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# Gundjehmi Aboriginal Corporation



*An organisation managed and controlled by  
the Mirrar People of Kakadu*

**Information for the Twenty-Sixth Session of the  
World Heritage Committee, Budapest, Hungary**

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## 1. Introduction

The Mirrar submit that the Jabiluka mine poses ascertained and potential threats to Kakadu National Park. The Mirrar remain committed to the inclusion of Kakadu National Park on the List of World Heritage Properties In Danger.

In a broader context, recent events at both the Ranger and Jabiluka uranium mining areas have increased Mirrar concerns over the adequacy of efforts by both Commonwealth and Northern Territory authorities to protect Kakadu from the environmental and cultural threats posed by continued uranium mining in the region.

For the Mirrar, an especially alarming aspect of these events was the delay – over a month – in the reporting of environmental incidents by the mining company Energy Resources of Australia (ERA). Such non-disclosure has confirmed Mirrar scepticism at the ability of both the mining and the government authorities to ensure that Kakadu will be protected and that Traditional Owners will be included in the ‘information exchange’ regarding happenings on their traditional lands.

This, combined with the disappointment of the Mirrar in the failure of the Australian Government to appoint an independent environmental representative to the Alligator Rivers Region Technical Committee, has unfortunately strained relations between the Mirrar and Government. Again the Mirrar feel powerless to prevent the ever-increasing pollution of their homelands. Mirrar are not informed of environmental incidents, their cultural concerns remain unmet by government and they are excluded from key decision-making forums affecting their land.

On a more positive note, the Mirrar have agreed to consider a process to define the issue of the protection Kakadu’s cultural heritage (specifically the Jabiluka area). The Australian Government, following an approach by the Gundjehmi Aboriginal Corporation to break the deadlock over this matter, suggested a process based on the Australia ICOMOS *Burra Charter*.

The Mirrar consider that the integrity of the World Heritage Convention itself is threatened by non-action at Kakadu. For this reason, the Mirrar recommend the Committee call for Kakadu to be inscribed on the list of World Heritage Properties in Danger.

## 2. Jabiluka

In previous submissions to the Committee the Mirrar have highlighted the persistent water management problems at the Jabiluka mine site. Essentially, these problems relate to the premature construction of the mine decline, the lack of adequate water containment and treatment facilities and the excess of contaminated water at the site derived from both the underground decline and surface runoff.

In an effort to manage Jabiluka's worsening water management problem, ERA sought approval for the spray irrigation of contaminated pond water at the site in September 2001. In October 2001 the mine regulator, the Northern Territory Government, granted approval for the irrigation of up to 600m<sup>3</sup> per day on 6.34 hectares at Jabiluka at a maximum allowable uranium concentration of 1,000 parts per billion (ppb) and with a 'load limit' of 240 kg uranium per year or up to 40 kg in any one month. This approval was granted despite the absence of any specific studies of the uranium retention capabilities of Jabiluka soil.

When irrigation of contaminated water first began in the mid 1980s at the Ranger uranium mine a series of long-term and detailed scientific studies were undertaken to quantify the heavy metal retention characteristics of the laterised and clayey soils. At Jabiluka, where the soils are much sandier and have minimal clay and oxide content, the heavy metal retention characteristics can be reasonably expected to be considerably lower. Despite this there have been no such studies on the specific characteristics of the Jabiluka soil to date. The Mirrar believe this omission is scientifically indefensible and further erodes confidence in water management issues and the control of contaminants such as uranium.

Irrigation commenced from mid October 2001 although this was not reported to stakeholders, including the Office of the Supervising Scientist (OSS), until some three (3) weeks later. Irrigation continued until late December 2001, before stopping due to the onset of the wet season.

The reverse osmosis (RO) treatment system was decommissioned and removed from the site in late December 2001. The use of RO from August 2000 onwards had encountered several problems and failed to live up to company and regulatory expectations due to poor selection of the RO technology supplier and consumables. The lack of adequate water treatment capacity at Jabiluka remains a great concern to the Mirrar.

There is currently a broad review of water treatment and management options at Jabiluka based upon a 'Best Practicable Technology' (BPT) assessment. In the Mirrar experience the use of BPT assessments has seen cost considerations given a greater weighting than the legitimate environmental and social expectations of the Mirrar.

Recently Jabiluka has been downgraded to 'care and maintenance' status. The regular changes to the scope and nature of water management at Jabiluka fail to inspire confidence that the serious environmental risks from the non-operational site are being adequately addressed by either ERA or government regulators.

The Interim Water Management Pond (IWMP) was designed for a life of one or two years and is inappropriate as a long-term measure. The Mirrar find it disturbing that both Commonwealth and Territory regulatory authorities consider that a structure design for the short-term should now be employed as a 'stop-gap' measure for the longer term. A long-term solution that addresses the basis of the escalating water management crisis is required. Such a solution must also address the lack of adequate water storage and treatment capacity on site, along with the continuing uranium contamination from groundwater discharged from the underground decline.

It is also noteworthy that almost five (5) years since the release of ERA's Jabiluka Public Environment Report (PER) there remains no publicly available mine plan that reflects the 1998 recommendations and requirements of the Commonwealth Government. The absence of such a plan was highlighted by the IUCN during consideration of Kakadu at the 25<sup>th</sup> Session of the Committee in Helsinki in December 2001.

Based on new water quality guidelines adopted for the Jabiluka site during 2001, a three-tiered approach of 'trigger levels' is now applied to monitoring downstream water quality. This consists of 'focus', 'action' and 'limit' levels for the perceived contaminants of concern – uranium (U), pH (acidity/alkalinity), electrical conductivity (EC), nitrate (NO<sub>3</sub>), magnesium (Mg) and sulfate (SO<sub>4</sub>).

