

PDR: MS19-000243

To: Minister for the Environment (For Decision)

Approval decision brief – Yeelirrie Uranium Mine, Shire of Wiluna, WA (EPBC 2009/4906)

Timing: The statutory date for a final decision was 3 April 2017 but under section 518 of the EPBC Act a late decision is still valid.

Recommendations:

1. Consider the information in this brief and the proposed approval decision briefing package, including the legal considerations report at **Attachment A**.

Considered / Please discuss
2. Consider the responses to the invitation for comment on the proposed decision at **Attachment B** and the Department's consideration of these responses at **Attachment E**.

Considered / Please discuss
3. Approve, for each controlling provision, the action as summarised in the table below.

Approved / Not approved
4. Noting your proposed decision of 5 March 2019, if your view remains that the conditions at **Attachment B2 of the proposed decision brief at Attachment A** should be attached to the approval (subject to amendments from consultation), agree to attach the conditions of approval as set out in **Attachment C**.

Agreed / Not agreed
5. If you approve the taking of the proposed action at recommendation 3 and agree to recommendation 4 in respect of the conditions to be attached to the approval, accept the reasoning in the Departmental briefing package as the reasons for your decision.

Accepted / Not accepted
6. Sign the notice of your decision at **Attachment C**.

Signed / Not signed
7. Sign the letters at **Attachment D** advising the person proposing to take the action, and other relevant parties, of your decision.

Signed / Not signed

Summary of recommendations on each controlling provision:			
Controlling Provisions for the action		Recommendation	
		Approve	Refuse to Approve
Listed threatened species and communities (ss 18, 18A)		Approve	
Listed Migratory Species (ss 20, 20A)		Approve	
Nuclear actions (ss 21, 22A)		Approve	
Minister for the Environment <i>MP</i> Date: 10/4/19 The Hon Melissa Price MP <i>Attachments "B to E"</i> I confirm I received Attachment "A" by email, which I have considered I confirm that I opened and considered each of the documents attached to this briefing package as Comments: provided to me by USB on 5 April 2019. Further, I note the letter from Hon Matthew Canavan, Minister for Resources and Northern Australia, dated 5/4/19, which I have considered 			
Clearing Officer:	James Tregurtha	First Assistant Secretary, Environment Standards Division	s22 s22 <i>MP</i>
Contact Officer:	s22	Director, Major Projects West Section	s22

KEY POINTS

Background:

1. On 5 March 2019, following consideration of the Department's Proposed Approval Decision Brief (**Attachment A**), including the Legal Considerations report, you proposed to approve the taking of the proposed action under s 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*. At the same time, you proposed to attach the conditions of approval set out in Attachment B2 of the Proposed Approval Decision Brief under s 134 of the EPBC Act.
2. Also on 5 March 2019, as recommended in the Proposed Approval Decision Brief (**Attachment A**), you wrote to the proponent, the person proposing to take the action, and relevant Commonwealth and State Ministers, seeking comments on your proposed decision.
3. This brief considers the outcome of the consultation, and seeks your decision on whether or not to approve (and what conditions to attach) the taking of the proposed action, being the construction and operation of the proposed Yeelirrie open cut uranium ore mine, ore processing plant and associated infrastructure in the Shire of Wiluna,

approximately 420 km north of Kalgoorlie, Western Australia (WA) (the proposed action) (EPBC 2009/4906). The proposed action includes the mining and processing of uranium ore, sourcing and use of water and electricity, upgrades to roads, workforce accommodation facilities and transport of uranium oxide concentrate by road from the mine to port of Adelaide, South Australia.

4. As part of the action, mining will be undertaken in stages using conventional open pit mining techniques. A maximum of 7,500 tonnes per annum of uranium oxide concentrate will be produced. The expected life of the mine is 15 years.
5. The designated proponent, and the person proposing to take the action, is Cameco Australia Pty Ltd (the proponent).

Issues/Sensitivities:

6. On 4 July 2017, the Environmental Defenders Office (on behalf of the Conservation Council of WA and members of the Tjiwarl Native Title group) commenced proceedings in the Supreme Court of WA for a judicial review of the decision made by the former WA Environment Minister, the Hon Albert Jacob MLA, to approve the Yeelirrie uranium mine. The WA Supreme Court dismissed proceedings on 7 February 2018 (Attachment D of the Proposed Decision Brief at Attachment A).
7. The appeal was heard in the WA Supreme Court on 5 March 2019 and an outcome will be determined at a later date. You are not prevented from deciding whether to approve the taking of the action for EPBC Act purposes because the WA appeal has not yet been finalised.

