

# Alligator Rivers Region Advisory Committee

## Agenda – 28th meeting

**Tuesday 21 August 2007 at 9.30am**

Venue: Conference Room – Jabiru Field Station, Opposite Airport, Jabiru

<b>Agenda item number and title</b>	<b>Action</b>
<b>1 Welcome</b>	Chair
<b>2 Apologies and Observers</b>	Chair
<b>3 Minutes of Meeting 26 – August 2006</b>	Chair
<b>4 Business arising from previous minutes</b>	Chair
<b>5 ERA developments – Ranger and Jabiluka</b>	ERA
<b>6 Supervising Scientist report</b>	SSD
<b>7 Dept of Primary Industry, Fisheries and Mines Report</b>	DPIFM
<b>8 Issues raised by environmental NGOs</b>	ECNT
<b>9 Hanson developments – Nabarlek</b>	Hanson
<b>10 South Alligator valley mine rehabilitation</b>	Parks
<b>11 Exploration</b>	
11.1 Cameco	Cameco
<b>12 Members reports</b>	
12.1 Australian Radiation Protection and Nuclear Safety Agency	ARPANSA
12.2 Department of Industry, Tourism and Resources	DITR
12.3 Northern Land Council	NLC
12.4 Parks Australia North	Parks
12.5 NT Department of Health and Community Services	DHCS
12.6 NT Department of Natural Resources, Environment & the Arts	DNRETA
12.7 Other members reports	
<b>13 Other Business</b>	
<b>14 Next meeting</b>	

# Alligator Rivers Region Advisory Committee

## Draft minutes – 21 August 2007 – Jabiru

Meeting commenced: 9.35am

### Item 1 Welcome

Charles Webb welcomed Members, Member's representatives and observers and acknowledged Traditional Owners and the Gundjeihmi Aboriginal Corporation members.

Alan Hughes (SSD) advised attendees of security and safety arrangements, including evacuation points from the Jabiru Field Station building.

### Item 2 Attendance and apologies

Charles Webb acknowledged changes in membership since the last meeting in April 2007

- Jennifer Parks replacing Ron Matthews – Cameco Australia Pty Limited
- Mike Ellsmore replacing Shane Maraldo – Hanson Australia Limited

<b>Apologies</b>		
<b>Name</b>	<b>Position</b>	<b>Organisation</b>
Philippe Portella	Member (pending appointment)	AFMECO Mining and Exploration Pty Ltd
Richard O'Brien	Deputy	Australian Radiation Protection and Nuclear Safety Agency
Jennifer Parks	Member (pending appointment)	Cameco Australia Pty Ltd.
Philipa Varris	Deputy	Energy Resources of Australia Pty Ltd – Ranger Mine
Peter Robertson	Member	Environment Centre Northern Territory
Emma King	Deputy (pending appointment)	Environment Centre Northern Territory
Mike Ellsmore	Member (pending appointment)	Hanson Australia Pty Ltd
Leslie Cadzow	Deputy	Hanson Australia Pty Ltd
Steve Baldwin	Deputy	Jabiru Town Council
Ian Newnham	Member	Jabiru Town Council
Mark Foy	Member	Northern Land Council
Richard Sellars	Member (pending appointment)	Northern Territory Office of the Administrator
Carolyn Barton	Deputy	NT Department of Industry, Tourism and Resources
Lyn Allen	Member	NT Department of Primary Industry, Fisheries and Mines
Mike Delosa	Member (Interim representative)	NT Department of Primary Industry, Fisheries and Mines
Peter Cochrane	Ex Officio	Parks Australia
<b>Attendance</b>		
<b>Name</b>	<b>Position</b>	<b>Organisation</b>
Charles Webb	Chairperson	Charles Darwin University
Peter Burns	Member	Australian Radiation Protection and Nuclear Safety

		Agency
Keith Tayler	Deputy (pending appointment)	Cameco Australia Pty Ltd
Marie Taylor	Member (pending appointment)	Department of Industry, Tourism and Resources
Xavier Schobben	Member	Dept of Health & Community Services
Suresh Rajapakse	Member (pending appointment)	Energy Resources of Australia Pty Ltd – Ranger Mine
Graeme Dewar	Member	Gundjehmi Aboriginal Corporation
Geoff Kyle	Deputy	Gundjehmi Aboriginal Corporation
Howard Smith	Deputy	Northern Land Council
Gillian Jan	Deputy	Northern Territory Office of the Administrator
Michael Lawton	Deputy	NT Department of Natural Resources, Environment and the Arts
Gary Martin	Deputy (Interim representative)	NT Department of Primary Industry, Fisheries and Mines
Russell Robinson	Deputy	NT Dept of Health and Community Services
Carolyn Lord	Secretariat	Supervising Scientist Division
Alan Hughes	Ex Officio	Supervising Scientist Division
Richard McAllister	Deputy (pending appointment)	Supervising Scientist Division

### Observers

Name	Organisation
Nicole Hinton	Department of Industry, Tourism and Resources
Brett Steele	Department of Primary Industry, Fisheries and Mines
David Klessa	Earth Water Life Sciences
Charles Roche	Environment Centre Northern Territory
Justin Tutty	Environment Centre Northern Territory
Anthony Sullivan	Supervising Scientist Division
Ken Evans	Supervising Scientist Division
Michelle Bush	Supervising Scientist Division
Michelle Iles	Supervising Scientist Division
Robert Thorn	Supervising Scientist Division
Suzanne Davis-Hall	Supervising Scientist Division
Wendy Murray	Supervising Scientist Division

## Item 3 Minutes of previous meeting

### Requested changes

**Page 14 – Requested by Geoff Kyle – Load limits on proposed water management**

The word ‘is’ should be ‘it’

**Page 14 – requested by Gary Martin**

Acronym RSL to be deleted

**Action: minutes accepted after changes made as requested. Secretariat to load amended minutes onto ARRAC website**

## Item 4 Business arising from previous meeting

Business arising – nothing identified from previous meeting

### **Outcome from Meeting 26 – ERA Incident list – raised by Justin Tutty**

Justin Tutty on behalf of Emma King (ECNT) advised that ECNT would like to take up the offer from ERA to provide the monthly EIRS (Environment Incident Report summary) to ECNT.

**Action: Suresh Rajapakse will arrange for reports to be forwarded to ECNT**

### **Update on Koongarra by AFMECO Pty Ltd – raised by Justin Tutty**

Justin Tutty on behalf of Emma King (ECNT) requested an update on the status of the Koongarra lease.

**Outcome: Howard Smith (NLC) advised a date was set in mid September for discussion between AREVA and TOs**

## Order of presentations

Richard McAllister provided an overview on the way data will be presented by each stakeholder group, as per agreement at ARRAC – Meeting 26.