The respective 'focus', 'action' and 'limit' concentrations are derived from one, two or three standard deviations from mean background or upstream concentrations. Alternatively, the 'limit' value may be derived using site-specific ecotoxicity data. The approved trigger values for Jabiluka are given in Table 1. The pH and Mg values are considered 'guidelines' only,

whereas other values are statutory requirements with regulatory expectations relating to increased monitoring, investigation or remedial works at the site.

Table 1 – Trigger Levels for Water Quality Criteria in Swift Creek

	Focus	Action	Limit	NWMQS	Swift Creek <sup>(1)</sup>	
					Upstream	Downstream
EC (µS/cm)	15	18	21	20 – 250 <sup>(2)</sup>	9 – 17	7.4 – 17
PH	4.61 – 5.31	4.27 – 5.65	3.92 – 6.00	6.0 – 8.0 <sup>(3)</sup>	4.5 – 6.4	5.2 – 6.0
Mg (mg/L)	0.37	0.50	0.76	no data	<0.1 – 0.56	<0.1 – 0.65
NO <sub>3</sub> (mg/L)	0.30	0.63	1.26	0.005 <sup>(3)</sup>	<0.022 – 0.034	<0.022 – 0.05 <sup>(4)</sup>
SO <sub>4</sub> (mg/L)	0.60	0.91	1.50	no data	<0.1 – 0.60	<0.1 – 0.74
U (µg/L)	0.02	0.03	5.8	0.5 <sup>(5)</sup>	<0.005 – 0.015	<0.005 – 0.017

Notes :

- Focus – mean plus 1 standard deviation (80<sup>th</sup> percentile);
- Action – mean plus 2 standard deviations (95<sup>th</sup> percentile);
- Focus – mean plus 3 standard deviations (99.7<sup>th</sup> percentile) or the 'No Observable Effect Concentration'.

<sup>(1)</sup> based on 10<sup>TH</sup> and 90<sup>TH</sup> percentiles in NTSA (2001b) (based on NTS, 1999; ERA, 2000 & 2001);

<sup>(2)</sup> recommended values for 'slightly disturbed' NT tropical upland and lowland rivers;

<sup>(3)</sup> recommended values for 'slightly disturbed' NT tropical wetlands, freshwater lakes and reservoirs, and lowland rivers (though pH is clearly not applicable to Swift Creek);

<sup>(4)</sup> some potential impacts from blast residues (high in nitrate) leaching from non-mineralised waste rock (values over 0.35 mg/L were observed);

<sup>(5)</sup> considered a 'low reliability' toxicity-based guideline.

During February 2002, the Mirrar became aware of important water quality issues in Swift Creek, which runs adjacent to and receives runoff from the Jabiluka site. The flow in Swift Creek began about 31 December 2001 although ERA did not obtain water quality samples until 2 January 2002. These samples returned uranium concentrations of 0.02 ppb upstream and 0.03 ppb downstream at gauging station JSC (*within the World Heritage Area*) - at the 'action' level (note – the analytical result was received at ERA on January 7). The next sample was taken on January 8 and returned 0.03 ppb upstream and 0.05 ppb downstream. As this result was above the 'action' trigger, ERA should have continued weekly sampling and notified stakeholders (see Monitoring and Reporting), however, the next sample was not obtained until January 22. The concentrations were now 0.01 / 0.06 ppb up/downstream. Although monitoring apparently occurred on January 30 there was no analysis of uranium. The next sample was obtained on February 5 with both values being 0.01 ppb.

The failure to follow the new protocols for water quality monitoring is a clear breach of regulatory requirements. The consistent pattern of higher uranium concentrations downstream

of the Jabiluka site compared to levels upstream is a serious indication of the potential failure of irrigation of contaminated pond water.

The Mirrar were first informed of the above situation on 25 February 2002, over one (1) month after the data was first known to ERA. Following media reports of the potential contamination arising from the Jabiluka site, the 22 January downstream sample was 're-analysed' for uranium, giving 0.014 ppb. Although the water quality samples obtained from Swift Creek by the OSS are understood to be lower than ERA samples, the pattern of uranium concentrations higher downstream than upstream of the Jabiluka site appears consistent.

The Mirrar are deeply concerned that the emerging evidence of the impact of the Jabiluka project – especially the potential failure of irrigation of contaminated pond water – was not promptly reported and that its significance was subsequently downplayed by ERA. This was evidenced during a Minesite Technical Committee meeting on 12 March 2002, when uranium concentrations up to 0.25 ppb in both the Central and Northern Tributaries (which both run through or adjacent to the Jabiluka site) were queried, with the implication that this was related to irrigation. This was denied by ERA representatives, who stated that concentrations have ranged up to this level in previous wet seasons. According to a draft research summary by the OSS, the average uranium concentrations measured by their ongoing research in the Swift Creek region is almost invariably less than 0.01 ppb.

A further concern is that the 'limit' for uranium – the concentration at which ERA would be required to undertake detailed investigation and subsequent remedial works – is 5.8 ppb or some 580 times higher than average background concentrations. This represents a significant and unacceptable increase in uranium concentrations and loadings through Swift Creek at JSC in Kakadu National Park.

The regulatory focus on contaminant concentration comes at the expense of a broader analysis of the impacts of cumulative loading of the ecosystem. Mirrar fears concerning the impacts of Jabiluka are beginning to be realised, even though the site is not operational.