Consultation:

8. The proponent, and Commonwealth and State Ministers were invited to comment on the proposed decision between 5 and 19 March 2019.
9. The proponent met with the Department on 13 and 14 March 2019 to discuss their comments on the proposed conditions of approval, and provided written comments on 17 March 2019 (see Attachment B1). Minister Scullion provided a response to the invitation to comment on 1 April 2019 (see Attachment B2).
10. The Department has considered the comments received, and made the following changes (refer to Attachment E for a detailed summary):
 - a. condition 2 has been amended to ensure the drawdown limit is restricted to the location of the stygofauna species of concern, rather than the broader south-east borefield,
 - b. Conditions 4, 5 and 8 (condition 4, 5 and 6 at Attachment C) have been amended, and conditions 6 and 7 removed to eliminate unnecessary duplication with the WA approval conditions.

- c. Condition 9 (condition 7 at **Attachment C**) has been amended to remove potential ambiguity with the definition of 'action'.
 - d. Condition 11 (conditions 8 and 9 at **Attachment C**) has been revised to ensure the intended environmental outcome for the Western *Atriplex yeelirrie* population could be achieved; there is now the requirement for the approval holder to implement a micro-genetic study, translocation trials and minimum viable population analysis, to demonstrate the viability of establishing a self-sustaining population of the Western *Atriplex yeelirrie* population.
11. The Department has had regard to the EPBC Act Translocation Policy (the policy) in the development of a condition for Western *Atriplex yeelirrie*, and acknowledges the policy affirms that translocation should not be contemplated unless there is clear evidence that demonstrates a high probability of long-term success.
 12. The Department has considered the risks associated with translocation, and is of the view that these risks are mitigated by avoiding clearing of the existing Western *Atriplex yeelirrie* until evidence is provided for the Minister's approval that the establishment of self-sustaining population of mature individuals of Western *Atriplex yeelirrie* population can be achieved.
 13. The proponent was consulted on these changes on 2 April 2019.
 14. The outcome of the consultation is below and responses to your proposed decision are at **Attachment B**. The Department's consideration of the comments is at **Attachment E**.

Person	Comment
Person taking action	Received on 17 March 2019 - refer to Attachment B1
Commonwealth Ministers	Received on 1 April 2019 – refer to Attachment B2
State Ministers	No comments

15. General Counsel Branch was consulted in the preparation of this brief.

Decision

16. In addition to the comments received from the proponent at **Attachment B**, the matters for consideration and factors required to be taken into account when deciding whether to approve the taking of the proposed action, and what conditions to attach to the approval remain as set out in the Department's Proposed Approval Decision Brief at **Attachment A**.
17. For the reasons set out in the Proposed Approval Decision Brief, the Department recommends that you approve the taking of the proposed action, for the purposes of the controlling provisions in sections 18 and 18A (listed threatened species and

ecological communities), 20 and 20A (listed migratory species) and 21 and 22A (protection of the environment from nuclear actions), subject to conditions.

18. As stated in the Proposed Approval Decision Brief (**Attachment A**), the Department notes that there is the potential for subterranean fauna species to become extinct as a result of the proposed action, for this reason, the Department is of the view that the proposed approval conditions at Attachment B2 of the Proposed Approval Decision Brief at Attachment A are the minimum necessary for you to be able to reasonably form a view that the risks to the environment (for the purposes of the controlling provisions at sections 21 and 22A) will be able to be mitigated to an acceptable level – particularly when balanced against the social and economic benefits of the proposed action.
19. However, the Department maintains the view that significant uncertainties remain in regards to whether the proposed approval conditions at Attachment B2 of the Proposed Approval Decision Brief at Attachment A would be effective in ensuring good environmental outcomes in the event that neither the proponent nor a third party are able to successfully demonstrate that additional populations of the subterranean fauna species exist outside the project area.
20. Therefore, the Department considers there is a real chance that even if the proposed action was taken in accordance with the proposed conditions at Attachment B2, one or more of the 12 subterranean fauna species would still be lost. For this reason, the Department's recommendation was, and remains, that you attach the proposed approval conditions at Attachment B1 of the Proposed Approval Decision Brief at Attachment A.
21. However, the Department notes that your proposed decision of 5 March 2019 was to attach the conditions at Attachment B2 of the Proposed Approval Decision Brief at Attachment A.
22. If this remains your view, and you want to proceed with attaching the conditions at Attachment B2 of the proposed decision brief at Attachment A, the Department recommends you consider the comments received and the subsequent changes made to the proposed conditions of approval (**Attachment E**), and agree to attach the conditions as set out at **Attachment C**.
23. Under section 133(3) you must give a copy of the approval to the person named in the approval notice. Letters are provided at **Attachment D** for your signature, notifying the proponent, and Commonwealth and State Ministers of your decision.
24. Talking points are being developed. The Department's external engagement team will be in contact with your Office.
25. A Statement of Reasons is currently being prepared and will be provided to you for signature following your decision.

