in Australia and the promise of uranium and Kakadu Park royalty monies.

We went from four or five families and around fifty Aboriginal people in 1975 to over 500 today. There has been a lot of fighting for many years between the Mirarr Traditional Owner's of Ranger and Jabiluka and other Aboriginal people.

Mining and the millions of dollars in royalties have not improved our quality of life.

*An-djewok 25, ad arri-Mirarr, arri-redweleng nawu Balanda gabarri-ngeibun Ranger, andi-djirrkang adberre, andi-bebkeng Balanda dja government, mining company. Bininj nawu Balanda bandi-marnedjare barri-gurrmeng. Bininj gu-bolkbuyiga-beh Balanda bandi-marnegurrmeng. Ad arri-redweleng larrk- marrek andi-bekkayi gayakki.*

For 25 years we Mirarr People, the Traditional Owners of Ranger, were pushed to the outside by non-Aboriginal people in government, mining companies and Aboriginal organisations and by other Aboriginal people who did their bidding and who were favoured by them.

*Barri-buyiga association nawu barri-gukbulerri gubehne Kakadu barri-wukmei gunwardde Djabulukku-beh wanjh barri-marnbom Daluk bedberre resource centre dja 'Night Patrol'. ERA mak barri-wohnani CDEP dja bedberre Bininj bandi-marnegurrmeng ba barri-durckmirriwirrinj CDEP-gen.*

Other Aboriginal Associations in Kakadu, with the help of government and the mining company, started using Jabiluka Mine money to set up social service programs like the Women's Resource Centre and the Night Patrol. The mining company ERA even provided their own staff to coordinate the CDEP project.

*Anekke wanjh barri-marnbom ba bu andi-marnelarlmang adberre arri-gukbulerri gubehne Kakadu. Bad larrk, marrek andi-guklarlmayi.*

They tried to divide the Aboriginal community in Kakadu but they did not succeed.

*Ad arri-Mirarr arri-warnyakminj marrek arri-marnedjare bedberre Daluk Resource Centre dja night patrol. Arri-yimeng gun-wardde Djabulukku-beh barri-wukmarnbom, gun-wardde nawu mining-gen nawu ga-bolkwarrewon djang adberre. Anekke-gen marrek arri-marnedjareniwirrinj. Bolkkime ba-rrangbalhmeng Daluk resource centre dja adman wanjh arri-marnbom CDEP wardi arri-gukbulerri arri-dangwerren munguih. Arri-Mirarr dja bedda nawu Djabulukku Association.*

*Ad arri-Mirarr arri-ni 'member' warridj gure Djabulukku Association.*

The Mirarr did not use these services because it was being funded by poison money from a uranium mine that will destroy a sacred site.

We told the government that it wasn't right that in Arnhem Land communities they fund all the social services, but we are forced to have a uranium mine to provide the money for service provision in Kakadu.

The Women's Resource Centre and Night Patrol have since closed down, and we initiated the setting up of an independent CDEP for all of Kakadu's outstation residents because of arguments between the Mirarr and the Djabulukku Association, of which we are members.

*Ad arri-redweleng Balanda andi-gebjirrkkang guberrk wanjh andi-dedjmelmeng. Gunukka wanjh arri-marnbom Gundjeihmi Aboriginal Corporation 1995 ba adman arri-redweleng arri-bolkwohnan.*

*Gure Gagadju Association, arri-wern arri-gukbulerri arrih-ni dja, ad arri-Mirarr marrek andi-wernhbekkayi. Arri-wern gunmogurrurr arrih-ni gure gagadju Association.*

Mining made us, the Traditional Owners, feel like outsiders until we established the Gundjeihmi Aboriginal Corporation in 1995. Before then the Gagadju Association was too big a group and could never truly represent the interests of the Mirarr Traditional Owners, along with many other clans.

*Bolkkime wanjh arri-wokdi gun-dangrayek adberre. Arrban-bidyigarrme Bininj gubehne gun-red Kakadu. Arrban-bidyigarrme djob-gen, gun-wardde-gen. Arri-wokdi bu ngeded gayimerranj bu Balanda gabarri-yakwon gabarri-bolkgarung, dja gabolkborledme andjewkbuyiga bu gamre. Arrban-bidyigarrmeng bu outstation-gen, diesel bedberre outstation gure dja gun-wardde royalty-gen arri-gurrmegurrmeng. Arri-wokdi gun-wern ba Bininj gabarri-bolkwohnan gubehnan marrek Balanda-wi. Boyen arrban-bidyigarrmeng bedda yawurrinj dja yawkyawk barri-marnbom bedberre gun-rurrk gubehne Jabiru.*

Since then we have developed a strong voice in our own right and have made many important contributions to Kakadu. Some of these include economic development studies, helping establish a process to examine Jabiru's future irrespective of mining, establishing an independent organisation for service delivery to Kakadu's outstations, funding diesel for electricity on the outstations, saving and carefully investing royalty money, and arguing for greater Aboriginal involvement in the running of Kakadu National Park. We have also recently helped set up the Kakadu Youth Centre in Jabiru.

*Ad arri-wokmarnburrinj. Bedda barri-marnbuyi NLC, dja government barri-gihgimuk nawu Canberra gabarri-ni dja Darwin government bad larrk, marrek barri-wokmarnburrimeninj. Adman wanjh arri-marnbom. Ad arri-wokmarnburrinj gun-wardde wanjh adman arri-marnbom dja Balanda adberre nawu andi-marnedurrkmirri.*

*Bedda Balanda mining company nawu, barri-mei nawu mining bedberre Ranger gure, wanjh andi-bawong.*

We have made these decisions through our Committee at the Gundjeihmi Aboriginal Corporation. Many of these things should have been done by the Land Council, by the Commonwealth Government or the Northern Territory Government – but they were not.

Along with our professional staff, we had to think, organise and even pay for many of these initiatives. Once non-Aboriginal people in government and the mining companies got what they wanted, once Ranger was up and running, all our problems were ignored.

*Andi-djalbawong wanjh barri-wokdi bu Djabulukku-gen barri-djareni Balanda gabarri-yawoihbolkgarung. Wanjh djaying andi-yawoihwokbekkayi.*

*Gun-wardde barri-wukgurmehgurmeng adberre yimarnek barri-bolkmarnbuyi wanjh barri-yimeng gamak rowk gabarri-bolkgarung wanjh Bininj minj gabarri-darrgidwarremen bad larrk. Barri-wokmarnburrinj Balanda nawu gabarri-ngeibun 'KRSIS report'.*

*Bedman deleng barri-wokdi gun-buyiga mak barri-wokdi, ad Bininj arri-benggayi.*

*Andi-marneberrebbom njalenjale bad larrk marrek ba-bolkborledkeyi gunmak. Djal gun-warre ga-djaldi.*

Everyone started looking at Kakadu's problems only when the government announced that the Jabiluka uranium mine should happen. All of a sudden there were many people interested in us and our problems and a lot of money was spent telling the world that more mining could happen and that things would be different this time.

Around this time (1997-1998) many decisions were made about things we didn't speak about in the KRSIS process and none of these things have lasted. None of the promises last but the problems always do.

*Ad Bininj arri-gele bu gabarri-yawoihbolkgarung gubehne. Ad arri-redweleng an-garre adberre arri-bolknahnyai dja Bininj warridj arri-nahnyai. Bu an-bang ga-bolkwarrewon wanjh ad Bininj warridj arri-warremen. Gabarri-bolkgarung wanjh ad Bininj warridj arri-darrgidwarremen.*

We are very worried about any further mining. We are worried because as Traditional Owners we must both look after country and look after people. If the country is poisoned people's lives could be ruined, if the social problems are not fixed this could also ruin lives.

*Ad arri-Mirarr arri-djare arri-wohnan gure gabarri-bolkgarung Ranger. Arri-djare andi-wokbekkan bu gun-red gabarri-durrkmirri ba ga-bolkmakmen.*

*Marrek arri-djare government barri-gihgimuk andi-dahme gabarri-yime adman Balanda arri-bolknahnan nawu bedda gabiarr-yime 'operational issue'.*

*Arri-djare andi-wokbekkan wardi an-gabo gumekke Madjdjili gure dja Madjinbardi dja an-labbarl ga-bolkwarremen, an-bang ga-bongimen wardi dja gukku ganjdjiganjdji warridj ga-bowarremen.*

Mirarr want a greater say in how the Ranger mine operates, in how the environment is protected, how the monitoring of the land is done. We don't think that once the mining starts the Traditional Owners should be locked out of all this just because the government calls it an 'operational issue'.

We want this say because one of our main worries is the long-term impacts of mining at Ranger, how mining could permanently damage the Magela Creek, the nearby billabongs and the water underground.

*Ganjdjiganjdji ad Bininj arrih-ni arri-bongun gukku dja wakkidj arri-we dja wurdurd gabarri-dirri gumekke. Arri-gele bu gun-gurlk nawu barri-djabnameng gumekke Ranger an-bang dorreng ga-ngimen ga-bolkwarrewon.*

*Balanda gabarri-wokdi bu bolkkime dja andjewk-gudji, minj na-ngale andi-marneyime ngaled ga-yimerran an-djewkwern bu gamhire dja gorroko Balanda barri-bolkbawong bu gabarri-yakwon gabarri-bolkgarung.*

*Balanda galuk gabarri-yakwon dja gabarri-durnderren. Adman arri-Mirarr arri-djalni munguihmunguih gure gun-red adberre arri-bolknahnan yiman ga-yime dabbarabbolk adberre barri-ni an-djalgare.*

People live on the creek downstream of the mine, they drink the water and fish and play in it. We are now very worried that the tailings in the pits at Ranger might poison the land over time.

Everyone seems to be only concerned with what is happening today or next year, yet no scientist can tell us properly what will happen at the mine site in a hundred years time when they are all gone and no-one cares.

Again it will be only the Mirarr people looking after that place as we have done for thousands of years.

*Adman arri-yime minj na-ngale gandi-wokbekkan bolkkime. Minj nangale andi-marnewokmeyu nawu djurra arri-munkeweng ad Gundjeihmi Aboriginal Corporation gure Senate Inquiry 2002 dja 2003.*

*Gare nuk andi-bawong, gabarri-djare arri-badwokngurdmen. Bu minj andi-wokmang, arri-djalwokrayekmen, arrbanmarneridmarnbun munguih bedberre bu minj andi-wokbekkan. Bu minj gabarri-wernhmarnbun an-djad djurra adberre, bu munguih minj andi-wokbekkan, wanjh arri-yawoihre gure radio, tv dja newspaper yiman ga-yime boyen.*

*Marrek arri-djare munguih garri-dangwerren. Marrek arri-djare anekke.*

*Arri-djaldjare ba Balanda gabarri-wokwoibukwon bu andi-marneberrebbun njalenjale dja gabarri-yime who, galuk wurri-gukbulerri wurri-bolkwohnan.*

We feel that people in government and in the mining company are still not listening to us. No one has answered all the questions or responded to all the comments that Gundjeihmi Aboriginal Corporation put to the Senate inquiry in 2002 and 2003. Perhaps people want to ignore us and hope our opposition will just go away – but if we are treated that way again we will respond in the same way.

If we don't have any power through the agreements and the environment, cultural and social processes then we will try to take power through the courts and through the media like we have in the past.

This fight is not something we want, we simply want non-Aboriginal people to mean what they say when they promise to include us in decision-making over our own lives and country.

*Government barri-gihgimuk ban-wong mining lease bedberre ba gabarri-bolkgarung gure Ranger dja Djabulukku. Ad Bininj marrek arri-wohnan gumekke. Barri-mei warridj gun-red ngarduk gu-bolkbulgay ba gabarri-marnbun Jabiru. Arri-djare andi-marnebolkdurndiwe gure ad arri-redweleng bad larrk andi-gaybun. Gabarri-badyakwon gabarri-bolkgarung andjewk gun-bidgudji. Ngaled-gen marrek gandi-marnebolkdurndiwe gun-red ngarduk wanjh?*

The government granted both the Ranger and Jabiluka mining leases Aboriginal Land during the land claim, but we have no real say over what happens there.

Worse still, they took some land in the middle of my country to build the mining town of Jabiru and will not give it back to the Mirarr Traditional Owners, even though mining will finish in five years time when Ranger's uranium is mined out completely.

*Bedda government barri-gihgimuk gabarri-bulumerren gabarri-yime Jabiru gun-red nawu gabarii-ngeibun 'World Heritage Area'. Ad Bininj dja dabbarrabolk adberre barri-bolknahnani an-djalgare.*

*Balanda andi-djalbolkgaybun minj gabarri-djare gandi-marnebolkdurndiwe gure an-garre bedberre nawu Aboriginal Land Rights Act. Gun-wern arri-djawayhmeng anekke andjewkwern.*

The government also boast that Jabiru is part of the World Heritage Kakadu National Park, taking advantage of the fact that my people have looked after this country for generations, yet they are unwilling to recognise the Mirarr as Traditional Owner's under the Aboriginal Land Rights Act NT and schedule Jabiru as 'Aboriginal Land'. We have been asking for this for many years.

*Arri-djare Balanda dja barri-buyiga barri-gukbulerri gabarri-garregadjung Bininj an-garre. Ad arri-Mirarr gun-red adberre, ad arri-bolkwohnan. An-gare dabbarrabolk adberre barri-bolknahnani. Adman warridj bolkkime arri-djare arri-bolknahnani munguilmunguih.*

*Gun-wern arri-wokdurndiwe arri-yawoihyime anekke nawu bolkkime nga-yolyolmeng. Arri-djare bolkkime wanjh gandi-wokbekkan woibukki.*

We want non-Aboriginal and Aboriginal people to recognise and respect us as Traditional Owners and to let us decide our future as we have done since time immemorial.

We hope that what we are saying in yet another government uranium inquiry will finally be listened to.

Yvonne

Yvonne Margarula

Mirarr Senior Traditional Owner

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## ACRONYMS

AAEC	Australian Atomic Energy Commission
ALRA	<i>Aboriginal Land Rights (Northern Territory) Act 1976 (Cth)</i>
ARRAC	Alligator Rivers Region Advisory Committee
ARRTC	Alligator Rivers Region Technical Committee
DBIRD	Department of Business, Industry & Resource Development (Formerly DME – Department of Mines & Energy)
EIS	Environmental Impact Statement
EPIP	<i>Environment Protection (Impact of Proposals) Act 1974 (Cth)</i>
EPBC	<i>Environment Protection Biodiversity Conservation Act 1999 (Cth)</i>
ERA	Energy Resources of Australia Ltd
ERISS	Environmental Research Institute of the Supervising Scientist
GAC	Gundjeihmi Aboriginal Corporation
JMA	Jabiluka Mill Alternative
KRSIS	Kakadu Region Social Impact Study
NLC	Northern Land Council
OSS	Office of the Supervising Scientist
PER	Public Environment Report
RAER	Ranger Annual Environment (Management) Report
RL	Reduced Level (relative to mean sea level)
RMA	Ranger Mill Alternative
RMTC	Ranger Minesite Technical Committee
SSD	Supervising Scientist Division (formally the Office of the Supervising Scientist OSS)
UNESCO	United Nations Educational Scientific and Cultural Organisation

## Recommendations

### Current Structure and regulatory environment

The Gundjeihmi Aboriginal Corporation reiterates that the Commonwealth Parliament urgently needs to overhaul and consolidate the regulation of uranium mining in the Alligator Rivers Region of the Northern Territory consistent with the aims of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* in relation to impact on World Heritage properties. The consolidated regulatory requirements would:

- set out the responsibilities of the Commonwealth in relation to uranium mining in the Alligator Rivers Region.
- set out the responsibilities of the Northern Territory in relation to uranium mining in the Alligator Rivers Region.
- clearly set out appropriate Environmental Requirements and the associated enforcement mechanisms for uranium mining in the Alligator Rivers Region.
- set out the responsibilities of the Supervising Scientist and the Environmental Research Institute of the Supervising Scientist, including the co-operative relationship with the Northern Territory Supervising Authority.
- set out the functions of ARRAC, ARRTC and the Minesite Technical Committees OR create a single entity with the consolidated functions of these committees.
- reform the system of Authorisation for uranium mining in the Alligator Rivers Region.

### Waste Management - Tailings

The management of radioactive uranium mill tailings is a major challenge and needs to be undertaken with full transparency. To enhance both short and long-term management of tailings, the following should be adopted:

- the incorporation of a deadline for removing the tailings from the above ground dam into Authorisation 82/3 and the Environmental Requirements (i.e. by the end of 2007).
- detailed studies on the suitability of Pit 3 as a long term tailings repository to be commenced immediately.
- detailed analysis and reporting of the existing contamination of groundwater by seepage from tailings storage facilities (above ground dam and Pit #1), especially with regards to the use of contaminant plume maps.
- the SSD need to undertake specialist research on groundwater flowpaths, such as fracture zones and faults zones, to allow more detailed quantification of contaminant migration rates. This will allow more realistic design and implementation of tailings storage within Pit #3 as well as long-term groundwater monitoring needs after rehabilitation approximately 2016.
- the incorporation of the current RL 0 m limit for Pit #1 into Authorisation 82/3 and the Environmental Requirements and should also be legally binding with no escape or modification clause, other than the current proposal to allow temporary storage above

RL 0m. A similarly appropriate limit should also be introduced for tailings Pit #3 (when this proceeds).

- all detailed studies and reports that already exist within ERA, DBIRD and SSD should be made publicly available.
- detailed field studies should be undertaken by the SSD to quantify radon flux, microbiological behaviour and the physical properties of tailings (especially permeability).
- more rigorous horizontal and vertical monitoring and reporting of all groundwater units around tailings facilities (dam and Pit #1).
- a more suitable technique be developed and applied to measure tailings density in Pit #1, incorporating known mill data (such as tonnes ore milled and tonnes reagents used).
- correct terminology is ensured by ERA, DBIRD and SSD at all times (eg. do not refer to the above ground dam as an 'evaporation pond').

### **Waste Management - Water**

The treatment of contaminated minesite waters and monitoring of the areas used for this at Ranger needs to be significantly improved. The Mirarr believe this can best be achieved through use of the following:

- the incorporation of maximum cumulative load limits into specific areas for disposal, specific to the use of irrigation (land application) or wetlands.
- release of all reports and data on known environmental problems at treatment areas (wetlands, irrigation).
- detailed studies on the long-term future of existing sites to continue to be able to perform effectively, including all contaminants (Mg, SO<sub>4</sub>, Mn, U, <sup>226</sup>Ra, etc.).
- incorporation of more rigorous sampling (more sites and frequency) of wetland and irrigation areas in Authorisation 82/3 and the Environmental Requirements.
- need to reduce reliance of SSD and DBIRD on company data and assertions in managing these contaminated areas.
- SSD and DBIRD should undertake check monitoring and analysis of wetlands and irrigation sites.
- Regular workshops between Mirarr and SSD to discuss water management issues.
- the Corridor Creek wetlands need to be investigated as to whether they have any capacity to continue to perform as wetland filters in the future.
- Studies to address the permeability issues of Pit 3 to commence immediately.

### **Waste Management – Rehabilitation**

The long term health of the Mirarr depends on a rehabilitation program that will contain radioactive wastes for more than 10,000 years. Consequently the following matter must be addressed immediately:

- that Mirarr and the Gundjeihmi Aboriginal Corporation be given legal status to participate in the development and implementation of the Ranger rehabilitation plan.
- that the Gundjeihmi Aboriginal Corporation be given full access to all material relevant to the rehabilitation of the Ranger Project Area.

- that ERA is required to establish a fund in perpetuity that can be used to maintain and monitor the rehabilitated area and if necessary repair any of the rehabilitation works that fail.
- that the Mirarr have full rights with respect to the management of the rehabilitated area, including the right of veto over future proposed management actions.

### **Social Impact Assessment**

If social impact assessment is to be effective and result in actions that improve the physical and cultural well being of Aboriginal people in the Alligator Rivers Region then the development and implementation must be done with the full knowledge and cooperation of the Indigenous inhabitants. Consequently there is a need for:

- a plain English summary of the 1984 Consolidated Report on the *Social Impact of Uranium Mining on the Aborigines of the Northern Territory*;
- a plain English review and analysis of the current status of the implementation of the *KRSIS Community Action Plan*;
- a demographic study to be initiated using Indigenous collection and collation of data, and
- secure Commonwealth funding for the Jabiru School Indigenous Heritage Education Unit.
- the Mirarr to be appointed to the Ranger and Jabiluka Minesite Technical Committees
- the Commonwealth to consider the establishment and ongoing funding of a 'University' as initially requested in March 1982 as reported by AIAS (see section 3.1 pp 48)

## Introduction

The Gundjeihmi Aboriginal Corporation is primarily concerned with the mining of uranium on the traditional homelands of the Mirarr people. Consequently this submission is in two parts. Firstly addressing item “d” in the terms of reference set out by the Committee namely:

- d) Current structure and regulatory environment of the uranium mining sector.

This is then followed by item 4 that the Committee indicated it would also welcome advice on:

4. Adequacy of regulation of uranium mining by the Commonwealth.

The second part of the report addresses several of the other issues that the Committee indicated it would also welcome advice, namely:

2. Whole of life cycle waste management – dealing specifically with waste management at the Ranger and Jabiluka mines.
3. The adequacy of social impact assessment, consultation and approval processes with traditional owners and affected Aboriginal people in relation to uranium mining resource projects.
4. Examining of health risks to workers and to the public from exposure to ionising radiation from uranium mining

The Gundjeihmi Aboriginal Corporation has made a number of submissions over the years with respect to uranium mining and the impact mining is having on the culture of the Mirarr and other Aboriginal people affected by mining. Consequently as well as the material in this submission the Gundjeihmi Aboriginal Corporation would like to draw the following submissions and reports to the attention of the Committee:

- Senate Committee into *Uranium Mining and Milling in Australia* 1997 Tabled 1997 available from <http://www.aph.gov.au/senate/committee>
- *Mirarr Living Tradition in Danger. World Heritage in Danger* 1998. Submission to World Heritage Committee Mission to Kakadu October 1998. available from <http://www.mirarr.net/references.html#submissions>
- *Report on the Mission to Kakadu National Park 26 October – 1 November 1998.* Bureau of the World Heritage Committee. United Nations Educational Scientific and Cultural Organization (UNESCO). Paris 24 November 1998. available from <http://www.mirarr.net/references.html#submissions>
- *Jabiluka: The Undermining of Process* Inquiry into the Jabiluka Uranium Mine Project. Report of the Senate Environment, Communications, Information Technology and Arts Reference Committee June 1999. The Parliament of the Commonwealth of Australia
- Gundjeihmi Aboriginal Corporation 2000 *Information for the Twenty Fourth Session of the World Heritage Committee* September 2000. available from <http://www.mirarr.net/references.html#submissions>
- Gundjeihmi Aboriginal Corporation 2001 *Information for the Twenty Fifth Session of the World Heritage Committee* 13 November 2001. available from <http://www.mirarr.net/references.html#submissions>
- *Submission by the Mirarr Aboriginal People, Kakadu Australia, 2001* to The Office of the High Commissioner for Human Rights Workshop on “Indigenous peoples, private sector

natural resource, energy and mining companies and human rights” December 2001. available from <http://www.mirarr.net/references.html#submissions>

- Gundjeihmi Aboriginal Corporation 2002 *Submission to Senate Environment, Communications, Information Technology and the Arts References Committee Inquiry into the Environmental Regulation of Uranium Mining*. Available from <http://www.mirarr.net/references.html#submissions>.
- *Regulating the Ranger, Jabiluka, Beverley and Honeymoon uranium mines*. Senate Environment, Communications, Information Technology and the Arts References Committee Inquiry into the Environmental Regulation of Uranium Mining October 2003 Senate Printing Unit Parliament House Canberra.

The Gundjeihmi Aboriginal Corporation would like to draw the attention of this current Inquiry to the fact that as of May 2005 the Howard Government has not responded to the extensive and practical recommendations of the Senate Environment, Communications, Information Technology and the Arts References Committee *Inquiry into the Environmental Regulation of Uranium Mining* tabled October 2003. The recommendations made in the Gundjeihmi Aboriginal Corporation’s submission to that 2003 Senate Inquiry are attached as Appendix 5.

Gundjeihmi Aboriginal Corporation is an organisation established, managed and controlled by the Mirarr independently of any agenda influenced by mining. The establishment of Gundjeihmi Aboriginal Corporation occurred due to the Mirarr people’s dissatisfaction with jurisdictional and institutional arrangements on their land, including their ability to exercise their rights under the *Aboriginal Land Rights (Northern Territory) Act, 1976*.

It was the intention of the Mirarr to establish Gundjeihmi Aboriginal Corporation to provide both for its own members and for those Aboriginal people affected by the Ranger uranium mine, consistent with their cultural obligations. It was intended Gundjeihmi Aboriginal Corporation would:

- assist with housing and community services;
- raise funds where appropriate for furthering their objects;
- publish and disseminate information;
- maintain culture and protect heritage;
- assist in establishing an economic base;
- represent the interests of members in the development of regional agreements and other matters that will further self determination;
- assist with education, family programs, and community development.

Gundjeihmi Aboriginal Corporation has not sought to duplicate any of the present functions of the existing organisations operating in the region. Gundjeihmi Aboriginal Corporation exists to assist the Mirarr participate in informed decision-making regarding all matters and activities in relation to their land. As reflected in clause 6.1 of the Gundjeihmi Aboriginal Corporation Rules, Gundjeihmi Aboriginal Corporation assists the Mirarr to protect and advance their rights and interests; and as reflected in clause 7.2 of the Rules to ensure that the Mirarr responsibilities and obligations to other Aboriginal people are carried out. Gundjeihmi Aboriginal Corporation does this by undertaking activities in accordance with the direction given by Mirarr people through their elected governing committee.

# 1 Current structure and regulatory environment of the uranium mining sector

The Mirarr experience of the regulatory environment of uranium mining is that it is governed by ad hoc agreements between the Commonwealth and Northern Territory Governments, is essentially reactive to the development agenda and excludes the considerations of Traditional Owners. In order to give the Committee an idea of how uranium mining became established on Mirarr land this section includes a brief history of how the Ranger mine and the currently mothballed Jabiluka project became established. The second part of this section deals with the current regulatory regime.

## 1.1 Current Structure

In April 1974, Justice Woodward delivered his Second Report to the Whitlam Government recommending, *inter alia*, the creation of a new form of Aboriginal statutory title in the Northern Territory to be granted by Aboriginal Land Commissioners to Aboriginal land trusts on the basis of claims from traditional Aboriginal owners. While the land trusts could act only at the direction of the land councils, the traditional owners would possess a right of veto over mining on their land. Woodward stated that, “*to deny to Aborigines the right to prevent mining on their land is to deny the reality of their land rights*”.<sup>1</sup>

In 1972, however, the proponents of the Ranger uranium mine, Peko and EZ, entered into contracts to supply Japanese nuclear utilities with uranium in the years 1977-86. The Commonwealth Government approved these contracts in November 1972. In October 1974, long before Woodward’s recommendations were enacted in the *Aboriginal Land Rights (Northern Territory) Act 1976 (Cth) (ALRA)*, the Whitlam Government signed the so-called Lodge Agreement with Peko and EZ that provided for a 50% equity stake for the Commonwealth and the joint venturers (with Peko and EZ holding 25% apiece) and for 72.5% of capital costs to be met by the Commonwealth. The Lodge Agreement was elaborated and supplemented with a Memorandum of Understanding between the Commonwealth and the joint venturers in October 1975 which provided, *inter alia*, that the Commonwealth would grant any necessary authorities under the *Atomic Energy Act 1953 (Cth)*. The Ranger mine was a *fait accompli*, regardless of local Aboriginal opposition.

In July 1975 the Commonwealth announced that a public inquiry would be conducted into, “the proposal for the development by the Australian Atomic Energy Commission (AAEC) in association with Ranger Uranium Mines Pty Ltd of uranium deposits in the Northern Territory”<sup>2</sup> – the Ranger Uranium Environmental Inquiry or ‘Fox inquiry’, after the presiding commissioner.

Over 18 months the Fox inquiry heard evidence from 287 witnesses and produced 12,000 pages of testimony. In October 1976, The Commissioners delivered the *First Report* to the Government, now under the leadership of Liberal leader Malcolm Fraser. While not ruling out Ranger, the Commissioners recommended the

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<sup>1</sup> Woodward, A.E. *Aboriginal Land Rights Commission: Second Report*, AGPS, Canberra, 1974 p.108.

<sup>2</sup> Ranger Uranium Environmental Inquiry. *First Report*, p.1 AGPS Canberra.