There are presently both mineralised and non-mineralised stockpiles at Jabiluka from the premature development work undertaken over 1998-99. The mineralised stockpile, currently covered under a tarpaulin, contains some 47,000 tonnes of uranium ore at an average grade of 0.123%  $U_3O_8$ . The maximum sulfide grade was 0.48% S, with the average about 0.12% S.

At the 2001 World Heritage Committee meeting the Australian Government advised that, “the Traditional Owners had refused permission for the removal of the [mineralised] stockpile and transport of ore to the Ranger mine for storage” (WHC-01/CONF.208/24, p.31).

ERA has created this problem due to its premature construction of Jabiluka and it is therefore inappropriate for the Australian Government to apportion responsibility on the Mirrar. The major barrier to rehabilitation is the regulators’ lack of political will and the unwillingness of ERA and its parent company Rio Tinto to take effective action.

The accepted norm in the mining industry is that all wastes are accommodated on-site within the mineral lease. External transfer of the mineralised stockpile is clearly not consistent with this industry norm. The mineralised material should be used to backfill the Jabiluka decline and not be transported to exacerbate problems at Ranger.

The ongoing problems at Jabiluka highlight clear deficiencies in environmental management. There is a clear need to undertake urgent rehabilitation works on the Jabiluka site in order to avoid an increase in adverse impacts. Rehabilitation works should be aimed at making the site suitable for its inclusion in the Kakadu National Park World Heritage area. Regardless of the legal status of rehabilitation requirements, there is a Mirrar expectation that action be taken to maintain and protect the area’s cultural and natural values.

### **3. Ranger**

#### ***Magela Creek Monitoring – ‘GS009’***

As with Jabiluka, a new water quality system was introduced for Ranger during 2001 consisting of a three-tiered trigger level approach. The values reflect the fact that the Magela / Ranger catchment does have some differences to the water quality surrounding Jabiluka, however, statistical variation from background remains the basis for the derived trigger values. Alternatively the ‘limit’ value may be derived using site-specific ecotoxicity data. There is no longer any load limits combined with the concentration criteria. The trigger values are shown in Table 2. The values apply at the hydrology gauging station known as ‘GS009’, which is situated just inside the Ranger Project Area and acts as the last monitoring point before the Magela Creek enters the Kakadu National Park World Heritage area.

Table 2 – Water quality ‘trigger values’ for GS009 in the Magela Creek

Variable	Focus	Action	Limit
pH	5.84-6.50	5.51-6.83	5.18-7.16
Electrical Conductivity ( S/cm)	22	30	43
Turbidity (NTU)	10	24	57
U ( g/L)	0.30	1.90	5.8
Mn ( g/L)	11	19	37
Mg (mg/L)	use EC triggers <sup>(1)</sup>		use EC maximum <sup>(1)</sup>
SO <sub>4</sub> (mg/L)	use EC triggers <sup>(1)</sup>		use EC maximum <sup>(1)</sup>
<sup>226</sup> Ra (mBq/L) <sup>(2)</sup>	>10	>10 over 90 days	annual average of 10

<sup>(1)</sup> Based on the near-linear relationship between Mg and SO<sub>4</sub> in Ranger minesite waters.

<sup>(2)</sup> Based on the increase downstream compared to paired upstream samples.

The uranium concentration in the Magela Creek is typically less than 0.1 ppb, with occasional samples returning up to 0.5 ppb. It is noteworthy that in the first wet season after the introduction of this new system, the ‘focus’ level for uranium was reached at GS009.

The Mirrar remain opposed to the limit of 5.8 ppb for uranium as it represents an unacceptable degree of pollution above the naturally occurring concentrations in the Magela Creek. The lack of maintaining strict load limits – which were previously quite generous to Ranger – is also a major failure as significant loads can still flow through and impact on the Magela Creek without necessarily reaching the ‘limit’ values. Under the previous guidelines, ERA was allowed to dump up to 3,200 kg of uranium in the Magela Creek every year with water releases from Ranger – the natural load of uranium is generally about 25 kg.

Of further interest is that when the Mirrar were first informed by a representative from the Northern Land Council (NLC) of the focus level being reached at GS009, it was suggested that this might be related to the Magela Land Application Area (MLAA). The MLAA receives contaminated Retention Pond 2 (RP2) water through irrigation or ‘land application’. This practice was first adopted in the mid 1980s and has been heavily used by Ranger since this time. The situation at the current time is unclear, although the NLC representative made it known that, in his opinion, the focus level being reached at GS009 was related to the MLAA.

The Mirrar remain concerned that the MLAA may have reached the end of its useful life (or soil load limits) and is no longer able to retain contaminants such as uranium or radium. There is a wealth of evidence that shows that conservative contaminants such as Mg and SO<sub>4</sub> are not retained by the MLAA soils, and they form efflorescent salts during the dry season and flush

through into the Magela Creek during the wet season. The salts have even been observed on the banks of the Magela Creek in the dry season, related to groundwater discharge from the MLAA. The increasing Mg and SO<sub>4</sub> concentrations at GS009 clearly include a major contribution from the salts derived from the MLAA.

The MLAA must be investigated as a continuing pollution source for the Magela, focusing on the extent and rate of Mg and SO<sub>4</sub> migration and whether there is any residual capacity in MLAA soils to continue retaining uranium and radium. This would ascertain if the MLAA is indeed contributing to the 'focus' level being reached for uranium at GS009.