James Tregurtha
First Assistant Secretary
Environment Standards Division
Department of the Environment and Energy

s22

5 April 2019

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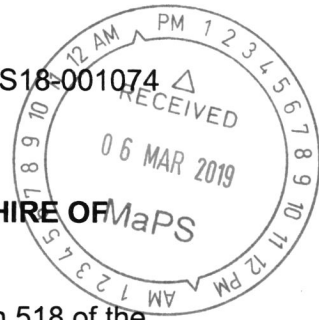
Major Projects West Section

Ph: s22

ATTACHMENTS

- A** Proposed approval decision briefing (refer to linked MS18-001074)
- B** Responses to invitation for comment on proposed decision
 - B1** Proponent – 17 March 2019
 - B2** Minister Scullion – 1 April 2019
- C** Final decision notice [FOR SIGNATURE]
- D** Letters [FOR SIGNATURE]
 - D1** Proponent
 - D1-1** Compliance Monitoring Factsheet
 - D2** Minister for Health
 - D3** Minister for Resources and Northern Australia
 - D4** Minister for Indigenous Affairs
 - D5** WA Minister Environment; Disability Services
- E** Department's consideration of comments

PDR: MS18-001074



To: Minister for the Environment (For Decision)

PROPOSED APPROVAL DECISION BRIEF – YEELIRRIE URANIUM MINE, SHIRE OF WILUNA, WA (EPBC 2009/4906)

Timing: The statutory date for a final decision was 3 April 2017 but under section 518 of the EPBC Act a late decision is still valid.

Recommendations:

1. Consider the information in this brief and the Legal Considerations Report at **Attachment A**.

Considered / Please discuss

2. Note that the Legal Considerations Report (**Attachment A**) recommends you approve, subject to conditions, the taking of the action for each of the relevant controlling provisions ss 18, 18A (Listed threatened species and communities), ss 20, 20A (Listed migratory species), and ss 21, 22A (Protection of the environment from nuclear actions).

Noted / Please discuss

3. Note that this brief and the Legal Considerations Report (**Attachment A**) provide for two alternative sets of approval conditions at **Attachment B1** and **Attachment B2**.

Noted / Please discuss

4. Note that the Department recommends you attach the conditions at **Attachment B1** to the approval of the proposed action.

Noted / Please discuss

5. If you form a view that the conditions at **Attachment B2** will reduce the environmental risks from the proposed action to an acceptable level:

- a. Agree that the proposed decision notice at **Attachment B2** reflects your proposed decision.

Agreed / Not agreed

6. If you form a view that the conditions at **Attachment B1** are necessary to reduce the environmental risks to an acceptable level:

- a. Agree that the proposed decision notice at **Attachment B1** reflects your proposed decision.


Agreed / Not agreed

7. Sign the letters at **Attachment C** to invite comments from the proponent and relevant State and Commonwealth Ministers on your proposed decision.

Signed / Not signed

8. Agree to not publish the proposed decision notice at **Attachment B1 or Attachment B2** on the internet for public comment.

Agreed / Not agreed

Controlling Provisions for the action	Recommendation		
	Approve	Refuse to Approve	
Sections 18 and 18A (Listed threatened species and ecological communities)	Approve		
Sections 20 and 20A (Listed migratory species)	Approve		
Sections 21 and 22A (Nuclear actions)	Approve		
Minister for the Environment The Hon Melissa Price MP: 		Date: 5/3/19	
Comments:			
Clearing Officer: Sent: 20/12/2018	s22	A/g Assistant Secretary, Assessments (WA, SA, NT) and Post Approvals Branch	Ph: s22 Mob: s22
Contact Officer:	s22	A/g Assistant Director, Major Projects West Section	Ph: s22 Mob: s22

Key Points

Proposed action

1. This brief seeks your proposed decision on whether or not to approve the construction and operation of the proposed Yeelirrie open cut uranium ore mine, ore processing plant and associated infrastructure in the Shire of Wiluna, approximately 420 km north of Kalgoorlie, Western Australia (WA) (the **proposed action**) (EPBC 2009/4906). The proposed action includes the mining and processing of uranium ore, sourcing and use of water and electricity, upgrades to roads, workforce accommodation facilities and transport of uranium oxide concentrate by road from the mine to port of Adelaide, South Australia.
2. As part of the proposed action, mining will be undertaken in stages using conventional open pit mining techniques. A maximum of 7,500 tonnes per annum of uranium oxide concentrate will be produced. The expected life of the mine is 15 years.