Government proceed with caution. The Deputy Prime Minister and Minister for Natural Resources, Doug Anthony, interpreted this as a green light for the mine, as did the media. The *Australian Financial Review* declared, “Fox Gives Uranium the Go-ahead” and the *Sydney Morning Herald* exclaimed, “Way Open to Uranium Sale”. However, recommendation five clearly stated that, “any decision about mining for uranium in the Northern Territory should be postponed until the Second Report of this Commission is presented”.<sup>3</sup>

In May 1977, Justice Fox delivered the second report and, while again not specifically recommending that the Ranger mine proceed, paved the way for its development. The Commissioners recommended that construction of uranium mines in Kakadu commence sequentially, that a national park be created, the Aboriginal land claimants be granted title<sup>4</sup>, and much more. In a major win for industry, the Ranger and Jabiluka mining areas were to be excluded from the national park. The Fraser Government cemented the deal by removing the Mirarr right of veto over the Ranger Project when enacting the *Aboriginal Land Rights (Northern Territory) Act 1976*. Subsection 40(6) of the Act stated, “If the land... being known as the Ranger Project Area, becomes Aboriginal land, subsection (1) [*the mining veto provision*] does not apply in relation to that land”<sup>5</sup>.

Despite being defeated on Ranger by the most powerful forces in the country, the Mirarr maintained their opposition to the development of a second uranium mine at the Jabiluka mineral lease. This time the *Land Rights Act* was cleverly administered, rather than specifically altered, to allow mining interests to prevail. During compulsory *Land Rights Act* consultations the Mirarr were told that land claims over remaining areas of Mirarr traditional country were likely to fail unless an agreement was reached on Jabiluka<sup>6</sup>. In the midst of confusion and unconscionable pressure, a *Land Rights Act* agreement for mining at Jabiluka was signed by the Northern Land Council (NLC) in 1982. Such events prompted Nugget Coombs to state: “*what is happening in the [Kakadu] region bears little resemblance to the picture envisaged in the Woodward-Fox scenario*”<sup>7</sup>.

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<sup>3</sup> Ranger Uranium Environmental Inquiry. *First Report*, p.185.

<sup>4</sup> The Fox Inquiry had been empowered to hear the Alligator Rivers Stage 1 Land Claim and make findings and recommendations, which were treated as if they had been made by the Aboriginal Land Commissioner.

<sup>5</sup> The ALRA has been substantially amended since 1976, however the removal of the Mirarr right to veto mining at Ranger has been ‘grandfathered’ into the current Act by section 8 of the *Aboriginal Land Rights (Northern Territory) Amendment Act (No. 3) 1987*.

<sup>6</sup> Northern Land Council, *Transcript of Djarr Djarr Meeting*, 27 January 1981.

<sup>7</sup> Coombs, H.C., *How to Balance the Aboriginal Interest in Resource Development*, paper presented to Australian National University Public Affairs Conference, Resource Development and the future of Australian Society, 21 & 22 August 1981.



The Australian Labor Party ‘buried’ the Jabiluka project upon coming to office in 1983 and for 13 years the Mirarr believed their country at Jabiluka was protected from uranium mining. However, when the Howard Government was elected in 1996, the Mirarr were subjected to yet another tainted exercise of mining company power under the *Land Rights Act*. This time mining company North Limited (through its subsidiary Energy Resources of Australia (ERA)) dusted off the old 1982 Agreement<sup>8</sup>, despite it being repudiated by the Mirarr and rendered near unworkable after 14 years of mothballing, and started development of a ‘new’ Jabiluka uranium mine using ‘change in concept’ provisions of the 1982 Agreement. Legal proceedings instigated by the Mirarr failed to prevent the commencement of construction.<sup>9</sup>

Notwithstanding constant public denials from North/ERA, it was common knowledge in 1996 that the ‘new’ Jabiluka project was only economically viable if uranium from Jabiluka was processed at the existing milling facilities at the Ranger mine, some 20 kilometres away. The Mirarr formally advised the company and the Commonwealth that, in accordance with the provisions of the *Land Rights Act* and associated agreements<sup>10</sup>, they would not give permission for a road to be built between the two projects.

The Mirarr veto was exercised on the basis of two principles. Firstly, the Mirarr were determined to do everything in their power to prevent Jabiluka proceeding. Secondly, the Mirarr had serious concerns about radioactive waste management at Ranger and did not want processing to continue at Ranger beyond the life of the existing Ranger mine.

In an act of astounding environmental irresponsibility, North/ERA, with the approval of the Commonwealth and Northern Territory Governments, began construction at Jabiluka in June 1998 despite Mirarr exercising their right to prevent milling at Ranger. The decision to commence construction at this time was politically motivated as in the lead-up to the 1999, election the Australian Labor Party stated that it would issue export licences only for existing working mines. The Mirarr were then subjected to a campaign of corporate and government intimidation to force a reversal of the veto, culminating in the World Heritage Committee of UNESCO declaring in July 1999 that it was ‘...gravely concerned about the serious impacts on the living cultural values of Kakadu National Park posed by the [Jabiluka] proposal...’<sup>11</sup>.

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<sup>8</sup> The Northern Land Council and Pancontinental Ltd entered into the original Jabiluka Agreement (under the *ALRA*) in 1982. Energy Resources of Australia Ltd then bought the Jabiluka Mineral Lease (and assumed the agreement) in 1991. ERA was a subsidiary of North Limited and became a subsidiary of Rio Tinto in August 2000.

<sup>9</sup> See for example *Yvonne Margarula v Hon Eric Poole, Minister For Resource Development and Energy Resources Australia Ltd* [1998] (unreported) NTSC 87 (16 October 1998).

<sup>10</sup> The ‘veto’ over the milling of Jabiluka uranium at Ranger is ultimately empowered by the *ALRA*, in conjunction with a 1991 Deed of Agreement between the Northern Land Council and ERA

<sup>11</sup> Clause (e), Declaration of the 3<sup>rd</sup> Extraordinary Session of the UNESCO World Heritage Committee, July 1999.

In September 1999, having knowingly desecrated an identified sacred site and extracted 47,000 tonnes of radioactive material and 57,000 tonnes of non-mineralised material, North/ERA ceased work on the Jabiluka construction site.

In August 2000, North Limited was acquired by mining giant Rio Tinto which today owns 68.4% of ERA, and has now agreed that Jabiluka will not proceed without support from Traditional Owners<sup>12</sup>. As a result of this change of ownership and the application of Rio Tinto's global community and environment policies, the Jabiluka Project has been placed in long term care and maintenance. A formal agreement was entered into by ERA, the Traditional Owners and the Northern Land Council in February 2005 which details the circumstances under which this project may actively re-commence. Significantly, ERA has formally agreed that this will only occur with the consent of the Traditional Owners. This has been welcomed by the Traditional Owners as a positive step toward improved relations between the mine operator and themselves.

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<sup>12</sup> The *Australian Financial Review* reported on 19 April 2002 in an article entitled 'Rio Tinto concedes defeat on Jabiluka' that 'steadfast opposition from traditional owners and poor global economics' had led to the company 'mothballing development of the Jabiluka uranium deposit in the Northern Territory for at least the next decade'.

## **1.2 Regulatory environment**

### **1.2.1 Ranger Regulatory Arrangements**

#### **Atomic Energy Act 1953 (Cth)**

The Act, as it currently stands, performs four main functions. Firstly it vests title of all prescribed substances<sup>13</sup> in the territories of Australia in the Commonwealth<sup>14</sup>. Secondly, it requires those who discover prescribed substances in any part of Australia to notify the Commonwealth<sup>15</sup>. Thirdly, it gives the Commonwealth power to obtain information about prescribed substances from a person possessing or controlling such substances<sup>16</sup>. Fourth, the Act provides authority for commercial exploitation of prescribed substances on the Ranger Project Area<sup>17</sup>.

Atomic Energy Act 1953 (Cth)

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<sup>13</sup> Section 5(1) defines a ‘prescribed substance as: uranium, thorium, an element having an atomic number greater than 92 or any other substance declared by the regulations to be capable of being used for the production of atomic energy or for research into matters connected with atomic energy’.

<sup>14</sup> Section 35. Under section 42, compensation is payable to those from who property in acquired.

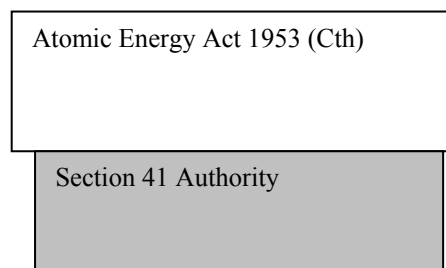
<sup>15</sup> Section 36.

<sup>16</sup> Section 37.

<sup>17</sup> PART III, including sections 41, 41A-D. In addition, section 5(1) defines the ‘Ranger Project Area’ as the land described in Schedule 2 to the *Aboriginal Land Rights (Northern Territory) Act 1976*.

## Section.41 Authority

The Commonwealth Minister is empowered to grant authority to a person or persons to discover, mine, recover, treat and process prescribed substances, however this power is restricted to the Ranger Project Area (RPA).<sup>18</sup> The Minister is also empowered to vary and revoke the authority. Section 41A(4) provides that where those holding the authority have refused or failed to comply with or observe a condition or restriction to which the authority is subject the Minister may vary the conditions or restrictions of the authority, even if this results in indefinite suspension of operations on the RPA. However section 41A(5) provides that the Minister must not vary the conditions under section 41A(4) unless the Minister has provided written notification of the breach of the authority and given the holders of the authority an opportunity to secure compliance with the condition within a specified timeframe.



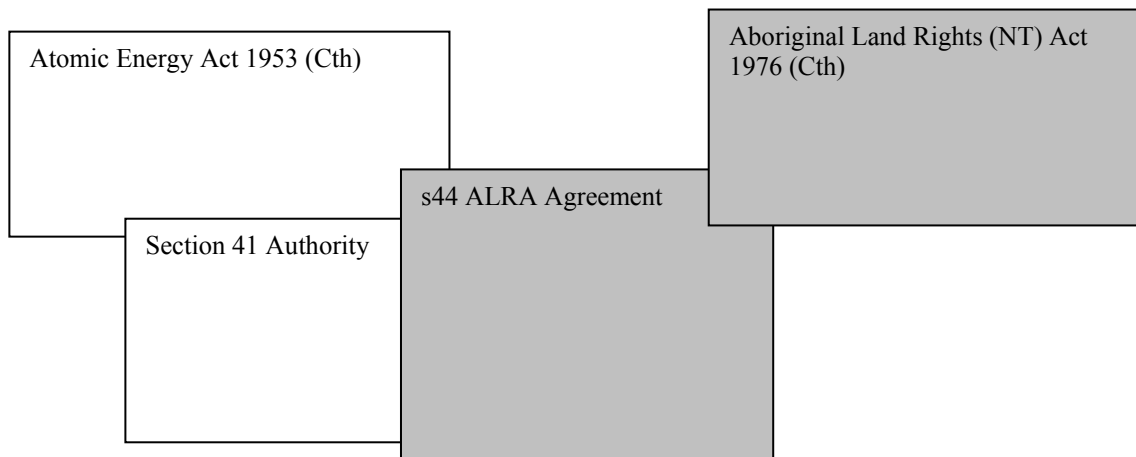
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<sup>18</sup> Section 41.

## Atomic Energy Act & s.44 Land Rights Act Agreement

In exercising powers under section 41A, the Minister is not permitted to act in a manner that is inconsistent with the obligations of the Commonwealth under the ALRA section 44 agreement<sup>19</sup> the parties to which are the NLC and the Commonwealth.

Section 41 (2AA) creates the ‘statutory fiction’ that those named in the ‘s.41 authority’ are carrying out operations on behalf of the Commonwealth<sup>20</sup>. This ‘fiction’ was created to deal with the fact that, because the Ranger Project Area is on Aboriginal Land, and because the Ranger Project Area is dealt with separately and uniquely under the *Aboriginal Land Rights (Northern Territory) Act 1976 (Cth)*, an agreement between the Commonwealth and the NLC is required for mining operations to take place on the RPA<sup>21</sup>.



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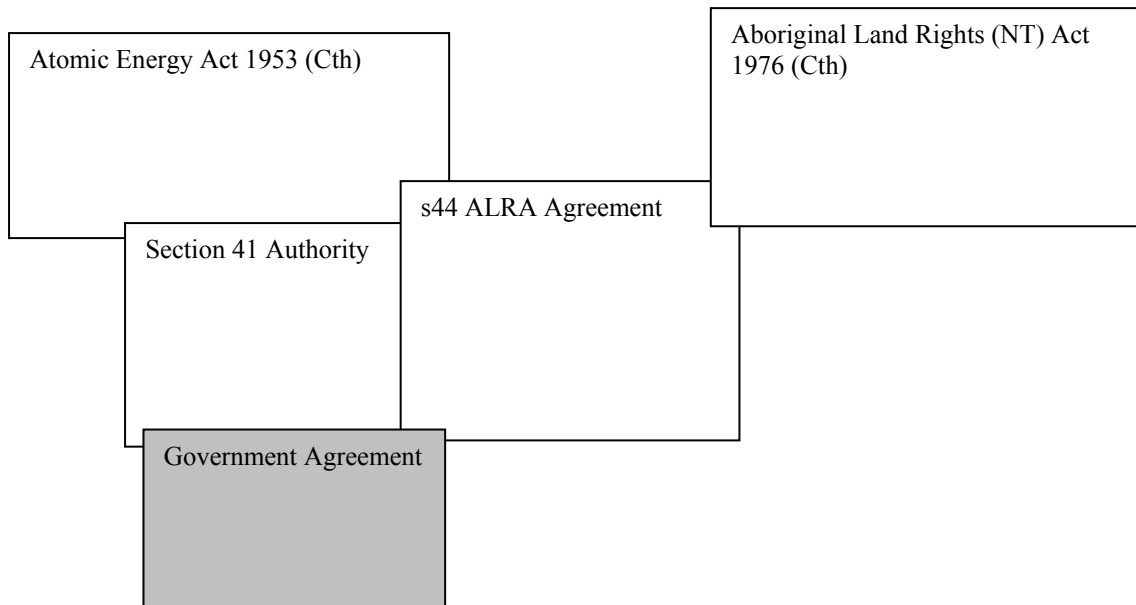
<sup>19</sup> Section 41A(8).

<sup>20</sup> In *Northern Land Council v The Commonwealth* (1986) 161 CLR 1, the High Court upheld the "statutory fiction" enacted by s 41(2AA) as a drafting device supported by the Territories' power in s 122 of the Constitution.

<sup>21</sup> When the ALRA was enacted, section 40(6) of the ALRA provided that s 40(1) (relating to the conditions for the grant of mineral interests on Aboriginal land) was not to apply if the land known as the Ranger Project Area became Aboriginal land. The main effect of this section was to remove the power of the traditional owners to ‘veto’ mining operations on the RPA. Instead, an agreement was reached on 3 November 1978 pursuant to (the then) s.44(2) of the ALRA, which provided for agreements only between the Commonwealth and the relevant Land Council for the Ranger Project Area.

## Atomic Energy Act & Government Agreement

It is presumed that creating this statutory fiction was favoured over the option of requiring the operators of the Ranger Mine to enter into a new, direct agreement with the Land Council. Instead the Commonwealth has a separate agreement with ERA, “the Government Agreement” and as long as this agreement is complied with, the statutory fiction prevails<sup>22</sup>.



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<sup>22</sup> Sections 41(2AA) and 41(2AB).

## **Atomic Energy Act, s.41 Authority & Complementary Agreement/Extension Agreement & Mining Agreement**

Section 41C entitles those holding a s.41 authority to have a new authority conferred upon them for a period not exceeding that of the existing authority provided, *inter alia*, not later than 9 months before the expiration of the mining period the existing Land Rights Act section 44 agreement is extended or a new section 44 agreement is entered into between the Commonwealth and the Land Council.

The original authority was granted on 9 January 1979 for a period of 26 years (including five years for rehabilitation). It was therefore due to expire on 9 January 2000. ERA applied for a new Authority on 15 December 1995. On 19 March 1999 an agreement was entered into between the Commonwealth and the Northern Land Council to extend the original Land Rights Act s.44 Agreement dated 3 November 1978.

The Land Rights Act section 44 Agreement was extended in compliance with section 41C of the Atomic Energy Act by the 'Extension Agreement', which is in turn subject to the 'Complementary Agreement', which provides for substantial re-negotiation of the extended section 44 Agreement. The re-negotiation of the s.44 Agreement (between the Commonwealth and NLC) also involves the creation of a Mining Agreement (between ERA and the NLC).

The Extension agreement amended the s.44 Agreement by, *inter alia*, inserting the following:

25A.2 The New s.41 Authority shall provide that the terms and conditions of the Authority shall, with the consent of ERA, be amended or revised to ensure that the Authority is at all times consistent with the Commonwealth's obligations under this Agreement.

25A.3 The New s.41 Authority shall contain a condition substantially in accordance with the following:

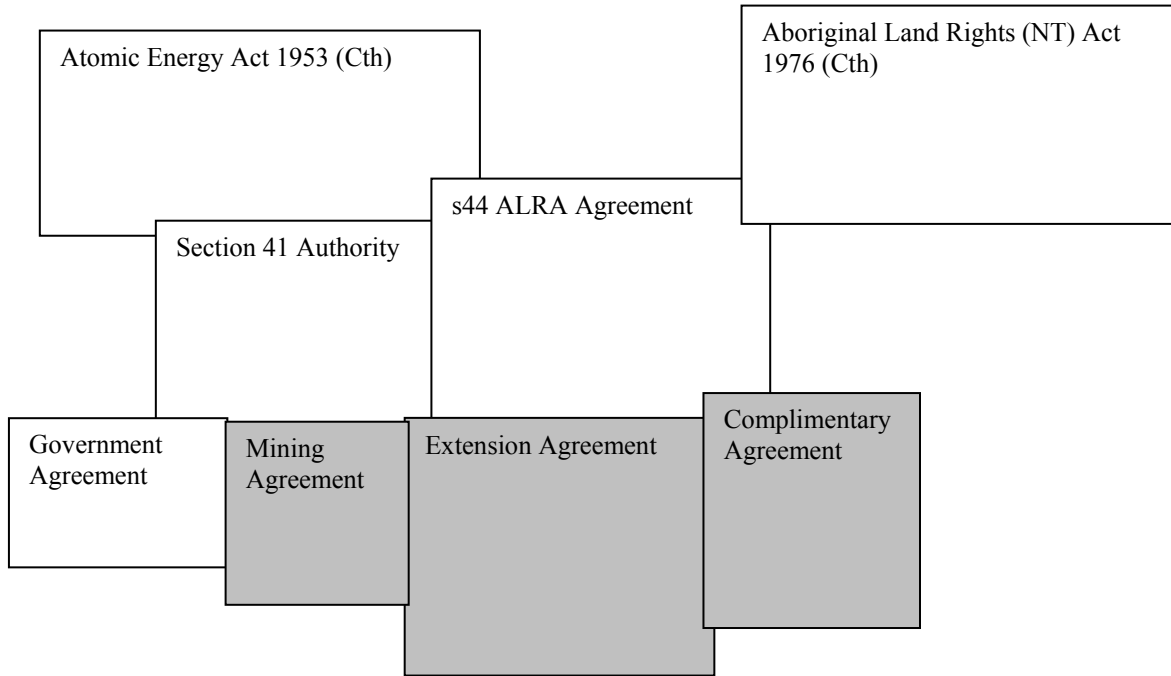
Notwithstanding anything contained elsewhere in this Authority, ERA shall comply with such other conditions and restrictions as may be determined pursuant to the agreement described as the "Complementary Agreement" made between the Commonwealth, the NLC and ERA. In the event of any inconsistency with other conditions or restrictions contained in this Authority, those determined as referred to in this condition and restriction shall prevail.

25A.4 The Commonwealth shall enforce, and shall use its best endeavours to ensure that ERA undertakes the Operations in accordance with, the Authority.

25A.5 The Commonwealth shall use its best endeavours to ensure that ERA undertakes Operations in accordance with the Mining Agreement and the New s.41 Authority shall contain a condition to the effect that ERA must undertake Operations in accordance with the Mining Agreement.

On 14 November 1999, a new s.41 Authority was granted to ERA for a period of 26 years commencing 9 January 2000. Conditions and restrictions include a condition giving effect to Clause 25A(3) of Extension Agreement (Condition 2.2). Also the Authority would seem to get around the cumbersome restrictions in the Atomic Energy Act (s.41A) in relation to varying the Authority by creating a condition in the Authority that additional conditions may be made by the Minister from time to time (Condition 2.5).

**Atomic Energy Act, s.41 Authority & Complementary Agreement/Extension Agreement & Mining Agreement**





## Power sharing between the Commonwealth and the Northern Territory

The *Atomic Energy Act* 1953 demonstrates an intention at s.41(4) not to exclude or limit the operation of any provision of a law of a State or Territory that is capable of operating concurrently with the Atomic Energy Act. This principle has been confirmed by the Federal Court in *Yvonne Margarula v Minister for Resources & Energy & Ors* [1998] (unreported) 1029 FCA (14 August 1998).

Accordingly, Northern Territory Acts such as the *Mining Act* 1982 (NT) and the *Mining Management Act* 2001 (NT) are capable of operating in respect of the Ranger Project Area. While there is no mineral lease issued under the *Mining Act* 1982 (NT) in respect of the Ranger operations (authority to carry out the current Ranger operations being sufficiently supported by the *Atomic Energy Act* 1953 (Cth)), the Northern Territory has issued an authorisation for operations at Ranger under the *Uranium Mining (Environmental Control) Act* 1979 (NT), which has now been repealed and replaced by the *Mining Management Act* 2001 (NT).

Section 34 (3) of the *Mining Management Act* 2001 (NT) provides that:

- 34 (3) Before exercising a power or performing a function under this Part in relation to an Authorisation that relates to uranium or thorium, the Minister -
- (a) must consult with the Commonwealth Minister about matters agreed in writing between them relating to the mining of uranium or thorium; and
  - (b) must act in accordance with any advice provided by the Commonwealth Minister.
- (4) In granting or varying an Authorisation that relates to the Ranger Project Area, the Minister must ensure that the Authorisation incorporates or adopts by reference (with the necessary modifications) the Ranger Project Environmental Requirements.

Section 175 of the *Mining Act* 1982 (NT) similarly provides:

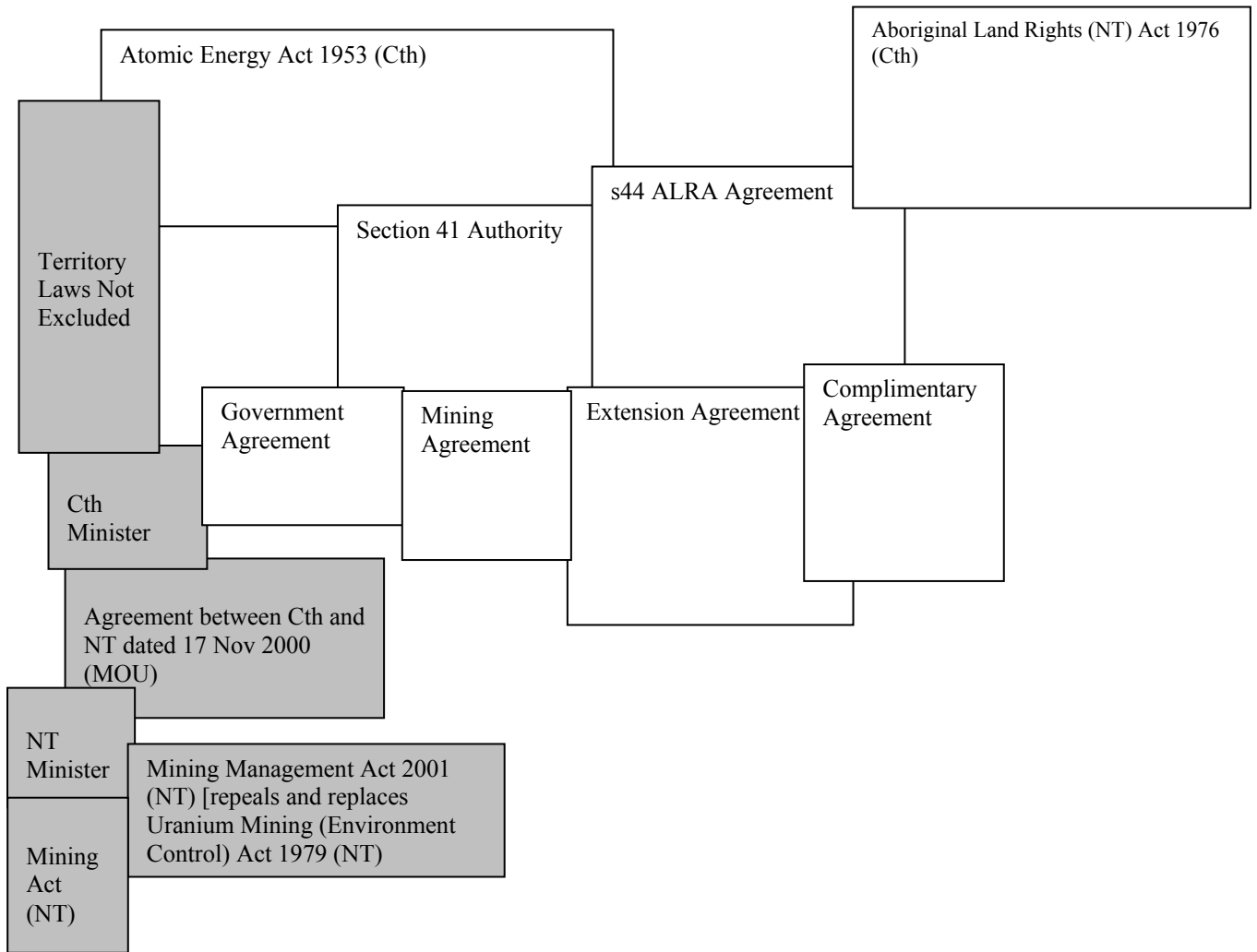
- (1) Subject to subsection (2) [which relates to exploration licences], but notwithstanding anything elsewhere contained in this Act (other than subsection (3) [which relates to the payment of royalties] or the Regulations, in respect of a prescribed substance within the meaning of the Atomic Energy Act 1953 of the Commonwealth, the Minister –
- (a) shall exercise his powers in accordance with, and give effect to, the advice of the Minister of the Commonwealth for the time being administering section 41 of that Act; and
  - (b) shall not exercise his powers otherwise than in accordance with such advice.

The ‘matters agreed in writing between’ the Commonwealth and Northern Territory Minister (as referred to in section 34(4) above) are principally contained in the Agreement between the Commonwealth of Australia and the Northern Territory of Australia in relation to principles to be applied in the regulation of Uranium Mining in the Northern Territory of Australia (updated 17 November 2000). In this document the Commonwealth and the Territory agree at Clause 5 to:

recognise the basic principle that the Territory shall consult with the Commonwealth in respect of matters agreed in writing between them relating to the mining of prescribed substances in the Territory. The Territory Minister shall act in accordance with any advice on the matter which is provided by the Commonwealth Minister.

This document contains a number of other statements, obligations and intentions relating to the sharing of responsibility between the Commonwealth and the Northern Territory in relation to uranium mining, which are discussed in more detail later in this submission.

### Power sharing between the Commonwealth and the Northern Territory



## **Working Arrangements between the Commonwealth Office of the Supervising Scientist and the Northern Territory Supervising Authority (and associated instruments)**

In broad terms, the analysis on previous pages provides an outline of the foundation regulatory framework for Ranger, while the following describes the system for ongoing monitoring, reporting and research in relation to environmental aspects of the Ranger mine.

The Commonwealth and the Northern Territory share responsibility via the Revised Working Arrangements for Co-ordinating the Regulation of Environmental Aspects of Uranium Mining in the Alligator Rivers Region (September 1995) [“the Working Arrangements”].

The purpose of the Working Arrangements is to establish procedures for consultation between the Commonwealth Office of the Supervising Scientist and the Northern Territory Supervising Authority (currently the Department of Business, Industry and Resource Development (DBIRD)) in the performance of their legislative functions with ‘maximum efficiency and minimum duplication’.

The Working Arrangements set out reporting, information exchange and decision-making procedures agreed between the Commonwealth and Northern Territory agencies in relation to uranium mining in the region.

The Working Arrangements establish the functions of the Ranger Minesite Technical Committee (RMTC), which is chaired by the NT Supervising Authority and comprises representatives of the Supervising Scientist Division (SSD) (formally the OSS), ERA Ltd and the Northern Land Council. They also make provision for Ad Hoc Technical Working Groups comprised of the same representatives (and others as necessary).

The primary function of the RMTC is the review and development of Environmental Performance Reviews, which are twice-yearly reviews of the impact of uranium mining operations on the environment of the region carried out by the SSD and the NT Supervising Authority.

The Working Arrangements also reiterate the functions of the Alligator Rivers Region Advisory Committee (ARRAC), which is established in the *Environment Protection (Alligator Rivers Region) Act 1978* (Cth), and consists of the Supervising Scientist, the Director of National Parks, the representatives of Territory authorities, mining companies, unions, Aboriginal organisations, conservation groups and such other members who may be appointed by the Commonwealth Minister for the Environment.