## Item 5 ERA developments – Suresh Rajapakse

### Developments Ranger and Jabiluka

#### Organisation – Management changes and restructure

- GM Technical Projects – Dr Greg Sinclair replaced Dennis Gibson. Responsible for looking at the future of ERA.
- Maintenance Manager, Alex Bates, relocated to Business Integration early this year to assist with rainfall issues.
- Manager, Plant Operations – Gareth Anderson
- Manager, Mine Operations – Paul Hughes

#### Discussion

Marie Taylor (DITR) queried ERA about Amanda Buckley (former Media and External Relations Officer for ERA). Suresh Rajapakse advised that she had been moved to a corporate position in Melbourne and had been replaced by Shlae Bootie.

#### Safety performance

- ERA have been improving overall safety from 2004 in both contractor and employee management.
- Reported five injuries this year-to-date, not much better stats than last year.
- There has been significant focus on contractors, a revised contractor safety management process and a significant reduction on contractor injuries, even though improvements are taking place and more are required.
- To provide incentives to employees, ERA are promoting programs for improvements in performance. Rewards include the winning Department chooses a charity to donate money to.
- ERA are undertaking a semi quantitative risk assessment – 18 employees for two months have been allocated to work together to identify critical issues that could result in fatality.

## **Production**

- Although water is dropping rapidly ERA is still affected by the increased early 2007 rainfall. Lots of resources have been allocated to looking at strategies to deal with water management issues.
- Laterite processing will be commissioned early next year.
- Radiometric processing plant will be commissioned January 2008.
- Feasibility study for extension. A report will be produced to ERA board next month and the decision made after that.
- Acid Plant is to be decommissioned later this year – October.
- A 4 pt acid unloading facility will be commissioned in two weeks time – to unload acid from Darwin.

## **Monsoon trough recovery update**

- Earthworks to Jabiru East Land Application Area (JELAA) is underway to remediate erosion affected areas
- Hydrographic stations – new stations are in development and the old stations are back on the line post
- Solar ponds were approved on 22 June 07. Ponds will increase the evaporation of pond water at an estimate of up to 3 ML per day.
- New Land Application Area (LAA) at Corridor Creek was approved on 20 June 2007. The first two modules have been commissioned. Very good rates of evaporation are being commissioned. All modules should be operating by mid September.
- Still 35 metres of water in Pit 3.

## **Water Treatment Plant (WTP)**

- Designed to operate at 6 ML per day. Early this year expectations were not reached. The last few months the WTP is producing as designed.
- Process water treatment is scheduled to commence commissioning in October this year. Will require engineering changes in October – November timeframe. Will expect permeate production after then, followed by ecotox testing and wetland nitrification work. Cost estimate: \$111 million.
- Next year \$40million to be spent on WTP to produce permeate by end of 2009.

## **TSF Lift**

- Contractors mobilised in June. 35% of clay core was relocated to the stockpile next to the dam and 5% of rockfill placed. Filter material preparation (crushing and screening) began this week
- Should be complete by November next year.
- \$17 M cost.

## **Further expansion opportunities**

- ERA have assessed alternative mining and processing options
  - Further increase mining in Pit 3
  - Increase in current processing plant output
  - Investigation of alternative technologies – one being application of heap leach technology to lower grade ores.
- ERA have identified that tailing management is critical for any further expansion of operations. Rio is supporting ERA through the process.

## **2006–07 Wet season – Ranger and Jabiluka monitoring data**

Data presented on

- Magela Creek
  - Filterable uranium
  - Electrical conductivity (EC)
- Gulungul Creek
  - Filterable uranium
  - Electrical conductivity (EC)
- Jabiluka Swift Creek
  - Filterable uranium
  - Electrical conductivity (EC)
- Incidents – no critical or high incidents. Commitment has been managed well.

## **Revegetation – Ranger and Jabiluka**

- 6000 seedlings by Kakadu Native Plant Supplies
- Over 23 ha planted on the Ranger Project Area and Jabiluka lease
- 30–50% survival rates for plants at Ranger (extreme rainfall event has affected this)
- 5% survival rates for plants at Jabiluka (low rainfall in planting areas has affected this)
- Participation of 2–6 GAC contractors over the planting out period.

## **Closure Planning**

- Demonstration trial plot will be completed at end of year.
- Pit 1 tailings modelling completed, proposed schedule.
  - Installation of wick drains 2009.
  - Pit kept open as potential contingency for process water / tailings storage
  - Backfilling scheduled 2012–2013
- Water balance completed and in use for developing both short and long-term water strategies
- Closure criteria – will present further at next meeting and provide more detail.

## **Discussion**

### **Pit1 – raised by Geoff Kyle (GAC)**

Geoff Kyle queried the announcement that Pit 1 was to be used for tailings management and whether there would be a possibility of early rehabilitation. Suresh Rajapakse advised that this would be delayed.

### **Pit water and rainfall event – raised by Michael Lawton (DNRETA)**

Michael Lawton raised the rainfall event and pit water level and asked how that represented the volume of water ERA was dealing with.

Suresh Rajapakse advised ARRAC that between 3500 and 4000ML flowed into the pit as result of the rainfall event. Previous to the event the bottom of the pit, at approximately -114 mRL, was basically dry. After the event it was filled up to approx -72 mRL. ERA are steadily reducing this, and the level is now at -83m. There is still lot of water but it is anticipated that by the beginning of the wet season with the new LAAs, solar evaporation ponds and everything working ERA hope to be able to work the bottom pit. The 3500–4000ML should be removed from the pit by the beginning of wet season.

Michael Lawton verified that the 4000ML would be disposed of through evaporation, treatment in the plant and irrigation.

**Exploration – raised by Justin Tutty (ECNT)**

Justin Tutty asked for an explanation on exploration activities at ERA  
Suresh Rajapakse advised that exploration had been focused in the pit area between the pit and access road, and the other side of road. Exploration was significantly ramped up over the past 18 months and the focus will be locating resources for continuation of Pit 3 and to gain an understanding of where the deposit goes.

**Ore located at ERA exploration points (Anomalies 4, 8 and 18) – raised by Geoff Kyle**

Geoff Kyle queried whether the company had determined what would be done with any ore located at Ranger 18??. Suresh Rajapakse advised that ERA were focussing all their energy on near pit exploration.. Part of the longer term strategy focuses on what is elsewhere on the lease.

**ERA extension – raised by Michael Lawton (DNRETA)**

Michael Lawton noted that the proposal was to be presented to the ERA board in a month and asked when a decision was expected, when it would be announced, and whether a report would be released.

Suresh Rajapakse advised that the decision will be made on the day of the board meeting and that a report should be released, although not including the confidential economics component.