3. The designated proponent for the action is Cameco Australia Pty Ltd (the **proponent**).
4. In deciding whether or not to approve the proposed action, you must consider the legal considerations at **Attachment A**.

Assessment history

5. The proposed action has been comprehensively assessed through an accredited assessment with the Western Australia Environmental Protection Authority (the **WA EPA**) through a Public Environmental Review under the *Environmental Protection Act 1986* (WA) (the **EP Act**). The WA EPA released an assessment report and recommendations in August 2016.
6. The WA EPA concluded the proposal could not meet the State environmental objective for subterranean fauna protection and, for that reason, recommended the proposed action not be approved. The Western Australia Appeals Convenor later upheld the WA EPA's decision.
7. Despite the WA EPA's recommendation, on 16 January 2017, the proposed action was approved, subject to conditions, by the former Western Australia Environment Minister, the Hon Albert Jacobs MLA, in Ministerial Statement 1053 issued under section 45 of the EP Act (Appendix B4 of the Legal Considerations Report at Attachment A). Under the EP Act, in deciding whether to approve the proposed action, the Minister was able to consider matters that the WA EPA was not permitted to, including social and economic matters.
8. Despite recommending the proposal not be approved, the WA EPA also provided a list of recommended conditions that they considered should be imposed if the WA Minister did decide to approve the proposal. These conditions formed the basis of the WA conditions of approval.

*Assessment of impacts on subterranean fauna, *Atriplex yeelirrie* and shield-backed trapdoor spider*

9. The WA EPA considered that the proposed action has the potential to lead to the extinction of twelve subterranean fauna species and clearance of one of the two remaining populations of the plant *Atriplex yeelirrie*. It is due to the potential extinction of subterranean fauna species that the WA EPA recommended to the WA Minister that the proposed action not be approved.
10. Subterranean fauna are not listed threatened species under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). In addition, the plant species *Atriplex yeelirrie* and invertebrate species shield-backed trapdoor spider (*Idiosoma nigrum*) were only listed as an EPBC Act listed threatened species after the proposal was determined a controlled action. Under section 158A(4) of the EPBC Act, the listing as threatened species of *Atriplex yeelirrie* and the shield-backed trapdoor spider must therefore be disregarded in deciding whether to approve the taking of the controlled action for the controlling provisions in sections 18 and 18A.

11. However, the likely impact of the proposed action on these matters has been considered as part of the assessment of the impact of the action, being a nuclear action, on the 'environment' for the purposes of deciding whether to approve the action for the controlling provisions in sections 21 and 22A.

Department's assessment of the proposed action

12. An analysis of the legal considerations you must take into account when deciding whether or not to approve the proposed action is at **Attachment A**.
13. That attachment sets out the Department's assessment of the impact of the proposed action in respect of the controlling provisions for the action, namely, sections 18 and 18A (listed threatened species and ecological communities), sections 20 and 20A (listed migratory species) and sections 21 and 22A (nuclear actions).
14. In undertaking this assessment, the Department has considered matters relevant to the controlling provisions, as well as economic and social matters. The Department has also considered the following information:
 - the Public Environmental Review (Appendix B1 to the Legal Considerations Report at **Attachment A**)
 - the WA Appeals Convenor Report (Appendix B2 to the Legal Considerations Report at **Attachment A**)
 - the WA Minister's Appeal Determination (Appendix B3 to the Legal Considerations Report at **Attachment A**)
 - The WA Minister's Approval decision (Appendix B4 to the Legal Considerations Report at **Attachment A**)
 - Additional information provided by the proponent (Appendix B5 to the Legal Considerations Report at **Attachment A**)
 - Letters from the former Senator Scott Ludlam at (**Attachments E1 and E2**)
 - Relevant recovery plans, approved conservation advices and threat abatement plans (Appendix D to the Legal Considerations Report at **Attachment A**)
15. The Department has avoided regulatory duplication in undertaking its assessment of the proposed action, and in the drafting of the proposed approval conditions where possible, consistent with the use of an accredited assessment approach and the Department's *EPBC Act Condition-setting Policy (2015)*.
16. The Department recommends the proposed approval conditions rely upon the State conditions to the extent that they align with the Department's recommendation. This includes conditions to ensure that impacts to the environment are not unacceptable. The Department also recommends additional conditions in relation to subterranean fauna, *Atriplex yeelirrie*, the Malleefowl (*Leipoa ocellata*) and the Night Parrot (*Pezoporus occidentalis*).