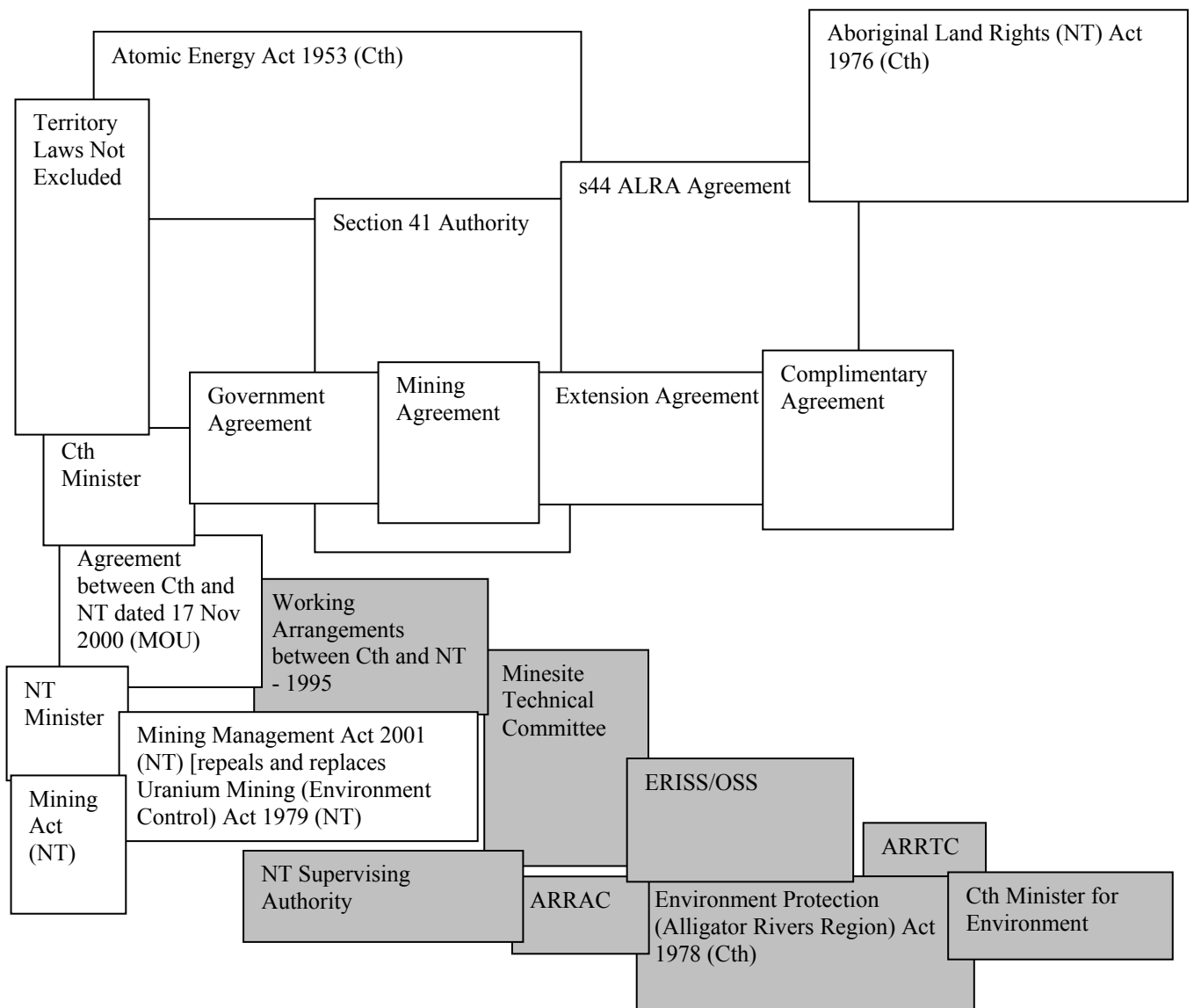
The Working Arrangements also refer to the Alligator Rivers Region Technical Committee (ARRTC), which is now also established in the *Environment Protection (Alligator Rivers Region) Act*. The functions of the Technical Committee include considering programs for research into the (non-social) effects of uranium mining operations and to make recommendations to the Commonwealth Environment Minister on the nature and extent of research necessary to protect and restore the environment in the region. The Technical Committee consists of people with

appropriate scientific or technical qualifications appointed by the Minister. At least one member must be nominated by the NLC.

The *Environment Protection (Alligator Rivers Region) Act 1978* (Cth) also establishes the functions and responsibilities of the Supervising Scientist and the Environmental Research Institute of the Supervising Scientist (ERISS).

The Working Arrangements establish that the NT Supervising Authority is responsible for ensuring that the mining companies directly and immediately notify the NT Supervising Authority, the Supervising Scientist, the Commonwealth Department responsible for the Atomic Energy Act and the NLC if there is any mine-related event which results in significant risk to biological integrity or has the potential to cause harm to people in the area or may cause concern to traditional owners or the public.

### Working Arrangements



## **Section 41 Authority Environmental Requirements and the Ranger General Authorisation Number A82/3 Issued under the Uranium Mining (Environment Control) Act 1979 (NT) and now governed by the Mining Management Act 2001 (NT)**

The Environmental Requirements for the Ranger uranium mine are conditions of the Authority issued under s41 of the Atomic Energy Act 1953 and also reflect the Commonwealth's role in the Alligator Rivers Region under the *Environment Protection (Alligator Rivers Region) Act 1978*.

The operational procedures and practices, and environmental standards, guidelines, codes, regulations or limits relevant to meeting these conditions are set out in Northern Territory legislation and (currently) Ranger General Authorisation Number A82/3 issued under the *Uranium Mining (Environment Control) Act 1979 (NT)*, which has been repealed and replaced with the *Mining Management Act 2001 (Cth)*.

The Environmental Requirements that the Traditional Owners have identified as requiring strict adherence and enforcement, as well as interpretation from an Aboriginal Traditional Owner perspective, are the following:

### **1. Primary Environmental Objectives**

- 1.1 The company must ensure that operations at Ranger are undertaken in such a way as to be consistent with the following primary environmental objectives:
  - (a) maintain the attributes for which Kakadu National Park was inscribed on the World Heritage list;
  - (c) protect the health of Aboriginals and other members of the regional community;

### **16. Reporting Incidents**

- 16.1 The company must directly and immediately notify the Supervising Authority, the Supervising Scientist, the Minister and the Northern Land Council of all breaches of any of these Environmental Requirements and any mine-related event which:
  - (a) results in significant risk to ecosystem health; or
  - (b) which has the potential to cause harm to people living or working in the area; or
  - (c) which is of or could cause concern to Aboriginals or the broader public.

### **18. Environmental Management Report**

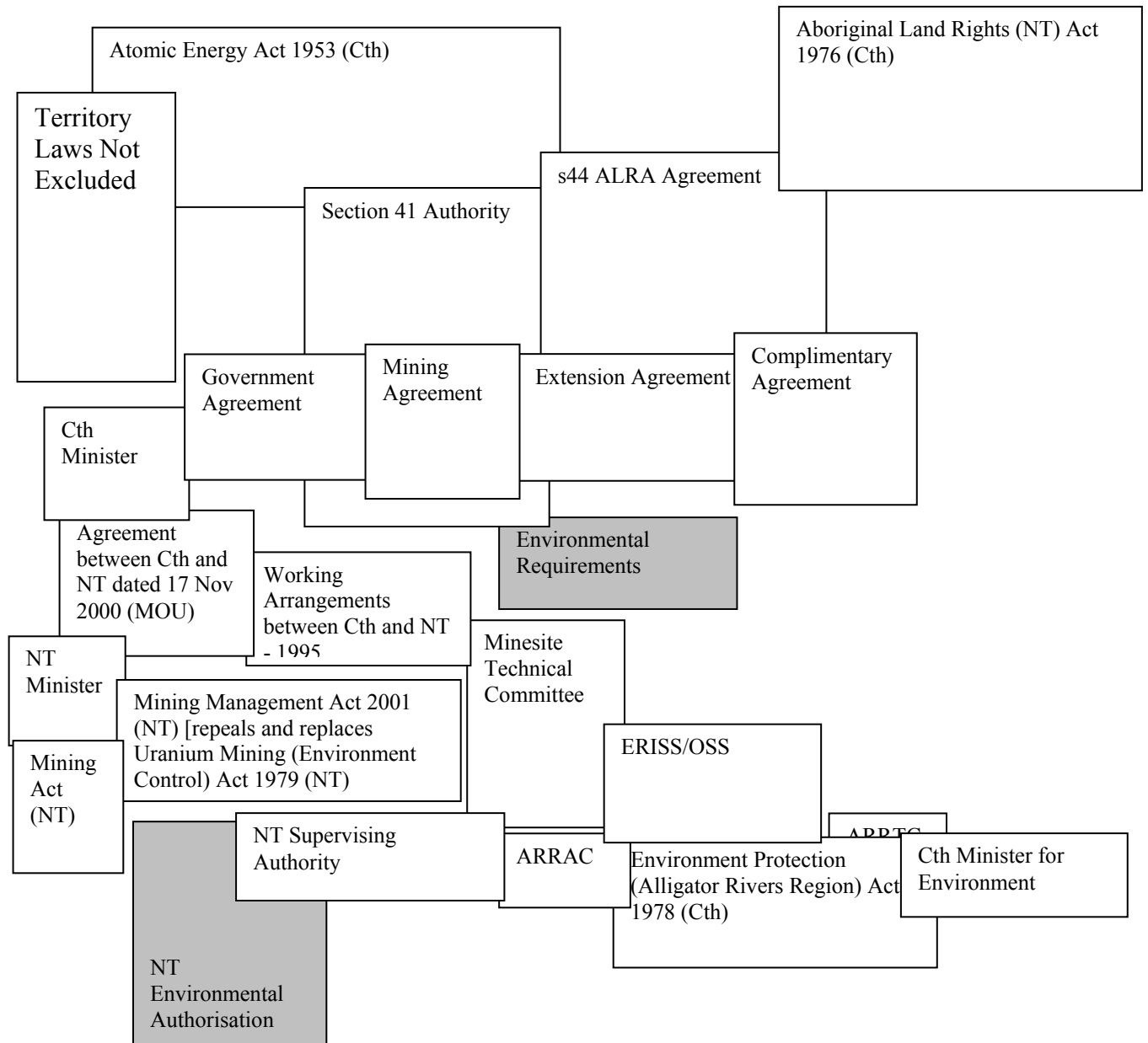
- 18.2 The report required under clause 18.1 must deal specifically with the following matters:
  - (g) social impact monitoring;

Section 34(4) of the *Mining Management Act 2001 (NT)* states:

In granting or varying an Authorisation that relates to the Ranger Project Area, the Minister must ensure that the Authorisation incorporates or adopts by reference (with the necessary modifications) the Ranger Project Environmental Requirements.

In compliance with this section, Ranger General Authorisation Number A82/3 includes Primary Environmental Objectives and requires an Environmental Management Report in the same terms as both the Commonwealth Environmental Requirements. It does not directly incorporate the Environmental Requirement relating to the reporting of incidents.

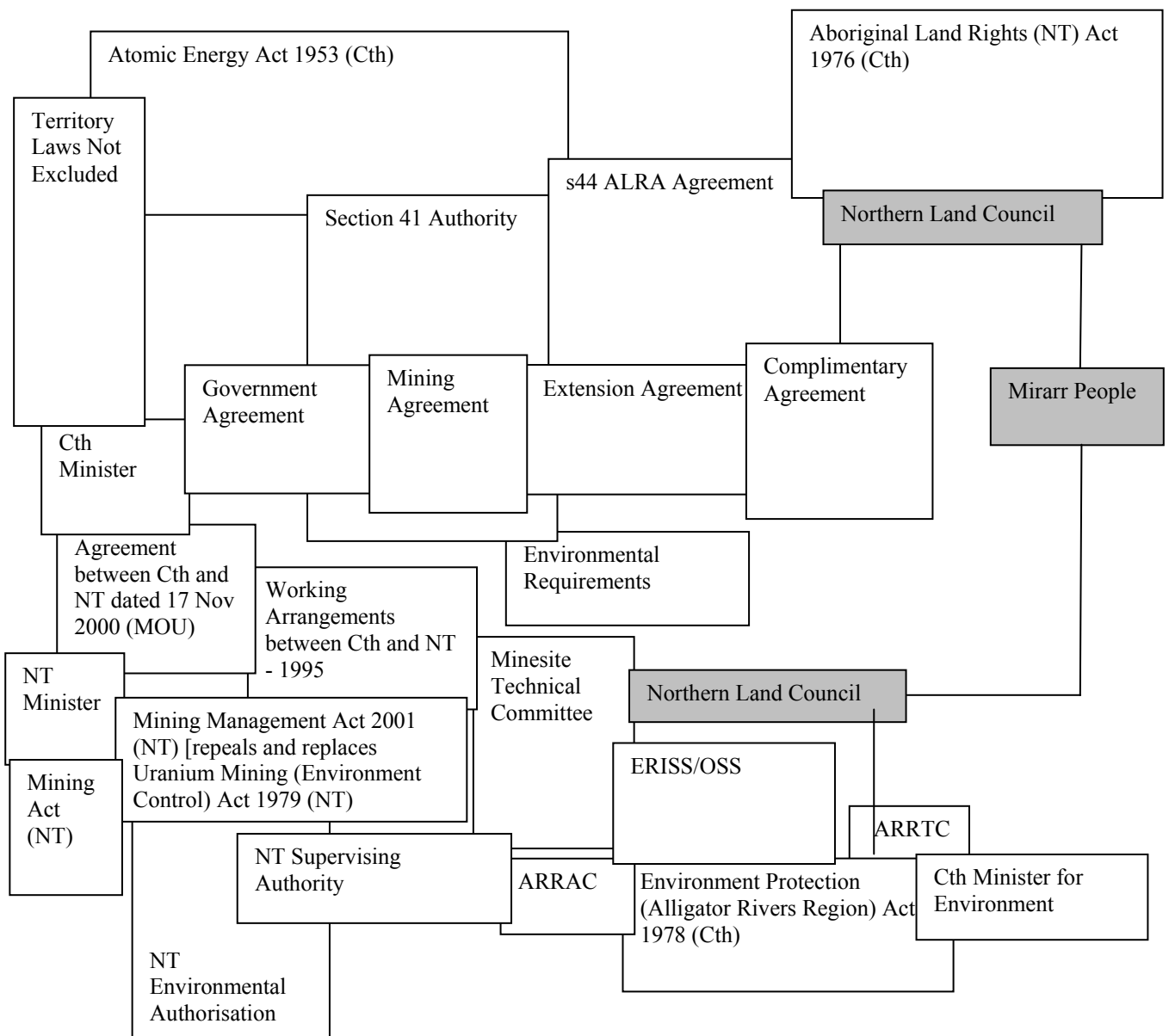
**Section 41**



## Traditional Owners and the regulatory regime for the Ranger Mine

The Traditional Owners of the Ranger Project Area (RPA) are the Mirarr People, who manage and control the Gundjeihmi Aboriginal Corporation.

The Traditional Owners have no direct role in the regulatory system. The Mirarr receive information emanating from the reporting process via the Northern Land Council. The Mirarr may also attempt to assert rights and interests, via the Northern Land Council, pursuant to the terms of the s.44 Land Rights Act Agreement.



## 1.2.2 Jabiluka Regulatory Arrangements

As stated in section 1.1 the Mirarr people have signed an agreement with ERA and the Northern Land Council which provides for the circumstances under which the Project may come out of the current care and maintenance phase. The agreement establishes that the consent of the Mirarr is required before any further activity can take place and specifies the circumstances under which consent might be requested. In the event that consent were given by the Mirarr, and there is no suggestion that it will be, there is scope for the 1982 agreement to be re-negotiated at least in part. It would be reasonable to assume that the regulatory arrangements should also be thoroughly reviewed before the project was to re-commence.

The regulatory arrangements set out below are the ones that applied prior to the Long Term Care and Maintenance Agreement. They may still be valid should mining resume.

### Jabiluka Mineral Lease and s.43 ALRA Agreement

The regulatory frameworks at Jabiluka and Ranger are markedly different.

Most significantly, there is no provision in the *Atomic Energy Act 1953 (Cth)* for the Commonwealth to authorise uranium mining operations at Jabiluka<sup>23</sup>. Instead, authority for mining operations at Jabiluka derives from the Jabiluka Mineral Lease (ML N1) issued under the Mining Act 1982 (NT).

As the Jabiluka Mineral Lease is on Aboriginal Land, an agreement under the ALRA is required for mining to take place. This agreement is known as the s.43 Jabiluka Agreement. Unlike Ranger, the agreement is directly between the Northern Land Council and ERA – the Commonwealth is not a contractual party.

The Environmental Requirements attached to the Jabiluka Land Rights Act Agreement are attached to the Jabiluka Mineral Lease in identical terms. These Environmental Requirements were developed as part of a Commonwealth environmental impact assessment process carried out in 1979 pursuant to the terms of the (now repealed and ‘grandfathered’<sup>24</sup>) Environment Protection (Impact of Proposals) Act 1974 (Cth).

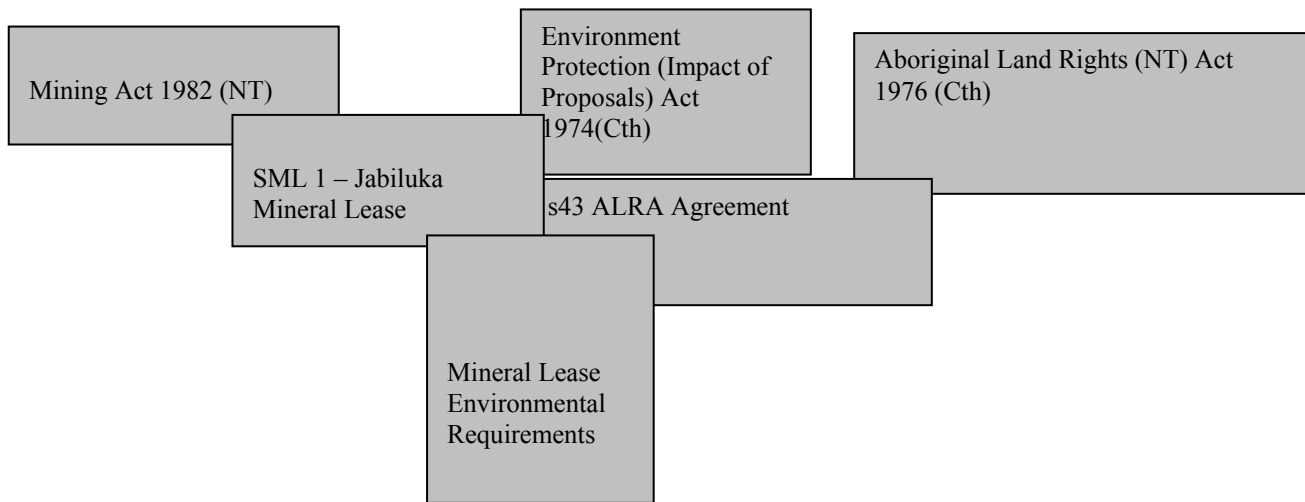
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<sup>23</sup> However the *Atomic Energy Act 1953 (Cth)* does operate to vest ownership of uranium at Jabiluka in the Commonwealth: section 35.

<sup>24</sup> The *Environment Reform (Consequential Provisions) Act 1999 (Cth)* and the *Environment Protection & Biodiversity Conservation Act 1999 (Cth)* make provision for proposals considered under the *Environment Protection (Impact of Proposals) Act 1974 (Cth)* to continue to be considered under the earlier Act.



## Jabiluka Mineral Lease and s.43 ALRA Agreement



## **Jabiluka Change of Concept process, the new Jabiluka Environmental Requirements & NT Authorisation**

In 1996, following a change in Commonwealth Government policy on uranium mining, ERA developed a new proposal to mine uranium at Jabiluka. The company's preferred option was to mill uranium from Jabiluka on the Ranger Project Area (the so-called Ranger Mill Alternative (RMA) and ERA developed an Environmental Impact Statement (EIS) for this proposal under the Environment Protection (Impact of Proposals) Act 1974 (Cth) (EPIP). On 8 October, 1997 the Commonwealth Minister for Resources and Energy approved the proposal as described in the EIS, subject to the (primarily environmental) 'Jabiluka Requirements'.

The new proposal to mine at Jabiluka was radically different from that proposed in the 1982 s.43 ALRA Agreement. The company chose not to enter into a new ALRA Agreement with the Traditional Owners, presumably because the Mirarr People were absolutely opposed to the development of the Jabiluka deposits. Instead, ERA triggered 'Change of Concept' provisions in the 1982 Agreement, which allowed the new project to proceed under the old agreement (despite the opposition of the Traditional Owners, local Aboriginals and the NLC) in conjunction with a '1998 Jabiluka Deed Poll'.

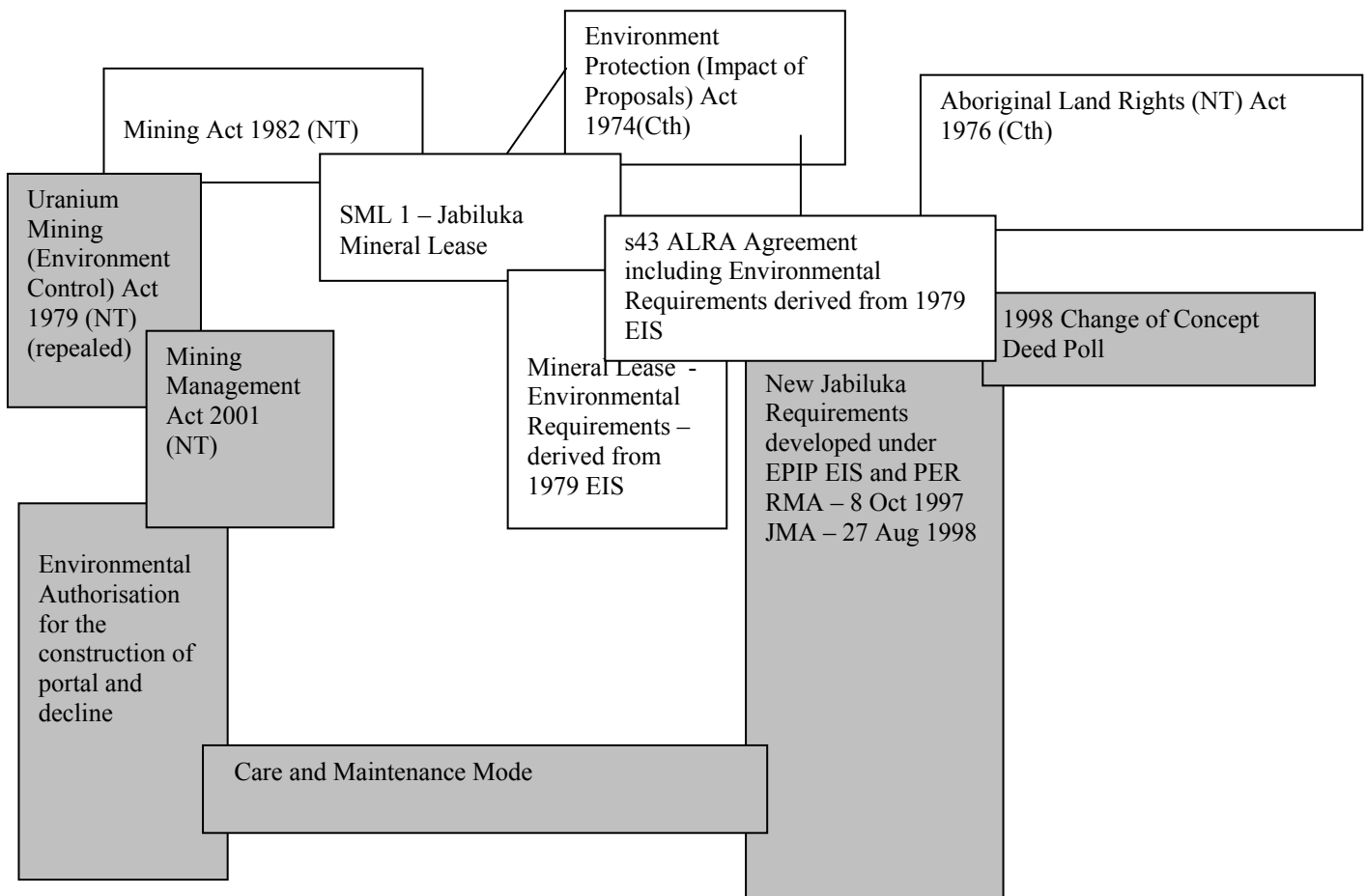
However, the 'Change of Concept' provisions did not allow the Environmental Requirements in the 1982 Agreement to be updated without the consent of the Traditional Owners. For contractual reasons, this has also prevented the Environmental Requirements in the Mineral Lease being updated to reflect the new proposal.

In 1998, ERA accepted that the Traditional Owners would not consent to the company's preferred option of milling Jabiluka ore at Ranger. As a result, ERA was directed by the Commonwealth to prepare a Public Environment Report (PER) under EPIP for mining and milling at Jabiluka (the 'JMA'). On 27 August, 1998 the Commonwealth Minister for Resources and Energy approved the proposal as described in the PER, subject to additional 'Jabiluka Requirements'.

In June 1998, the Northern Territory Minister for Mines and Energy, after consulting with the Commonwealth Minister, issued an Authorisation under the Uranium Mining (Environmental Control) Act 1979 NT for the construction of a portal and decline and associated facilities on the Jabiluka Mineral Lease. The Authorisation was issued on the basis that the construction activities were common to both the (approved) RMA and (at that stage proposed) JMA. On the basis of previous reviews (eg. 2002 Senate submission), the Mirarr contend that the actual portal, decline and infrastructure (especially water) built at Jabiluka over 1998 to 1999 were indeed to the design of the RMA - against the express wishes of the Mirarr.

In September 1999, having completed construction activities ostensibly ‘common’ to both the RMA and JMA, ERA suspended construction of the Jabiluka Project. Since this time, the Jabiluka Project has been in a so-called ‘environmental care and maintenance’ mode. The current NT authorisation does not accommodate the prolonged (at least 10 years) period of care and maintenance proposed by ERA and Rio Tinto. Best practice demands the issuing of a new authority to accommodate this drawn-out delay.

### **Jabiluka Change of Concept process, the new Jabiluka Environmental Requirements & NT Authorisation**



## **Commonwealth and Northern Territory arrangements for monitoring and reporting of the environmental aspects of the Jabiluka Project**

The *Agreement between the Commonwealth of Australia and the Northern Territory of Australia in relation to principles to be applied in the regulation of Uranium Mining in the Northern Territory of Australia* (dated 17 November 2000), as described above in relation to the Ranger Mine, purports to cover the Jabiluka Project. The Agreement makes particular reference to incorporation and adoption of the 'Jabiluka Requirements' developed by the Commonwealth during the 1997 Jabiluka EIS and the 1998 Jabiluka PER, and includes a statement of intention to amend the 23-year-old Environmental Requirements attached to the Jabiluka Mineral Lease.

