

Ms Lisa Bradley  
Director, Environmental Assessment  
Department of Environment and Natural Resources

19 August 2019

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Dear Lisa

## **Re: Nolans Project, request for further information**

On 20 June the NT EPA received a notification of alterations to the Nolans Project in accordance with clause 14A of the Environmental Assessment Administrative Procedures. Officers of DENR in consultation with Northern Territory Government advisory agencies reviewed the Notification, and their review has sought additional information. Outlined below is the required information, to enable the NT EPA to decide whether the alterations to the Nolans Project requires further assessment or conditions under the Environmental Assessment Act 1982.

### **1 Terrestrial flora and fauna – elevated dust levels**

#### **1.1 Context**

Arafura propose to replace the slurry pipeline with an 8 km haul road, to allow a 24-hour haulage operation if required using a single or dual trailered heavy haulage road train. Whilst the road was previously included in the EIS and would have been subject to heavy haulage vehicles periodically the changes does increase vehicle usage, the altered proposal based on modelling, is likely to increase the footprint of elevated dust levels to encompass a larger area of rock-wallaby habitat than the assessed Proposal, with the potential for impacts on the species. The Flora and Fauna Division considered that the level of significance of this risk is uncertain due to inadequate survey effort to determine habitat use by the rock-wallabies within the predicted footprint. Given this uncertainty, it is appropriate to adopt a precautionary approach to avoid impacts within suitable rock-wallaby habitat.

#### **1.2 Request for information**

Provide detail of the specific measures that would be included in an updated Air Quality and Dust Management Plan including (but not limited to) dust suppression measures specifically for avoiding proposal generated dust dispersing onto suitable rock-wallaby habitat.

### 1.3 Response

Arafura Resources acknowledges that the level of significance associated with the risk is uncertain.

- The modelled level of dust does not exceed acceptable ambient air quality for human health (24-hour criteria, National Environment Protection (Ambient Air Quality) Measure), there is no similar exceedance threshold for small mammals such as the desert dwelling rock wallabies.
- DENR's assertion that inadequate survey effort was applied is refuted. The terrain encountered and present in the study area and regionally, exceeds over 3000sq kms is rugged and inaccessible other than on foot. The study area assessed represented a significant portion of this potential habitat. Because of the nature of the terrain and generally the poor accessibility, Arafura used a helicopter to fly the 3 study teams to the 65 selected study locations near the project area to conduct the survey assessments, at a significant cost. There were no responses from DENR on the adequacy of the surveys completed in either the Draft EIS or the Supplementary EIS document.