### ***Retention Pond 1***

The initial design of the Ranger uranium project included a dam across (then) Coonjimba Creek and Billabong to receive runoff from the catchment north of the tailings dam. The catchment of this pond, called Retention Pond 1 (RP1), was therefore supposed to be relatively clean and allow the suspended sediments in runoff to settle out before being discharged into the Coonjimba and Magela creeks. As the water quality was relatively good, there were no controls engineered or designed into the dam wall and after the early wet season rains RP1 water would discharge over the spillway for about 4-5 months.

During 1998, ERA sought and received approvals to dump uranium ore (~0.02-0.1% U<sub>3</sub>O<sub>8</sub>) on the northern wall of the tailings dam. This was primarily to allay technical concerns over the physical stability of the embankment in this area, as the foundations were known to be weaker and seepage a critical issue to monitor and manage. Some drainage works were put in place to ensure that contaminated runoff would flow through to Retention Pond 2 (RP2), which was designed and engineered to receive such waters.

During the 1998/99 wet season, the first following the placement of this uranium ore within the RP1 catchment, the uranium concentrations increased 100-fold from a normal background value of <1 to some 70 ppb within weeks. As this coincided with low flow rates in the Magela Creek, there was real scientific concern that this could cause an unacceptable increase in uranium concentrations at the gauging station 'GS009'.

In an attempt to reduce the flow rate ERA placed sandbags over the RP1 spillway. Towards the end of the wet season, uranium concentrations had reduced somewhat to about 10 ppb – still above the pre-1998 levels. Although the obvious source was the dumped ore, this was denied by ERA and investigations were begun by the OSS and ERA to isolate the exact 'source'.

It is understood that the total load of uranium discharged by this incident alone from Ranger was of the order of some 500 kg. The RP1 uranium is therefore a significant increase in uranium load for the Magela Creek system.

The 1999/2000 wet season saw the uranium concentrations in RP1 discharge once again reach highly elevated levels of about 40 ppb. During 2000 ERA finally admitted that the source of the elevated uranium was indeed the ore on the tailings dam wall and the failure of drainage controls which overflowed during wet season storms.

Although more drainage control works were done in 2000 and apparently again in 2001, the uranium concentrations have continued to stay elevated in RP1 discharge, maintaining around 10-15 ppb in the dry season. The levels in the 2000/01 wet season reached about 25 ppb. However, in early 2002, the Mirrar became aware that the uranium concentrations had again reached some 70 ppb – indicating a major failure of the drainage control works and fresh leaching of contamination from the dumped ore into RP1.

It is curious that ERA states it was not aware of RP1's elevated uranium concentrations until the 'focus' level for uranium was reached at monitoring point GS009 and it started investigations to trace the source. ERA is required to test the quality of RP1 discharge on a weekly basis and therefore should have known earlier. ERA's response again was to merely sandbag the RP1 spillway. The concentrations up to mid-2001 are shown in Figure 1.

The Mirrar are extremely disappointed that such continuing cycles of pollution – with recognised threats to the uranium contamination of the Magela Creek – are allowed to continue without sufficient enforcement of environmental objectives by regulators (or ERA). The elevated uranium concentrations are severely impacting on Mirrar confidence in environmental management at Ranger and raising serious doubts about many other aspects of ERA's operations.

The Mirrar believe that the RP1 catchment needs to be completely re-engineered to prevent – under *any* wet season scenario – the flow of contaminated water into RP1 and therefore returning RP1 to the relatively clean catchment it was prior to 1998.

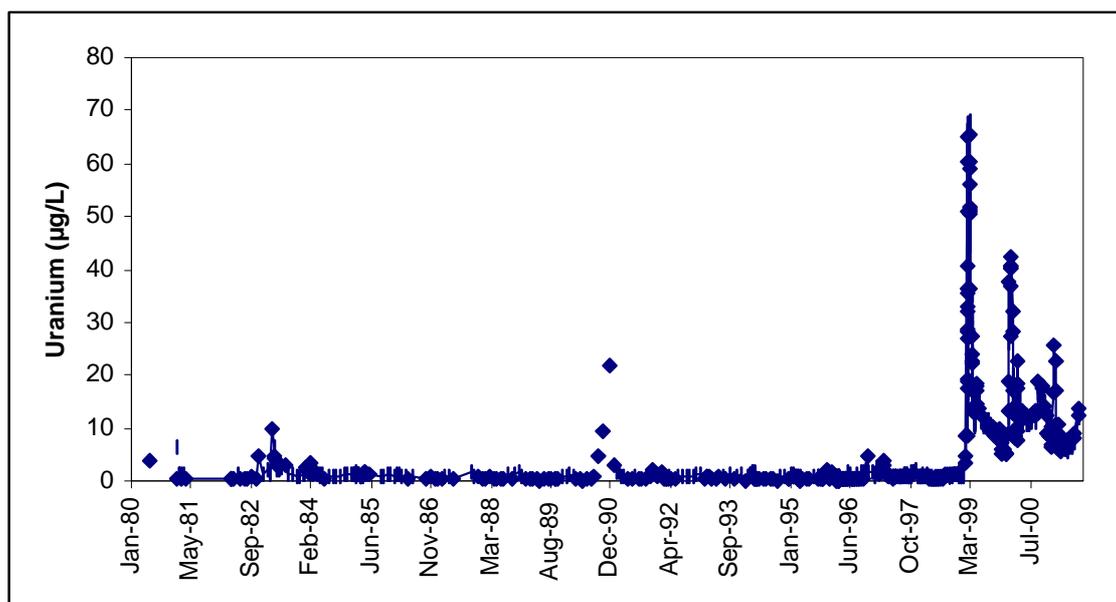


Figure 1 – Uranium concentrations in RP1 discharge to the Magela

This process must be done with the full knowledge and approval of stakeholders and regulators, as ERA can clearly not be trusted to undertake this project on its own. The Mirrar also believe that additional monitoring points are required downstream of RP1 in the Coonjimba Billabong and along the flow-path where RP1 discharge would mix with waters in the Magela Creek.