**Acid Plant decommissioning – raised by Charles Webb (Chairperson)**

Charles Webb asked about the status of the decommissioning of the acid plant and the installation of acid loading equipment and whether ERA were currently having acid delivered. Suresh Rajapakse advised that there was now a single point for unloading the acid on site now and they have had about four loads delivered. Geoff Kyle queried how many trucks of acid would be delivered per week. Suresh Rajapakse advised six trucks per day and advised that ERA had some problems with the acid plant so have been purchasing acid. Geoff Kyle commented that this was a lot of acid for one day, Suresh Rajapakse acknowledged the comment.

**Life of the mine – raised by Justin Tutty (ECNT)**

Justin Tutty asked for an outline on the proposed life of the mine. Suresh Rajapakse advised that in terms of the mining it was due to cease in 2008 and this extension will extend it for three years. Processing will continue beyond the life of the mine. Geoff Kyle asked whether at this stage there were any plans to seek an extension of the lease. Suresh Rajapakse advised no.

**Item 6 Supervising Scientist Report to ARRAC 28****SSD routine monitoring activities – Michelle Iles**

Michelle Iles presented the results of the SSD routine surface water and atmospheric radiation monitoring programs, including aspects of research and development in these programs, ie Chapter 2 of the Report of the Supervising Scientist to the ARR Advisory Committee, August 2007 to ARRAC.

Topics included:

**Ranger off-site surface water quality monitoring by SSD (including some key ERA data)**

*Outline of SSD program*

- Weekly water chemistry at Magela and Gulungul Creeks upstream and downstream sites

- Continuous EC, Ph, turbidity data collected for Magela and Gulungul Creeks (and ph & EC in Retention Pond 1 (RP1) and GC2 by ERA).
- Water quality monitoring is only conducted on site by SSD as part of specific research projects.
- Biological toxicity testing in Magela Creek (bi-weekly creekside water samples and continuous monitoring using insitu snails – a new method still under research and development)
- Macro-invertebrate and fish community studies in shallow lowland and channel billabongs
- Bioaccumulation of fish and mussels – biological indicator as well as assurance of these food items in Mudginberri billabong

*Salient points of presentation*

**Magela Creek**

- Upstream vs downstream concentration of U (SSD & ERA data) for Magela & Gulungul Creeks
- Water level during heavy rainfall event in February – March 2007.

During a period of 5–7 days there was eight time the mean annual water. Way over a 1: 100 event. Damage was done to the monitoring stations and interfered with monitoring programs.

- Uranium concentrations

Data from ERA, DPIFM and SSD was shown and was in good agreement apart from one ERA sample (1.2ug/L) that exceeded the action trigger level. At the time ERA had approved water contingency programs in place so Action was already occurring.

- Predicted magnesium concentrations from EC

Strong relationship between EC and Mg concentrations allow predictions of magnesium from continuous EC data. Investigated (i) Early season spikes in Mg concentrations, (ii) Exceedances of the ecotoxicologically derived “high reliability trigger value” (a trigger value according to the ANZECC & ARMCANZ 2000 water quality guidelines NOT a compliance trigger value) during flood event, (iii) Monthly loads of Mg calculated for the season from continuous EC.

- (i) Spikes occurred early in season and mid season. First spike occurred prior to the RP1 flow. The second spike was tracked to Coonjimba Billabong. The Mg:SO<sub>4</sub> ratio was ~3:1 - similar to waste rock wash off signal of 4:1 seen in water on site (including RP1). During this period rainfall was sporadic. Continuous EC used to calculate Mg loads during this period and similar period last season. Load of Mg during this period is less than during previous season, therefore increase in concentration attributed to a concentration effect rather than an increase in loads. (This was also presented at previous ARRAC meeting)
- (ii) During the flood event the estimated Mg concentrations at 009 spiked above the ecotoxicologically derived “high reliability trigger value” several times. No Mg:Ca ratio data for these spikes is available and the durations were very short.
- (iii) The estimated Mg loads were higher for 2006-07 than the previous wet season because of the high February and March loads during the flood event. Loads in the other months were lower in 06-07 compared to 05-06.

## Discussion

### Monitoring schedule/techniques and pre-2001 data – raised by Geoff Kyle

Discussion was held on

- the continuous monitoring show spikes in EC which illustrates how the current monitoring schedule of SSD, ERA and DPIFM (weekly grab sampling or less frequently for DPIFM) has a high possibility of not capturing spikes. Alan Hughes responded that this was one of the reasons we now have continuous monitoring. Michelle Iles added that, although not an early warning method of monitoring, the biological monitoring integrates effects over the whole season and is the endpoint for assessing environmental protection.
- uranium data prior to 2000 was not presented to ARRAC members in the presentation. It was explained the formal SSD routine monitoring program did not begin until 2001-02 although SSD have data for the same sites and variables for 2000. The improvement in water quality at 009 seen since 2000 result from works done in the headwaters of the RP1 catchment to improve the water quality in RPI.

## Discussion

### Spike in EC and predicted level of Magnesium – raised by Michael Lawton (DNRETA)

Discussion was held on the

- General discussion of how Mg concentration can be predicted from EC data.
- The EC spikes and their relationship to volumes in the creek.

ARRAC was informed that

- In the first spike EC and Mg concentrations were higher than usual at that time of year but volume was low, meaning the Mg load was low.
- Both the EC and volume in creek was high at that time of the flood which means the Mg load was high during that time
- ERA have continuous EC data from RP1 and GC2 which will be analysed by eriss as part of their research into reconciling solute loads leaving the site vs loads in the creek.

David Klessa (EWLS) said the spike during the flood event was caused from intense rainfall and the normal water management systems not being able to cope. As a consequence, ERA moved into contingency management mode adopting contingency measures approved in the water management plan and some additional measures approved by the Supervising Authorities at the time. This resulted in some seepage and runoff waters being diverted into RP1 and Corridor Creek, wetland filters flushing quickly and thus resulting in a spike in EC and Mg on 3 March during the high flood. He indicated this was not surprising.

### Magela Creek 2006–07 data chart (refer to SSD PP slide page 9)– raised by Charles Webb (Chairperson)

Discussion was held on

- the relationship between the discharge graph (top), the continuous EC trace (bottom) and the predictions of Mg concentrations from the Mg-EC regression relationship.
- the relationship between the activities on site during the flood event and the EC peaks seen in the downstream EC trace compared to the upstream EC trace. The downstream EC trace follows the hydrograph trend as the rainfall over the site was extreme and the more water there was in the creek the more

there was also on the site and leaving the site. The water leaving the site was high in solutes and caused an EC peak.

**Continuous loggers – raised by Michael Lawton (DNRETA)**

Taking into consideration the correlation between EC and Mg a discussion was held on what time frame the loggers could detect a spike. ARRAC was informed that the loggers detect every 6 minutes.

Michelle Iles advised that SSD had only collected two years of data and the continuous monitoring program was still in the research and development stage. SSD would also be looking at RP1 and Corridor Creek catchment continuous monitoring (ERA data).