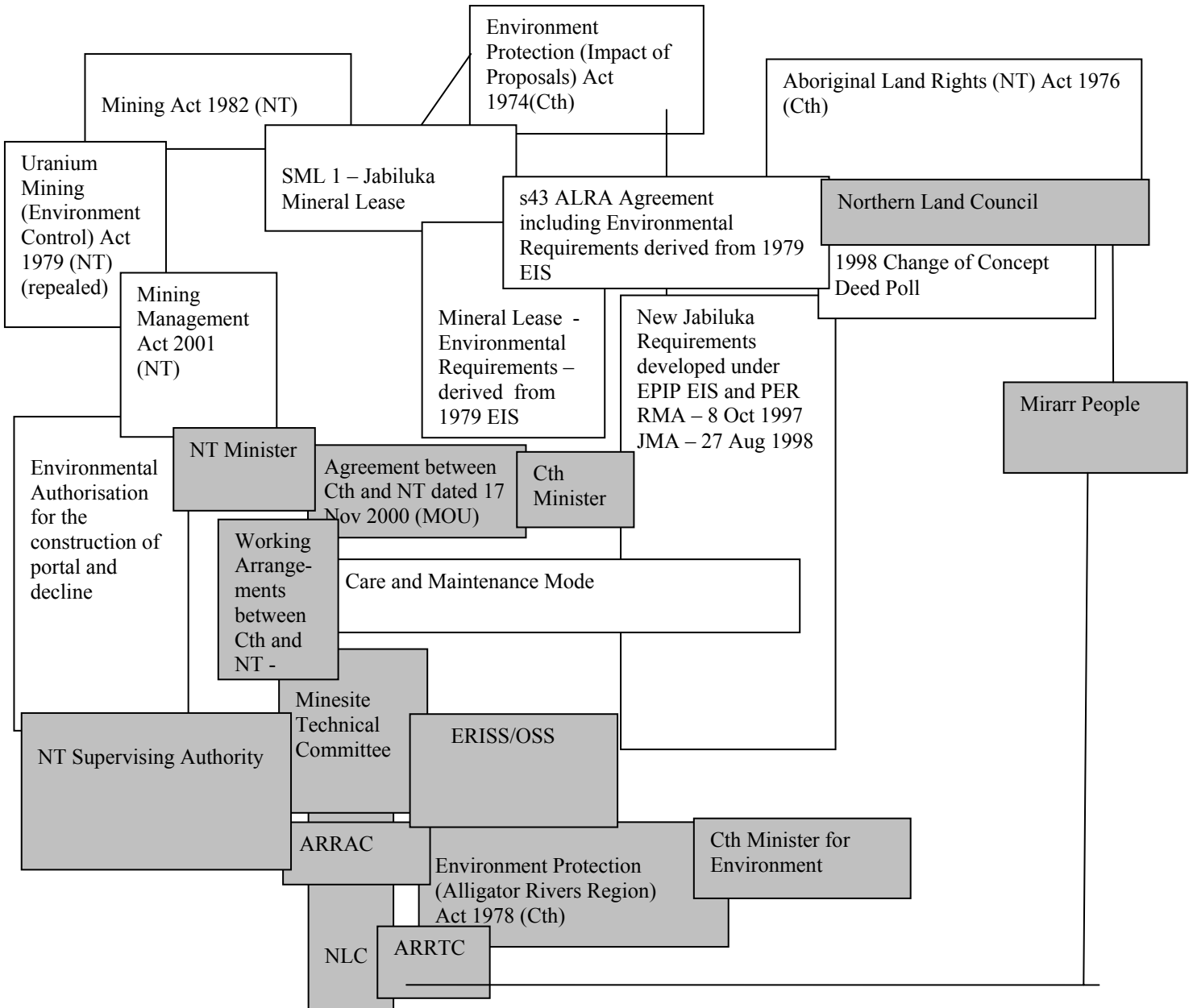
It is presumed that the Office of the Supervising Scientist and the Northern Territory Supervising Authority use the *Revised Working Arrangements for Co-ordinating the Regulation of Environmental Aspects of Uranium Mining in the Alligator Rivers Region* (September 1995) (as described above in relation to the Ranger Mine) to govern their shared legislative responsibilities in respect of Jabiluka. There is, for example, a Jabiluka Minesite Technical Committee. However there is no specific mention of the Jabiluka Project in the Working Arrangements because they pre-date the new development of Jabiluka by ERA. *The Environment Protection (Alligator Rivers Region) Act 1978* (Cth) applies to the Jabiluka Project.

## **Traditional Owners and the regulatory regime for the Jabiluka Project**

The Traditional Owners of the Jabiluka Mineral Lease are the Mirarr People, who manage and control the Gundjeihmi Aboriginal Corporation.

As is the case with the Ranger Mine, the Traditional Owners have no direct role in the regulatory system at Jabiluka. The Mirarr receive information emanating from reporting processes via the Northern Land Council. The Mirarr may also attempt to assert rights and interests, via the Northern Land Council, through the 1982 s.43 ALRA Agreement.

## Traditional Owners and the regulatory regime for the Jabiluka Project



### 1.3 Adequacy of Commonwealth uranium regulations

In 1980, H.C Coombs (Nugget) wrote:

*...both the Parliament [through the Land Rights Act] and the Ranger Inquiry intended that subject only to the National Interest clause, Aboriginal wishes in matters affecting the land should be paramount. An external observer cannot escape the impression that, increasingly day-by-day, that principle is honoured more in the breach than the observance. Where Aboriginal wishes conflict with the interests of mining companies, white property owners, or the convenience of bureaucrats the original intention appears to be whittled away till the principle has become little more than an advertising slogan bearing little relation to the quality of the product...<sup>25</sup>*

In 1984, a Commonwealth Social Impact Study into uranium mining in the Alligator Rivers Region found:

*The local Aboriginal people always appear at a distance...They are problems, not participants. And they are not to be assigned an active role. The administrative arrangements are left to outsiders: specialists. The local people may participate as workers, but not as decision-makers, or as the makers or imposers of sanctions. They are not to have a determining voice. Their voices may be heard, but not heeded: they are nowhere decisive. How this could be reconciled with granting of land ownership, and the fact of Aboriginal responsibilities to land, is not explained.<sup>26</sup>*

In 1996, in response to the Jabiluka EIS, Environment Australia conducted an *Environmental Assessment Report* in which it stated:

*There would appear to be evidence of marginalisation of the Traditional Owners and the broader Aboriginal community as a result of past decisions concerning development and management of the region...<sup>27</sup>*

From the perspective of the Mirarr, the problems identified above remain unabated and in fact have become deeply entrenched over the past two decades. Simply put, the regulatory arrangements for operations at Ranger and Jabiluka are inadequate and inappropriate because they prevent the Traditional Owners effectively managing those parts of Mirarr land subject to uranium mining interests.

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<sup>25</sup> The Impact of Uranium Mining on the Social Environment of Aborigines in the Alligator Rivers Region, 1980, (In Harris, *Social and Environmental Choice – The Impact of Uranium Mining in the Northern Territory*), CRES Monograph 3, CRES, ANU, p.131.

<sup>26</sup> *Aborigines and Uranium – Consolidated Report to the Minister for Aboriginal Affairs on the Social Impact of Uranium Mining on the Aborigines of the Northern Territory*, Australian Government Publishing Service, Canberra 1984 p.84-85.

<sup>27</sup> Environment Australia, *Environmental Assessment Report : Proposal to Extract, Process and Export Uranium From Jabiluka Orebody No. 2 – The Jabiluka Proposal*. Environmental Assessment Branch, Environment Australia, August 1997, p109.

### 1.3.1 Flaws with the current Regulatory Arrangements

#### Inconsistency

The arrangements governing the Ranger Uranium Mine and the Jabiluka Project, both located on Mirarr country and both owned by ERA, are significantly different. This creates confusion in the Aboriginal (and non-Aboriginal) community and places additional stress on those Traditional Owners seeking to understand why and how decisions are made about mining on their country.

For example, at Ranger, in broad terms, the Commonwealth authorises mining through s.41 of the *Atomic Energy Act* (Cth). The Environmental Requirements attached to this Authority are, to a significant degree, subject to the Ranger s.44 *Land Rights Act* (Cth) Agreement<sup>28</sup>. Relevant Northern Territory legislation requires the incorporation of these Environmental Requirements in NT authorisations<sup>29</sup>.

However, there is no provision in the *Mining Management Act 2001* (NT) for the incorporation of the Jabiluka Environmental Requirements. In addition, while the (repealed) *Uranium Mining (Environmental Control) Act 1979* (NT) compelled the NT Minister to consider *Land Rights Act* agreements (including the 1982 Jabiluka Agreement) in exercising his powers<sup>30</sup>, no such specific provision exists in the *Mining Management Act 2001* (NT).

#### Lack of accountability

The transfer of responsibility for regulation and monitoring of Commonwealth-owned uranium resources to the Northern Territory has, in a large part, been carried out through non-legislative agreements between Commonwealth and Territory Ministers. These agreements are not subject to direct parliamentary scrutiny and do not provide mechanisms for persons with legal standing, such as the Mirarr, to seek compliance with the terms of these agreements.

Of the agreements referred to above, the primary documents are the *Agreement between the Commonwealth of Australia and the Northern Territory of Australia in relation to principles to be applied in the regulation of Uranium Mining in the Northern Territory of Australia* (dated 17 November 2000) [“the MOU”] and the *Revised Working Arrangements for Co-ordinating the Regulation of Environmental Aspects of Uranium Mining in the Alligator Rivers Region* (September 1995) [“the Working Arrangements”]. Three key aspects of the MOU have not been implemented. Two of these (Clauses 14 and 15) relate to Environmental Requirements at Jabiluka. The third (Clause 16) relates to revision of the Working Arrangements.

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<sup>28</sup> Via the Ranger Extension and Complementary Agreements. There are, however, significant barriers to Traditional Owners exercising land management powers through *Land Rights Act* agreements, see below.

<sup>29</sup> Section 34(4) *Mining Management Act 2001* (NT).

<sup>30</sup> Section 18.

However, because these agreements are essentially ‘private’ agreements between the Commonwealth Minister and the Northern Territory Minister, the failure of governments to abide by them carries no sanction and there is no mechanism to enforce compliance with their terms.

### **Outdated Provisions**

In the 1977 Inquiry into the Ranger Uranium Mine, the Commissioners stated:

*We strongly recommend against the use [of the Atomic Energy Act] for the grant of an Authority to Ranger to mine uranium.*

The main thrust of the arguments for this recommendation was that the *Atomic Energy Act 1953* (Cth) was never designed for regulating uranium mining, having been introduced as a security measure to enable Australian uranium to be diverted for strategic military use. However, the recommendation was not adopted and Part III of the Act, which deals with Ranger, was ‘tacked on’ to allow Ranger to proceed prior to self-government in the Northern Territory.

Unfortunately, both the Ranger Mine and the Jabiluka Project continue to rely on authorities or approvals derived from outdated, repealed or ‘grandfathered’ legislation. While Governments have improved and reformed legislation, mining operations at both sites have been burdened with historical regulatory frameworks.

For example, operations at Ranger rely on a statutory fiction that those named in the s.41 authority issued under the *Atomic Energy Act 1953* (Cth) are carrying out operations on behalf of the Commonwealth. In addition, while the holders of an authority under the *Atomic Energy Act 1953* (Cth) may be convicted of an offence under the Act for failing to comply with the authority<sup>31</sup>, the penalty is merely \$2,000 in the case of a natural person and \$10,000 in the case of a body corporate<sup>32</sup>. However, it should be noted that there are also penalty provisions in the NT Mining Management Act.

To compound the problem, even instruments developed to deal with inadequate legislative direction for appropriate regulation, such as the Working Arrangements agreed to in September 1995, are now outdated. The Working Arrangements make no specific provision for the Jabiluka Project and have not been updated to reflect the repeal of the *Uranium Mining (Environmental Control) Act 1979* (NT). The Working Arrangements also make reference to the creation of further important regulatory instruments, such as ‘Agreed Commonwealth Requirements for Environmental Monitoring by the Northern Territory Regulatory Authorities of Uranium Mining in the Alligator Rivers Region’. Recently the Federal and Northern Territory Governments have finalised new Working Arrangements. While they are still to be ratified by the relevant Ministers, Gundjeihmi Aboriginal Corporation is aware that the Working Arrangements recommend that Mirarr sit in an advisory capacity with the NLC on the Minesite Technical Committees.<sup>33</sup>

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<sup>31</sup> Section 41A(7).

<sup>32</sup> Section 41D.

<sup>33</sup> Pers. Com. Arthur Johnston 19 May 2005



The primary role of the Ranger Minesite Technical Committee (RMTC) in the administration of measures to ensure compliance with the Environmental Requirements is, while arguably implicit, not specifically codified in the Working Arrangements.

The Working Arrangements also make reference to outdated twice-yearly Environmental Performance Reviews by the SSD and NT Supervising Authority. This regime was replaced in early 2001 by a system comprising an annual Environmental Audit, a mid-term review and routine monthly inspections.

The Environmental Requirements annexed to the Jabiluka Mineral Lease (pursuant to s.64 the *Mining Act 1982* (NT)) and the 1982 Jabiluka Agreement (pursuant to s.43 of the pre-1987 version of the *Aboriginal Land Rights (Northern Territory) Act 1976* (Cth)) were formulated from an EIS process carried out in 1979. In addition, their continued effect is contrary to Clause 15 of the MOU between the Commonwealth and the Northern Territory.<sup>34</sup>

### **Inadequacy of Land Rights Act agreements**

The Mirarr People believe that Traditional Owners should have the opportunity to directly participate in the regulatory arrangements governing uranium mining on their country. The only practical way for this to occur is via agreements for mining under the *Land Rights Act* (Cth).

While the Ranger and Jabiluka Land Rights Act Agreements provide for Aboriginal participation committees, these entities are chronically dysfunctional. As early as 1984 the Ranger Aboriginal Liaison Committee was identified by a Commonwealth social impact study as having ‘*now subsided into near, if not actual inactivity, even oblivion*’<sup>35</sup>. The ‘Bininj Working Committee’ established in the 1982 Jabiluka Agreement has suffered a similar fate. Almost unbelievably, neither Commonwealth nor Northern Territory authorities have ever seriously addressed this major flaw in the operation of the regulatory system.

The same 1984 study found:

*that Aboriginal people are not centrally involved in the legal and administrative machinery which has been imposed on the Region, and have not become effective members of the special committees established to deal with social and other problems as they arise. There are no real indicators either that Aboriginal people are developing the skills to be able to participate in a more meaningful fashion; consequently it is not surprising that there is little Aboriginal interest in committee or administrative work.*<sup>36</sup>

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<sup>34</sup> Which states the NT Minister will amend the environmental requirements attached as a condition to the Jabiluka Mineral Lease to “more closely reflect the environmental requirements to which the Ranger Authority is subject”.

<sup>35</sup> *Aborigines and Uranium – Consolidated Report to the Minister for Aboriginal Affairs on the Social Impact of Uranium Mining on the Aborigines of the Northern Territory*, Australian Government Publishing Service, Canberra 1984, p.120.

<sup>36</sup> *Aborigines and Uranium – Consolidated Report to the Minister for Aboriginal Affairs on the Social Impact of Uranium Mining on the Aborigines of the Northern Territory*, Australian Government Publishing Service, Canberra 1984, p.130.

Once again, this problem has never been adequately addressed and has simply compounded over the years. However, it is not as the 1984 Study reports that “*there is little Aboriginal interest*”. Mirarr are vitally interested in involvement in decision making, but their efforts and those of the Gundjeihmi Aboriginal Corporation are continually frustrated by the inadequacy of the ALRA agreements.

The Mirarr have consistently proposed that ALRA agreements should provide mechanisms for Traditional Owners to propose and seek implementation of improvements to regulatory arrangements; prevent changes detrimental to Traditional Owner interests; and instigate action for breaches of regulatory arrangements; however, such suggestions have consistently met with opposition.

However, even if meaningful land management mechanisms were included in the ALRA agreements for Ranger and Jabiluka, existing regulatory instruments would not adequately support such agreements.

For example, the *Atomic Energy Act 1953* (Cth) provides only limited potential for the Ranger ALRA agreement to affect the enforcement of Environmental Requirements. The Mirarr believe there should be a significant extension of the relationship between the authorising legislation and the provisions of the ALRA agreement.

At Jabiluka the rights of Traditional Owners are vulnerable because there is no Commonwealth legislation authorising mining and no requirement in Northern Territory legislation that authorities and mineral leases be consistent with Commonwealth environmental approvals. However, the Project is now subject to the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. This legislation requires either an approval to be obtained or for the Project to come under one of the exclusions to the approval requirements as a result of a bilateral agreement having been entered with the Northern Territory. At present, the ‘Jabiluka Requirements’ established by the Commonwealth Minister during the 1997 EIS and 1998 PER processes are not annexed to the 1982 Agreement nor the Jabiluka Mineral Lease. Nor are they incorporated in NT legislation, contrary to Clause 14 of the MOU between the Commonwealth and the Northern Territory. They are instead ‘implemented’ via two letters sent by the Commonwealth Minister to the NT Minister in 1997 and 1998. It is doubtful whether this arrangement would be sufficient to comply with the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.

A series of 'Environmental Requirements' were annexed to the 1982 Jabiluka Agreement and the 1982 Jabiluka Mineral Lease in order to provide Traditional Owners, through the NLC, with some limited power to enforce environmental monitoring and reporting through the contractual provisions of the 1982 Agreement. However, now operations at Jabiluka are governed by the 'Jabiluka Requirements' (although the original Jabiluka Environment Requirements remain legally in force). It is noteworthy that key provisions of the 'Jabiluka Requirements' remain unmet and that there is no mechanism for Traditional Owners to seek enforcement. In addition, the requirements are now inconsistent with the terms of the 1982 Land Rights Act agreement. Further to this, the supervising and advisory bodies merely apply the current version of the Ranger ER's to Jabiluka, despite the fact that there is no legal

enforceability of the Ranger ER's on operations at Jabiluka (Ref : Senate Estimates Hansard, 30 May 2002, pp 508).

Finally, the role of the terms of *Land Rights Act* agreements appears to have become further marginalised. For example, the Working Arrangements purport to provide the mechanism for 'main interested parties', such as the Northern Land Council, to receive information 'via effective consultative and reporting procedures'. To this end, the Northern Territory Supervising Authority is to have regard to the views of the NLC, mainly through the functions of the Minesite Technical Committees. There has been no attempt to refer to the provisions of the agreements in this mechanism.

If Mirarr directly or via Gundjeihmi Aboriginal Corporation had a statutory role on the RMTTC then agenda items could be considered in advance at a pace more suitable to Mirarr and would also provide Mirarr with the opportunity to obtain its own expert opinion.

### **Lack of monitoring and reporting on social and cultural impacts**

The Primary Environment Objectives of the Commonwealth Environmental Requirements for Ranger (as incorporated in the Northern Territory Ranger General Authorisation) contain a provision that:

- 1.1 The company must ensure that operations at Ranger are undertaken in such a way as to be consistent with the following primary environmental objectives:
  - (a) maintain the attributes for which Kakadu National Park was inscribed on the World Heritage list;
  - (c) protect the health of Aboriginals and other members of the regional community;

The 'attributes for which Kakadu National Park was inscribed on the World Heritage List' include both natural and cultural values. The cultural values encompass the living tradition of the Aboriginal landowners, including the Mirarr People. This has been reiterated by the World Heritage Committee, and accepted by the Australian Government, in recent consideration of whether uranium mining has endangered the World Heritage values of Kakadu National Park.

In addition, the 'health of Aboriginals and other members of the regional community' [as set out in 1.1(c)] should be given an ordinary reading and encompass both the mental and physical health of Aboriginal landowners. The threat of environmental danger often leads to mental anxiety and other social distress amongst Traditional Owners. This was noted by Environment Australia in its response to the Jabiluka EIS in which it stated:

*...mining and its cumulative impacts have the potential to contribute to existing sources of stress, potentially leading to increased alcohol usage...*<sup>37</sup>

Therefore, it seems clear that the Environmental Requirements and the Ranger General Authorisation require the company to ensure that operations at Ranger do not

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<sup>37</sup> Environment Australia, "Environmental Assessment Report: Proposal to Extract, Process and Export Uranium From Jabiluka Orebody No. 2 – The Jabiluka Proposal". Environmental Assessment Branch, August 1997, p.117.

adversely impact upon the culture, social fabric or mental health of the Aboriginal community.

Accordingly, the Gundjeihmi Aboriginal Corporation contends that just as environmental monitoring is carried out on an ongoing basis, so should social impact monitoring be a continuous process.

However, there is no functioning process in place to monitor the ongoing social impact of the Ranger or Jabiluka operations. The last such exercise was carried out in 1997 by the Kakadu Region Social Impact Study (KRSIS), which was a 'once off' or 'snapshot' analysis of the social impact of uranium mining in the region.

As the NLC noted in response to the 1996 Jabiluka EIS:

*Aboriginal people in the region have faced profound social, environmental, and economic changes since the Ranger Uranium Environmental Inquiry examined the basis of their land claims and their opposition to uranium mining. There has been constant monitoring of biophysical environmental change in the region. In contrast monitoring of the social and cultural impacts of uranium mining... has been far from systematic and rarely aimed at securing equitable and sustainable benefits for Aboriginal groups.*

The Environmental Requirements and the Ranger General Authorisation require the production of a Environmental Management Report by ERA. Clause 18.2 of the Environmental Requirements provides that the report must deal specifically with 'social impact monitoring'. However, the social impact reports for 1999-2000 and 2000-2001 contained identical wording about supporting the implementation of KRSIS. The 2003 report does not even mention the KRSIS study.<sup>38</sup>

Unfortunately, as described above, there is no direct legislative mechanism for the Mirarr to insist on ERA's compliance with the Environmental Requirements or the Ranger General Authorisation despite the company's inadequate monitoring and reporting of social impacts.

At Jabiluka the situation was even worse. There was no Commonwealth Environmental Requirement for social impact monitoring and there was no provision for social impact monitoring in the Northern Territory's Authorisation for construction activities on the Jabiluka Mineral Lease.

In addition, none of the regulatory agencies or committees (the SSD, ERISS, ARRAC, ARRTC, NT DBIRD) has sufficient mandate, resources or personnel to either carry out or assess social impact monitoring processes.

The Gundjeihmi Aboriginal Corporation contends that social impact monitoring and reporting should be independently conducted in close consultation with Traditional Owners and other Aboriginals affected by mining operations. To this end, comprehensive social impact monitoring processes, supported by enforcement provisions, should be agreed in both the Ranger and Jabiluka ALRA agreements and the statutory regulatory instruments.

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<sup>38</sup> Energy Resources of Australia 2003 *Social and Environmental Report*. Accessed at [http://www.energyres.com.au/environment/ERA\\_SERep03Fin.pdf](http://www.energyres.com.au/environment/ERA_SERep03Fin.pdf) 3 May 2005

### **1.3.2 The Effective Management, by the Mirarr People, of Aboriginal Land subject to Uranium Mining**

As Traditional Owners, the Mirarr People have a cultural responsibility to actively participate in the land's management and protection. This principle also goes to the core of Aboriginal land rights.

In order to effectively manage and protect their land, the Mirarr contend that agreements under the ALRA, in conjunction with relevant Commonwealth and Northern Territory legislation, should provide the Mirarr with the legally enforceable right to:

- i. access independent and appropriate information about the way that mining operations on Mirarr land, and arrangements for regulating those operations, directly and indirectly impact upon the physical environment and living culture of the Mirarr;
- ii. seek compliance and/or remedies where operators of mining projects on Mirarr land do not comply with the regulatory arrangements;
- iii. instigate processes for reforming the regulatory arrangements as they apply to Mirarr land;
- iv. disallow changes to the regulatory arrangements which detrimentally affect the exercise of Traditional Owner rights or protection of the environment on Mirarr land.

Unfortunately, at present, the Mirarr are unable to effectively exercise any of these land management functions. Many of the barriers to the exercise of meaningful land management arise from the current regulatory arrangements imposed by government. Other barriers relate to the way existing mining agreements were drafted more than 20 years ago.

### **1.3.3 Recommendations**

As stated in previously the regime for regulation of uranium mining at Ranger and Jabiluka is overly complex, confusing, inconsistent and incomplete. The Gundjeihmi Aboriginal Corporation can see little long-term benefit in proposing recommendations that attempt to fix the current 'system' piecemeal.

Instead the Gundjeihmi Aboriginal Corporation reiterates that the Commonwealth Parliament urgently needs to overhaul and consolidate the regulation of uranium mining in the Alligator Rivers Region of the Northern Territory consistent with the aims of the Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999 in relation to impact on World Heritage properties.

The consolidated regulatory requirements would:

- 1. Set out the responsibilities of the Commonwealth in relation to uranium mining in the Alligator Rivers Region, including:**
  - Affirming that prescribed substances in the Northern Territory are the property of the Commonwealth.
  - Stating that the Commonwealth has final accountability for uranium mining in the Northern Territory.

- Affirming that the Commonwealth has a responsibility to monitor the environmental impact of uranium mining in the Alligator Rivers Region through the Office of the Supervising Scientist and the Environmental Research Institute of the Supervising Scientist.
  - Affirming that the Commonwealth has a responsibility to monitor the social impact of mining on the Indigenous population of the Alligator Rivers Region and that the social impact monitoring is developed in conjunction with Traditional Owners.
  - Affirming that proposals for uranium mining in the Alligator Rivers Region are actions having significant impact for the purposes of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and the Commonwealth has international responsibilities in relation to the Kakadu World Heritage Area.
2. **Set out the responsibilities of the Northern Territory in relation to uranium mining in the Alligator Rivers Region, including:**
    - The Northern Territory is, subject to the Commonwealth, responsible for granting mineral leases for uranium mining under the Mining Act 1982 (NT).
    - The Northern Territory is, subject to the Commonwealth, responsible for authorising and regulating uranium mining actions under the Mining Management Act 2001 (NT).
  3. **Clearly set out appropriate Environmental Requirements and the associated enforcement mechanisms for uranium mining in the Alligator Rivers Region.**
  4. **Set out the responsibilities of the Supervising Scientist and the Environmental Research Institute of the Supervising Scientist, including the co-operative relationship with the Northern Territory Supervising Authority.**
  5. **Set out the functions of ARRAC, ARRTC and the Minesite Technical Committees OR create a single entity with the consolidated functions of these committees.**

The matters set out in points 1 to 5 above would allow the consolidation of:

- ❖ *the Agreement between the Commonwealth of Australia and the Northern Territory of Australia in relation to principles to be applied in the regulation of Uranium Mining in the Northern Territory of Australia (dated 17 November 2000) [“the MOU”]*
- ❖ *the Revised Working Arrangements for Co-ordinating the Regulation of Environmental Aspects of Uranium Mining in the Alligator Rivers Region (September 1995) [“the Working Arrangements”]*
- ❖ Part III of the *Atomic Energy Act 1953 (Cth)*
- ❖ *Environment Protection (Alligator Rivers Region) Act 1978 (Cth)*

6. **Reform the system of Authorisation for uranium mining in the Alligator Rivers Region.**

## 2 Waste management at mine sites

The management of waste has always been of primary importance to the Mirarr. Even before the first spill of contaminated water from the Nabarlek mine, a Mirarr elder was expressing concern about the possible contamination of the Nourlangie and Magela creeks. He voiced fears “*about the bad life the mine will bring*”.<sup>39</sup> Regardless of the statements made by the agencies charged with the regulation of the mine that there has been no environmental harm as a result of mining, Gundjeihmi Aboriginal Corporation contends that the monitoring regime at both Ranger and Jabiluka is deficient. This contention is supported by independent expert opinion.<sup>40</sup> Consequently, we hold grave fears that the reason why the regulatory authorities are able to continue to say that there has been no environmental harm, is that the monitoring regime is inadequate.

The Gundjeihmi Aboriginal Corporation would like to draw the Committee’s attention to a submission made to The Senate Environment, Communications, Information Technology and the Arts Committee Inquiry into *Regulating the Ranger, Jabiluka, Beverley and Honeymoon uranium mines*, by Mr Geoffrey Kyle in 2002.<sup>41</sup> His submission is identical to a written complaint made by him to relevant Federal and Territory bodies regarding matters that occurred at the Ranger mine between 1993-1998 when Mr Kyle was employed as a Technical and Senior Technical Officer at the Ranger Mine Environmental Laboratory.

Mr Kyle’s submission points to a mine management culture that does not employ environmental best practice, operates in a manner that seeks to cover up possible problems and one that is not prepared to make the effort needed to ensure the environment of Kakadu is not damaged. He also makes specific allegations with respect to ERA’s water monitoring and reporting regime.

Additionally there is a culture with the regulating authorities to down play incidents at Ranger. An example of downplaying ‘incidents’ is the OSS 2000-01 Annual Report.<sup>42</sup> It states that there were “no reportable incidents during the year” (pp 18). In its 6-monthly report of December 2000 to ARRAC, however, the SSD described the following significant incident:

*Sept. 9, 2000 – About 20,000 litres of tailings leaked following the failure of a pressure gauge tapping point adjacent to one of the tailings pumps in the mill area. The failure resulted in tailings spraying over the bunds surrounding the pipe and associated infrastructure into an area which drains to RP2.*<sup>43</sup>

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<sup>39</sup> Report to the Minister for Aboriginal Affairs on the Social Impact of Uranium Mining on the Aborigines of the Northern Territory for the period 1 April 1981 to 30 September 1981. Australian Institute of Aboriginal Studies, AGPS Canberra

<sup>40</sup> See transcript of 18 April 2002 7.30 Report entitled *Claims of environmental breaches threaten Ranger mine*. Accessed 10 May 2005 at <http://www.abc.net.au/7.30/content/2002/s535126.htm>

<sup>41</sup> G Kyle Untitled submission Number 35, 2002 to The Senate Environment, Communications, Information Technology and the Arts Committee Inquiry in to *Regulating the Ranger, Jabiluka, Beverley and Honeymoon uranium mines*.

<sup>42</sup> 2001 *Annual Report*. Office of the Supervising Scientist (OSS), Canberra, ACT, Years 1978-79 through 2000-01.

<sup>43</sup> *Investigation of Stockpiling and Reporting Incidents at Ranger and Jabiluka 2002*. Office of the Supervising Scientist, Darwin, NT, 12 April 2002, pp 1-2

According to Environmental Requirement 16.1 ('Reporting Incidents'), ERA must immediately report to stakeholders (SSD, DBIRD, NLC):

- “... any mine-related event which :
- (a) results in significant risk to ecosystem health; or.
  - (b) which has the potential to cause harm to people living or working in the area; or
  - (c) which is of or could cause concern to Aboriginals or the broader public.”