Typical terrain Reynolds Range



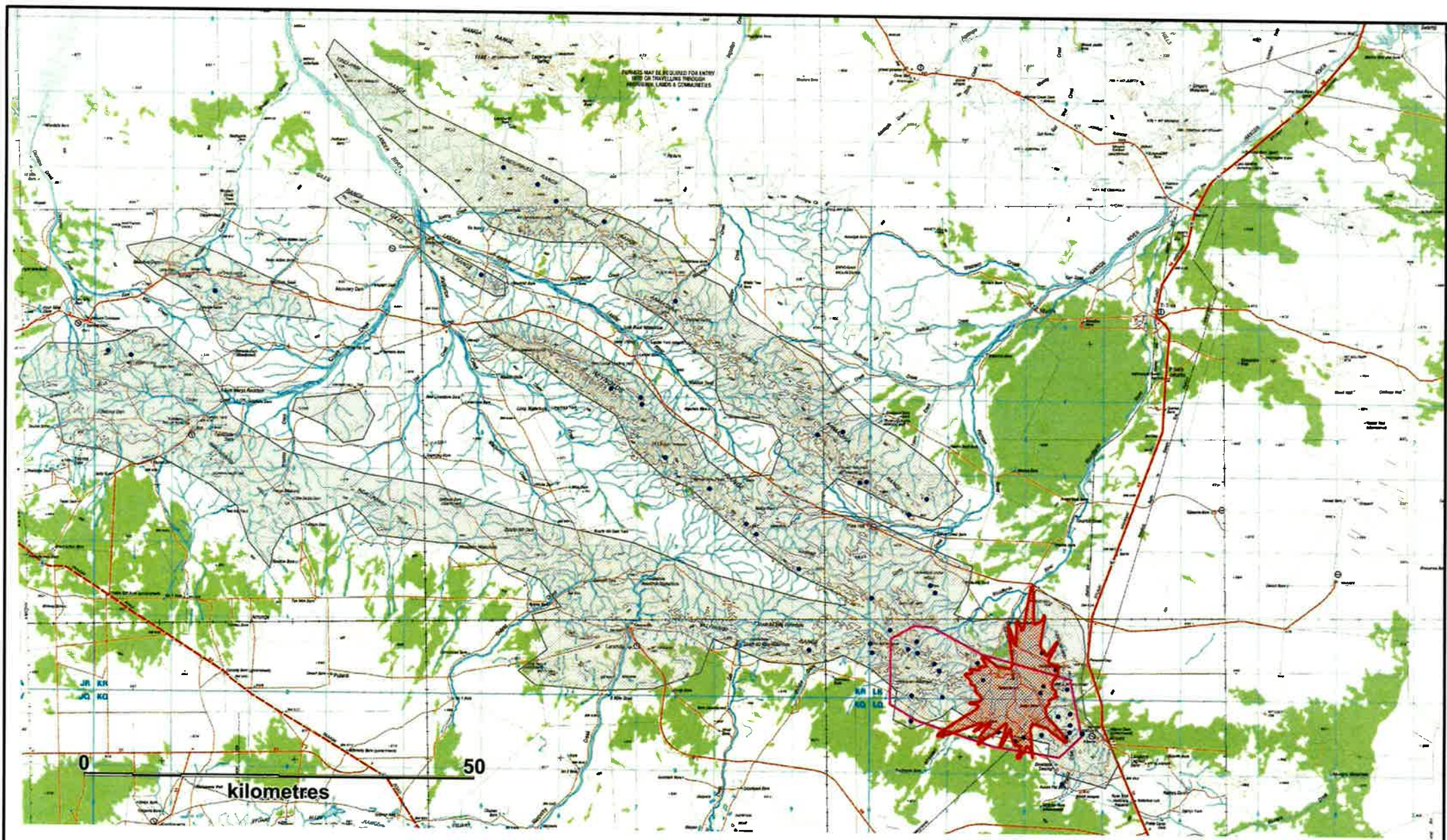


Typical terrain Reynolds Range


- Signs of rock-wallaby are widespread across the broader study area, (i.e. 650 km<sup>2</sup> and 65 potential habitat sites surveyed in 2011 and 2015 by GHD including in the eastern end of the Reynolds Range, the Hann Range, Reaphook Hills and many small outcrops in between), only small numbers of rock wallabies were recorded within or near the mine site. The most recent survey was in 2015 and it is uncertain how many, if any, rock wallabies are utilising suitable habitat areas within the potential dust impact area.


The attached map shows the locations where evidence was found and also shows where wallaby have been observed historically by Arafura's geological exploration teams who have worked extensively through the ranges in the project immediate region.





 BFRW potential regional habitat 3152sq kms

 EIS Survey area 263sq kms

 Potential dust impact zone 121sq kms

 BFRW observed historically



Date: Aug  
2018

Drawn: KH,

Figure 1

**ARAFURA RESOURCES LIMITED**

**Nolans Project  
Black Footed Rock Wallaby Habitat,  
Observed BFRW locations and  
potential dust impact zone**



Furthermore, it should be noted that the dust modelling is conservative and actual operational ambient air quality measurements are required to validate the predictions from this model.

The EIS Appendix X-C Air Quality and Dust Management plan commits Arafura Resources to dust deposition monitoring through the construction and operational phases. This monitoring will now be extended to include the predicted impact area associated with the haul road.