Justin Tutty queried whether there was continuous EC data from other agencies or if spot data from other agencies had been overlain on the SSD continuous data. ARRAC was informed that this has not yet been done but could be done and reported at a later stage. It was noted that DPIFM & ERA do not have any loggers in Magela Creek. ERA has them in onsite water bodies. This data will be used in load reconciliation. The priority of these tasks would be decided by eriss when weighed up against their other work commitments.

Justin Tutty asked if the significance of continuous data with respect to toxicity could be explained. Discussion was held on the use of EC to predict Mg concentrations. The toxicity results are interpreted as Mg:Ca ratio values to take account of ameliorating effect of Ca on the Mg toxicity. However, continuous EC cannot be used to predict the Mg:Ca ratio. Therefore the continuous EC cannot be used to interpret EC spikes and therefore predicted Mg spikes in terms of toxicity.

Further discussion was held on the ability to use other chemicals to detect uranium. ARRAC was informed that EC and uranium in Magela Creek are not related, back on site, closer to the source of uranium wash out from stock piles, there is a strong relationship in the sense that if one rose the other would also, but not in the creeks off-site, therefore EC levels cannot be used to predict uranium in the creeks.

Charles Webb: What is the relationship?

Michell Iles: EC is a direct measure of solutes. Because salts and uranium are washed off the waste rock dumps and enter water bodies in a similar time frame the EC in those water bodies reflects the salt and the uranium concentrations well. From there the salts act conservatively in the creeks and retention ponds (ie stay dissolved) but uranium is adsorbed to sediments and particulates. So the further from the source the more different the behaviour in U and the salts. The EC reflects the dissolved salts but is not affected by uranium so much as there is little of it left dissolved and the EC signature is dominated by the salts. Therefore EC cannot be used to predict U concentrations. David Klessa confirmed this.

Michael Lawton noted that it had been indicated that if Mg trigger was near the trigger interims of ecotox and queried what temporal element was taken into this. He further queried if the spike was showing duration of less than an hour and the trigger is over the threshold how would this be put into a risk assessment, like it happened for

35 mins in a flood event. ARRAC was informed that the ecotox values are set on 96 hour tests. It is understood that if this happened over the small time frame no ecotox effects would be seen.

Geoff Kyle queried whether this meant that on that criterion that on occasion we have no way of determining an effect if exposed for less than 96 hours. ARRAC was informed that this is why SSD conducts snail insitu tests in the creek and monitors these. To date no effects have been seen and 96hrs is the cut off period as this is the chronic test used. 96 hour tests are what is recommended by the ecotox scientific community and the Australian Water Quality Guidelines.

Further discussion was held on chronic and acute tests, and whether the chronic toxicity studies that have been conducted can also provide information on the potential toxicity of short duration events.

A request was made for SSD to put together a presentation on acute and chronic tests to be presented at the next ARRTC meeting. ARRAC was informed that that this information will be presented in the SSD Annual Report 2006–07.

Alan Hughes did not commit to do in time for ARRTC but advised it would be prepared to present at the next ARRAC meeting.

**Action: OSS to arrange a presentation on acute and chronic ecotox testing for presentation at the next ARRAC meeting**

**Michelle Iles continued to present to ARRAC on**

- Magela Creek – estimated Mg loads

ARRAC was informed that during the period when the spikes occurred there were lower loads going down the creek, compared to last wet season. Later on in the season the concentration of the load is actually lower. It was clarified that the units are in tonnes

- Magela Creek radium 226

ARRAC was informed that the turn around time had decreased and that upto date data is available on the SSD website. There is not much difference in the results downstream and upstream. The radium annual limit trigger level is based on a uptake via mussels for a 10 year child living downstream.

- Gulungul Creek uranium

ARRAC was informed that data was in good agreement except for one peak shown. Peak occurred during the flood. SSD sampled around about the same time as ERA but did not get peak. Data since December 2001 was presented and uranium concentrations showed that last year was more of a spike. It is thought that this increase is related to the Tailing dam work and more turbidity in creek.

- Creekside monitoring – snails

ARRAC was informed that the previous setup was destroyed through flood. Another system was already in place. Survival rates close to 0 difference most of year.

**Discussion**

**Significant increase in egg rate since 1992 – raised by Howard Smith (NLC)**

Howard Smith queried what the significant increase in egg rate was since 1992. Discussion held and referred to explanations given in previous annual reports.

Justin Tutty asked for more confirmation that the EC spike during the flood event did not cause an environmental impact.

Wendy Murray (JFS Field Station Manger) informed ARRAC that SSD only retrieved downstream creekside results not upstream data during the event and staff did not go out to monitor daily during the flood event due to the risk and inaccessibility of the site. It was reinforced that SSD has macroinvertebrate and fish community data to confirm statement that there had been no biological effect.

<b>Action: SSD to report what biological data available over the flood period at next meeting of ARRAC.</b>
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Reference was made to the *Supervising Scientists Report to ARRAC – August 2007, Page 12* and further discussion held on the increase of snail egg production.

Snail egg production was high during first test. But spot water chemistry data was not unusual compared to long history of data compared to weeks of creekside tests and past tests with similar water chemistry have not shown any impact. Also snail egg production in the insitu tests was not high. This had been reported to the previous ARRAC meeting and the committee were referred to the SSD report for a detailed explanation.

Charles Webb: Would be interesting to understand the effect in case there are impacts other than mining having an effect on snail laying. Be good to understand why there was such a high level of eggs laid.

Michelle Iles; Important to note during the first test period no water was entering Magela through RP1 or Corridor Creek creek.

Justin Tutty: Why is Larvae fish test being dropped from the field toxicity program.

Michelle Iles; Have been using that test for years and it is very resource intensive. Snails are much more sensitive so it is better to focus on snail and try and come up with better methods. With creekside monitoring have 4 days monitoring and have a week break partially to culture fish larvae. The new method using only snails insitu is continuous.

Michelle Iles continued with the presentation.

- Macroinvertebrate communities

ARRAC was informed that communities with similar macroinvertebrate structure have been monitored in both controlled and test creeks.

- Fish communities – channel billabongs & shallow lowland billabongs.

ARRAC was informed that in channel billabongs there was a decline in dissimilarity values. The chequered rainbow fish changes were in response to natural changes. Changes in sediment etc has impacted on change in results. Large variations in Coonjimba billabong. Committee referred to the ARRAC report and the SSD Annual Reports for more information on these issues.

- Magela Creek – bioaccumulation

Discussion on trends, comparison of results with control site and importance of different radio-isotopes to dose for humans

- Jabiluka surface water results - Discussion on U and radium trends

- Radiation monitoring

ERA and SSD sample airborne pathway. Data is collected in Jabiru and Jabiru East and near Mudginberri. In March each year radon is lower-this due to amount of water around. Does are low compared to dose limits.