Recommended decision

17. The Department considers that there is sufficient information for you to make an informed decision on whether or not to approve the taking of the proposed action for the purposes of each of the controlling provisions.
18. The Department recommends that you approve the taking of the proposed action, for the purposes of the controlling provisions in sections 18 and 18A (listed threatened species and ecological communities), 20 and 20A (listed migratory species) and 21 and 22A (protection of the environment from nuclear actions), subject to conditions.
19. The Department notes that there is the potential for subterranean fauna species to become extinct as a result of the proposed action. The Department's view is that the proposed approval conditions at **Attachment B2** are the minimum necessary for you to be able to reasonably form a view that the risks to the environment (for the purposes of the controlling provisions at sections 21 and 22A) will be able to be mitigated to an acceptable level – particularly when balanced against the social and economic benefits.
20. However, the Department also considers that there remain significant uncertainties as to whether the proposed approval conditions at **Attachment B2** would be effective in ensuring good environmental outcomes in the event that neither the proponent nor a third party are able to successfully demonstrate that additional populations of the subterranean fauna species exist outside the project area. Therefore, the Department considers there is a real chance that even if the proposed action was taken in accordance with the proposed conditions at **Attachment B2**, one or more of the 12 subterranean fauna species would still be lost.
21. For that reason, and applying the precautionary principle, the Department's recommendation is that you attach the proposed approval conditions at **Attachment B1**. These conditions would require the approval holder to submit evidence for your approval that the proposed action will not result in the extinction of subterranean fauna species before they are able to commence the action. The Department considers that if the proposed action is taken in accordance with the proposed conditions at **Attachment B1** it would not have unacceptable impacts on protected matters.
22. However, the Department notes that attaching the proposed conditions at **Attachment B1** would mean the project could not proceed if the approval holder is unable to demonstrate that the action will not result in the extinction of subterranean fauna species. This would mean that the social and economic benefits of the project would not be realised.
23. Please note that due to a lack of scientific knowledge that exists in relation to the biology and ecology of subterranean fauna, including sampling and survey protocols, and despite the proponent indicating during the assessment that it is possible to demonstrate by extension of habitat or surrogates that the subterranean fauna species, currently only known from within the impact area, exist outside, and therefore the relevant **Attachment B1** conditions are capable of being satisfied, there is a risk that the proponent will not be able to demonstrate that the action will not result in the extinction of subterranean species.

24. Taking this into account, the Department considers that it would be open to you to form the view that, on balance when weighed against the likely social and economic benefits of the project, the environmental risks, particularly to the subterranean fauna species, would still be mitigated to an acceptable level by attaching the proposed approval conditions at **Attachment B2**.
25. If you formed this view, you should approve the action for the purposes of the controlling provisions at sections 18 and 18A, 20 and 20A and 21 and 22A and attach the proposed approval conditions at **Attachment B2**.
26. Alternatively, if you were to form the view that the proposed conditions at **Attachment B2** would not adequately mitigate the risks to the environment (even when those risks are weighed against the likely social and economic benefits of the project) but the proposed conditions at **Attachment B1** would do so, you should approve the action for the purposes of the controlling provisions at sections 18 and 18A, 20 and 20A and 21 and 22A and attach the proposed approval conditions at **Attachment B1**.
27. Further detail of the rationale for the Department's recommendation is provided in the legal considerations report at **Attachment A**.
28. The Department recommends the taking of the proposed action be approved until 31 December 2043. This proposed approval timeframe allows seven years for the development of the proposed action, a 15-year life of mine, and time for decommissioning and mine closure activities.

Sensitivities and Handling

29. Uranium mining has long been contentious and there has been a high level of public interest in this project. The proposed action is one of four uranium mines approved since 2015 by the former WA Environment Minister that have required assessment under the EPBC Act. The other uranium mines are Kintyre, Extension to Wiluna, and Mulga Rock.
30. The Department also notes that on 20 June 2017, the WA Government announced a ban on uranium mining for all future mining leases granted in WA. The ban does not prevent the already approved projects (Toro Energy's Wiluna Project, Cameco's Kintyre and Yeelirrie projects, and Vimy Resources' Mulga Rock) from proceeding.
31. The Public Environmental Review document for the proposed action was released for public comment, as part of the WA EPA assessment process, between 21 September and 14 December 2015 (**Appendix B1 of the Legal Considerations Report at Attachment A**). A total of nine government agency submissions, 169 individual submissions and 2946 pro forma submissions were received. Issues raised included impacts to Aboriginal heritage, subterranean fauna species, the plant *Atriplex yeelirrie* and short range endemic species, in addition to radiological impacts to human health and non-human biota, water usage, dust and air quality.
32. The former Senator Scott Ludlam wrote to your predecessor on 23 February 2016 (**Attachment E1 and E2**) to raise concerns regarding the possible extinction of 11 subterranean fauna species, economic matters and the proponent's environmental history. The Department considers that these issues have been adequately considered as part of the assessment of the proposed action, as discussed in the legal considerations report (**Attachment A**).