In addition, the project will commit to using surfactants during the road construction phase so that the haul road has dust retardants mixed into construction materials to inhibit dust generation. Surfactant will also be reapplied in response to recorded exceedances of dust levels. Watering for dust suppression will be undertaken along the haul road in response to recorded dust levels and visual observations. The use of these products will also potentially reduce water consumption.

Controls to be included in the dust management plan also include:

- Use of water sprays and water carts to reduce dust generation from the road and from loaded trucks, whilst being mindful not to create foraging habitat along the haul road
- Haul truck to be maintained and operated in a proper and efficient condition
- Truck queuing and unnecessary trips will be minimised through logistical planning
- A further mitigation is that it is likely is that the project will initially commence mining on a campaign basis. This means the project would mine for an initial period of 14 months, then stop mining for 12 months, recommencing mining for 27 months, then stop for 24 months and then recommence mining on a full-time basis thereafter. Whilst this would not reduce the ore haulage component, it would reduce other vehicle movement and dust impact from mining during this first 6-year period. This campaign process will enable Arafura to evaluate the risk and impacts from the project on the wallaby population and implement mitigations strategies.

The Biodiversity management plan (Appendix X-D in the EIS) commits to implementation of a targeted rock-wallaby monitoring program, including in the potential impact area associated with the haul road.

### **1.3.1 Planned Monitoring Program**

A Biodiversity Management Plan was prepared by GHD in 2016 (Nolans Project Biodiversity Management Plan 2016), which recommended monitoring activities (see also Table 1 below) including preparation of a detailed monitoring framework for threatened species occurring within the Nolans site including the Black-footed Rock-wallaby, and detailing methods, effort and timing of future monitoring events.

With respect to dust impacts, Arafura commit to monitor Black-footed Rock-wallaby populations within the modelled dust contours, pre and during mining operations, with a baseline of wallaby distribution and abundance to be undertaken prior to mine construction. In concert with rock-wallaby monitoring, Arafura are already proposing to establish additional dust monitoring devices,

which will be utilised to analyse dust levels in relation to rock-wallaby population dynamics and to assist with the recalibration of the dust model when operational data is available.

<b>Program</b>		Threatened Species Monitoring – Black-footed Rock-wallaby
<b>Objective</b>		Assess the potential impact from the Project on Black-footed Rock-wallaby through: <ul style="list-style-type: none"> <li>•→ Documenting the persistence of the local rock-wallaby population;</li> <li>•→ Understanding changes in habitat use near the mine site;</li> <li>•→ Evaluating the effectiveness of predator control measures; and</li> <li>•→ Evaluating the effectiveness of vehicle movement restrictions.</li> </ul>
<b>Method</b>	<b>Survey</b>	Aerial and motion camera surveys.
	<b>Locations</b>	Marginally rocky habitat, rocky outcrops near the mine site and in surrounding rocky areas (landscape context).
	<b>Timing</b>	Annual.
	<b>Personnel</b>	Qualified ecologist.
<b>Trigger Points</b>		<b>Acceptable level of change:</b> moderate change <b>Additional mitigation action required if:</b> <ul style="list-style-type: none"> <li>•→ Rock-wallabies are not detected in rocky outcrop near the mine site and in the preceding year rock-wallabies are killed on the roads in the study area;</li> <li>•→ Predator monitoring shows that numbers of predators in the study area over the preceding 12 months increased (cat and fox) or increased greatly (dingo); or</li> <li>•→ Wildfire in rocky areas during the preceding 12 months and no rock-wallabies are detected in nearby rocky areas.</li> </ul>
<b>Contingency</b>		<b>Mitigation measures include:</b> <ul style="list-style-type: none"> <li>•→ Increase cat/fox control efforts (trapping, poisoning, shooting) if predator numbers have increased;</li> <li>•→ Broaden fire breaks in high risk areas to prevent future fires, if fire may have been responsible, and</li> <li>•→ Reduce vehicle speeds or access in high-risk areas if roadkill may have been the cause.</li> </ul>

## 2 Terrestrial flora and fauna – risk of road strike of listed species

### 2.1 Context

About 1km of the planned haul road alignment is located adjacent to potential habitat of the black-footed rock-wallaby. Road-strike could kill or injure individual rock-wallabies. The potential increase in the risk of road-strike of listed threatened species due to the haul road that is part of the altered Proposal but was not included in the assessed Proposal.