Howard Smith asked for details of the hypothetical diet used to model dietary uptake for the critical group of Aboriginal people living at Mudginberri. Michelle Iles explained that recent surveys have been conducted by eriss to update the dietary knowledge. Which is important for calculating doses now and for deriving radiological closure criteria for Ranger.

Discussion on discrimination between mining and non-mining uptake of radionuclides into mussels. Michelle Iles explained that the ratio of radium 226 and radium 228 can be used to identify mine source and background. Eriss have used this method in the South Alligator Valley and can provide more detail at the next ARRAC meeting.

**Action: SSD to report on updated dietary model and use of radium ratios to identify mining from background radium at next meeting of ARRAC.**

## **Audit and inspection – Suzanne Davis-Hall**

Suzanne Davis-Hall presented to ARRAC the audit and inspection activities reported in the *Report of the Supervising Scientist to the Alligator Rivers Region Advisory Committee – August 2007*.

### **Ranger mine**

- 4 Routine Periodic Inspections and 1 environmental audit were conducted

*Routine Period inspection (RPI)*

Focus for the RPIs

- Djalkmara and Corridor Creek LAAs areas
- Evaporation (solar) ponds
- FIFO camp
- Radioactive hydrocarbon storage area
- Magela Creek LAA and flow

*Ranger audit*

- Conducted on 9–10 May 2007
- Ranger Radiation Management Plan was the focus of the audit
- The audit team were satisfied that Ranger mine complied with the major components of the plan. The audit resulted in 27 findings
  - One finding was satisfactory but improvement (S/I) recommended
  - 26 were satisfactory (S).

An overview of the S/I requirement was explained as follows:

Section 6 of the Ranger Radiation Management Plan required all staff to undergo a radioactivity and radiation induction. Ranger did not have a system to be able to verify that staff have undertaken this induction, although training inductions are run weekly. The audit team made it a requirement that this issue be rectified prior to the November audit.

### **Jabiluka lease**

- One RPI and one environmental audit was conducted at Jabiluka.

### *Jabiluka RPI*

The Jabiluka RPI focussed on

- Revegetation success
- Erosion control

### *Jabiluka audit*

- Conducted on 10 May 2007
- The focus of the audit was the Jabiluka Authorisation 0140–03
- The audit team were satisfied that Jabiluka complied with the major components of the authorisation. The audit resulted in 22 findings
  - One finding was satisfactory but improvement (S/I) recommended

An overview of the S/I requirement was explained as follows:

Section 2.1.2 requires ERA to maintain the site in a state of care and maintenance, by undertaking activities including maintaining the capping of the vent raise at the surface and conversion to a water sampling point. Capping was maintained until 2006, but due to access difficulties caused by Cyclone Monica in April 2006 has not been maintained since.

### **Nabarlek**

The Nabarlek dry season inspection included the

- Radiologically anomalous area
- Mill and admin revegetation area
- Development of the wet-season accommodation
- The site boundary fence

### **South Alligator valley (SAV)**

- Inspected on 25–28 June 2008
- Inspections included
  - SAV village containers
  - SAV village underground containment
  - El Sherana camp underground containment
  - El Sherana weigh bridge underground containment
  - Batter bund underground containment
  - Saddle Ridge underground containment
  - Rockhole mine creek
  - Gunlom roadside tailings site.

The following recommendations were made after the inspection

- Weed control in an around the SAV village container compounds is needed
- Exposed rubbish and gully erosion at the weighbridge containment site needs to be included in the remediation of that site.
- SSD to visit the sites post remediation to conduct a final radiation check of the sites.

### **King River and Myra Camp exploration sites**

Not inspected during this reporting period and inspections have been scheduled for late August to early September.

## **Discussion**

### **Responsibility for South Alligator. – raised by Justin Tutty (ECNT)**

Discussion was held on which organisation has responsibility for the South Alligator valley. ARRAC was informed that Parks Australia North is funded to manage this project and Greg Balding is the contact person. Parks Australia are regulated by ARPANSA and have a licence for radiation material stored at the SAV site.

### **Jabiluka audit outcome – raised by Justin Tutty (ECNT)**

Justin Tutty asked for further information to be provided on the failure to maintain the vent raise at the Jabiluka lease. ARRAC was informed that the capping is located on top of the hill and ERA staff couldn't gain access to the top of Jabiluka due to the weather and the access road not being safe. Justin Tutty queried whether access to the site could be gained by helicopter and was advised that there was no landing pad. It is anticipated that there will be access in time for the November audit. ARRAC was informed that the road has been refurbished to the existing hardstand area but the road up to the vent raise was a steep rocky hill and had completely washed out during recent events. Justin Tutty queried why the road had not been repaired and was informed that ERA can now access the area so will be able to commence repair of road so the top can be accessed. ARRAC was informed that in terms of environmental risk this issue was very low.

### **Audit ratings and response – raised by Xavier Schlobben**

Xavier Schlobben referred to the Ranger S/I outcome and queried if an audit resulted in a number of unsatisfactory (U) finding would ERA be required to deal with them straight away. ARRAC was informed that if the findings were a safety hazard they would expect the issue to be rectified straight away but the S/I finding on the radiation safety plan was based on a record management issue. It was noted that if urgent action was required it would trigger the Mining Management Act and the mining officer could issue the instruction immediately. Suresh Rajapakse confirmed that if any impact that has an immediate impact ERA would undertake immediate action.

## **Item 7 DPIFM – Gary Martin.**

Gary Martin presented the *DPIFM Northern Territory Supervising Authorities Environmental Surveillance Monitoring in the ARR – Report 54 – ARRAC August 2007* to ARRAC.

### **Minesite Technical Committee (MTC)**

- Ranger MTC and Jabiluka MTC were held on 1 June and 26 July 2007.
- Nabarlek MTC was held on 26 June 2007

### **Variations to authorisations**

- Ranger – authorisation 0108–07 issued 3 April 2007 has not been varied since the previous ARRAC meeting
- Jabiluka – authorisation 0140–03, Annex C, section C4.4 was varied on 11 July 2007, to align for reporting requirements for JSC and JSCUS with the monitoring schedule for these sites.

### **Environmental and safety incidents**

- During the reporting period there were 13 incidents reports at the Ranger mine
- The incidents did not constitute any significant risks and were followed up during routine periodic inspections and.
- One incident involving 500 litres of diesel fuel spilt from a vehicle at the bulk fuel split area was contained and cleaned up with minimal environmental impact.
- There were no significant safety incidents reports at the Ranger mine.
- On 1 July 2007 the safety function of the Mining and Petroleum Compliance Division of DPIFM was transferred to NT Worksafe.