33. Twenty appellants submitted appeals (to the WA Appeals Convenor) in objection to the content or recommendation in the WA EPA's report. Two appeals argued that impacts on subterranean fauna could be managed. The remaining 18 appeals supported the WA EPA's outcome although stated impacts on several of the eight environmental factors considered by the WA EPA were not acceptable (refer to Appendix B2 of the Legal Considerations Report at Attachment A). Anti-nuclear activist and Traditional Owner, Vicky McCabe, wrote to your predecessor on 9 February 2017 (Attachment E3) asking you to liaise with Traditional Owners before making your decision on whether or not to approve the proposed action.
34. The Department notes that the proponent has stated they have engaged with the Aboriginal people from Leonora and Wiluna regions since 2013 in relation to the proposed action, and that an Aboriginal Heritage Management Plan is required to be prepared as a condition of the WA Approval (see conditions 6-1, 14-1 and 14-2 in Appendix B4 of the Legal Considerations Report at Attachment A).
35. On 4 July 2017, the Environmental Defenders Office (on behalf of the Conservation Council of WA and members of the Tjiwarl Native Title group) commenced proceedings in the Supreme Court of WA for a judicial review of the decision made by the former WA Environment Minister, the Hon Albert Jacob MLA, to approve the Yeelirrie uranium mine. The WA Supreme Court dismissed proceedings on 7 February 2018 (Attachment D).
36. On 8 March 2018, the Conservation Council of WA lodged an appeal against the WA Supreme Court's decision. That decision has yet to be heard.
37. The WA Conservation Council, with the support of the Tjiwarl Native Title group, are now campaigning for the Commonwealth to refuse the proposed action.
38. Talking points will be prepared to accompany your final approval decision.

Consultation

39. Under sections 131(1) and 131AA(1) of the EPBC Act, you are required to consult with the proponent and relevant Ministers whom you believe have administrative responsibilities relating to the action on your proposed decision (including any proposed conditions), and invite the proponent and those Ministers to provide you with comments on the proposed decision within 10 business days. Draft letters inviting comments on your proposed decision are at Attachment C for your signature.
40. Under section 131A of the EPBC Act, you can choose to invite public comments on the proposed decision and any conditions proposed to be attached before making your final approval decision. The Department considers that this is not necessary because there has been sufficient public consultation through the WA assessment process and State appeals process.
41. The brief, the briefing material and the proposed conditions were developed in consultation with the Office of Compliance, Environmental Standards Division and Biodiversity Conservation Division. In addition, the Office of Water Science, Heritage Branch, Geoscience Australia, and Australian Radiation Protection and Nuclear Safety Agency provided advice at the referral and/or assessment stages.
42. General Counsel Branch was consulted in the preparation of this brief.

ATTACHMENTS

- A:** Legal Considerations Report
- B:** Proposed Approval Decision
 - B1:** Proposed Approval Decision Notice
 - B2:** Proposed Approval Decision Notice
- C:** Letters [FOR SIGNATURE]
 - C1:** Proponent
 - C2:** Minister for Health
 - C3:** Minister for Resources and Northern Australia
 - C4:** Minister for Indigenous Affairs
 - C5:** WA Minister Environment; Disability Services
- D:** WA Supreme Court Decision
- E:** Ministerial Correspondence
 - E1:** Former Senator Scott Ludlam
 - E2:** Former Senator Scott Ludlam
 - E3:** Vicky McCabe, Traditional Owner and anti-nuclear activist

CONSIDERATIONS RELATING TO DECISION-MAKING UNDER PART 9 OF THE EPBC ACT**How to use this document**