A tailings spill such as that on 9 September 2000 is clearly of risk to mill workers, and would be of legitimate concern to the Mirarr and the general public. The Gundjeihmi Aboriginal Corporation is concerned that a poor management culture within ERA and regulating authorities that down play reportable incidents is a recipe for disaster.

The latest in a long line of incidents<sup>44</sup> at Ranger has finally resulted in legal action being taken against ERA. In March 2004 the process water system was connected directly to water used for showering and drinking, exposing up to 159 people, including Aboriginal people, to levels of contamination far exceeding public health limits<sup>45</sup>. Twenty eight people reporting gastrointestinal distress; vomiting; and skin itchiness on washing or showering.<sup>46</sup> ERA has claimed the contamination was the result of human error, but Gundjeihmi contends that it is yet another example of a systemic problem with management at the Ranger mine.

In a separate incident a mining vehicle contaminated with uranium was allowed to leave the minesite, resulting in children playing in a pile of contaminated material that fell from the vehicle.<sup>47</sup> These are further examples of poor management which continues to erode Mirarr confidence in ERA.

In 2002 the Gundjeihmi Aboriginal Corporation made a detailed submission to The Senate Environment, Communications, Information Technology and the Arts Committee Inquiry in to *Regulating the Ranger, Jabiluka, Beverley and Honeymoon uranium mines*. Sections 4a, 4b, 4c, 4d of this 2002 Submission should be read in conjunction with the material set out below.

The management of uranium mining and milling wastes impose additional and fundamentally different constraints to traditional mining (eg. copper, gold or mineral sands) due to the radioactive nature of the ore. Thus, as well as chemical and physical risks to the environment, the release of radionuclides and radiation increases the risks associated with uranium mining and milling relative to conventional mines.

A fundamental concern of the Mirarr is that uranium mining, both during operation and after rehabilitation, could lead to increased concentrations and loads of radionuclides released in the environment compared to pre-mining conditions, as well

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<sup>44</sup> See Appendix 1

<sup>45</sup> Unpublished Précis of Facts - Burgess v Energy Resources of Australia Limited

<sup>46</sup> *Investigation of the potable water contamination incident at Ranger mine March 2004* Supervising Scientist Report 184. Supervising Scientist, 2004 Department of the Environment and Heritage 2004 (ch 5 p47)

<sup>47</sup> On 6 May 2005 ERA pleaded guilty to breaching the NT Mining Management Act over both the contaminated water and bobcat incidents.



as possibly higher radiation rates due to the operations undertaken. Many of these concerns are shared by environmentally concerned citizens across Australia and internationally. According to the Environmental Requirements for Ranger, after operations have been completed it is expected that the “the rehabilitated [Ranger Project] area could be incorporated into the Kakadu National Park” (ER2.1) – that is, meet the environmental and cultural standards of being a World Heritage area. (See figure 2.1 for an overview of the Ranger Project area)

The Mirarr are concerned that the incorporation of the RPA into Kakadu National Park will not happen for a long time due to the degraded nature of the site. While the RPA remains, Mirarr will be excluded from a formal role in decision making because, as explained on page 4, the RPA is the subject of specific provision in the ALRA which excludes Mirarr from making decisions with respect to use. Until this section of the Land Rights Act is repealed Mirarr will continue to be excluded from decision making on their land.

The Gundjeihmi Aboriginal Corporation would like to stress to the House of Representatives Standing Committee on Industry and Resources that the Mirarr people are not just stakeholders, they are the owners of the land on which both Ranger and Jabiluka mines are situated, yet are largely excluded from a direct decision making role.

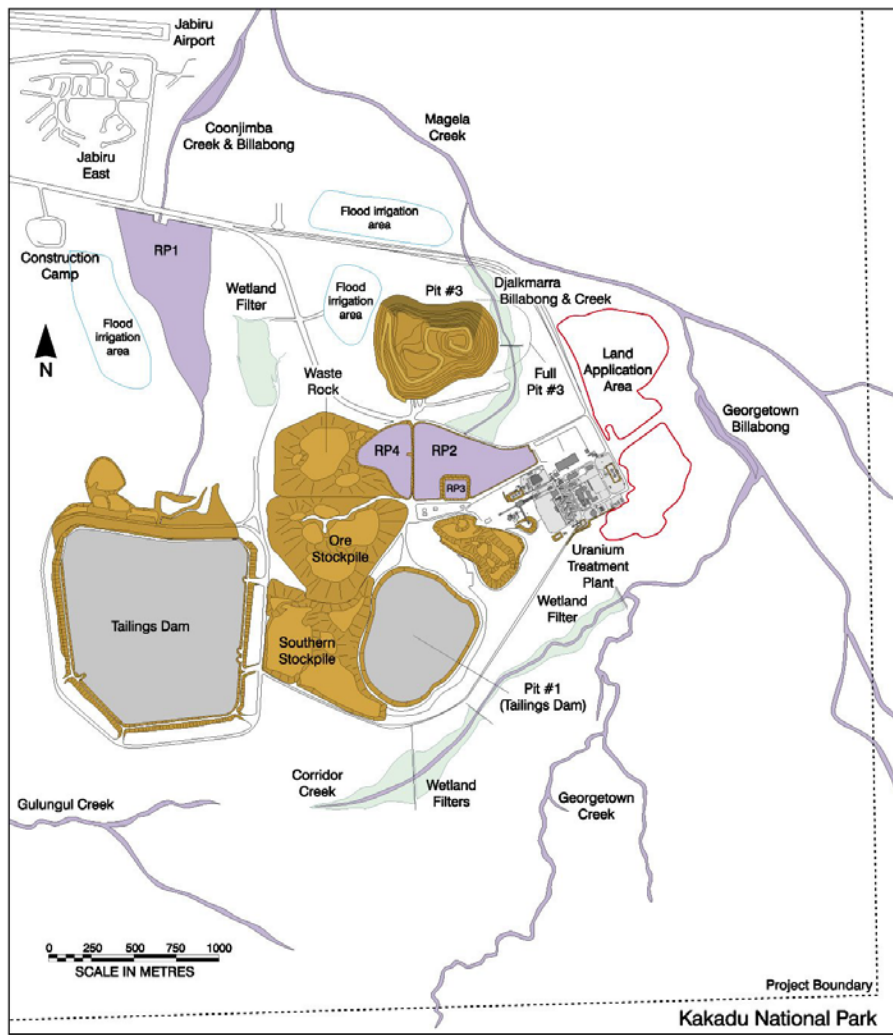


Figure 2.1 – Site plan of the Ranger uranium mine and mill and associated facilities <sup>48</sup> and aerial photo <sup>49</sup> (7 July 2001) [Note : RP4 is now decommissioned.]

<sup>48</sup> Courtesy Anti-Nuclear Alliance of Western Australia, Perth, WA, based on maps in ERA-RAER (various).

<sup>49</sup> Courtesy Northern Land Council.

## **2.1 Types of Wastes**

The mining and milling of uranium deposits leads to the following main types of wastes (among others such as industrial wastes, chemicals, putrescible wastes, etc.):

- High Grade Ore (various grades, generally >0.1% up to 10% U<sub>3</sub>O<sub>8</sub>; Ranger ~0.3% U<sub>3</sub>O<sub>8</sub>; Jabiluka ~0.5% U<sub>3</sub>O<sub>8</sub>)
- Low Grade Ore (generally 0.02-0.1% U<sub>3</sub>O<sub>8</sub>)
- Inert or 'Non-mineralised' waste rock (generally <0.02% U<sub>3</sub>O<sub>8</sub>)
- Tailings – finely ground ore remaining after milling (shown in Figure 2.2)
- Contaminated minesite water

For large and complex sites such as Ranger, now some 26.5 years since construction commenced, the quantities of these various types of wastes are significant. Water management at Ranger, which commenced commercial milling 24 years ago, has been a constant and demanding challenge, as well as tailings and low grade ore management. For sites such as Jabiluka, the principal challenge to date has been water management.

Waste management problems lead to increasing pressures on ecosystems at each mine site, with increasing concern for the environment and worry that it is merely a matter of time before significant impacts start to manifest.

Mirarr are concerned that the management of wastes is not transparent. Because there is no legal obligation for ERA to speak directly with Mirarr about the management of the lease area, much of the information related to waste management is not readily available. This results in Mirarr often only hearing about the accidents and spills of contaminated material (see Appendix 1) which in turn leads to an erosion of trust and confidence that ERA is capable of managing wastes.

The Mirarr are concerned about the impacts of uranium mining and milling on their country, and wish to see improvements in environmental performance, monitoring and reporting of the Ranger and Jabiluka projects to ensure that the short and long-term impacts are minimised to the greatest extent possible.

The Mirarr are concerned that the dominant focus of ERA, and government officials places too much emphasis on the downstream protection of Kakadu National Park at the expense of minimising cumulative impacts on the project or lease areas. Mirarr are concerned that instead of contamination being contained at specific locations, contamination is being spread all over the land controlled by ERA via the wet land filters, seepage from the tailings dam and Ranger Pit 1, runoff from stockpiles and from the numerous leaks and spillages that have occurred.

Due to the confluence of issues at Ranger and Jabiluka, the principle of complete transparency and public reporting on all environmental matters should be adopted by ERA, the SSD and DBIRD. All of the information held by SSD and DBIRD should be publicly accessible as a matter of public and stakeholder interest.

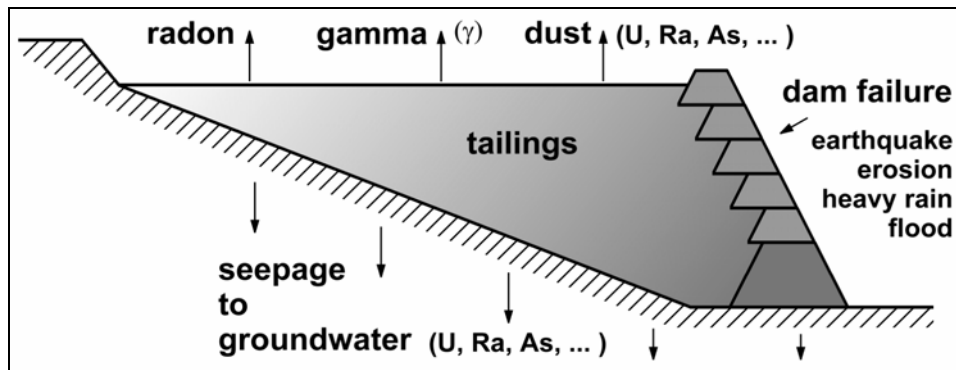


Figure 2.2 – Radiation and environmental risks associated with uranium tailings

### Recommendations

The annual quantities of materials utilised at Ranger needs to be more thoroughly reported by ERA and SSD in their respective annual reports, specifically including the following :

- the quantities of ore, low grade ore and non-mineralised rock mined from Pit #3 including uranium grade (and other minerals of concern such as sulfide or copper).
- the annual use of industrial chemicals and reagents used in the processing mill at Ranger (acid, ammonia, lime, etc.).
- the short and long-term plans for mining need to be publicly stated each year, focusing on full transparency of issues such as the timing of tailings management, ores mined versus predicted quantities, heap leaching (and/or beneficiation) and the potential for underground mining.
- the SSD and DBIRD continue to ensure significant commitments from ERA to fund environmental monitoring and ensure that a rigorous environmental monitoring and reporting program is always in place.

## 2.2 Specific Issues

### Tailings

The interim and long-term storage of tailings has always been one of the most contentious issues associated with the Ranger Project. From August 1981 to August 1996, tailings were deposited in a large (~1.2 km<sup>2</sup> or 120 ha) storage dam to the west of Pit #1 and the processing mill (see Figure 2.1). At present, tailings are deposited into the former Pit #1. The acidic tailings from the mill were neutralised to pH 7, although in more recent times the pH is only adjusted to pH 5 (with current plans to shift lower to pH 4 to cut costs).<sup>50</sup> The dominant issues have and continue to be radon flux, water management, physical stability, seepage to and contamination of groundwater and long-term management and rehabilitation.

The Fox Inquiry made two critical recommendations concerning tailings<sup>51</sup>:

- 7.1 *That the Ranger project be permitted to commence only if there is a firm, legally binding undertaking by Ranger to replace in one or other of the pits the tailings and any stockpiles of low grade ore remaining after milling ceases.*

<sup>50</sup> Ranger Minesite Technical Committee meeting minutes, 10 July and 12 June 2002.

<sup>51</sup> Fox, R W, Kelleher, G G & Kerr, C B, 1977, *Ranger Uranium Environmental Inquiry - 2<sup>ND</sup> Report*. AGPS, Canberra, ACT, 17 May 1977, pp327

- 7.2 *That the supervising authority not have the ability to relax the requirement that the tailings and unused ores be returned to the pits.*

It is important to highlight that the Ranger Inquiry recognised low grade ore as an equivalent long-term environmental risk as tailings and should also be backfilled into mined out pits. This has never been implemented by the Commonwealth or the Northern Territory – with no legally binding requirement to address this issue.

When the Ranger Project was approved on 9 January 1979 (the original Section 41 Authority), the attached Environmental Requirements included the following two provisions, allowing a subtle but critical change from what the Fox Inquiry recommended:

- 29a *Subject to paragraph (b) of this clause, all tailings shall be dealt with by being deposited in or transferred to the mine pits in a manner approved by the Supervising Authority not later than 5 years after the cessation of mining (whether under this Authority or otherwise in accordance with law) on the Ranger Project Area.*
- 29b *If after 10 years from the date of issue of the Authority but before the cessation of mining on the Ranger Project Area, the Supervising Scientist reports that he is satisfied that, by dealing with the tailings in the manner outlined in the report, the environment will be less well protected than by depositing or transferring the tailings to the mine pits and, following receipt of such report, the Minister for Science and the Environment, the Council and the Joint Venturers agree that the tailings should be dealt with in the manner outlined in the report, all tailings shall be dealt with in the manner the report.*

The position is therefore clear : ERA must (eventually) deposit all tailings back into the mined out Pits #1 and #3 (the ‘below-ground’ option), although they were allowed ten years to research and try and justify a case for rehabilitating the above ground dam ‘as is’ (in situ), despite the strong and clear recommendations against this from the Ranger Inquiry. It is important to note that Mirarr have always advocated for tailings deposition back into and complete backfilling of the pits as recommended in the Fox Inquiry.

Although ER-29b allowed ERA to put a case to the SSD for in situ rehabilitation of the above ground tailings dam from 1989 onwards, the process became long and drawn out. It was not until December 1997 that ERA made a commitment<sup>52</sup> to abide by ER-29a and accept the emplacement of all tailings in Pits #1 and #3. Despite the obvious environmental and cultural significance of this decision, the SSD fails to even note ERA’s commitment to final below-ground tailings management.<sup>53</sup>

The present Environmental Requirements (January 2000 Section 41 Authority) state :

- 11.2 *By the end of operations all tailings must be placed in the mined out pits.*
- 11.3 *Final disposal of tailings must be undertaken, to the satisfaction of the Minister with the advice of the Supervising Scientist on the basis of best available modelling, in such a way as to ensure that:*

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<sup>52</sup> ERA-AR, (1998), *Annual Reports - 1981 through 2001*. Energy Resources of Australia Ltd, Sydney, NSW and Milnes, A R, 1998, *Ranger Mine Closure Strategies for Tailings Disposal*. Proc. "Tailings Management for Decision Makers", Case Study 2, Australian Centre for Geomechanics, Perth, WA, 30 April-1 May 1998, 26 p

<sup>53</sup> OSS-AR, (1998), *Annual Reports*. Office of the Supervising Scientist (OSS), Canberra, ACT

- a) *the tailings are physically isolated from the environment for at least 10,000 years;*
- b) *any contaminants arising from the tailings will not result in any detrimental environmental impacts for at least 10,000 years; and*
- c) *radiation doses to members of the public will comply with relevant Australian law and be less than limits recommended by the most recently published and relevant Australian standards, codes of practice, and guidelines effective at the time of the final tailings disposal.*

The above ground dam is inspected annually by an appropriately qualified and independent consultant, according to established industry/government standards for large water and tailings storage dams. The report, the *Annual Tailings Dam Surveillance Report* (Annex C.7, Authorisation 82/3), is completed by September every year but is confidential. However, the Gundjeihmi Aboriginal Corporation has been informed that the above ground tailings dam is leaking to the tune of 15 mega litres per annum.<sup>54</sup> This plume of contamination is moving through the groundwater and will eventually leave the lease area, thus contaminating the waterways that Mirarr use for hunting. The Mirarr only become aware of the extent of leak from the tailings dam during the course of a recent consultation with the NLC about an application from ERA to raise the current level of tailings in Ranger Pit 1.

The approvals process for tailings deposition into Pit #1 led to ERA not being required to line the pit with an impermeable barrier, such as clay to minimise groundwater contamination. It was argued that fractures and permeable units such as carbonate rocks would not be dominant in controlling groundwater flow since the tailings would be of relatively lower permeability and therefore only minimal seepage may reach groundwater. The upper height limit of tailings currently allowed for Pit #1 is (reduced level<sup>55</sup>) RL 0m or about 20-35 m below ground surface – though this is not incorporated into Authorisation 82/3 nor the current Environmental Requirements.

The 20-35 m below ground surface is where shallow aquifer sands, gravels and porous soils exist which often have direct connections to surface water systems, such as billabongs. Groundwater discharge to billabongs is especially important in the dry season. There are legitimate concerns about the long-term impacts on groundwater (>10,000 years) from tailings stored above RL 0m.

ERA was however forced when the water levels in Pit 1 rose above RL 0m to put an impermeable barrier in a section of the wall of Pit 1 that was permeable and connected with the aquifers of Corridor Creek. Unfortunately it has now been discovered that not all this permeable area was sealed and an unspecified quantity of process water from Pit 1 is leaking into the Corridor Creek aquifer. ERA say they have located the leaking section and are attempting to grout the area. Despite this leak, ERA are making an application to the NLC to be allowed to raise the level of the tailings in Pit 1 to above RL 0m.

ERA have told the NLC that the impermeable (albeit leaking) barrier will contain seepage in the short to medium term, but would not contain contaminants in the longer term. The reason ERA want to raise the level of the tailings in Pit 1 is due to the leak from the above ground tailings dam. In the original design for Ranger the

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<sup>54</sup> Pers Com between NLC and Mirarr at 3May 2005 meeting at Gundjeihmi Aboriginal Corporation Office Jabiru.

<sup>55</sup> For example, relative to mean sea level.

above ground tailings dam was to have its wall progressively raised as the volume of tailings increased. ERA now considers that if the walls are raised any further and additional tailings deposited, the seepage from the tailings dam will increase due to increased mass of tailings exerting higher hydraulic pressure on the entrained pore waters. There are also long standing issues with the integrity of the wall of the tailings dam.

Consequently Mirarr are being asked to make a choice between a bad outcome – raise the tailings in Pit 1 above RL 0m and risk contamination of Corridor Creek – and a worse outcome – force ERA to have to raise the height of the above ground tailings dam and increase what is already a significant leak. See Appendix 2 for the response Gundjehmi Aboriginal Corporation has made to the NLC with respect to ERA application.

### **Recommendations**

The management of radioactive uranium mill tailings is a major challenge and needs to be undertaken with full transparency. To enhance both short and long-term management of tailings, the following should be adopted :

- the incorporation of a deadline for removing the tailings from the above ground dam into Authorisation 82/3 and the Environmental Requirements (i.e. by the end of 2007).
- detailed studies on the suitability of Pit 3 as a long term tailings repository to be commenced immediately.
- detailed analysis and reporting of the existing contamination of groundwater by seepage from tailings storage facilities (above ground dam and Pit #1), especially with regards to the use of contaminant plume maps.
- the SSD need to undertake specialist research on groundwater flowpaths, such as fracture zones and faults zones, to allow more detailed quantification of contaminant migration rates. This will allow more realistic design and implementation of tailings storage within Pit #3 as well as long-term groundwater monitoring needs after rehabilitation (around 2016 ?).
- the incorporation of the current RL 0 m limit for Pit #1 into Authorisation 82/3 and the Environmental Requirements and should also be legally binding with no escape or modification clause other than the current authorization to allow temporary storage above RL 0m. A similarly appropriate limit should also be introduced for tailings Pit #3 (when this proceeds).
- all detailed studies and reports that already exist within ERA, DBIRD and SSD should be made publicly available.
- detailed field studies should be undertaken by the SSD to quantify radon flux, microbiological behaviour and the physical properties of tailings (especially permeability).
- more rigorous horizontal and vertical monitoring and reporting of all groundwater units around tailings facilities (dam and Pit #1).
- a more suitable technique be developed and applied to measure tailings density in Pit #1, incorporating known mill data (such as tonnes ore milled and tonnes reagents used).
- correct terminology be ensured by ERA, DBIRD and SSD at all times (eg. do not refer to the above ground dam as an ‘evaporation pond’).

## **Water management**

The Mirarr have specific concerns about water contaminated with uranium and other harmful substances as well as the monitoring of creeks and water bodies within the Ranger and Jabiluka lease areas. Section 4b and 4c of the Gundjeihmi submission to the 2002 Senate Inquiry provides detailed technical analysis of Mirarr concerns about water management.

Mirarr have for thousands of years used their traditional lands as a source of food and recreation. They still do today and wish to be able to continue to do so in the future. While the supervising authorities state that the mine has had no discernable impact on the environment of Kakadu, Mirarr are aware that increased levels of uranium have been found in surface water systems down-stream of the mine. Mirarr know that contaminated water is leaking into the ground water. Mirarr see ducks and other water birds in the tailings dam which then move off-site. Mirarr are thinking into the long term. They are worried for their children and their children's children.

Of real concern to Mirarr is the reduction in statutory monitoring points within the lease area. There has been a significant reduction in the number of sites where water quality is measured. In a recent review of water monitoring the number of statutory monitoring points were reduced from approximately 60 to six. There are some 311 groundwater bores from which testing of the groundwater can be conducted. Most of these sites are not within the statutory monitoring regime and no groundwater monitoring is carried out by SSD. Given that it is now confirmed that contaminated water is leaking from both the above ground tailings dam and from Pit 1, and evidence of elevated uranium levels in the surface water systems of Gulungul, Corridor and Swifts Creeks, the need to conduct intensive monitoring is even more vital.

Mirarr would like more information on the extent of the leaks and modelling as to possible future movement of the plumes. Detailed studies of how Pit 3 will be able to be used for tailings storage once mining has finished need to be carried out immediately as it is already obvious that Pit 3 has extensive permeable areas.

Gundjeihmi is aware that SSD is seeking to run a workshop in the near future, but given that mining has been underway for more than 20 years there is a significant backlog of knowledge that SSD needs to impart. Mirarr are also concerned that this is a hollow promise from the SSD as at a meeting on 12 February 1997 Arthur Johnston, then ERISS Director and Acting Supervising Scientist stated:

*The 1995 meeting on water release showed me the failure of our communication with Aboriginal people and their distrust of us. Very disappointing for me, given our scientific confidence regarding environmental protection. That's a real failing and we want to fix it co-operatively with you. Communication in both directions is important.*<sup>56</sup>

Yet this was over eight years ago and still two-way communication is only in the planning stage. Mirarr want to be involved in and understand the management of the

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<sup>56</sup> Minutes of KRSIS Aboriginal Project Committee Meeting, at Bowali Parks HQ 12 February 1997



mine and the possible sources of contamination. This lack of communication between the SSD and Mirarr was also noted by the 2003 Senate Inquiry<sup>57</sup>

### **Recommendations**

The treatment of contaminated minesite waters and monitoring of the areas used for this at Ranger needs to be significantly improved. The Mirarr believe this can best be achieved through use of the following:

- the incorporation of maximum cumulative load limits into specific areas for disposal, specific to the use of irrigation (land application) or wetlands.
- release of all reports and data on known environmental problems at treatment areas (wetlands, irrigation).
- detailed studies on the long-term future of existing sites to continue to be able to perform effectively, including all contaminants (Mg, SO<sub>4</sub>, Mn, U, <sup>226</sup>Ra, etc.).
- incorporation of more rigorous sampling (more sites and frequency) of wetland and irrigation areas in Authorisation 82/3 and the Environmental Requirements.
- need to reduce reliance of SSD and DBIRD on company data and assertions in managing these contaminated areas.
- SSD and DBIRD should undertake check monitoring and analysis of wetlands and irrigation sites.
- Regular workshops between Mirarr and SSD to discuss water management issues.
- the Corridor Creek wetlands need to be investigated as to whether they have any capacity to continue to perform as wetland filters in the future.
- Studies to address the permeability issues of Pit 3 to commence immediately.

### **Rehabilitation and final landform**

As stated earlier the Environmental Requirements for Ranger, envisioned “the rehabilitated [Ranger Project] area could be incorporated into the Kakadu National Park” (ER2.1) – that is, meet the environmental and cultural standards of being a World Heritage area. As can be seen from figure 2.1 the Ranger Project Area is a major industrial site and much of the area that is still bush has been contaminated from irrigation and other water management techniques.

As the RPA is Aboriginal Land under the ALRA Mirarr have a vital interest in what rehabilitation strategies are going to be used. Mirarr are concerned that they will not be given adequate opportunity to be involved in the planning and implementation of the rehabilitation. While the NLC will be involved to represent the interests of Mirarr, the NLC is not adequately funded to run detailed workshops and planning sessions and to employ independent experts to assist Mirarr.

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<sup>57</sup> *Regulating the Ranger, Jabiluka, Beverley and Honeymoon uranium mines.* Senate Environment, Communications, Information Technology and the Arts References Committee Inquiry into the Environmental Regulation of Uranium Mining October 2003 Senate Printing Unit Parliament House Canberra.

Mirarr want to be confident that the final landform of the project area is as close as possible to what it was pre-mining. Mirarr do not want big piles of waste rock that give the landscape an unnatural look and pose a continual erosion hazard. Mirarr want:

*“the hills smoothed out, cover it all up so that it does not look like a minesite..all goes back to bush.”<sup>58</sup>*

Mirarr want to be confident that for the thousands of years into the future the hazards associated with tailings and other wastes are contained. Mirarr want to be confident that the locations of the “hotspots” are known and monitored. Mirarr want to be confident that if containment breaks down, then there are processes in place to deal with the matter promptly using current best practice.

Mirarr do not want the Ranger and Jabiluka lease areas to turn into legacy mines where contaminants leak into the environment while industry and government argue over whom and how they are going to fix it.

At a meeting of Mirarr people at the Gundjeihmi Aboriginal Corporation office held on 2 May 2005 to discuss the contents of this submission, Mirarr spoke strongly of the need for ERA to involve them directly in the development of the rehabilitation plan, not just through the NLC. Mirarr want to know what is happening and have their ideas incorporated into the final plan.

Given the number of leaks, spills and accidents that have occurred at Ranger and the extent to which Mirarr have been excluded from decision making in the past, it is difficult for Mirarr to have any real level of trust in ERA to do a good job of the rehabilitation plan. Consequently it is vital that ERA, the Commonwealth and Northern Territory supervising authorities and the NLC all make a concerted effort to include Mirarr and the Gundjeihmi Aboriginal Corporation staff directly in the planning and implementation of rehabilitation.

## **Recommendations**

The long term health of the Mirarr depends on a rehabilitation program that will contain radioactive wastes for more than 10,000 years. Consequently the following matter must be addressed immediately:

- that Mirarr and the Gundjeihmi Aboriginal Corporation be given legal status to participate in the development and implementation of the Ranger rehabilitation plan
- that the Gundjeihmi Aboriginal Corporation be given full access to all material relevant to the rehabilitation of the Ranger Project Area
- that ERA be required to establish a fund in perpetuity that can be used to maintain and monitor the rehabilitated area and if necessary repair any of the rehabilitation works that fail.
- that the Mirarr have full rights with respect to the management of the rehabilitated area, including the right of veto over future proposed management actions.

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<sup>58</sup> Quote from Mirarr people Gundjeihmi Aboriginal Corporation Office 2 May 2005 Jabiru.