***Incorrect Stockpiling of Uranium Ore***

On the afternoon of 27 February 2002, the Mirrar were informed by Northern Land Council representatives of the incorrect dumping of low-grade uranium at the Ranger site. Despite incomplete details, environmental monitoring data had indicated a surge in uranium concentration in waters entering Corridor Creek to some 2,000 ppb. This creek flows into Georgetown Billabong and then to the Magela Creek and Kakadu. Detailed investigations were initiated by the OSS and ERA into the source of incorrect dumping and the levels of uranium contaminating surface waters. The report by ERA has been obtained by the Mirrar and highlights serious deficiencies with current and future environmental performance at Ranger.

The current mining within Pit #3 is producing much higher quantities of low-grade uranium ore (0.02-0.12% U<sub>3</sub>O<sub>8</sub>) than was predicted in mine planning estimates. This material requires separate stockpiling and storage, since any rainfall runoff would be highly contaminated with

uranium. The resultant need for additional material storage space at Ranger is proving a significant management issue.

On 14 January 2002, truck drivers from the mine began dumping the ore on an area (#2 stockpile) that had been compacted and 'sealed' to allow runoff to be diverted away from RP2. As this area was not supposed to receive this type of ore, the runoff was draining freely through existing networks that lead to Corridor Creek and Georgetown Billabong. The dumping of ore continued until 26 February. The total amount of ore dumped at the site according to current information is about 80,900 tonnes (t) of 0.02-0.08%  $U_8O_8$  ore and 3,600 t of 0.08-0.12%  $U_8O_8$  ore, or 84,5000 t in total.

Although the full detail of the incident is still being clarified the following points highlight some major fears and concerns of the Mirrar about operations at Ranger, namely:

- the incident is a clear breach of Ranger's statutory Environmental Requirements;
- the elevated uranium concentration in runoff water from the stockpile area was not identified by minesite personnel but the Darwin office (via email) of ERA's 100%-controlled EWL Sciences on 23 February;
- uranium concentrations were as high as 8,140 ppb in some locations, with most samples in the stockpile area showing between 500 and 1,000 ppb;
- ERA state they do not have the resources to finish the full implementation of the recommendations of the 2000 OSS report on the manganese leak;
- the high turbidity of the runoff was noticed by accident, which triggered sampling of the area in question and the 'discovery' of elevated uranium concentrations;
- runoff from the high grade ore #4 stockpile (containing 0.12-0.18%  $U_8O_8$ ) also breached proper drainage, and instead of flowing to RP2 joined the runoff from the incorrectly dumped low grade ore in flowing through to Corridor and Georgetown Creeks;
- the mine and environment departments at Ranger are not communicating effectively, despite this being a major shortcoming identified during the investigation of the 2000 manganese leak. This serious deficiency was also highlighted by the NLC by email in November 2001 to ERA's environment department;

- it took some 44 days for the problem to be identified – despite the increased oversight and site visits by regulators (which is now monthly) and previous commitments by ERA to improve environmental and other management at Ranger;
- the eventual destination and location of the leached uranium is still uncertain – greater investigation needs to be undertaken to quantify the environmental location and impact of the uranium, and other potential contaminants. For example, has there been any discharge to groundwater? Has there been uptake by plants? What are the radium activities in runoff waters and in plants?

The Mirrar are concerned that there is still a significant amount of investigation and analysis to be done regarding the incorrect stockpiling of uranium ore and the inadequacy of environmental and water management systems at Ranger.

#### **4. Monitoring and Reporting**

On Monday 25 February 2002, the Mirrar were informed of elevated levels of uranium, magnesium and nitrate in Swift Creek near Jabiluka and elevated uranium levels at the statutory monitoring point downstream of the Ranger mine GS009. From ERA documentation dated 20 February and received by Gundjehmi Aboriginal Corporation on 25 February it is clear that the company should have informed stakeholders of the ‘action level’ (see above) being reached for uranium and magnesium at Jabiluka on 7 January.

In its 20 February notification, ERA acknowledged four (4) separate infringements of protocol, whereby the company failed to immediately report to stakeholders. Not stated by ERA was the additional failure to initiate mandatory weekly monitoring after samples taken on 8 January were analysed. Thus, there are five (5) separate infringements of the reporting protocol determined by the Jabiluka Minesite Technical Committee and the Northern Territory regulator.

The Northern Land Council has informed Gundjehmi Aboriginal Corporation that it did not receive notification of these elevated uranium levels until Monday 18 February and that ERA should have notified stakeholders on 8 January. Therefore, there was a delay in reporting of some five (5) weeks.

In his June 2000 report “Investigation of tailings water leak at the Ranger mine”, the Supervising Scientist made 17 recommendations to improve the environmental and reporting performance at the Ranger mine. His report was in response to the leak of contaminated water from the Ranger aboveground tailings dam for a period of some five (5) months. Three recommendations relate specifically to the identification and reporting of mine-related incidents that, “could be perceived to be of concern to the local Aboriginal people or the broader community”, the development of early warning systems and improving communications with external stakeholders.