The Flora and Fauna Division of the DENR considered that, compared to the assessed Proposal, the altered Proposal has an increased risk of vehicle strike to rock-wallabies from use of the haul road, particularly during the high-risk periods of dusk, dawn and night. Section 4.5.1 of the Notification stated that the updated Transport Management Plan would include controls on driving at night, including signage and speed limits, controls were also discussed in the draft EIS in Section 9.7.12. A restricted speed limit would be applied in areas where rocky outcrops (suitable habitat) occur in close proximity to the road. Rock wallaby sightings and any road-strikes would be recorded.

The Flora and Fauna Division considers that additional measures are required to manage the new risks from hauling ore along the route of the previously planned service corridor for 24 hours each day. One way to demonstrate that potential impacts to rock-wallabies will be mitigated is to require reporting of any incident of vehicle-strike and subsequent corrective action to prevent re-occurrence. Corrective actions could include restrictions on driving at dusk, dawn and night, and could include additional monitoring (such as fauna cameras).

## 2.2 Request for information

Provide detail of the specific measures that would be included in an updated Transport Management Plan to avoid and mitigate impacts to black-footed rock wallabies. Include any additional corrective measures that would be adopted if vehicle strike occurs.

## 2.3 Response

Arafura Resources commits to monitoring and recording incidents of rock-wallaby sightings and vehicle strike along the route of the haul road. Drivers will be required to use the fauna sighting and fatality register included in Table A1 in the Appendix X-D Biodiversity Management Plan in the EIS.

If the use of speed limits and signage to remind drivers fails to mitigate against vehicle strike incidents (i.e. if rock wallabies are being killed or injured because of haulage activities), the Company will review the data and respond accordingly. If, for example, sightings and incidents are occurring at dawn and dusk the Company will alter shift changes to avoid using the route during these hours. Additional controls to be included in the traffic management plan will include:

- Driver inductions, including the specific requirements when driving on the site during the night shift
- Potential use of 'virtual fencing' (<https://www.wildlifesafetysolutions.com.au/what-is-virtual-fencing>) which incorporates the use of new technology fitted to roadside posts that are activated by approaching headlights, causing the device to emit a combination of sound and light stimuli that alert and repel animals from roadsides. Devices could be placed at 25 m intervals in high-risk areas for Black-footed Rock-wallaby movements (e.g. between areas of rocky outcrops), forming a virtual fence.
- Use of information posters to improve awareness of rock wallaby habitat
- Signage will be placed on the road, warning of threatened species habitat.

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- Speed limits will be enforced in areas where rock wallabies are known or likely to be present.
- Trucking operations will be required to perform maintenance and refuelling activities in the dusk and dawn period.
- Fatigue management of all drivers on the project site
- A register of fauna fatalities/injuries and near misses will be established and maintained by Arafura with regular audits of this data conducted to determine whether any additional measures are required or can be implemented to reduce impacts to the Black-footed Rock-wallaby.

As discussed in Section 1.3.1 above, a monitoring program is recommended to monitor Black-footed Rock-wallaby. It is proposed that the monitoring methods be extended to include surveys of rock-wallaby populations in the vicinity of haulage locations (in areas where rocky outcrops occur in close proximity to haul routes) to determine whether vehicle movements are impacting on rock-wallaby populations. This is likely to involve a combination of remote cameras and scat survey.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Brian Fowler'.

Brian Fowler

General Manager Northern Territory and Sustainability