## 3 Adequacy of social impact assessment, consultation and approval processes

### 3.1 Social Impact Assessment

*“There is a strong tendency to report **on** or **about** Aborigines, not **to** them.”<sup>59</sup>*

The Fox Inquiry identified that mining had the potential to impact on Aboriginal people of the region and identified a number of issues such as education, health, housing, and employment that would need to be addressed and monitored. However it did not make specific recommendations about who should have responsibility for monitoring impacts.<sup>60</sup>

In response to concerns expressed by the Northern Land Council about the need for social impact monitoring following the government’s decision to commence mining at Ranger, the then Minister for Aboriginal Affairs Mr Ian Viner approached the Australian Institute of Aboriginal Studies (AIAS) in 1977. He asked it to develop a research program to establish base-line data on the social environment. The Uranium Impact Project Steering Committee was appointed in 1978 initially for a period of five years and was to report to the Parliament every six months. Some of the material presented to the Parliament in those six monthly reports is detailed below. The 1984 Consolidated Report under the heading *The Social Impact of Mining on the Aboriginal Civic Culture* concluded:

*Aborigines in the Region are in a state of transition between a system of imposed wardship and an assertion of independence, one encouraged by Government. But the current civic culture is one in which disunity, neurosis, a sense of struggle, drinking, stress, hostility, of being drowned by new laws, agencies, and agendas are major manifestations. Their defeat on initial opposition to mining, negotiations leading to Ranger and Nabarlek, the fresh negotiations on Jabiluka and Koongarra, new sources of money, the influx of vehicles, together have led . . . to an unhappy verdict THAT THIS IS A SOCIETY IN CRISIS.<sup>61</sup>*

The Gundjeihmi Aboriginal Corporation contends that Traditional Owners remain A SOCIETY IN CRISIS as there has been no demonstrable improvement in the economic or social wellbeing of Aboriginal people in the Alligator Rivers Region.<sup>62</sup> For example, in the year 2000 at a World Heritage Committee meeting, Gundjeihmi Aboriginal Corporation presented the results of a recently completed *Environmental*

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<sup>59</sup> Report to the Minister for Aboriginal Affairs on the Social Impact of Uranium Mining on the Aborigines of the Northern Territory for the period 1 October 1981 to 13 March 1982. Australian Institute of Aboriginal Studies, AGPS Canberra

<sup>60</sup> Aborigines and Uranium. Consolidated Report on the Social Impact of Uranium Mining on the Aborigines of the Northern Territory. Parliamentary Paper No.310/1984 AGPS 1984 pp 4

<sup>61</sup> Aborigines and Uranium. Consolidated Report on the Social Impact of Uranium Mining on the Aborigines of the Northern Territory. Parliamentary Paper No.310/1984 AGPS 1984 pp 4 pp299

<sup>62</sup> Taylor J 1996 Aboriginal people in the Kakadu region: an analysis of social indicators Canberra: Centre for Aboriginal Economic Policy Research. Quoted in Kakadu Region Social Impact Study 1997. Report of the Aboriginal Project Committee June 1997. Supervising Scientist, Canberra. P 18

*Health, Housing Survey*. In a media release Gundjeihmi Aboriginal Corporation stated.<sup>63</sup>

*...the Mirarr people of Kakadu, Traditional Owners of the Ranger and Jabiluka uranium mining lease areas, are living in substandard housing conditions that pose significant health risks. The findings of the study stand in stark contrast to Australian Government claims that mining has delivered benefits to Traditional Owners...*

Key findings of the study included:

- 27 members of the Mirarr clan live in just 16 households, accommodating a total of 165 people;
- 37% of the Mirarr live in condemnable housing;
- 56% of households have four or more people per bedroom, including one household in which 13 people are sharing one bedroom;
- approximately 50% of bathrooms have no hot water;
- approximately 50% of households have substandard bathroom structures;
- 51% households have no hot water in their laundry;
- approximately 50% of kitchens have no hot water;
- 71% of households have cooking facilities that either require urgent maintenance or are not present;
- 37% of households have toilets that pose health and safety problems.

As far back as 1982 government was being alerted to social issues that were vital to address if the Mirarr and other Aboriginal people affected by mining were going to be able to benefit from it. The six monthly report for the period October 1981 to 31 March 1982 to the Minister for Aboriginal Affairs from the AIAS stated the following under the heading of *Emerging Problems*:

*“Both J.R. von Sturmer and R.M. Berndt have pointed to the need for a serious appreciation that Aborigines have a different philosophy and sociology of knowledge. Aboriginal perspectives on many topics differ; their priorities are different. They seek adult educators, employed on their terms, who can pursue both systems and interpret, or even transpose, one to the other. Traditional owners have asked this project ‘to run a university for us’: questioned, they are in fact seeking education – from people sympathetic to and knowledgeable about their culture and values – about mining, radiation, safety, the machinery of government, political process, money, economics and investment, non-Aboriginal law and legal process, as well as about their own law, systems of knowledge, social organization, history and traditions. They reject, quite categorically, the adult education approach that focuses exclusively on literacy, numeracy, elementary civics and someone else’s notions of community development.”<sup>64</sup>*

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<sup>63</sup> Gundjeihmi Aboriginal Corporation media release November 2000

<sup>64</sup> Report to the Minister for Aboriginal Affairs on the Social Impact of Uranium Mining on the Aborigines of the Northern Territory for the period 1 October 1981 to 31 March 1982. Australian Institute of Aboriginal Studies, AGPS 1982

This desire by the Aboriginal people affected by mining to learn about the modern world in order to be able to effectively interact with it was not fulfilled. Consequently, it is not really surprising that the next social impact assessment undertaken in the region 15 years later found that:

*..the measurable social conditions of the Aboriginal population of the Kakadu region are no better than they were in the previous decade, and are no better than those of their neighbours. The industry, bureaucracy, infrastructure, facilities and services that provide employment and suburban modernity for the region's workforce, and allow comfortable recreation for nearly a quarter of a million visitors annually, have not provided any significant general improvement in the measurable quality of length of life of the Aboriginal residents.*<sup>65</sup>

Government approval for mining on Mirarr land was given with a commitment that social impact monitoring of Aboriginal people in the region be conducted. However, the limited social impact monitoring that has occurred has been more a process of documenting devastation caused by development, rather than seeking to ameliorate its effects. The Fox Inquiry raised a number of questions with respect to the social impact of mining on the Aboriginal people of the area. These questions were re-examined in 1984 by AIAS<sup>66</sup>. Appendix 3 looks at the AIAS conclusions and includes an assessment by Gundjeihmi Aboriginal Corporation as to the situation in 2005. In summary, mining has attracted fringe dwellers - there are no Traditional Owners living permanently at the Manaburduma Town Camp which is the traditional country of the Mirarr – mining has not delivered any significant jobs or apprenticeships for Traditional Owners; alcohol continues to be a major health problem and traditional relationships between clan groups has weakened since mining commenced.

The Report of Senate a Select Committee on Uranium Mining and Milling tabled in 1997 concluded in its chapter on *Indigenous Concerns*:<sup>67</sup>

*The evidence that was presented to the Committee made it clear that the history of uranium mining in Australia and its impact on Aboriginal people is deplorable. Past mining in places like Rum Jungle have left areas so degraded that traditional owners are unable to use them, while mines such as Ranger have been forced on traditional owners against their will.*

The Government's response did not acknowledge the failure to-date to address the obvious social impact that mining was having in the region. Instead the response sought to place all the responsibility for social impact assessment on the mining proponents rather than recognise the need for ongoing social impact assessment:<sup>68</sup>

*Consideration of social issues is a normal part of the Environmental Impact Assessment process, and as such these issues are addressed by the project proponent in documentation for public review such as Environmental Impact Statements.*

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<sup>65</sup> Kakadu Region Social Impact Study 1997. Report of the Aboriginal Project Committee June 1997. Supervising Scientist, Canberra.

<sup>66</sup> Aborigines and Uranium. Consolidated Report on the Social Impact of Uranium Mining on the Aborigines of the Northern Territory. Parliamentary Paper No.310/1984 AGPS 1984

<sup>67</sup> Senate Committee into *Uranium Mining and Milling in Australia* 1997 ch 6 para 6.23 available from <http://www.aph.gov.au/senate/committee>

<sup>68</sup> Government Response to the Report of the Senate Select Committee on Uranium Mining and Milling in Australia. May 1998

Additionally the Government cited the *Kakadu Region Social Impact Study* (KRSIS) as the means for addressing social impact issues. As is discussed below KRSIS has not proven to have addressed social impact issues in the region.

The Report of the Senate Environment, Communications, Information Technology and Arts Reference Committee tabled in June 1999 made the following recommendation with respect to social impact:

*The Committee recommends that a new inquiry be conducted to assess the specific social and cultural impacts of the Jabiluka project on the Aboriginal communities of the Alligator Rivers Region. The Committee also recommends that the social and cultural impacts of mining be given greater attention in ministerial decision-making.*<sup>69</sup>

In response the Government again cites KRSIS.

The Report of the 2003 Senate Environment, Communications, Information Technology and the Arts Committee made the following recommendations:

**Recommendation 7 a & b**

- *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.*
- *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.*<sup>70</sup>

The Government to date has not responded to these recommendations.

There have been numerous reports to successive Australian Governments on the need for comprehensive and independent social impact assessment, yet as is discussed below Mirarr and other Indigenous people in the region are still being adversely affected as a consequence of uranium mining.

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<sup>69</sup> *Jabiluka: The Undermining of Process* Inquiry into the Jabiluka Uranium Mine Project. Report of the Senate Environment, Communications, Information Technology and Arts Reference Committee June 1999. The Parliament of the Commonwealth of Australia. ppxxi

<sup>70</sup> *Regulating the Ranger, Jabiluka, Beverley and Honeymoon uranium mines.* Senate Environment, Communications, Information Technology and the Arts References Committee Inquiry into the Environmental Regulation of Uranium Mining October 2003 Senate Printing Unit Parliament House Canberra.

### 3.1.1 Current issues

Given the lack of good baseline data (especially demographic analysis) and the limited social impact analysis that has been conducted in the region, it is easy for all concerned to opt out of taking responsibility. However one issue is very clear and that is, that there are a multiplicity of jurisdictions – Commonwealth, Territory, Local Government, statutory organisations, non-government organisations and the mining company. All of these layers are imposed over Traditional law and custom which should have overall control, but in reality is largely excluded from any decision making role. Instead the different levels of government and different agencies and organisations have ultimate or joint authority.<sup>71</sup> Just as the Gundjeihmi Aboriginal Corporation has criticised the overlap of regulations and jurisdictions governing the Ranger mine, so too does it lament the fact that often the needs of the Mirarr and other Aboriginal people affected by mining do not fall squarely within the functional ambit of any agency and consequently there is real opportunity for neglect.

In mid 1996 at the request of Aboriginal people from the Kakadu Region the *Kakadu Regional Impact Study* (KRSIS) was initiated jointly between the Commonwealth government, the Northern Territory government, the Northern Land Council and Energy Resources of Australia. By July 1997 KRSIS had developed a *Community Action Plan* designed to progress the articulated aspirations of the Aboriginal Project Committee.<sup>72</sup>

The Gundjeihmi Aboriginal Corporation wish to make it clear to the House of Representatives Standing Committee on Industry and Resources, that while initially supporting and participating in the KRSIS initiative, in late 1996 and early 1997 the Gundjeihmi Aboriginal Corporation expressed serious concerns with the manner in which the KRSIS process was being developed. These included:

- issues were examined by the Aboriginal Project Committee in an ad hoc and unorganised fashion;
- attempts were made by the Study Advisory Group to silence Mirarr opposition to the proposed Jabiluka uranium mine;
- the manner in which the Project Coordinator, Mr Robert Levitus, conducted the KRSIS process was inadequate and Gundjeihmi Aboriginal Corporation sought his resignation;
- the KRSIS process was undermined and the ultimate efficacy of its recommendations cast in doubt by ERA in its Draft EIS on Jabiluka.

In July 1997 the Gundjeihmi Aboriginal Corporation raised the following concerns with the (draft) report of the KRSIS Study Advisory Group (SAG):

- Gundjeihmi Aboriginal Corporation was not formally invited to comment on the draft SAG report
- apart from the NLC, there is an absence of an Aboriginal perspective on the SAG
- the KRSIS process has not given sufficient consideration to Aboriginal concerns about the proposed Jabiluka uranium mine

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<sup>71</sup> Kakadu Region Social Impact Study 1997. Report of the Study Advisory Group July 1997. Supervising Scientist, Canberra.

<sup>72</sup> Kakadu Region Social Impact Study 1997. Report of the Study Advisory Group July 1997. Supervising Scientist, Canberra.

- there was no process for Aboriginal endorsement of the SAG 'action plan'
- the KRSIS process sought to isolate the Mirarr oppositional view to mining at Jabiluka
- the KRSIS process was 'obsessed' with the issue of money going to Aboriginal people
- there has been no focus on real structural change
- Aboriginal people are regarded by the KRSIS process as merely another 'interest group', rather than the Traditional Owners of the land in question, with a primary role in decision-making on their land
- there was no real examination of the expenditure and investment of royalty equivalent money (from the Ranger operation)

In December 1999 and March 2000 in correspondence to the Implementation Team additional Mirarr concerns were expressed including: -

- the inclusion of ERA in any decision-making forum regarding the social impacts on Aboriginal people of uranium mining operations, and
- the decision to establish a separate 'Bininj forum' within the Implementation Team, with Mirarr considering that Aboriginal people should be able to make decisions at all levels in the KRSIS process.

These concerns however, relate mainly to the methodology used in the KRSIS process, especially the exclusion of Mirarr and other Aboriginal people affected by mining from having a proper role in decision-making, rather than the specifics of the content of the reports. Consequently Gundjeihmi have cited some of the findings of KRSIS in this submission in support of the need for a new social impact assessment process.

The report of the KRSIS Advisory Group describes the *Action Plan* as:

*...a comprehensive and coordinated response to the obvious imbalance of impacts from developments in the Region. The imbalance has been caused by the failure of the social contract imposed almost 20 years ago as part of the decision to approve uranium mining in the Kakadu Region.*

The *Community Action Plan* identified and made recommendations about four broad areas of action namely Recognition and Empowerment; Social Conditions; Cultural Issues; and Economic Development.

The Gundjeihmi Aboriginal Corporation contends that very little progress has been made in a number of areas that are fundamental to addressing social impact, especially with respect to *Recognition and Empowerment*.

The *Aboriginal Project Committee* of KRSIS identified that social problems are a manifestation of lack of real control, and the absence of any *sense* of control among the Aboriginal population.<sup>73</sup> This has been a constant message that Mirarr and other Aboriginal People affected by mining have been trying to make governments and the mining companies understand ever since the Region first came into national focus.

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<sup>73</sup> Kakadu Region Social Impact Study 1997. Report of the Aboriginal Project Committee June 1997. Supervising Scientist, Canberra.



A six monthly report for the period 1 April 1981 to 30 September 1981 to the Minister for Aboriginal Affairs from the (AIAS) stated:

*Although the Committee can offer no ready solution to the problem of involving Aboriginal representatives meaningfully on all Committees which make decisions about the Alligator River region, the problem must be confronted. There is a real danger that Aboriginal perspectives on developments in the Regional will be ignored or not given due weight. The involvement of Aborigines in committee work is unlikely to be really successful unless it is they who define the problems and issues and discussion occurs in terms they find meaningful and comprehensible.<sup>74</sup>*

The Gundjeihmi Aboriginal Corporation would like to reiterate to this current Inquiry by the House of Representatives that the original intention of the Government, when the decision was made in 1977 to commence mining on Mirarr land, was to empower Aboriginal people and to give them control over developments. The then Minister for Aboriginal Affairs Ian Viner stated:

*The Governments decision to accept all these recommendations (from the Ranger Inquiry) will ensure that Aboriginals themselves can exercise control over matters affecting their interests and the Government will also adopt, in consultation with the Aboriginal people, measures to protect and advance their well-being.<sup>75</sup>*

In 2004 the Federal Liberal Party in the lead up to the 2004 election was still making promises to Aboriginal people about working together.

*A re-elected Coalition Government will:  
Work with industry to ensure the continued safe transportation of radioactive material, and with Indigenous communities to guarantee protection of the local environment.<sup>76</sup>*

The Gundjeihmi Aboriginal Corporation is concerned that the efforts and commitments that were made in association with the *Kakadu Social Impact Study* will go the same way as all the other promises that have been made by Government. There is already mounting evidence that government resolve to address the social impact issues that have continually been raised since uranium mining commenced and were reaffirmed in the KRSIS study, has been abandoned.

In the year 2000 Bob Collins, the Chairperson of the KRSIS Implementation Team presented the then Minister for the Environment and Heritage with a report on the implementation of the KRSIS initiatives.<sup>77</sup> The *Implementation Report* presented what appeared to be a much improved approach to addressing social issues in the region and an improved cooperative environment. However, progress was short lived

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<sup>74</sup> Report to the Minister for Aboriginal Affairs on the Social Impact of Uranium Mining on the Aborigines of the Northern Territory (for the period 1 April 1981 to 30 September 1981. Australian Institute of Aboriginal Studies, AGPS Canberra

<sup>75</sup> Statement by the Hon. Ian Viner, M.P., Minister for Aboriginal Affairs in Uranium Australian Policy 1977 Parliamentary Paper No 198/1977. Commonwealth Government Printer Canberra 1978

<sup>76</sup> A Stronger Economy a Stronger Australia. The Howard Government Election 2004 Policy. Meeting Australia's Energy Challenge. [online] Available from <http://www.liberalparty.org.au/2004> accessed 26 April 2005

<sup>77</sup> Bob Collins 2000 *Kakadu Region Social Impact Study Community Report*. Report on initiatives from the Kakadu Region community and government, on the implementation of the Kakadu Region Social Impact Study, Nov 1998-2000 Darwin

and by the end of 2000 practically all of the initiatives had failed except for the Heritage Unit established at the Jabiru school. This subsequently folded when the initial three-year funding grant was not renewed by the Federal Government.

Consequently with respect to the implementation of the KRSIS *Community Action Plan* the specific recommendation made under the heading of *Recognition and Empowerment* go largely unresolved, despite the fact that there has been general recognition that empowerment and respect for Mirarr traditional authority are fundamental to improved social relations in the region.

Appendix 4 shows just how little progress has been made on the *Recognition and Empowerment* recommendations. It is also telling that when the Community Action Plan was finalised the *Recognition and Empowerment* recommendations were the first recommendations in the Plan. As was stated earlier the KRSIS Study Group found a direct link between loss of respect and disempowerment and social problems in the area. However, when the Implementation Report was published in 2000 the *Recognition and Empowerment* recommendations were last and the lack of progress on them was glossed over.

Gundjeihmi Aboriginal Corporation is of the opinion that the KRSIS initiatives failed due to a combination of poor planning, lack of local control and lack of community consultation, combined with the direct connection between the initiatives and the use of resources that are derived from the Jabiluka Project. Mirarr and other Aboriginal people in the area have consistently opposed the mining of uranium. Yet government insists that service provision in part be funded directly by ERA.

For example the CEDP program originally hosted by the Djabulukgu Association used funds sourced from moneys associated with the Jabiluka mine. In addition, the fact that the CEDP coordinator was a fulltime employee of ERA further estranged Mirarr from the program. Similarly the Women's Resource Centre and the Kakadu Health Service all used money from the mining that people have opposed. Mirarr and other Aboriginal people affected by mining cite the fact that other Indigenous communities have CEDP programs, health services and resource centres that are funded as part of mainstream government programs. In those places the traditional owners have not had to give up their control of country and have it turned into a radioactive waste dump in order to obtain basic services.

The failure of the Implementation Team and the lack of commitment on behalf of government to separate the funding of service provision and social impact monitoring from money generated by mining, is a clear indication that government is not committed to addressing its failure to honour the social contract that was made more than 20 years ago.

The Gundjeihmi Aboriginal Corporation is also of the opinion that the whole KRSIS project was never intended to be sustainable in the long-term, and it was merely an exercise by the Federal Government at a time when the World Heritage Committee was looking into the issue of whether the Kakadu World Heritage area should be placed on the List of World Heritage Properties in Danger. One of the concerns of the World Heritage Committee was the impact mining was having on the living culture of

the Traditional Owners of Kakadu. One of the recommendations of the World Heritage Committee was:

*The mission recommends that the Australian Government take a leading and decisive role in overseeing the immediate and effective implementation of the KRSIS recommendations. Implementation of the KRSIS recommendations should ensure that structures are in place within 12 months to begin to ameliorate the negative regional socio-cultural impacts of development on Aboriginal people that are a potential danger to the cultural values recognised when Kakadu National Park was inscribed on the World Heritage List according to cultural heritage criterion vi.*<sup>78</sup>

Now that the focus of the World Heritage Committee is off Kakadu the Federal Government has reneged on its commitments.

Under the terms of the Environmental Requirements that govern the Ranger mine, Energy Resources of Australia is required to “*protect the health of the Aboriginals and other members of the regional community.*”<sup>79</sup> This requirement is obviously not being adhered to. Section 1.3 of this report has already addressed the issue of the regulation of social impact assessment.

It is important to note that it not just Indigenous organisations that are calling for social impact monitoring to be addressed.

The ARRTC was established to facilitate communication between the community, government and industry stakeholders. One of its goals to ensure that research undertaken by the ERISS and ERA is of the highest quality and relevant and to ensure that that scientific knowledge is used to underpin the regulations, both the management and the policies.<sup>80</sup>

The ARRTC at its February 2002 meeting resolved that:

- it is desirable that social impact research and monitoring be undertaken in the Alligator Rivers Region (ARR) on a sustained basis;
- considerable biophysical research has been undertaken in the ARR. However, adequate social research is required to facilitate the application of this research;
- social research and monitoring should be progressed in the region in a strategic manner;
- the ARRTC will seek to establish strong linkages with whatever body is established to manage social research and monitoring; and
- the ARRTC noted that no progress appears to have been made with social research and monitoring in the region, and resolved to bring this to the attention of the Minister.<sup>81</sup>

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<sup>78</sup> United Nations Educational Scientific and Cultural Organization Bureau of the World Heritage Committee. Twenty-second extraordinary session Kyoto, Japan 27 - 28 November 1998. WHC-98/CONF.202/INF.3 Paris, 24 November 1998

<sup>79</sup> Environmental Requirements of the Commonwealth of Australia for the Operation of Ranger Uranium Mine.

<sup>80</sup> Professor Hart, Committee Hansard, 24 October 2002, p344

<sup>81</sup> The Senate Environment, Communications, Information Technology and the Arts Committee Inquiry in to *Regulating the Ranger, Jabiluka, Beverley and Honeymoon uranium mines*. Senate Printing Unit, Parliament House Canberra 2002 (p.76-77)

The Gundjeihmi Aboriginal Corporation is of the opinion that until social impact monitoring is adequately reflected in the regulations governing the management of the Ranger mine then it will always be ignored, as it has been to date.

### **3.1.2 Consultation and Approval processes**

The Mirarr have very limited rights with respect to consultation and approval with respect to uranium mining. The interests of the Mirarr people with respect to input into how ERA conducts business can only legally be represented by the NLC.

The concept of timely and transparent data and information sharing among the stakeholders has been dealt with in various ways by Ranger over the years. On different occasions, Ranger shared information with some, but not all stakeholders. On many occasions Ranger and the regulators did not share information with the Traditional Owners of the land on which the mine operates, and either declined or ignored subsequent requests for access to that information.

There are also regulatory obstacles that can and have been used to deny Traditional Owners access to relevant information. An example of that might be Section 90 of the Mining Management Act, a section that has been invoked by the NT government regulator, DBIRD, to restrict dissemination of information.

The Gundjeihmi Aboriginal Corporation and the Mirarr Traditional Owners regard the failure to share information in a full and timely manner as representing a failure on the part of Ranger to understand some of the consequences that attend an institutionalised culture of secrecy.

What is often referred to as "the fear factor" originates in part, and derives much momentum from, significant discontinuities in the flow of pertinent information about the management of the mine. This, in turn, does nothing to redress and much to promote the corrosive and counter-productive concept of "them and us", which has long characterised the debate over uranium mining on Aboriginal lands.

Since Rio Tinto has become the controlling player in the activities of ERA and Ranger, there have been assertions that restrictions to the flow of information will no longer occur. Rio Tinto has proposed a new era of transparency and has taken steps to implement a new paradigm of relations with Traditional Owners. Insufficient time has elapsed since the assertion of the new model for those steps to have been evaluated.

One of the key consultative bodies established under the Ranger Agreement is the RMTC. This Committee chaired by the NT Supervising Authority and comprises representatives of SSD, ERA and the NLC, is the main forum whereby ERA seeks approvals for actions at Ranger. The MTC is charged with the review and development of Environmental Performance Reviews, which are twice-yearly reviews of the impact of uranium mining operations on the environment of the region carried out by the SSD and the NT Supervising Authority.

However the RMTC meets every few months to discuss issues that are of considerable interest to the Mirarr, but as these interests can only be represented by the NLC, the NLC is often put in the difficult position of not being able to speak immediately at meetings on behalf of Mirarr because it has not had the time to consult adequately.

As discussed in section 1.3.1, if Mirarr directly or via Gundjeihmi Aboriginal Corporation had a statutory role on the Ranger and Jabiluka MTC then agenda items could be considered in advance at a pace more suitable to Mirarr and would also provide Mirarr with the opportunity to obtain its own expert opinion. The inclusion of Mirarr on the MTCs would also be more in keeping with Government commitment to work cooperatively with Traditional Owners.

Of particular importance to Mirarr in the future will be the consultation and approvals for the rehabilitation of the Ranger mine site. Mirarr are aware that the potential for contamination from the tailings and waste rock areas will last for thousands of years. In order for Mirarr and other Aboriginal people affected by mining to be confident that the Ranger site will be rehabilitated properly, Mirarr must be involved in the rehabilitation and exit strategy and be able to engage their own experts to assess, comment on and have real input into the rehabilitation plans.

One aspect of the consultation and approval process that is fundamentally flawed is the timeframes by which ERA operates. A case in point is the studies that are required before Pit 3 can even be contemplated as a tailings repository. It is obvious on visual inspection that Pit 3 has permeability problems of a greater magnitude than Pit 1 has. Yet works to determine if Pit 3 is suitable have not yet commenced, let alone what alternatives are available if Pit 3 proves to be unsuitable.

From past experience Mirarr know that when they are consulted on particular issues the company always wants an immediate decision or the timeframes that they set through the MTC, pressures the NLC to do less than adequate consultations or puts Mirarr in a position where they have to make a decision on the spot. Why, for example, was the permeability problems of Pit 1 not addressed prior to it being used as a tailings repository. The permeable layer was exposed for years while the pit was still being mined out. It is evident time and again that timeframes are dictated by the production agenda. Mirarr often find themselves agreeing with proposed measures that while unwelcome have become necessary due to an historical lack of regard for rehabilitation and general environmental outcomes. In other words, Mirarr are often presented with limited options late in the piece and find themselves forced to agree to the best of a bad number of options. In such instances, the best the Traditional Owners can do is to list 'caveats' on their reluctant agreement to the proposed measure. The Mirarr response to the proposed deposition of Ranger tailings above RL 0m (see Appendix 2) is a case in point.

The Gundjeihmi Aboriginal Corporation contends that ensuring timely investigation of future management actions that require authorisation is the responsibility of the supervising authorities. The current situation where the supervising authorities continually play to the timetable set by ERA and continually gloss over examples of poor management, supports the call by Mirarr for Government to get back in control

of the agenda to ensure that health and integrity of the environment and the people of the Alligator Rivers Region.

### **3.2 Health Risks**

The health status of Aboriginal people living in the Alligator Rivers Region is no different from other Indigenous communities in the Northern Territory.<sup>82</sup> This has been attributed to a range of reasons associated with overcrowded housing, alcohol abuse, education, service provision, stress and loss of respect and disempowerment. While it may not be possible to demonstrate that the mining of uranium has directly caused a decline in the health of the Traditional Owners, it is possible to link the mining of uranium with loss of respect, disempowerment, stress, and a decline in cultural practices, which in turn affect people's health. The KRSIS study also directly attributed the advent of mining and increased tourism with an increase in the population of Aboriginal people in the area which has led to overcrowded housing.

There are two underlying factors which must be addressed that are fundamental to the health of Mirarr and other Aboriginal people affected by mining. First is the fear that bush tucker and the land is being contaminated. The second is the sense of powerlessness that comes from being unable to control what happens on one's own country.

#### **Fear**

The Commonwealth and Territory agencies that have responsibility for regulating the operation of the Ranger mine confidently state that the mine has had no discernable impact on the environment. However, the Gundjeihmi Aboriginal Corporation and other Aboriginal people affected by mining in the region are not so confident.

There have been since 1979 approximately 196 'incidents' at Ranger, some of these are listed in Appendix 1. The 2003 Senate Inquiry was not convinced that degradation of the environment had not occurred given the history of incidents, the criticism of the monitoring program and evidence of poor management practices at Ranger.<sup>83</sup>

Regardless of the range of arguments that scientists can put forward as to whether or not there has been contamination, the Mirarr people and other Aboriginal people who use the land downstream of the mines are concerned with possible health risks associated with the contamination of bush tucker and water. This is not a new fear. At a symposium convened by the OSS at Jabiru on 29 April 1982 the NLC presented a paper that outlined concerns Traditional Owners had been expressing about the safety of the uranium mining operations.