The Mirrar maintain that had the recommendations of the Supervising Scientist in 2000 been implemented these delays in reporting would simply not have taken place. The Mirrar consider that the non-implementation of such recommendations highlights the inefficiency of the current regulatory regime at both Ranger and Jabiluka. These considerations were personally conveyed to the Minister for Environment and Heritage, Dr David Kemp, during a meeting in Canberra on 19 March 2002.

In its investigation report into the January-February 2002 incorrect stockpiling of uranium ore at Ranger (see above), ERA made the frank and disturbing admission that while the company, “commits to the full implementation of the recommendations of the Supervising Scientist from the leak incident in 2000... full compliance with the recommendations cannot be achieved with current ERA resources”.

#### **5. Alligator Rivers Region Technical Committee**

The Mirrar were disappointed that at the February 25-27 2002 meeting of the Alligator Rivers Region Technical Committee (ARRTC), the Committee declined to adopt the recommendation of the IUCN that an environmental NGO representative be appointed to the Committee. The Mirrar believe that the absence of an NGO representative both undermines the integrity of the Committee and reduces its transparency. It should be noted that the revision of the ARRTC by the then Minister for the Environment and Heritage, Senator Robert Hill was a direct consequence of persistent representation of the unresolved scientific issue to the World Heritage Committee by the Mirrar.

## 6. Cultural Heritage Protection

The Committee is well aware of the issues regarding the protection of Mirrar cultural heritage from the threats posed by the Jabiluka development. In a bid to break the deadlock over a process to protect the Mirrar cultural heritage from the threats posed by Jabiluka, the Mirrar have indicated they would consider a process *removed and separate* from the Jabiluka development. In response, the Commonwealth has suggested a process based on the Australia ICOMOS *Burra Charter* – the “Protecting Heritage Places” kit developed by the Australian Heritage Commission.

A two-day workshop to consider this proposal will be conducted on 16-17 April 2002. Convened by Gundjehmi Aboriginal Corporation, the workshop will be jointly chaired by the President of Australia ICOMOS and a representative of the Australian Heritage Commission. An observer from Environment Australia will also attend the workshop.

The outcomes of this workshop will be forwarded to the World Heritage Committee.

## 7. Allegations of Environmental Mismanagement

On Tuesday 9 April the Supervising Scientist issued a media statement stating he would, “investigate new allegations of inadequate environmental management at the Ranger uranium mine”. In the statement the Supervising Scientist noted that the allegations related to, “several incidents of poor environmental management practices at Ranger in 1997 and 1998”.

In subsequent media, ERA stated that a former senior environmental chemist at the company had made the fresh allegations that relate, *inter alia*, to: -

- ▶ the contamination (with uranium) and subsequent cover-up of creek systems, namely Gulungul Creek, outside the Ranger Project Area and within Kakadu National Park;
- ▶ inadequate and misleading reporting by the company in regard to the leak of tailings dam slurry, whereby the amount of slurry leaked was significantly under reported;
- ▶ substandard practices at the Ranger Uranium Mine laboratory, whereby the laboratory did not comply with the terms of its registration under that National Association of Testing Authorities (NATA).

In regard to Gulungul Creek, the former employee has stated – in documentation provided to the Supervising Scientist and the Northern Territory Department of Business Industry and Resource Development – that “Ranger Uranium Mine [RUM] knowingly and routinely allowed heavily contaminated water to flow out of the mine site at TDSWRC [tailings dam south road culvert] and into the surrounding environment in the catchment of Gulungul and Magela Creeks. RUM did not report the instances where an indication of this was observed at GCH [Gulungul Creek Highway – outside the Ranger Project Area and *within the World Heritage Area*]. RUM discouraged investigation into the elevated level found at GCH in December, 1997. Senior RUM Environmental Department personnel were alerted to the problem but did not regard it as serious and would not allocate resources to further investigation”. It should be noted that this testing point, GCH, is also a popular swimming area for the Traditional Owners, other Aboriginal residents and tourists visiting Kakadu.

The former employee alleges that uranium levels as high as 11 ppb were recorded in the World Heritage Area surrounding Ranger, almost twice the present limit, 5.8 ppb, at GS009 within the Ranger Project Area itself.

A separate allegation from the former employee relates to the spill of tailings from a ruptured pipe on the Corridor Road at Ranger in December 1997. The allegation is that where ERA reported the leak was approximately 1m<sup>3</sup> of tailings, the actual amount of leaked material was “several large tipper truck loads”.

Of this event, the former employee (who witnessed the clean-up operation) wrote: “Ranger Uranium Mine significantly understated the magnitude and extent of the tailings spill in December, 1997. The statutory report to the stakeholders stated that only one cubic metre had been spilled. For that to have been the case, the spilled material would have to have been spread over the 25 square metre area to a depth of only 1.6 millimetres. Given the nature of the spray from ruptured flanges, and that the leak was undetected for several hours, the scenario reported by Ranger is not possible.”

The former senior chemist also alleges that Ranger laboratory “did not comply with the terms of its NATA registration”, leading in the case of Zinc to “errors six times greater than the reporting limit ... being propagated and reported”. The former employee states, “Ranger did not comply with the analytical best practice required by the regulatory authorities”.

## 8. Conclusions and Recommendation

The recent unacceptable performance of Rio Tinto's uranium operations in Kakadu provide testimony to the long-held concerns of the Mirrar that environmental protection measures are completely inadequate.