- From 1 July 2007, all safety incidents on mine sites in the NT will be reported to and investigated by NT Worksafe.
- At moment DPIFM are still working under Mine Management Act.

**Action: Gary Martin will speak with NT Worksafe and see if they want to present to ARRAC on safety incidents or whether DPIFM is to present on their behalf**

#### **Operational approvals and projects approved**

- several projects were approved or commenced
- commissioning of new LAA in Corridor Creek and Georgetown Creek areas
- use of LAA at Jabiru East and the extension of the RP1 area.
- irrigation of pond water at the Jabiru East and Magela LAA that had been previously approved but not used for some time
- construction of an evaporation basin on the southern stockpile and further works to lift the height of the tailings dam to +RL51 metres.

#### **Pond water**

- Pond water inventory at Ranger has varied during 2007
  - volumes in RP1, RP2 and Pit 1 have decreased during this reporting period however volumes in the tailings dam and Pit 3 have increased due to high rainfall in early 2007
- Actions initiated to reduce pond water inventory
  - extension to LAA
  - pond water treatment
  - irrigation of stockpiles
  - construction of evaporation basins on southern stockpiles
  - increasing the use of pond water for dust suppression

#### **RP1 – EC, uranium and sulfate**

- Close alignment with DPIFM and ERA data. Slight difference and peak in December 2006 sample.
- Uranium and sulfate –same correlation between DPIFM and ERA.

#### **Bore 83/1 – EC, uranium and sulfate**

- ERA and DPIFM data differs. Looking at getting ERA and DPIFM staff together to resolve difference.
- Uranium is not varying.

### **Discussion**

#### **Bore samples – variations in DPIFM and ERA – raised Geoff Kyle (GAC)**

Geoff Kyle raised concern over the significant difference in the results of bore samples being analysed. This issue was identified about 12 months ago. ARRAC was informed DPIFM were still investigating the difference but highlighted there was not a lot of monitoring done during this period, only two or three water samples were taken in the past six months. Processes are in place to align procedures.

*Reference is made to the DPIFM presentation slide on slide – Bore 83/1 Electrical conductivity, SO4 and Uranium.*

Discussion was held on possible variations to the current procedures to assist with determining why there was a significant difference in results. Suggestions included changing the sampling regime to monitor a short period with frequent, timely samples. Further discussion was held on the method for analyses, Discussion took place in which it was recommended that Gary Martin examine the data and determine

if he is reporting EC measured insitu or in a laboratory as the results can be very different.. The additional workload for monitoring staff to undertake increased monitoring was noted.

Geoff Kyle highlighted the concern from the TO perspective particularly if this continued to be a problem, especially if it could be solved over a short period of time by focusing on the process.

David Klessa advised ARRAC that in 2000 a review of all data in ERA, eriss and DPIFM system was pulled together. The data was analysed to determine whether to use insitu or laboratory data. He recommended that the report *Klessa 2000 on deriving baseline data* be referred to assist with the review process. The report raised issues with pH and EC.

Charles Webb queried whether the differences caused due to sampling techniques was of concern if the highest reading is indicating an impact way below the trigger level. David Klessa highlighted the importance of getting the data aligned to feed into groundwater closure criteria. Justin Tutty raised concern over the comment made about just focusing on the trigger level.

Gary Martin indicated he had taken the point on board noting the need to solve the problem and get it sorted out as soon as possible.

*Refer to the DPIFM slide OB27 Electrical conductivity, S04 and Uranium*

#### **Pre Sept 2003 data missing – raised by Geoff Kyle**

Geoff Kyle queried the whereabouts of data from pre 2003. Geoff indicated that Alan Pulaohvich had advised it had been temporarily misplaced and he was going to try to locate it. He asked whether anyone from Ranger could advise if this has been found. Gary Martin agreed to update the chart if the data was located.

<b>Action: ERA to follow up data from Pre 2003 for OB27 and OB83</b>
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#### **Nabarlek**

- site inspection was conducted on 25 June 2007. Issues discussed at the inspection included
  - continued revegetation of the site
  - removal of bund around the disused fuel storage tank
  - covering of the Radiological Anomalous Area (RAA)
- Hanson putting together a proposal on how they will tackle this area.

#### **Discussion**

##### **Storage of tailings in Pit 3 – raised by Justin Tutty (ECNT)**

Justin Tutty queried whether the proposal to place tailings in Pit 3 had been raised at the Ranger Minesite Technical Committee (MTC). ARRAC was informed that this proposal had been considered by DPIFM and the MTC. This proposal did not require an authorisation change and has been approved.

##### **Safety inspections at Ranger mine – raised by Alan Hughes (SSD)**

Alan Hughes queried whether DPIFM was still responsible for conducting safety inspections as Ranger. ARRAC was informed that this responsibility is being taken over by Worksafe. Seven DPIFM staff have moved over to Worksafe. DPIFM are still responsible for the regulatory inspections covered by RPIs. Until Worksafe takes effect inspections will continue under the *Mining Management Act*.

**Solar ponds – raised by Michael Lawton (DNRETA)**

Michael Lawton raised concerned over the solar ponds sitting on top of stockpiles and the potential for leaching and queried whether there was a report on the risk assessment or someone could provide info on this briefly. ARRAC was informed that EWLS prepared a proposal to the MTC to address the issue of seepage through the stockpile. An outcome was that the ponds were not aligned to reduce amount of seepage through the stockpile and this was also assessed by geotechnical control and addressed through the perimeter of the area.

**Action: David Klessa to send a copy of report submitted to MTC on solar ponds to Michael Lawton**

Xavier Schlobben asked what the depth of solar pond was. ARRAC was informed the bunds were 1 m high and water was 0.5 m deep.

**ADU incident – raised by Xavier Schlobben (NTDHCS)**

Xavier Schlobben asked for further information on the ADU incident. ARRAC was informed that the scaffolding was being moved when they discovered ADU on the planks. The area was cleaned up and the people involved underwent a rigorous health monitoring for 24 hrs and continued to be monitored for the following month. Xavier Schlobben indicated that the follow-up was deficient in the report and should have been reported to ARRAC and requested that more information be provided. ARRAC was advised that SSD gets supplementary reports, Geoff Kyle also receives a copy of the report. A request was made for a copy of the report to be sent to the Health Dept. Gary Martin advised that under section 90 of the *Mining Management Act* the reports cannot be released to anyone except through forums, but advised that Ranger could release the information.

Charles Webb raised the principle discussion held at ARRAC 25 related to reporting of incidents and the conclusion as a group that the report would be submitted to agencies by ERA and any member could raise a question to clarify the incident further at ARRAC. Xavier Schlobben advised he would check the *Mining Management Act* and clarify the point on sharing information between agencies noting that NT Worksafe would be working closely with NT Govt and need to clarify more information in this forum.