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<sup>82</sup> *Kakadu Region Social Impact Study 1997*. Report of the Aboriginal Project Committee, June 1997. Supervising Scientist Canberra

<sup>83</sup> The Senate Environment, Communications, Information Technology and the Arts Committee Inquiry into *Regulating the Ranger, Jabiluka, Beverley and Honeymoon uranium mines*. Senate Printing Unit, Parliament House Canberra 2002 (p.92)

These concerns were defined as a series of questions that people had been asking:

- “how do we know the food we eat are not contaminated by mining operations”
- “are the birds that forage around the tailings dams and other ponds safe to eat”
- “are Europeans collecting enough information and providing reports about the foods we eat”
- “will our traditional food become contaminated”
- “will Europeans tell us if our foods and water become contaminated”<sup>84</sup>

Unfortunately, government has again dismissed the concerns of the Indigenous land managers in favour of Western science and additionally has done nothing to allay the fears of Mirarr and other Aboriginal people affected by mining. At the 1 October 2002 Jabiru hearing of the Senate Environment, Communications, Information Technology and the Arts Committee Inquiry in to *Regulating the Ranger, Jabiluka, Beverley and Honeymoon uranium mines*, a senior member of the Kakadu Board of Management Jacob Nayinggul stated:

*Sacred sites can be damaged by radiation. If radiation gets in between what we try to teach young people and access to the sites, any sites at all, then we are not going to be able to educate any of our young ones.*

*...It will also be really difficult to visit hunting sites. Even visiting other clans, tribes visiting other tribes like we used to, will be difficult. We do not know if we will be able to visit one another, even using vehicles. For example, we would have to cut across creeks which have uranium contamination. I would like to hear how we can overcome these sorts of fears<sup>85</sup>.*

This statement by Mr Nayinggul is particularly pertinent as he was a member of the Uranium Impact Project Steering Committee appointed by the AIAS in 1978. In its six monthly report dated 1 October 1981 to 31 March 1982 the Committee stated:

*There is an obvious and inescapable need to mount special programmes to inform **bininj** (the term the Aboriginal people of the Alligator Rivers Region use to describe themselves) about the work of the scientists and agencies engaged in monitoring programmes, and about their findings.<sup>86</sup>*

Yet again issues related to government working with Traditional Owners to manage land have been ignored. Mr Nayinggul, told the Senate Committee:

*... the story I have picked up in all that time, in all those many years from the start of the life of the Nabarlek mine and the Ranger mine, is that the scientific side is behind a cloud. It is just like you have got cotton wool, and you talk about things behind the cotton wool or a big dark cloud that you cannot see through to what somebody is trying to explain to you.<sup>87</sup>*

The suggestion cited earlier in this submission for the establishment of a ‘university’ to provide proper adult education could have provided Traditional Owners with a

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<sup>84</sup> Report to the Minister for Aboriginal Affairs on the Social Impact of Uranium Mining on the Aborigines of the Northern Territory (for the period 1 April 1981 to 5 November 1982. Australian Institute of Aboriginal Studies, AGPS Canberra

<sup>85</sup> J Nayinggul Kakadu Board of Management, Committee Hansard, Jabiru, 1 October 2002, pp159-160

<sup>86</sup> Report to the Minister for Aboriginal Affairs on the Social Impact of Uranium Mining on the Aborigines of the Northern Territory (for the period 1 October 1981 to 31 March 1982. Australian Institute of Aboriginal Studies, AGPS Canberra

<sup>87</sup> Kakadu Board of Management, Committee Hansard, Jabiru, 1 October 2002, pp160-161

much better understanding of the impacts on mining and greater confidence in the traditional knowledge/Western science interface. To date this long standing problem has not been addressed.

### **Powerlessness**

As stated above, the KRSIS Community Action Plan sought to address this issue. Gundjehmi Aboriginal Corporation has repeatedly sought direct and formal involvement of Mirarr in decision making. This is hampered by the use of out-dated and inappropriate legislation, regulations and agreements.

This sense of powerlessness could be eased if for a change Mirarr could see a consistent effort by government to work with Traditional Owners to address social impact. Not just short lived studies that are never properly funded or managed through the implementation phase. As stated by the KRSIS Advisory Group:

*It is essential that the commitments and undertakings given during the study, and the recommendations contained in this report, are more than mere rhetoric and empty words.*<sup>88</sup>

Today this sense of powerlessness persists and as a consequence health risks continue. All of the studies that have been cited in this submission from both Government Committees and independent sources have all clearly articulated that uranium mining has had a negative social impact on the Aboriginal people of the Alligator Rivers Region. As has been repeatedly raised throughout this submission, there is a fundamental link between the negative social impact and the lack of opportunity for Mirarr to have a direct influence on the type of activities that occur on their land and the pace at which things happen.

If it is the decision of the Australian Government that uranium mining will continue in this region, then it must learn from the past and move to redress the terrible injustices that have been the hallmark of mining to date.

Mirarr, other Aboriginal people in the Region and the organisations that represent them have consistently sought a management regime that respects their culture and beliefs, acknowledges their status as landholders and accords them the rights that accompany that responsibility. It must be a management regime that recognises the cultural differences that exist and one that seeks to accommodate different approaches, world views, priorities and timeframes. It cannot be a management regime, as it has been, that pays lip service to the concerns of the Traditional Owners and continually allows the mining company to dominate the agenda and the timeframes.

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<sup>88</sup> *Kakadu Region Social Impact Study: Community Action Plan 1997*. Report of the Study Advisory Group July 1997. Supervising Scientist. Canberra



## **Recommendations**

If social impact assessment is to be effective and result in actions that improve the physical and cultural well being of Aboriginal people in the Alligator Rivers Region then the development and implementation must be done with the full knowledge and cooperation of the Indigenous inhabitants. Consequently there is a need for:

- a plain English summary of the 1984 Consolidated Report on the *Social Impact of Uranium Mining on the Aborigines of the Northern Territory*;
- a plain English review and analysis of the current status of the implementation of the KRSIS *Community Action Plan*;
- a demographic study to be initiated using Indigenous collection and collation of data, and
- secure Commonwealth funding for the Jabiru School Indigenous Heritage Education Unit.
- the Mirarr to be appointed to the Ranger and Jabiluka Minesite Technical Committees
- the Commonwealth to consider the establishment and ongoing funding of a 'University' as initially requested in March 1982 as reported by AIAS<sup>89</sup> (see section 3.1 pp 48)

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<sup>89</sup> Report to the Minister for Aboriginal Affairs on the Social Impact of Uranium Mining on the Aborigines of the Northern Territory for the period 1 October 1981 to 31 March 1982. Australian Institute of Aboriginal Studies, AGPS 1982

## Appendix 1 A selection of 99 of the 196 'Incidents' at Ranger mine between 1979 and April 2005

### 2005

- **April 2** – A duct was improperly resealed after clearance of a blockage in the packing shed, and subsequently leaked, causing the emission to atmosphere of product slurry. The amount was variously estimated as being between 0.5 and 2.0 kg, (uranium equivalent). The authorised maximum uranium emission for Ranger is 1.5 kg / day.

### 2004

- **January 11** – 200,000 litres, (240,000 tonnes at the minimum density), of tailings were spilled into the Corridor Road drain after tailings lines ruptured due to insufficient support. Stakeholders inspected the site on January 13 and observed the cleanup in progress on January 20.
- **February 5** – A bobcat that was owned and operated by CDEP had been used on the Ranger site in March, 2003 for cleanup work to remove contaminated material from the leach bund at the processing plant. In October, 2003, the same bobcat was used to cleanup contaminated material from the neutralisation tank area. Prior to performing the work, CDEP personnel received a site induction and instructions on the process for radiation clearance of equipment. The bobcat left site on January 5, 2004. Children were later observed playing with an amount of contaminated material that had fallen from the bobcat after it had returned to its base off the mine site. An official investigation attributed the cause to a build up of dirt on the engine guard of the bobcat that was difficult to access due to the operator not being aware of how to lift the engine guard to clean that area. The RUM account is at variance with eye witness reports of an amount of the contaminated waste material being found in the bucket of the bobcat. Ranger was charged in court for this breach, pleaded guilty and was convicted.
- **March 23-24** – Responding to low process water pressure alarm, a worker connected potable water to the process water system. Higher pressure in the process circuit forced process water into the potable system. This water flowed throughout the potable system and back to the East Jabiru potable water holding tank near the Ranger nursery. That tank filled and then overflowed into Coonjimba Creek and thence into Magela Creek. The East Jabiru potable water holding tank supplies all potable water to the airport, the Supervising Scientist Laboratories and other East Jabiru infrastructure. Workers complained that the water tasted contaminated and they had become itchy and uncomfortable after showering. Analysis of the water found the workers had ingested uranium at the rate of 8,000 microgrammes per litre, which is 400 times the recommended maximum level for potable water. Typically, potable water at Ranger contains 5 to 6 microgrammes of uranium per litre. ERA conceded a number of errors, including failing to confine potable and process waters in separate systems that are not capable of connection. ERA was subsequently charged with breaching its obligation under the relevant Act to operate the site so as to minimise the risk to safety and health of workers. A further breach of the Act occurred as the health and safety of workers was actually risked. ERA subsequently pleaded guilty before the courts and was convicted.
- **June 8** – An Orica explosives truck departed from the Ranger site without having received a mandatory radiation clearance. The Ranger Radiation Safety Officer later travelled to Darwin and performed a clearance on the vehicle.
- **June 18** – A Bobcat hired from Kakadu Contracting completed its work and left the Ranger site in a contaminated condition. Radioactive material was later found in the belly plate of the machine. August 17 - A leak developed in the tailings pipeline transferring tailings slurry to Pit 1. The leak spilled 100,000 litres, (120,000 tonnes at the minimum density), of tailings. 5,000 litres, (6,000 tonnes), of that sprayed outside the confines of Pit#1 and onto the road. The road surrounding Pit#1 is part of a designated clean water catchment. The tailings spilled inside Pit#1 deposited a tailings beach, which breached an undertaking by Ranger to maintain the level in Pit 1 below "RL0", a benchmark that is approximately equal to sea level.
- **September 30** – A settler in the SX area overflowed and spilled 60 litres of an organic compound into the stormwater system which discharges into Retention Pond 2. The organic material is a

proprietary product that is chiefly composed of aliphatic and aromatic C7 hydrocarbons. Some materials in the product are known to be carcinogenic.

- **October 9** – A truck transporting Sulphur to the Ranger site spilled 200 kilogrammes of that material onto the public roadway from its uncovered load. The incident occurred on the Arnhem Highway, 80 kilometres from Jabiru.
- **October 29** – Ammonium Diuranate, an intermediate product of the Ranger process, was found in compressed air lines in the packing shed after a worker connecting a rattle gun to the compressed air ingested an amount of the pressurised Ammonium Diuranate. Ranger reported that this was due to a failed non-return valve in another part of the process that used the same compressed air system. ERA and government regulators did not make the final report into this incident available to the Traditional Owners. [1]
- **November 4** – Three Simons Engineering contract workers were sprayed with process water from a pipe near where they were working. One worker swallowed a mouthful of the process water and reported sick the next day. The supervising authorities waived an investigation of this incident, requesting only a written report.

ERA and government regulators did not make the final report into this incident available to the Traditional Owners. [1]

## 2003

- **February 14** – 3.5 cubic metres of laterite ore was spilled from a conveyor. The material was recovered and spread as roadbase. A later investigation by the supervising authorities found the use of this material as roadbase was inappropriate and the material was removed. The incident was not considered reportable by Ranger.
- **May 8** – 250 litres of process water was spilled outside the protective bund due to a pipe failure in the mill.
- **May 8** – 500 litres of process water was spilled outside the protective bund due to failure of temporary repairs to mill pipe failure earlier on the same day.
- **May 8** – 300 litres of process water was spilled outside the protective bund at thickener tanks due to a failed pipe.
- **May 16** – 500 litres of process water was spilled outside the tailings system protective bund when a process water return line failed.
- **May 17** – 1,000 litres of process water was spilled outside the tailings system protective bund as a result of insufficient repair to the damage occasioned on the previous day.
- **May 20** – 8,000 litres of tailings spilled from a holed pipe in tailings pump E. 2,000 litres of the material spilled outside the protective bund. The spilled material was recovered and removed to Pit 1.
- **May 25** – 20,000 litres of process water spilled from a corrosion hole in the return line near the tails bund. The spill was contained in the Corridor Road drain and allowed to evaporate.
- **June 15** – An unspecified volume of process water spilled when a coupling in the process water return line failed. The pipe was temporarily repaired with a clamp. The spilled process water was contained in the Corridor drain and allowed to evaporate.
- **June 16** – A further 1,000 litres of process water spilled when the clamp fitted to the process water return line in the incident of June 15 failed. The spilled process water was contained in the Corridor drain and allowed to evaporate.

## 2002

- **September 2** – A mild steel nipple failed on a process water return line. A 50 mm hole opened and sprayed 50 cubic metres, (50,000 litres), of material which discharged onto Corridor Road and into its drains. It was estimated that 25,000 litres of this material fell outside the drains onto the road. The spill was allowed to evaporate and dried salts from the non-contained area outside Corridor Creek were removed to Pit 1. The supervising authorities regarded this incident as a breach of the Ranger Environmental Requirements. A report on ongoing monitoring of downstream water quality was requested by the supervising authorities; however that report has not been made available to the Traditional Owners. [1]

**Notes: [1] Refer to page 56 in this submission for a discussion of some of the effects of restrictions in the flow of information.**

- **April 11-15** - It was discovered that further runoff from the Low Grade Ore stockpile - which was supposed to have been remediated - had uranium at 13,785 µg/L and was entering the headwaters of Corridor Creek. Despite being a considerably higher and more significant concentration, ERA (and regulators) did not investigate to find the source. NLC advised that it is unlikely source will be identified.
- **Feb. 26** - It was discovered that Low Grade Ore had been dumped in the wrong area, with contaminated runoff containing uranium in excess of 2,000 µg/L entering the headwaters of Corridor Creek. Subsequent investigations revealed that the incorrect dumping had been occurring for some six weeks from January 14. The total quantity involved 80,900 t of 'Grade 2' material (0.02-0.08% U<sub>3</sub>O<sub>8</sub>) plus 3,600 t of 'Grade 3' material (0.08-0.12% U<sub>3</sub>O<sub>8</sub>). It was also discovered that runoff from an adjacent medium grade stockpile ('Grade 4') was failing to report to RP2 as intended and was mixing with the contaminated runoff from the incorrect stockpiling and entering Corridor Creek. Remedial works were undertaken immediately.
- **Feb. (early)** - The 'focus' level of 0.20 µg/L for uranium concentration was exceeded in Magela Creek, with sampling showing 0.211 µg/L. ERA failed to notify stakeholders according to requirements.
- **Feb. (early)** - *Fourth year in a row* of high uranium concentrations in water discharging uncontrolled from RP1 to Coonjimba and Magela Creeks. This year the concentrations have increased back to as high as the first episode in 1998/99 (about 70 µg/L). In order to try and reduce the flow going into the Magela, ERA simply placed sandbags across the spillway - an action heavily criticised by many. In response, ERA promised to 'completely re-engineer' the RP1 catchment (though this is four wet seasons too late).

## 2001

- **Jan. 31** - Re-occurrence of high uranium (26 µg/L) in water discharging uncontrolled from RP1 to Coonjimba and Magela Creeks. Although concentrations were not as high as the previous wet season, the source of the uranium remained uncertain and questions the remedial works undertaken by ERA in the 2000 dry season.

## 2000

- **Sep. 9** - About 20,000 L of tailings leaked following the failure of a pressure gauge tapping point adjacent to one of the tailings pumps in the mill. The failure resulted in tailings spraying over the bunds surrounding the pipe and associated infrastructure into an area which drains to RP2. No tailings left the mill area.
- **April 28** - A major leak of about 2,000,000 L was announced from the tailings water return pipeline, between Pit #1 and Georgetown Creek. ERA first detected the problem on April 4, but failed to notify the authorities until April 28. The leak, from late December 1999 to April 5, 2000, originated from 2 flanges on the tailings water return pipeline (which pumps water from the tailings dam in Pit #1 to the mill for process use). The burial of the flange joints in silt and moist conditions for up to 6 months of the year allowed three bolts to rust and allow the joint to develop a slow leak. After breaching the bund surrounding the pipeline, about 85,000 L of tailings water was estimated to have reached the adjacent wetlands in Corridor Creek, from where water discharges through Georgetown and into Magela Creek. Exactly how the leak was discovered remains unclear but appears to have been by visual inspection. Follow-up investigation by OSS discovered evidence of a similar leak during the 1998/99 wet season. Tailings water has concentrations of Mn around 1,000,000 µg/L and NH<sub>4</sub> at 530 mg/L. ERA's monitoring was not required to analyse for these species in sampling in the Corridor Creek area. The OSS report on the issue identified 2 breaches of the Environmental Requirements. DBIRD failed to acknowledge breaches and sanction ERA.
- **Feb. 2** - Re-occurrence of high uranium (41 µg/L) in water discharging uncontrolled from RP1 to Coonjimba and Magela Creeks. Although concentrations were not as high as the previous wet season, the source of the uranium remained uncertain and questions the remedial works undertaken by ERA in the 1999 dry season to prevent this problem again.

## 1999

- **General** - The uranium contamination of RP1 during the 1998/99 Wet Season is the closest ERA has yet come to exceeding its operating requirements. Although the total mass of uranium discharged is below (high) legal limits, the low flows in Magela Creek during the early discharges from RP1 almost led to ERA increasing the U concentration in the Magela greater than the 3.8 µg/L allowed. The U and SO<sub>4</sub> levels in the Magela at the Kakadu National Park border are higher than background.

ERA states that : " *Analysis of water quality and sediments in surrounding billabongs and creeks indicate the presence of the mine is apparent, as was expected by the Ranger Uranium Environmental Inquiry. Whilst the levels are detectable chemically, they are not ecologically significant and no deleterious effects on downstream flora and fauna or downstream users of the creek and its resources have been detected.*" This is in contrast to the evidence and earlier OSS comments on such increases.

- **Mid (Dry Season)** - To try and better control future discharge from RP1, ERA constructed a short retaining wall on the spillway about 30 cm in height.
- **Feb. 17** - ERA attempted to minimise the discharge from RP1 by sandbagging the spillway - in order to avoid the Magela exceeding its allowable uranium concentration.
- **Jan. 27** - The concentration of uranium in water discharging uncontrolled from RP1 to Coonjimba Creek and on to the Magela Creek was found to be approximately 70 µg/L - up to 100 times higher than normal. The RP1 sediment control bund, with uranium at 600 µg/L, was identified as the likely source.

#### 1998

- **Oct. (late) to Nov. (early)** - The RP2 Wetland filter had been allowed to dry out during the Dry Season. The first rains of the Wet led to acidification of the wetland waters, with pH around 2.6 and uranium as high as 4,000 to 6,000 µg/L.
- **March 16** - To remove rainwater which had collected on the haul road, an ERA employee broke a bund which resulted in about 100,000 L of water escaping from the RRZ.

#### 1997

- **Dec. 19** - About 2,000 L of tailings slurry escaped from the RRZ due to a leak in the tailings pipeline.
- **Feb. 24** - 50,000 L of Very Low Grade/Low Grade (VLG/LG) ore spilled outside the RRZ zone into the RP1 catchment.

#### 1996

- **Nov. 19** - A segment of the perimeter drain around new extensions to the VLG/LG stockpile washed out during a heavy storm. About 100,00 L of RRZ water and some sediment was released into RP1 catchment.
- **Nov. 6** - Fatal work accident involving a contractor. The worker died when the excavator he was operating collapsed into the excavation.
- **Sep. 21** - A bush fire on the mine site placed significant demand on accessible non-RRZ water for fire fighting. To speed up the turnaround times for water tankers, a decision was made to use RRZ water to create a wet perimeter and to dampen facilities under threat. Approximately 585,000,000 L was applied to areas outside the RRZ.

#### 1995

- **Dec. 13** - An administrative error resulted in a repeat of the incident of 6 Dec. when 8,000 L of the residual diesel/water mixture was spilled back to RP2. There were no further bird deaths associated with this incident.
- **Dec. 6** - 12,000 L of diesel spilled from tanks at the power station and ran into RP2. Although the spill was cleared up the spill was responsible for the **DEATH OF 40 WATER BIRDS** (36 Little Black Cormorants, 3 Australasian Grebe and 1 Australian Darter). *The OSS regarded this incident as the first example of an unacceptable environmental impact at Ranger since operations began.*
- **Aug. 1** - About 120,000 L of RP2 water was accidentally discharged outside the RRZ due to a failure in a pipeline carrying water to the constructed wetland filter adjacent to RP1.
- **July 31** - An asbestos cement pipe failed and about 120,000 L of water from RP2 was released. The water was pumped over the spillway into Djalkmara Creek.

#### 1994

- **May 10** - About 50,000 L of RP2 water was accidentally discharged outside the RRZ during the installation of a new section of pipe at the RP2 pumping station. The pipe was part of the network that serves the Magela irrigation area.
- **April 13** - About 60,000 L of combined rainfall-runoff and seepage from the high-grade ore stockpile discharged outside the RRZ following a pipe joint failure. The pipe ran alongside the drain downstream of the RRZ boundary at the bund in the high-grade ore stockpile drain. Samples taken

along the flow path showed an increase in U concentration in Georgetown Creek but no change in U concentration could be detected in Georgetown Billabong. The pipe has since been relocated wholly inside the RRZ.

### 1993

- **Jan. 25** - During heavy rainfall a blocked drain caused a small volume (less than 100,000 L) of water to escape from the RRZ. The OSS assessed this event as being an infringement of the Ranger Authorisation and a breach of ER27.

### 1992

- **Sep. 27** - About 430,000 L of RP2 water was transported by mine trucks to locations outside the RRZ for use by the Ranger emergency fire crew in containing and controlling a bushfire burning in and near the Magela LAA. The fire, fanned by strong winds and burning on a number of fronts, threatened infrastructure including monitoring installations and powerlines close to RP2 and also threatened to move towards the light industrial area and the Jabiru East site. There were no alternative sources of water in sufficient quantity available to fight the fire. The OSS assessed the transfer of water from the RRZ as constituting an infringement of the Ranger Authorisation and a breach of the ERs.
- **Feb. 26 to 27** - During a high rainfall event, water from the high grade ore stockpile, which contained significant U concentrations, escaped from its containment sump and flowed into Georgetown Creek, then into Magela Creek. As a result increased concentrations of U were detected in Georgetown Creek and in Magela Creek. The available information did not enable an accurate assessment to be made of the effect of this uncontrolled release. The OSS estimated that about 25 kg of U was released.

### 1991

- **General** - "At Ranger, the expected environmental effects of a large operating uranium mine are beginning to be discernible outside the immediate environs of the mine site ... The water quality of Magela Creek close to the boundary of the Project area and Kakadu National Park deteriorated in the 1991 Wet season to the extent that uranium and sulphate reached concentrations higher than background values ... this is the first recorded instance since Ranger commenced mining that the water quality in Magela Creek has deteriorated to the point where it has the potential to cause observable effects on aquatic organisms. Ranger is now a mature mine; losses of contaminants to the environment are increasing and their presence is measurable in local waterbodies and streams. The company has introduced a number of practices which result in the deliberate release of water whose quality will modify the chemistry of nearby natural waterbodies. While each of these sources contributes only minor quantities of contaminants, the resultant effect on water quality is readily measurable and more importantly, the evidence shows it to be increasing. The environmental implications of this trend should be assessed and water management practices re-evaluated to ensure that all sources contributing to losses to the environment have been minimised as required under the definition of Best Practicable Technology (ER 44)."
- **Aug. 24 to 25** - Approximately 1,300,000 L of RRZ water (from RP2) was inadvertently used on the perimeter road of the tailings dam to suppress dust.
- **March 27** - About 320,000 L of additional water were applied to the land application area following equipment malfunction, leading to a 9% increase in irrigation rate. The water fully infiltrated and there was no runoff.
- **Feb. 26 to 27** - Uranium enriched water draining from the Ranger high grade ore stockpile was accidentally released to Georgetown Creek and subsequently Magela Creek. The event was not classified as an infringement by NTDME. The OSS estimated that about 25 kg of U was discharged to Magela Creek during this event and, based upon the flow conditions at the time, assessed that the concentration of uranium could have been comparable to the receiving water limit for a short period.

### 1989

- **Aug. 13 to 14** - About 315,000 L of RP2 water was used for fire fighting when a bush fire threatened both the Ranger and Alligator Rivers Region Research Institute laboratories.

## 1988

- **Nov.** - Following a malfunction of ore discriminators material containing low grades of uranium had been dumped incorrectly on the waste rock dump; up to 500,000 t of material may have been involved, possibly for as long as six months. The area of the waste rock dump was redesignated as RRZ. Criticising Ranger's attitude to the incident, Dr Glen Riley, OSS Director at Jabiru wrote "I regard this situation as the most serious deficiency shown by Ranger in a long series of malfunctions and operational shortcomings since the mine opened ... rather than achieve better (or more sure) environmental control as they gain more experience, Ranger are moving the operation into a more hazardous situation".

## 1987

- **March** - 500,000 L of RP4 water was inadvertently released via the pipeline to Magela Creek following a valve malfunction and when the creek's flow rate was below the minimum approved rate.

## 1985

- **Oct. 3-7** - Valve failure in the tailings line resulted in 500,000 L of tailings and process water being inadvertently applied to land application plots within the RRZ.
- **Sep. 18** - Another tailings pipeline failure resulted in about 25,000 L of tailings water being released from the RRZ.
- **Sep. 17** - Tailings pipeline failure resulted in about 25,000 L of tailings water being released from the RRZ.
- **Feb. 14 to 16** - A fish kill in RP2 was reported after water was pumped from RP4.

## 1984

- **July 11** - 200,000 L of water from within the RRZ leaked outside the RRZ from a joint in a pipe carrying tailings dam seepage back to the dam.
- **Jan. 25** - 100,000 L of RP2 water escaped from a pipeline within the RRZ; all water was contained.

## 1983

- **Sep. 20** - 40 t of low grade ore was dumped outside the RRZ. Clean up was carried and material returned to RRZ.
- **July** - Drinking water at the mine was contaminated by radioactive water used in the processing plant. The processing water and drinking water were connected accidentally. It is uncertain how long this situation went undetected. When the contamination was eventually discovered the system was flushed out and workers were examined for radioactive contamination. Tests on the workers and in the contaminated area indicated 'no danger'; however subsequently a plumber found residue in the pipes which was found to have been the radioactive substance ammonium diuranate.
- **Feb. 9** - 200 L of diesel spilt at a borefield 800 m south of pit #1.

## 1982

- **April 20** - 30,000 L pregnant organic liquor solution overflowed from an overflow sump into stormwater system thence to RP2. The operation was stopped and the sump modified.
- **Jan. 22 to 23** - About 40 dead fish were found in Coonjimba Billabong, considered part of natural processes. No abnormal water quality indicators were found.

## 1981

- **July 29** - A recycle tank overflowed spilling process water from RP3 into the neutral thickener area. Some of the water and a minor amount of tailings solids were pumped into the stormwater collection pond which discharges to RP2 during the wet season. The estimated volume pumped was 40,000 L.
- **April 9** - Small volume of water and silt flowed from RUM's organic dump tank to Georgetown Creek. (Ranger reported the incident to the OSS on April 29).

### 1980-81 Wet Season

- **General** - The sewer at the old mess site became surcharged at times and sewage entered Coonjimba Billabong; necessitating remedial works.

#### 1980

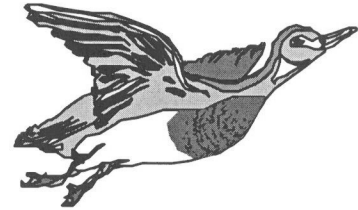
- **June 6** - A release of 1,000,000 L of silty water discharged from Borrow D to Georgetown Creek.
- **Feb.** - The tailings dam floor and walls were identified by the Ranger Uranium Environmental Inquiry as major pathways by which contaminants could enter the Magela Creek. 245 mm of rain fell on the Ranger mine site in five hours. A rapid rise in water level occurred in both RP1 and the partially complete tailings dam. The company was forced to make a four metre breach in the tailings dam wall and about 9,000,000 L and possibly up to 64,000,000 L was discharged into Djalkmara Creek.

#### 1979

- **Nov. 22** - 20 L of diesel spilled into a drain in Jabiru.
- **Feb. 28** - Spillage of diesel into Coonjimba Billabong.



**Appendix 2 Gundjeihmi Aboriginal Corporation  
response of ERA application to increase the height of  
the tailings in Ranger Pit 1**



16.5.05

Mr. Norman Fry,  
Chief Executive Officer,  
Northern Land Council,  
P.O. Box 42921,  
Casuarina N.T  
0811.