Over the past two (2) months the Mirrar have received news that: -

- ▶ ERA neglected to report elevated uranium levels at Jabiluka by five (5) weeks;
- ▶ Elevated uranium levels were detected some three (3) kilometres downstream of the Ranger mine at gauging station 009;
- ▶ Elevated uranium levels were detected at Ranger Retention Pond 1;
- ▶ ERA incorrectly placed 84,500 tonnes of uranium at the Ranger mine;
- ▶ A former ERA employee has alleged inadequate environmental mismanagement at Ranger, the contamination of the surrounding World Heritage Area and a subsequent cover-up, and misleading reporting to regulatory authorities of environmental incidents at the mine.

In light of the above and other concerns the Mirrar recommend: -

*That the World Heritage Committee:*

- (a) Immediately inscribe Kakadu National Park on the list of World Heritage Properties In Danger on the grounds that the Jabiluka development poses ascertained and potential threats to the park's natural and cultural World Heritage values;*
- (b) Insist, at a minimum, on the immediate rehabilitation – to the satisfaction of the Mirrar Traditional Owners - of the Jabiluka mine site;*
- (c) Maintain an active engagement and watching brief over developments at Kakadu, particularly in relation to the protection of the natural environment.*



**Attachment A: Senate speech by Senator Trish Crossin regarding Ranger and Jabiluka**

**Title:** MATTERS OF PUBLIC INTEREST: Environment: Ranger and Jabiluka Uranium Mines. **Date:** 13 March 2002 **Database:** Senate Hansard

**Speaker:** Crossin, Senator Trish (ALP, Northern Territory) (EXTRACT)

SENATOR CROSSIN (Northern Territory) (1.24 p.m.) —I rise this afternoon to discuss as a matter of public interest the recent news of four separate incidents involving the elevated levels of contaminants, most notably uranium, at the Ranger and Jabiluka uranium mines in the Northern Territory. More specifically, I want to address the delayed reporting of these incidents by both the operator of the mine, Energy Resources Australia, and the failure of the Howard government to ensure Kakadu's protection.

The Ranger mine has had more than its fair share of environmental woe over its 23 years. According to the Australian Conservation Foundation there have been no fewer than 110 environmental incidents over this period, ranging from unexplained elevated levels of contaminants to spillages, leaks and breaches of reporting requirements. Ranger, as most Australians would know, is within the external boundaries of Kakadu National Park, which is Australia's largest national park and one of only 10 Australian sites inscribed on the UNESCO World Heritage List. Kakadu is actually listed on that world heritage register for both its natural and cultural values.

It is therefore imperative that the operations of the Ranger mine are placed under the highest possible scrutiny to ensure that we both protect the natural and cultural values of Kakadu and thus meet our international obligations under the World Heritage convention. To this effect in 1978 the Commonwealth established the Office of the Supervising Scientist. It was tasked with the protection of Kakadu's environment. Twenty-four years on, it is now very clear that the procedures in place to ensure Kakadu's protection are grossly inadequate. The regulatory regime, with the Office of the Supervising Scientist having an overall watching brief and with the mining company collecting its own samples and providing analysis, is plainly not working.

Unfortunately, Ranger also has a long history of delayed reporting of environmental mismanagement. On 5 November 1981 an island appeared in the tailings pond at the mine, radioactive wastes were exposed and the matter was not reported until 19 November. On 23

November that year, the then Northern Territory minister for mines and energy closed down Ranger pending further investigations. Four days later, that same minister waived the requirement of a two-metre coverage of water over tailings at all times and Ranger was under way again. But 20 years on the system is still grossly inefficient, as evidenced by this month's reports of elevated levels of uranium and subsequent delays in reporting by the mining company.

But these events come less than two years after a comprehensive review of Ranger operations following a five-month leak of contaminants from the tailings dam. On the afternoon of 28 April 2000, ERA notified the Office of the Supervising Scientist and other so-called stakeholders although not including the Mirrar, who are the traditional owners. They were not informed until media reports of 3 May 2000 hit the headlines. ERA notified that approximately 2,000 cubic metres of tailings water had leaked from a pipe in the tailings dam corridor at the Ranger site between late December 1999 and 5 April 2000. Subsequently the company revealed that it had suppressed this information for over one month before releasing details to the Australian Stock Exchange.

Of course, it is now known that ERA knew exactly how high the levels of manganese were in the area around the mine site as early as December 1999. In failing to report this accident, ERA was in breach of environmental requirements and the working arrangements outlined in the memorandum of understanding between the Commonwealth government and the Northern Territory government. In his subsequent report, the Supervising Scientist concluded that ERA did not comply with its environmental requirements under the Atomic Energy Act section 41 authority. Specifically, the Supervising Scientist concluded that two environmental requirements were breached, namely, requirement 3.4, which states that processed water must be totally contained within a closed system; and, requirement 16.1, which states that 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 regulations and any—not the ones they choose—mine related event which is of concern to Aboriginals or the broader public.

When the news broke late in May 2000, this federal government promptly assured the public—somewhat prematurely, though—that Kakadu was safe; and they made a brief show of politely castigating ERA at the time. It was in this chamber—in fact, in the Senate on 27 June 2000—that the then Minister for Industry, Science and Resources, Senator Minchin, tabled the report

of the Supervising Scientist into the tailings leak at Ranger, on behalf of the environment and heritage minister, Senator Hill. Senator Minchin detailed the recommendations of the Supervising Scientist, addressed each and reassured this parliament that they would be implemented. In fact a press release from Senator Hill at the time said this:

We will take the necessary action to extend the statutory environmental monitoring program to provide an additional early warning capability.