**Action: Gary Martin and Xavier Schlobben will follow up on legislation on sharing information between government agencies.**

**Update to closure plan – raised by Justin Tutty (ECNT)**

Justin Tutty queried whether DPIFM had contributed to the closure plan. ARRAC was informed that DPIFM had received a plan but not recently. David Klessa advised that there was also the rehabilitation plan which is different from the closure model released to stakeholders. At some point in the future the document will be merged. The closure plan takes into account the mining plan and includes all aspects of mine closure including the workforce etc. The rehabilitation plan assumes that mining stops on 31 March of the following year and only deals with rehabilitation. It is used to determine the cost of rehabilitation which is then forms the basis of the security bond ERA places with DITR. The ERA closure model is not a legal requirement but is a planning tool for ERA for long-term strategy. ERA fills statutory requirements by submitting the annual plan of rehabilitation. David Klessa advised that ERA would be releasing the closure model in September, and all stakeholders will be asked to provide comments.

## **Item 8 Issues raised by environmental NGOs – Environment Centre Northern Territory report – Justin Tutty**

**Tabled document Jeffery Lee**

### **Jabiluka status**

Justin Tutty raised the recent comments from Rio Tinto on Jabiluka that had attracted a lot of media attention and queried his understanding that Jabiluka was in long term care and maintenance (LTCM).

Suresh Rajapakse informed ARRAC that ERA had released a public media statement about distancing itself from the member of Rio and that Jabiluka will remain into LTCM for the future unless discussion is held with the Traditional Owners.

Geoff Kyle on behalf of the Northern Land Council informed ARRAC the NLC had also not made any comments.

### **Export controls**

Justin Tutty queried whether any of the attendees at ARRAC had any independent ideas on the export controls on uranium. Alan Hughes advised Justin Tutty that export of uranium did not fall in the scope of ARRAC. Justin Tutty further queried if anyone was interested in the Policy and was informed by Peter Burns that the export is controlled in non-proliferation laws by Australian Safeguard and Non-proliferation office.

### **Continuing EC issues**

Charles Roche raised concern that over a period of time that EC has been an issue. David Klessa highlighted that a lot of problems are recurring problems through lack of corporate memory and from when people come onto new job, work been done, decisions made, being who we are we like to look at data and sometimes not rigorous enough as to why we do things the way we do.

## **Item 9 Hanson developments**

### **Presented by Charles Webb on behalf of Mike Ellsmore**

Mike Ellsmore has now replaced Shane Maraldo at Hanson. Apology was sent to ARRAC as Mike Ellsmore was unable to attend.

ARRAC was informed that the plan for Nabarlek for the next six months had been continued including the weed and feral horse control, removal of the diesel tank bund material to be used as cover material on the RAA and the removal of the perimeter fence.

No questions raised

## **Item 10 South Alligator valley mine rehabilitation**

Greg Balding (PAN) sent his apologies and submitted the following written report. All monitoring systems were deployed on schedule, with the slow start to the 2006–07 wet season providing the opportunity to capture in detail the first flush period. This slow beginning was followed by record rain at the end of February. Despite loss and damage to some field equipment, and severe damage to the upstream creekside monitoring station, a continuous record of water quality parameters upstream and downstream of the minesite through the flood event was captured by the in-stream data sondes. This record will be analysed to provide a better understanding of the

interaction between the inputs from mine catchment and Magela Creek under these conditions.

A summary of the progress that has been made in the 2006–07 work program, since the last ARRAC meeting in August 2006, is provided below.

- Several workshops have been held with key partner stakeholders to establish priorities and timelines for operational and rehabilitation activities at Ranger. These include management and treatment of pond and process water, weed management, and design of rehabilitation trials.
- The planned ecotoxicity assessment of process water permeate has not been done owing to ongoing delays with commissioning of the process water treatment stream. This work may be done in quarter 3 2007.
- Installed for a second wet season continuous water quality (pH, EC, turbidity) monitoring equipment in Magela Creek upstream and downstream of Ranger mine
- Installed autosamplers upstream and downstream of Ranger to collect water samples to:
  - Derive a calibration function between turbidity and fine suspended sediment. This will be used in conjunction with the continuous turbidity trace to quantify the annual suspended sediment loads
  - Provide data to derive higher reliability management triggers for turbidity
  - Derive annual loads of U in suspended sediment upstream and downstream of the mine
- The second year of a trial of in situ biological monitoring methods (snail egg laying and gudgeon sac fry survival) is being carried out. Results to end of February were very encouraging (ie good comparison between in situ and creekside results). However, extensive damage to the upstream creekside station means that it might not be possible to continue with the full complement of comparative testwork for the remainder of the current wet season.
- Completed analysis of data from a major macroinvertebrate sampling program from reference sites and natural and mine-affected waterbodies in the vicinity of Ranger mine to provide basis for developing water quality closure criteria for natural waterbodies on the lease. The results show that the macroinvertebrate community in Georgetown Billabong is currently indistinguishable from reference waterbodies. This conclusion provides support for the proposal to use the historical water quality from this natural (mine-influenced) waterbody to derive closure water quality criteria that are conservatively protective for the aquatic ecosystem.
- Conducted routine water quality sampling and biological monitoring, the results from which have been regularly updated on the SSD website.
- Finalising ecological risk assessment for mining and non-mining threats and pressures on Magela Creek floodplain.
- Completed ecotoxicological testwork to quantify amelioration of magnesium toxicity by calcium in Magela Creek, and derived a provisional guideline value for Mg.

- Ongoing analysis of terrestrial bushtucker samples to derive local concentration factors for radionuclides in soils.
- Substantial progress in the acquisition of data to populate the first spectral database of ground cover plants relevant to minesite monitoring and rehabilitation assessment.
- Completed acquisition of post-Monica data for the Gulungul Creek catchment, Ranger mine and Nabarlek
- The CAESAR landform evolution model (University of Hull, UK) has been installed locally to complement the Siberia modelling capacity. Initial comparisons between the results from field measurements methods to estimate erosion losses and predictions of CAESAR and Siberia for a natural catchment have been very favourable.
- Collaborating with Parks Australia North to develop scopes of work for the rehabilitation of the old uranium mining sites in the South Alligator River valley (SAV), carrying out specialist radiometric assessments required for rehabilitation planning, and assisting with tender specification and selection for the rehabilitation works.

### **10.1 Planned and continuing *eriss* research and monitoring**

The planned and ongoing research and monitoring activities are designed to address the Alligator Rivers Region Technical Committee (ARRTC) key knowledge needs (KKNs), detailed in the *Report of the Supervising Scientist to the Alligator Rivers Region Advisory Committee in August 2005*.