1. This Legal Considerations Report (**report**) should be read in conjunction with the covering brief (**brief**) and other relevant attachments relating to the proposed decision on whether or not to approve the proposed action. This report adopts the terminology defined in the brief (for example, proponent, proposed action etc.).
2. The Assessment Report at **Appendix A** was prepared by the Western Australian (WA) Environmental Protection Authority (the **WA EPA**) under an accredited assessment process. Accrediting a WA EPA assessment allows the Commonwealth to use State assessment processes and documentation to avoid unnecessary paperwork and regulatory duplication. The Commonwealth Minister retains responsibility for approving the action at the end of the assessment process and must ensure that all mandatory considerations under the *Environment Protection and Biodiversity Conservation Act 1999* (**EPBC Act**) are taken into account before deciding whether or not to approve the taking of the action under sections 130(1) and 133 of the EPBC Act.
3. Before deciding to accredit the WA EPA assessment, the Commonwealth conducted an analysis to ensure the relevant WA assessment process met the standards set out in the EPBC Act and *Environment Protection and Biodiversity Conservation Regulations 2000* (**EPBC Regulations**). When deciding to accredit the WA assessment process for the purposes of assessing the proposed action, the Minister's delegate was satisfied that the requirements in section 87(4) of the EPBC Act were met.
4. The accredited assessment process for the proposed action was public environmental review under the *Environmental Protection Act 1986* (WA) (the **EP Act**). The public environmental review document (**PER**) is at **Appendix B1**.
5. The Department has reviewed the Assessment Report (**Appendix A**) and is satisfied that the report meets the requirements of the accredited assessment and is a suitable document to inform your decision in relation to the proposed action. The Assessment Report is an 'assessment report' for the purposes of s 130(2) of the EPBC Act, which you are required, under section 136(2)(b), to consider when deciding whether to approve the taking of the proposed action.
6. In preparing the Assessment Report, the WA EPA consulted with relevant decision-making authorities. A list of these authorities is provided in Appendix 5 of the Assessment Report (**Appendix A**).
7. In its assessment of the proposed action, the Department considered the information and analysis provided by the WA EPA in the Assessment Report, in addition to the WA Appeals Convenor Report (**Appeals Convenor Report**) (**Appendix B2**), WA Minister's Appeal Determination (**Appendix B3**), WA Ministerial Statement (**WA Approval**) (**Appendix B4**) and additional information provided by the proponent on the proposed action and its impacts (**Appendix B5**).



Figure 1 Location of the proposed Yeelirrie uranium mine in a regional context

Assessment steps

The proposed action

8. The proposed action is the development of the Yeelirrie open cut uranium ore mine, ore processing plant and associated infrastructure in the Shire of Wiluna, located approximately 420 kilometres (km) north of Kalgoorlie, WA ([Figure 1](#)). As part of the proposed action, mining will be undertaken in stages using conventional open pit mining techniques. A maximum of 7,500 tonnes per annum of uranium oxide concentrate will be produced. The expected life of the mine is 15 years. The proposed action includes the mining and processing of uranium ore, sourcing and use of water and electricity, upgrades to roads, workforce accommodation facilities, stockpile and laydown areas, evaporation pond and transport of uranium oxide concentrate by road from the mine to the Port of Adelaide, South Australia, as described in the referral received on 21 May 2009 and variation request approved on 5 December 2014 (EPBC 2009/4906).

Assessment history

9. On 21 May 2009, BHP Billiton Yeelirrie Development Company Pty Ltd (BHP Billiton) referred the proposed action to the Department. The proposed action was determined by a delegate to be a controlled action under the EPBC Act on 19 June 2009 on the basis that it was likely to have a significant impact on listed threatened species and communities (ss 18 and 18A), listed migratory species (ss 20 and 20A), and on the basis that the proponent was a constitutional corporation, the action is a nuclear action and the nuclear action was likely to have a significant impact on the environment (ss 21 and 22A).
10. An assessment approach decision was not made under section 87(4) of the EPBC Act at the time of the referral decision as the WA EPA advised the Department that the bilateral agreement that was in force at the time (the pre-2012 bilateral agreement) was applicable, and the proposed action described in WA referral assessment no. 1788 could be assessed by the WA EPA in a manner that was consistent with the bilateral agreement.
11. On 2 January 2013, Cameco Australia Pty Ltd (the proponent) notified a delegate of a change to the person proposing to take the action, as they had acquired the proposed action from BHP Billiton. BHP Billiton also notified a delegate on the same date, confirming the change. On 21 January 2013, a delegate published the change of proponent notice.
12. On 12 November 2014, the original proposal referred to the WA EPA (assessment 1788) was terminated by the proponent and a new referral was submitted (assessment 2032) and assessed by the WA EPA through a public environmental review under the EP Act.
13. On 17 November 2014, the proponent submitted a request to the Minister under section 156A(1) of the EPBC Act to vary the proposed action to increase the annual rate of mining and production of uranium ore concentrate. On 5 December 2014, a delegate decided to accept the varied proposal under section 156B(1) and published the variation notice.
14. In 2015 a new bilateral agreement was made between the Commonwealth and WA Government under section 45 of the EPBC Act (the current bilateral agreement). The current bilateral agreement did not include actions that were assessed by WA referral assessment no. 1788 as declared classes of actions that do not require assessment under Part 8 of the EPBC Act (due to the termination of assessment 1788). In addition, the current bilateral agreement does not allow for projects that were being assessed under the pre-2012 bilateral agreement to transition to the

current bilateral agreement. Accordingly, the proposed action was no longer able to be assessed under a bilateral agreement, and required an assessment approach decision under section 87 of the EPBC Act.