Senator Hill went on to say that Senator Minchin's support of the recommendation was vital to ensure that the changes required were delivered. After that, though, the Howard government, including both the industry and the environment ministers, simply forgot all about it. As current events have shown, the federal government and its agencies have clearly failed in their duty to protect Kakadu from the threats posed by uranium mining— because it has happened again. The news of this year's incidents and the subsequent reporting delay gives the lie to the government's assurances. Once again the Australian people have been let down. The environment of Kakadu National Park and the Mirrar traditional owners have been let down by this government. The World Heritage status of Kakadu has been tarnished once again by this government's abrogation of its responsibility.

In his June 2000 report the Supervising Scientist made 17 recommendations, four of which, I believe, have clearly not been implemented. Recommendation 4 was that ERA provide for training to ensure its employees appreciated the need to inform supervisors of any events which could be of concern to local Aboriginal people or the broader community. Another recommendation was that ERA should 'upgrade the environmental protection staff structure at Jabiru' to ensure that the company has 'the on site ability to effectively identify, interpret and rectify environmental incidents'. Recommendation 9 was that statutory monitoring be extended to 'enhance its capacity to provide early warning of unplanned releases of contaminants'. If these recommendations had been implemented—and, clearly, one would assume that they have been; if they have not been, that is another serious matter for this parliament to consider—then the likelihood is that these recent events would not have taken place, and certainly not the delay in reporting. Ensuring ERA's adherence to the recommendations was the sole responsibility of this federal government, and it has plainly failed to meet that responsibility.

Several weeks ago, on the afternoon of 27 February, the Gundjehmi Aboriginal Corporation was informed that, a day earlier, ERA had notified individual members of the Alligator Rivers

Region Technical Committee—not the whole committee as it sat in session, which is worthy of note, but individual members—that an incident had occurred at the Ranger mine, involving the incorrect stockpiling of uranium ore. While details remain sketchy at this point—which is, in itself, an indictment—it appears that ERA incorrectly dumped grade 2 ore into a rainwater sheeting area designed solely to run rainwater offsite and down the adjacent Corridor Creek, which feeds directly into the Magela wetlands.

The date of this dumping has not yet been ascertained. The ore was watered by rain, and a turbid run-off commenced entering Corridor Creek to the south of the mine site. Of course, with continual rainfall, most of the contaminant run-off bypassed the wetland filters in the Corridor Creek catchment and ran straight down the creek. In addition, the problem was exacerbated by incorrectly flowing run-off from a drain of another stockpile. Under the mine management plan, this water should flow to retention pond 2 and, therefore, remain there prior to filtration. Instead, it added to the contamination from the incorrectly placed ore.

Extraordinarily high levels of uranium in the Corridor Creek catchment were also recorded in early January by ERA, but no action was triggered and no report made to the stakeholders. It was not until 20 February this year that ERA commenced an investigation into the source of the elevated levels. ERA's investigation revealed, in fact, the incorrect placement of ore. They even said in their report:

... small laterite plumes from the toe of the stockpile, flowing west to the drain running to the Corridor system.

ERA have now capped the incorrectly placed stockpile, redirected the drains and introduced more frequent monitoring in the catchment. But how did it happen? How could such a serious blunder occur and go unnoticed and unreported? Has this company learnt nothing from its 1999-2000 experience? More importantly, why hasn't the Commonwealth government introduced measures to ensure that this could not happen again? Just how effective is the monitoring and reporting system that has been put in place by this company and the Office of the Supervising Scientist?

There is actually a three-tiered water monitoring system that comprises 'focus, action and limit'—too complicated to explain for the purposes of this parliament today. What should be known is that in the series of incidents that happened several weeks ago one of the levels actually reached the second stage, which is 'action', and that means that the company must

immediately inform all stakeholders, including the Supervising Scientist, the NLC and the Northern Territory government. But by 7 January ERA knew that the sample collected on 2 January showed that the action level had been reached yet it failed to report the matter until some five weeks later. In not reporting having reached action level, the company has again breached its environmental requirements. But what has this government done? Has the minister even issued a formal statement? Has he said anything? No, he has not. Has the Supervising Scientist been directed to prepare a report or a review? We would not know. Sadly, typically, this government is quiet. The silence from the minister's office is deafening.

Unlike the stunned minister, bunkered behind his minders, this party knows precisely what must be done. To ensure adequate scrutiny of what now appears to be a consistently failing system of monitoring and reporting in the Australian uranium mining industry, there needs to be a full and frank independent inquiry into exactly what is happening in these mines and what is happening with the monitoring and reporting requirements of this government to the Australian parliament and to the Australian people. The supervising scientist cited two reasons ERA had given by way of explaining the fact that they had breached two environmental requirements. Firstly, they said:

... recent changes in staffing at Ranger have resulted in the absence of a senior scientist with the ability to effectively identify, interpret and rectify environmental incidents.

Secondly, they said:

There is a lack of recognition by the Ranger Management Team of the needs and expectations of stakeholders that resulted in emphasis being placed on the absence of environmental impact rather than the issue of whether or not the incident would be of concern to Aboriginal people.

So ERA have blamed staffing and cultural ignorance within their organisation. This is an admission of an endemic problem, yet again this federal government has ignored it, washed its hands of its responsibility. ERA appear to have learnt nothing from June 2000 and because of Commonwealth negligence we are presented again with delayed reporting, breaches of environmental requirements and broken commitments. So how can the Australian people, and more particularly the traditional owners of Ranger, trust a government that so blatantly abrogates its domestic and international responsibilities to protect Kakadu?

The Mirrar people and the broader Australian public deserve that the truth be told about what happened at Ranger and Jabiluka to cause these environmental threats and subsequent secrecy.