**Re: Interim Deposition of Tailings above RL0 in the Ranger Pit#1 Draft Application to the Supervising Authorities, 30<sup>th</sup> March, 2005.**

Dear Mr. Fry,

At a meeting on the 3<sup>rd</sup> of May 2005, the Gundjeihmi Aboriginal Corporation (GAC) Committee voted to accept the current draft Ranger Uranium Mine Pit#1 RL0 proposal. Mirarr have done so with great reluctance after accepting advice that the proposal represents the least risk to the environment of the three scenarios presented as options, that is; approving the draft RL0 proposal, lifting the tailings dam, or depositing tailings in Pit#3.

In view of the available research studies, the GAC Committee was puzzled as to why the third option was included. Energy Resources of Australia (ERA) has not performed the requisite research studies into the integrity and permeability of the country surrounding Pit#3. These studies must be completed before deposition of tailings into Pit#3 can be considered by the stakeholders.

The Committee noted that a fourth option was not offered for consideration, that is; that the mine would temporarily cease milling until the barrier problems were solved to the satisfaction of all stakeholders. That would have represented a highly desirable option for Mirarr, as an unhurried and rigorous process would have been likely to produce a positive production outcome for Ranger and an environmentally sound protection barrier for the secure storage of tailings.

Although achieving such a solution would have taken time and could have entailed temporarily reduced production at Ranger, such a solution could have been expected to ensure environmental protection into the long-term future.

Effectively, only one option was presented to Mirarr. It is acknowledged that this option is not presently performing to expectations, insofar as monitoring has detected seepage from Ranger Mine Pit#1 with the chemical signature of process water in the vicinity of Mine Bore "L" (MBL).

Considerably more modelling and empirical scientific effort has been recommended to ERA in order to more fully understand the processes that are operating in the vicinity of the barrier and the possible interconnection of shallow and deep aquifers that could connect the MBL aquifer at Corridor Creek, Retention Pond 2 (RP2), and the deeper aquifer on the Gulungul Creek side of the tailings dam.

Even though they have accepted the draft proposal, Mirarr wish to instruct the Northern Land Council (NLC) to record and carefully consider a number of reservations and concerns that are attendant upon the decision, and to understand that acceptance of the RL0 proposal was contingent on implementation of the following provisions, some of which were suggested by the Office of the Supervising Scientist (OSS) and the NLC during their respective deliberations on the subject.

- OSS must have the legally-enforceable right at any time to insist that tailings and process water be lowered to whatever level instructed, below the permeable zone, should there be seepage problems in the future;
- Suitable detection equipment must be installed and monitored at an appropriate frequency;
- Suitably conservative triggers must be developed;
- Stringent monitoring requirements must be in place, with data shared freely among all stakeholders, and;
- ERA must acquire the capability to perform on-site and to National Association of Testing Authorities, (NATA), standards such soil and water analyses as are required to remediate, manage and monitor the barrier.

When negotiating the final RL0 proposal on behalf of Mirarr, NLC must insist on the inclusion of those provisions, and consult Mirarr before a draft agreement is finalised for execution.

Other points that concerned the Committee, and which GAC would like the NLC to pursue as its representative are:

1. The existing RL0 barrier *per se*: The process of constructing the barrier to its design specifications and performance expectations was flawed by poor process water management. ERA allowed the level of process water in Pit#1 to rise above the intended base of the barrier. That resulted in the base of the barrier being set at insufficient depth to operate at its design capabilities.

Seepage from that section of the barrier is currently evident. Mirarr have seen that ERA proposes scientific excellence in its engineering, yet allows the exigency of short-term production to override the importance of environmental protection.

There have been other examples of this and the Mirarr are fearful that the mining company cannot be trusted to implement environmental best practice where that would conflict with and possibly limit production.

This problem is further compounded because government regulators have had a history of endorsing such actions.

2. Tailings Dam Facility leaks/seepage: Although it has previously assured stakeholders that there was no significant egress from the tailings dam, ERA has recently conceded that a plume of sulphate and magnesium has been observed to be spreading outwards into the environment from the tailings dam. It is known that ERA has been aware of this plume for some time, but instead of increasing the monitoring and remediation effort, it has reduced, (as at the last review of the Ranger Authorisation), the number of bores routinely sampled and tested to keep track of the phenomenon.

Moreover, it is known that the Department of Business, Industry and Resource Development (DBIRD) has previously obliged ERA to shore-up the toe-loading of the tailings dam, and that there is at least one spring within the dam wall that contributes to an outflow of liquid into the headwaters of a tributary of Gulungul Creek which flows through Kakadu National Park and into Magela Creek. It is further known that some degree of unspecified damage was occasioned to the tailings dam during dredging operations some years ago.

For these reasons, Mirarr entertain great concern about the longevity of the dam as it is, and its future integrity. Mirarr are also worried that knowledge of the present and projected expansion of the plume towards country that is within Kakadu has not been fully shared with them. It is known that for many years Ranger analysed many more bores than were required for statutory purposes. Water analysis results from those bores in the vicinity of the tailings dam might be expected to shed some light on the phenomenon, yet the accumulated data has not been shared with all stakeholders.

3. The suitability of Pit#3 as a tailings repository: As outlined above, the requisite permeability studies have yet to be performed for this pit. Given the nature of the geology of the area, and taking account of the frequent blasting during operations, it is highly likely that difficulties will be encountered with the plan to deposit tailings into this pit. The difficulties are likely to be compounded when the proposed angular drilling for expanded ore reserves outside the road bounding Pit#3, at what was once Djalkmarra Billabong, goes ahead.

Again, the fears entertained by Mirarr derive from ERA's apparent poor preparation for such a major event as is proposed for Pit#3, and the clearly observable ingress into the pit along the south wall, apparently seeping from RP2, which indicates that the surrounding rock is in some sense incompetent.

4. OSS and NLC both lack a specialist hydrogeologist on their staff, and therefore rely on the advice of consultants or ERA's research facility, Earth Water and Life Sciences (EWLS), formerly Energy Resources of Australia Environmental Services (ERAES). This could be seen as a lack of independence that has led to ERA presenting studies that were incomplete or of insufficient scope. An example might be the lack of 3-D modelling in the investigation of the extent and characteristics of the MBL aquifer. Knowing the fate of any seepage that passes the barrier is arguably one of the most important aspects of the RL0 proposal. That ERA has not definitively and exhaustively studied this before acting on construction of the barrier is a matter of deep concern to Mirarr.

Given that substantial resources are available to ERA, and that there has been ample time to direct those resources to the task at hand, Mirarr understandably suspect that ERA preferred to pursue continued production at a time of rising uranium prices rather than deploy sufficient resources to learn whether there are other flowpaths connected to the MBL aquifer.

Appropriate independent staff within the Supervising authorities would allow detailed government-directed studies to be done on such unknowns.

One result of that would be that the current paradigm of risk management predicated on incomplete understanding of the variables could be succeeded by a regime of objective and independent scientific study that is not potentially compromised by the demands of production.

5. ERA has not given an unequivocal commitment to ultimately return tailings to a level below any permeable zones in Pit#1. Mirarr are concerned that this 'interim' RL0 strategy will be the subject of re-assessment at the commencement of the rehabilitation stage, and that such an evaluation will be made in the context of 'acceptable' environmental impact.

Mirarr do not consider that any degree of negative environmental impact is acceptable, and have frequently heard the concept employed to allay their fears about increasing levels of chemical species measured outside the Ranger Restricted Release Zone (RRZ).

They fear that the concept of environmental impact is a relative one for the purposes of ERA and the Supervising Authorities. Mirarr would much rather see the source of such increases removed to a safer repository than to later argue about projected estimates of toxicity and environmental damage.

In conclusion, it is clear that this proposal has relative merit. It is however, equally clear that ERA is driven more by production exigencies and its own internal planning processes than by an absolute concern for the environment and the health and welfare of successive generations of the Traditional Aboriginal Owners of the country they are mining.

So driven, ERA has implemented the strategy in advance of acquiring a thorough understanding of every aspect of it. Consequently, the strategy has failed to perform to design expectations and is currently under remediation.

Whilst acknowledging that the proposal represents the best of several unwelcome choices within the context of continued production at Ranger, Mirarr are disappointed that the NLC has seemingly bowed to ERA's commercial requirements, rather than insisting on a best practice solution in advance of approval.

During consultation, the NLC made it clear that refusal of the proposal would impose a major constraint on optimal production of final product at Ranger and that such was unacceptable to other stakeholders.

The NLC imposed this limitation to the available options knowing that it was at variance with the views of Mirarr, whom the NLC represents in these negotiations.

Mirarr understand the legal reality that the NLC represents them in negotiating Ranger proposals, but nevertheless believe that it should be emphasised to the NLC that 'consultation' is not merely the presentation of *fait accompli* positions to Traditional Owners.

In the case at hand, the consultation did not seek to determine and represent the ideal outcome for Mirarr. One can only hope that ERA's final Pit#1 RL0 application alleviates the Traditional Owner's concerns, which should be shared by all regulatory stakeholders, and commonsense prevails.

Mirarr believe that protection of the environment in not only the World Heritage area of Kakadu National Park, but also the Ranger Project Area for future generations is far more important than maximising production for the short-term benefit of company shareholders, and we insist that the NLC be mindful of and advocate that belief in future negotiations where it represents the Mirarr.

As we do not read or write English, this letter has been prepared by Gundjeihmi Aboriginal Corporation staff at our direction.

Yours sincerely,

Yvonne

Yvonne Margarula.  
Mirarr Senior Traditional Owner

Yours sincerely,

NIDA

Nida Mangarrbar  
Chairperson

cc. Dr. Arthur Johnston - Supervising Scientist

Dr. Tony Milnes - General Manager, EWL Sciences

Richard Jackson - Director of Compliance, DBIRD

Chris Salisbury - General Manager Operations, ERA Ranger Mine

## Appendix 3 Comparison of social impact concerns raised in Fox Inquiry (1976), AIAS findings (1984) and Gundjeihmi Aboriginal Corporation (2005)

Social Impact concerns raised by Fox <sup>90</sup>	Conclusion reached by AIAS in 1984 <sup>91</sup>	Situation in 2005 <sup>92</sup>
Has uranium mining brought disease, particularly venereal disease, and an increase in ill-health?	No.	Yes Heart disease due to increased alcohol consumption
Has the machinery of mining forced Aborigines to relocate physically, or to change their diet?	No.	Yes People, including Mirarr, were relocated as a seasonal camp at Coonjimba was abandoned at the commencement of mining.
Have miners preyed on Aboriginal women or engaged in sly-grog trade?	No.	No
Has mining delivered Aborigines to a promised land of apprenticeship and employment?	No.	No
Has mining reduced Aboriginal poverty, individual neurosis, and internal decline generally?	No.	No
Has mining created or attracted 'fringe-dwelling' communities?	Yes, to the extent that Jabiru has become an attraction point. . .	Yes
Has mining directly changed the traditional culture by disturbing sacred sites and/or ceremonies?	Yes, possibly. . .	Yes
Has mining produced alcohol devastation?	No, except in the matter of mining moneys with which Aborigines can and do buy more alcohol.	Yes Alcohol availability has increased due to mining and the Jabiru township.
Has mining produced a desire for and a greed about money, in a deleterious ways?	Yes.	Yes
Has mining impinged upon or affected the Aboriginal civic culture, albeit one in transition from inmateship to independence?	Yes.	Yes

<sup>90</sup> Fox, R W, Kelleher, G G & Kerr, C B, 1977, *Ranger Uranium Environmental Inquiry - 2<sup>ND</sup> Report*. AGPS, Canberra, ACT, 17 May 1977

<sup>91</sup> Aborigines and Uranium. Consolidated Report on the Social Impact of Uranium Mining on the Aborigines of the Northern Territory. Parliamentary Paper No.310/1984 AGPS 1984 p242-243

<sup>92</sup> As determined by GAC

## Appendix 4 KRSIS Recognition and Empowerment Recommendations

Recommendations	Response	Status
<b>The Future of Jabiru</b>		
<p>Acknowledged importance of recognising Jabiru as Aboriginal land and the corresponding need to safeguard existing commercial interests. A community consultation program be established to:</p> <ul style="list-style-type: none"> <li>➤ provide information on governance options/arrangements</li> <li>➤ develop a vision for Jabiru and the region</li> <li>➤ discuss options for achieving Aboriginal ownership of land in Jabiru/extension of headlease</li> </ul>	<p><i>Commonwealth government</i> Support in principle, seek cooperation of NT to joint sponsor a consultation program. Parks Australia to lead initial Commonwealth discussions.</p> <p><i>Northern Territory government</i> Does not support Aboriginal ownership of land in Jabiru via Aboriginal Land Rights (Northern Territory) Act. Notes that native title application to be determined.</p> <p><i>Local community</i> • Mirarr Gundjeihmi lodge native title claim over Jabiru lease area – September 1997.</p>	<p>The Jabiru Region Development Project was established to address this recommendation. Progress has been slow due to discussions being sidetracked over Native Title issues.</p> <p>Mirarr are agreeable to a long term extension to the town headlease but want proper recognition of their ownership of the land. The Jabiru town area was excluded from the original grant of land under the Aboriginal Land Rights Act (NT).</p>
<b>Governance and Service Provision</b>		
<p>Governments ensure that further investigation and consultation undertaken prior to solutions being decided and implemented.</p> <p>The KRSIS Study Advisory Group recognised that the issue of governance and service provision was “unfinished business” and required further consideration before incorporation into the Community Action Plan. The SAG reported that governance is complex and confusing and that despite the multiple layers giving an appearance of over-governance, service provision for many Aboriginal people is sub standard. The SAG found: “this extreme complexity has caused disempowerment and disconnection; people do not know or have an understandable link to who makes decisions or who provides services”.</p>	<p><i>Commonwealth government</i></p> <ul style="list-style-type: none"> <li>• Will initiate discussions with the NT government, including consultation with local communities.</li> <li>• Notes that the KRSIS Implementation Team should address these issues as a priority.</li> </ul> <p><i>Northern Territory government</i></p> <ul style="list-style-type: none"> <li>• Will participate in discussions that lead to more effective arrangements</li> <li>• NTG undertaking a review of local government arrangements</li> </ul> <p><i>Local community</i></p> <ul style="list-style-type: none"> <li>• Gundjeihmi Aboriginal Corporation has separately proposed establishment of a new regional organisation; the Alligator Rivers Region Resource Agency. Gundjeihmi sponsored meeting to facilitate establishment of new organisation.</li> </ul>	<p>Implementation team met only once in 2000 and has not met again since</p> <p>Many of the services are not functioning due to funding for them being sourced from Jabiluka funds</p> <p>Ad hoc and uncoordinated government response. Poor coordination</p> <p>Gundjeihmi Aboriginal Corporation (GAC) contributed &gt;\$200,000 in administrative and financial support to establish the Warnbi Aboriginal Corporation-Kakadu.</p> <p>The Kakadu Regional Economic Development Study was a GAC initiative</p>

Recommendations	Response	Status
<p>Political Futures</p> <ul style="list-style-type: none"> <li>• the Northern Land Council continues to attempt to resolve the current dispute between the Gagudju Association and the Gundjeihmi Aboriginal Corporation as a priority for the Kakadu Region;</li> <li>• notwithstanding the key significance of traditional ownership and clan-based decision making in the Region, there is a need for principles of coordination, rationalisation and efficiency to guide regional service provision and financial resource management;</li> <li>• the regional initiatives to establish joint approaches through community action groups to deal with a range of issues including alcohol abuse, housing and infrastructure needs and employment and training are applauded. Such joint Aboriginal/non-Aboriginal collaborations and actions must be effectively maintained.</li> </ul>	<p><i>Commonwealth government</i></p> <ul style="list-style-type: none"> <li>• The Commonwealth accepts that there is a need for coordination, rationalisation and efficiency to guide regional service provision and financial resource management.</li> <li>• Relevant Commonwealth agencies will consult with the Northern Territory Government to ensure that the issues of alcohol abuse, housing and infrastructure needs, and the lack of employment and training are addressed.</li> </ul> <p><i>Northern Territory government</i></p> <ul style="list-style-type: none"> <li>• The Territory will cooperate with the Commonwealth, the Northern Land Council and other stakeholders in the proposed Implementation Team to develop more effective regional arrangements.</li> </ul> <p><i>Local community</i></p> <ul style="list-style-type: none"> <li>• Local community groups; the Gunbang Action Group, Kakadu Housing and Infrastructure Group and the Kakadu Education, Employment and Training Groups continue to meet to develop strategies for improving social outcomes for Aboriginal people in the region.</li> </ul>	<p>Implementation is linked to the JRDS and therefore not real progress has been made addressing the issues.</p> <p>There is no functioning Implementation Team.</p> <p>Funding for some activities are sourced from Jabiluka funds so are boycotted by many Traditional Owners.</p> <p>Poor coordination and local level consultation.</p>





## **Appendix 5 Recommendations made to 2003 Senate Inquiry**

### **Legislative Regime**

#### **Recommendations**

The Commonwealth Parliament urgently develop and implement an Act to reform the regulation of uranium mining in the Alligator Rivers Region, in accordance with the provisions detailed in Section 5.

### **Ranger - Waste Inventories, Ore Reserves and Expected Life**

#### **Recommendations**

The annual quantities of materials utilised at Ranger needs to be more thoroughly reported by ERA and OSS in their respective annual reports, specifically including the following:

- the quantities of ore, low grade ore and non-mineralised rock mined from Pit #3 including uranium grade (and other minerals of concern such as sulfide or copper).
- the annual use of industrial chemicals and reagents used in the processing mill at Ranger (acid, ammonia, lime, etc.).
- the short and long-term plans for mining need to be publicly stated each year, focusing on full transparency of issues such as the timing of tailings management, ores mined versus predicted quantities, heap leaching (and/or beneficiation) and the potential for underground mining.
- the OSS and DBIRD continue to ensure significant commitments from ERA to fund environmental monitoring and ensure that a rigorous environmental monitoring and reporting program is always in place.

### **Ranger - Tailings Management**

#### **Recommendations**

The management of radioactive uranium mill tailings is a major challenge and needs to be undertaken with full transparency. To enhance both short and long-term management of tailings, the following should be adopted:

- the incorporation of a deadline for removing the tailings from the above ground dam into Authorisation 82/3 and the Environmental Requirements (i.e. by the end of 2007).
- detailed analysis and reporting of the existing contamination of groundwater by seepage from tailings storage facilities (above ground dam and Pit #1), especially with regards to the use of contaminant plume maps.
- the OSS need to undertake specialist research on groundwater flowpaths, such as fracture zones and faults zones, to allow more detailed quantification of contaminant migration rates. This will allow more realistic design and implementation of tailings storage within Pit #3 as well as long-term groundwater monitoring needs after rehabilitation (around 2016 ?).
- the incorporation of the current RL 0 m limit for Pit #1 into Authorisation 82/3 and the Environmental Requirements and should also be legally binding with no escape or modification clause. A similarly appropriate limit should also be introduced for tailings Pit #3 (when this proceeds).
- all detailed studies and reports that already exist within ERA, DBIRD and OSS should be made publicly available.

- detailed field studies should be undertaken by the OSS to quantify radon flux, microbiological behaviour and the physical properties of tailings (especially permeability).
- more rigorous horizontal and vertical monitoring and reporting of all groundwater units around tailings facilities (dam and Pit #1).
- a more suitable technique be developed and applied to measure tailings density in Pit #1, incorporating known mill data (such as t ore milled and t reagents used).
- correct terminology be ensured by ERA, DBIRD and OSS at all times (eg. do not refer to the above ground dam as an 'evaporation pond').

## **Ranger - Water Management**

### **Recommendations**

The monitoring and management of contaminated minesite waters at Ranger needs to be significantly improved. The Mirarr believe this can best be achieved through use of the following:

- 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).
- the trigger system for water quality be expanded to include other important contaminants from Ranger such as NO<sub>3</sub>, PO<sub>4</sub>, Cu, Pb, Zn and others.
- the limit for uranium at gauging station 8210009 in Magela Creek should be lowered from 5.8 µg/L to 0.5 µg/L.
- a greater number of monitoring sites be established, especially along critical drainage features such as Gulungul, Corridor and Georgetown Creeks and Coonjimba and Djalkmarra Billabongs. More data will allow ongoing analysis and checks on sources of contaminants, loads, dilution, reactions and uptake by the ecosystem, and therefore possible impacts.
- a separate system of trigger levels be developed and applied for important discharge sites such as Corridor Creek, RP1 and Gulungul Creek.
- greater emphasis be placed on collecting hydrology data (stream flow rates and total volumes) for joint interpretation with water quality data.
- ERA adopt event-based monitoring to ensure compliance of all necessary water management system components.
- water samples be more thoroughly analysed for various indicator and important contaminants, such as Mn, <sup>226</sup>Ra and major solutes (Mg, SO<sub>4</sub>).
- a more suitable upstream site for Magela Creek should be developed and standardised in Authorisation 82/3 and the Environmental Requirements.
- OSS need to undertake a wider and more detailed surface water monitoring program around the Ranger site, especially the creeks and billabongs.
- greater use of upstream data should be made in analysing water quality, especially with reference to flow (hydrology) data.
- the OSS and DBIRD continue to ensure significant commitments from ERA to fund environmental monitoring of minesite and adjacent surface waters and ensure that a rigorous environmental monitoring and reporting program is always in place.

## **Ranger - Contaminated Water Treatment**

### **Recommendations**

The treatment of contaminated minesite waters and monitoring of the areas used for this at Ranger needs to be significantly improved. The Mirarr believe this can best be achieved through use of the following:

- the incorporation of maximum cumulative load limits into specific areas for disposal, specific to the use of irrigation (land application) or wetlands.
- release of all reports and data on known environmental problems at treatment areas (wetlands, irrigation).
- detailed studies on the long-term future of existing sites to continue to be able to perform effectively, including all contaminants (Mg, SO<sub>4</sub>, Mn, U, <sup>226</sup>Ra, etc.).
- incorporation of more rigorous sampling (more sites and frequency) of wetland and irrigation areas in Authorisation 82/3 and the Environmental Requirements.
- need to reduce reliance of OSS and DBIRD on company data and assertions in managing these contaminated areas.
- OSS and DBIRD should undertake check monitoring and analysis of wetlands and irrigation sites.
- the Corridor Creek wetlands need to be investigated as to whether they have any capacity to continue to perform as wetland filters in the future.

## **Ranger - Stockpile and Waste Rock Management**

### **Recommendations**

The stockpiling of ore, low grade ore and non-mineralised material is proving a significant challenge from Pit #3. To ensure that operations at Ranger do not lead to repeat situations of 2002 and earlier incidents, the following improvements are recommended:

- the 'Ranger Mining Manual' be available publicly, or its successor the Mining Management Plan (MMP) under new NT legislation.
- development and implementation of a more rigorous inspection programs be developed by the OSS and DBIRD which physically checks all stockpiles prior to, during and immediately after each wet season. Such a program should not be reliant on ERA statements or incompetence.
- more thorough reporting of stockpile locations, plans and quantities by ERA, OSS and DBIRD, including water management aspects for each site.
- the discharge of runoff from southern stockpile not be permitted to enter the Corridor Creek system until the wetlands have been ascertained to be suitable for the remaining period of the Ranger operation (eg. 15 years) and increased environmental monitoring has been properly implemented.

## **Ranger - Groundwater Management**

### **Recommendations**

The management and protection of groundwater could be enhanced through the following improvements:

- development and implementation of check groundwater monitoring program by the OSS.
- greater frequency of groundwater bores in areas of and down gradient from higher permeability zones, including broader analysis of water quality.
- more thorough reporting of groundwater data, both horizontally and vertically, by ERA, OSS and DBIRD, including cross-sections, plume maps and groundwater elevations (i.e. piezometric surfaces).

- more detailed field studies aimed at quantifying groundwater flow paths to enable more accurate short and long-term (>10,000 years) models.

## **Ranger - Soil Monitoring**

### **Recommendations**

The management and protection of soils could be enhanced through the following improvements:

- development and implementation of check soil monitoring programs by the OSS and DBIRD.
- more sampling points located in areas of active water treatment, such as wetlands or irrigation.
- more detailed field studies aimed at quantifying long-term contaminant retention characteristics of soils.

## **Jabiluka - Water Management**

### **Recommendations**

The water quality monitoring program within Swift Creek be enhanced through implementation of the following:

- The statutory monitoring point for the determination of the impact of Jabiluka downstream on Swift Creek be moved within the Jabiluka Mineral Lease.
- Separate trigger levels should be applied for the North and Central Tributaries at the sampling locations closest to the site (ie. JSCTN2, JSCTC2).
- The statutory program for Jabiluka should include upstream monitoring of water quality in the North and Central Tributaries, including radium activities.
- An additional statutory monitoring location should be established within the West Branch of Swift Creek.
- 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.
- Analysis of radium should be included with metals.
- A succinct and accurate location plan of sampling sites should always be given with relevant reports, publications or scientific papers.
- Adequate people and financial resources be allocated by ERA to ensure that personnel are available at times of first flush or other necessary and opportune times to obtain water quality or other environmental samples. Detailed electronic and automatic sampling equipment should be implemented across the Swift Creek catchment.

## **Jabiluka - Water Quality Triggers**

### **Recommendations**

The water quality trigger levels be revised to reflect legitimate Mirarr concerns and provide enhanced scientific scrutiny through the following changes:

- The 'Limit' value for uranium should be revised to a concentration much closer to the extremely low background in Swift Creek. A value of 0.05 µg/L is proposed.

- The trigger levels for NO<sub>3</sub> should be re-assessed, including the addition of NH<sub>4</sub> 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 NO<sub>3</sub> and NH<sub>4</sub> in Swift Creek.
- Trigger levels for radium and other contaminants (eg. Al, Mn, P, Re, Zn) should be developed.
- The trigger system should include the loads of contaminants as well as concentrations.
- The trigger system should be enhanced to include statistical analysis of difference between upstream and downstream water quality monitoring locations.

## **Jabiluka - Water Quality Onsite**

### **Recommendations**

The water quality monitoring program for the Interim Water Management Pond should be enhanced through the following changes:

- A concept of guideline triggers be established for the IWMP to establish potential levels of intervention to manage on-site water quality.
- Analysis of radium and radon should be included with metals, and all tested monthly.
- Detailed studies be undertaken to characterise in sufficient detail the quality of various sources of seepage into the decline to allow more realistic quantification of proposals for long-term water management. This work must be reported publicly and promptly.
- Studies documenting the biological and geochemical (limnological) processes within the IWMP should be undertaken and reported publicly. This should enable an accurate mass balance for contaminants such as U, SO<sub>4</sub>, <sup>226</sup>Ra and others.

## **Jabiluka - Water Quantity**

### **Recommendations**

The public reporting of volumes of contained water in the IWMP is very poor and needs to be improved by inclusion of sufficiently detailed tables and graphs within the Annual Environmental Interpretative Report.

The annual reports “Water Management Systems Operation Manual” and “Water Management” should also be made public documents.

## **Jabiluka - Contaminated Water Treatment**

### **Recommendations**

That Reverse Osmosis water treatment (or another technology) of a high quality be established on the Jabiluka site, with a view to ensuring that there is, under any possible scenario, NO NEED for irrigation of water containing significant uranium concentrations (that is, water >5 µg/L uranium).

# **Jabiluka - Water Quality and Effects of Irrigation**

## **Recommendation**

The OSS, DBIRD and ERA adopt an approach to ensure that the expected monitoring and reporting requirements, can be enforced legally to the satisfaction of the Mirarr and broader public.

In order to prevent increasing uranium (and other) contamination of the tributaries and hence Swift Creek and Kakadu National Park, direct irrigation of IWMP water be suspended immediately and a high quality RO or equivalent technology be re-established on the Jabiluka site.

Detailed investigation of the soils at Jabiluka needs to be undertaken, assessing issues such as retention capacity (ie. cation exchange capacity, adsorption, complexing, etc.) and the rates at which uranium might leach from existing irrigation impacted areas.

The uranium grade of the non-mineralised stockpile must also be reported and this investigated as a future source of continuing uranium into the Central Tributary (which could happen regardless of whether irrigation is continued). All irrigation of this site must cease.

The OSS, DBIRD and ERA need to pro-actively move towards backfilling the decline with the mineralised ore and undertake proper rehabilitation of the Jabiluka site. The plugging of the decline could be an important first step in this direction.

## **SUMMARY OF KEY ENVIRONMENTAL MANAGEMENT ISSUES**

- 1) MORE FREQUENT SAMPLING**
- 2) MORE COMPREHENSIVE ANALYSIS**
- 3) EVENT-BASED MONITORING**
- 4) IMPROVED TRIGGER LIMITS**
- 5) SEVERAL SITES FOR TRIGGER LIMITS**
- 6) STATUTORY : LEGAL FORCE**
- 7) TRANSPARENCY & ACCOUNTABILITY**
- 8) MORE RIGOROUS RESEARCH ON SPECIFIC ISSUES**