The 18<sup>th</sup> meeting of ARRTC was held on October 17–18, 2006. At this meeting the outcomes of the research and monitoring program for the 2005–06 financial year were presented by SSD. ARRTC endorsed the quality of the work and the science behind it. A summary of *eriss* research and monitoring proposed for the 2007–08 financial year was presented to the 19th meeting of ARRTC on 8–9 March 2007. The committee members agreed that the program continued to address the research needs for the region. A significant proportion of the meeting was devoted to revisiting the KKN document. Since the KKNs were originally formulated in 2003 there has been a substantial extension (from 2011 to 2020) in the processing life of the mine. Hence it was an opportune time to ascertain if the content, priorities or timelines for specific work needed to be revised. An updated version of the KKN document will be produced in advance of the next ARRTC meeting late in 2007.

#### **Discussion**

Charles Webb asked if any questions to be raised need to seek an answer from PAN. Michael Lawton (DNRETA) requested that PAN clarify points:

- Removal of asbestos- where will this be placed?
- In terms of process has there been a germination of weed management and an overall environmental management plans prepared on a revegetation stabilisation exercise to see how they will manage.

## **Item 11 Exploration**

### **Cameco – Keith Tayler**

Keith Tayler reported that business was as usual. Both camps were up and running with a helirig on site at Myra camp and also have diamond RC rigs on site at King River. Aircore rigs will turn up soon. Currently Cameco have a reasonable drilling program scheduled but this will be weather dependant. If wet season comes early may be changed. Have completed the work program consultations with the traditional owners at Myra River and Kings River.

Keith Tayler advised that Cameco was working on formalising their environmental and safety management system.

### **Discussion**

Suzanne Davis-Hall queried whether Cameco were looking at achieving ISO14001 accreditation. ARRAC was informed that Cameco wasn't doing so immediately but were trying to just get things up and going.

## **Item 12 – Members reports**

### **Item 12.1 – Australian Radiation Protection and Nuclear Safety Agency – Peter Burns**

Peter Burns advised there was nothing to report except the ICRP finalised recommendations. Next committee reporting meeting in October 2007

### **Discussion**

#### **ICRP recommendations – raised by Justin Tutty (ECNT)**

Justin Tutty asked about what recommendations were being referred. ARRAC was informed that he was referring to the ICRP main commission. Five committees were formed to look at the question of protecting the environment from radiation with a view of what to do about it. The committees report to the main commission in October 2007. ICRP 60 stated that man should just protect the environment. The committee is looking at this in more detail. Arthur Johnston (former Supervising Scientist) is one of the committee members.

### **Item 12.2 Department of Industry, Tourism and Resources – presented by Marie Taylor**

Marie Taylor provided a brief update on the Uranium Industry Framework (UIF) activities and advised that the framework covered a partnership between government, industry, non-government and indigenous stakeholders that identified impediments such as

- Overlapping series of regulation between Northern Territory, Commonwealth and South Australian government.
- Transport issue – series of safety standards irrespective that transport carriers won't carry dangerous goods.

- Issues around skills, key impediments shortages of radiation safety skill sets. Looking at core competencies for that skill and encourage universities to train people.
- Indigenous engagement – look at obstacles for indigenous engagement and educational materials.

ARRAC was informed that a consultancy had been advertised on AusTender the previous week to review the regulation activities and identify specific actions to streamline the regulation that overlaps. The consultancy is expected to be two to three month project and a draft report should be available later in the year.

Also looking at establishing a dose register. This would be a national register of workers doses, so when workers move they have records maintained. Peter Burns (ARPANSA) is working on this. Currently trying to get funding from the Commonwealth Government to take further.

## **Discussion**

### **Report by UIF working groups – raised by Justin Tutty (ECNT)**

Justin Tutty queried whether the working groups had reported back. ARRAC was informed that the implementation group identified a one year workplan and each quarter they report to the implementation group. The public will be reported to annually.

### **Expanded role of Supervising Scientist – raised by Justin Tutty (ECNT)**

Justin Tutty commented that the role of Supervising Scientist may be expanded to cover other mines in Australia. ARRAC was informed this was not the case under the UIF. Justin Tutty also queried about the export of uranium and was informed that this was also no covered under the UIF.

### **Item 12.3 – Northern Land Council**

Need an copy of report

### **Item 12.4 Parks Australia North**

No attendance – nil reported

### **Item 12.5 – NT Dept of Health and Community Services – Xavier Schlobben**

Xavier Schlobben provided an update on the transportation of Dangerous Goods. In February there had been a significant spill of cyanide on the south of the Stuart Highway causing the highway to be closed for nine days. There was government action to look into rail and road transport of dangerous goods and consultancy let. A report has been prepared for government but this hasn't been released.

The Dangerous Goods Transport working group made a range of recommendations to rationalisation the radiation transport storage and handling legislation. These were made in time for the implementation of new dangerous good legislation facing all jurisdictions early next year and will need to be accommodated in the NT Worksafe Agency.

The working group is to also look at developing and implementing incident and response plans to transport of dangerous goods. Support was given to the consultants recommendation that the new proposals that go through the NT Worksafe Agency will require response plans to be developed up front. Report should be in public domain next month.

## **Item 12.6 – Department of Natural Resources, Environment and the Arts – Michael Lawton**

Michael Lawton provided an update on the NT Environment Protection Agency (EPA) local development.

Report has been prepared by an interim EPA board to send to government and cabinet for endorsement and now requires a process to implement recommendations.

The website link on the DNRETA homepage to NT EPA contains a range of information on other reports made. Invitation has been made to have significant briefings on what is going on and where things are at. The legislation has been drafted and anticipated that will be presented in Assembly before end of month.

## **12.7 – Other Members reports**

Nil reported

## **Item 13 Other business**

Nil raised

**Meeting closed 1.40pm**

## **Actions arising from ARRAC meeting 28 – August 2007**

### **Secretariat**

**Action: minutes accepted after changes made as requested. Secretariat to load amended minutes onto ARRAC website**

### **ERA**

**Action: Suresh Rajapakse will arrange for reports to be forwarded to ECNT**

**Action: ERA to follow up data from Pre 2003 for OB27 and OB83**

**Action: David Klessa to send a copy of report submitted to MTC on solar ponds to Michael Lawton**

### **SSD**

**Action: OSS to arrange a presentation on acute and chronic ecotox testing for presentation at the next ARRAC meeting**

**Action: SSD to report what biological data available over the flood period at next meeting of ARRAC.**

**Action: SSD to report on updated dietary model and use of radium ratios to identify mining from background radium at next meeting of ARRAC.**

### **DPIFM**

**Action: Gary Martin will speak with NT Worksafe and see if they want to present to ARRAC on safety incidents or whether DPIFM is to present on their behalf**

**Action: Gary Martin and Xavier Schlobben will follow up on legislation on sharing information between government agencies.**

### **PAN**

**Action: PAN is to provide information as requested at the next ARRAC meeting**