15. On 12 March 2015, a delegate decided under section 87(1)(a) of the EPBC Act that the proposed action would be assessed by an accredited assessment process, being PER under the EP Act. A correction notice was issued on 17 March 2015, as the original decision notice did not state the assessment approach, which is a requirement for accredited assessment decisions under section 91(2) of the EPBC Act.
16. On 21 September 2015, the public comment period on the PER (**Appendix B1**) commenced for a period of 12 weeks, ending on 14 December 2015. A total of nine (9) government agency submissions, 169 individual submissions and 2946 pro forma submissions were received (**Appendix A** – refer to Appendix 3). Issues raised included:
 - potential impacts to subterranean fauna species, noting the potential loss of species
 - potential impacts on the Rare Flora *Atriplex yeelirrie* (previously known by the phrase name *Atriplex* sp. Yeelirrie Station (L. Trotter & A. Douglas LCH 25025))
 - potential radiological impacts to human health and non-human biota
 - potential impacts on Short Range Endemic Species (e.g. Shield-backed Trapdoor Spider - *Idiosoma nigrum*)
 - concerns with dust and air quality
 - potential problems with how the release of solutes from the tailings storage facility had been simulated
 - concerns about the water usage for a region of poor water supply and poor water security
 - the transport of uranium and potential for spillage
 - potential impacts to livelihood because of living near the proposed mine
 - concerns regarding the consideration of Aboriginal heritage
 - the consideration of cumulative environmental impacts of uranium projects
 - the limited presentation of management plans with the PER document.

These issues were addressed through the WA EPA's assessment and appeals process.

17. The WA EPA released an assessment report and recommendations on 3 August 2016 (**Appendix A**). The WA EPA concluded the proposal could not meet the State environmental objective for the protection of subterranean fauna and recommended the proposal not be approved. A summary of the submissions to the WA EPA and the proponent's response to submissions are included in the Assessment Report (**Appendix A** – refer to Appendix 7).
18. Despite recommending the proposal not be approved, the WA EPA also provided a list of recommended conditions that they considered should be imposed should the WA Minister decide to approve the proposal. These conditions formed the basis of the WA conditions of approval.

19. On 2 September 2016, a delegate requested further information from the proponent under section 132 of the EPBC Act on the economic and social impacts of the proposed action; the proponent's international environmental history; and how the proponent intends to 'ensure the survival of a self-sustaining population of mature individuals of the Western population of the *Atriplex yeelirrie*, having regard to the EPBC Act Policy Statement - Translocation of Listed Threatened Species (**Appendix C**) (noting that the *Atriplex yeelirrie* was being considered in the context of 'the environment' for the purposes of the controlling provisions at sections 21 and 22A). The further information requested was provided by the proponent on 11 October 2016 and 17 January 2017. Additional information on the proposed action has subsequently also been provided by the proponent on 19 June 2017, 21 November 2017 and 18 July 2018 (**Appendix B5**).
20. On 2 September 2016, a delegate also extended the statutory timeframe for making a decision on whether or not to approve the proposed action by 40 days. The statutory timeframe for a final decision was 3 April 2017.
21. A delegate advised the WA EPA on 2 September 2016 of the extended statutory timeframe, and also requested further information from the WA EPA, including the final Appeals Convenor Report, the WA Minister's Appeal Determination and the WA Approval, when these documents became available. The further information requested was provided by the WA EPA on 24 January 2017 (**Appendix B2-B4**).
22. Twenty (20) appellants appealed to the WA Appeals Convenor against the decision of the WA EPA. Two appellants argued that impacts on subterranean fauna could be managed. The remaining 18 appeals supported the WA EPA's recommendation that the proposed action should not be implemented, and also took the view that impacts on several of the eight other environmental factors considered by the WA EPA were not acceptable (**Appendix B2**).
23. Following the appeals in December 2016, the WA Appeals Convenor upheld the WA EPA's decision and recommended that the appeals be dismissed (**Appendix B2**). On 14 December 2016, the WA Minister allowed the appeals in part, in respect of flora and vegetation and the public availability of plans and dismissed the other grounds of appeal (**Appendix B3**).
24. Despite the recommendation by the WA EPA, on 16 January 2017, the WA Minister approved the proposed action, subject to conditions, by issuing Ministerial Statement 1053 under section 45 of the EP Act (**Appendix B4**). Under the EP Act, in deciding whether or not to approve the proposed action, the Minister was permitted to consider additional factors that the WA EPA was not, including social and economic matters.
25. On 20 June 2017, the WA Minister for Mines and Petroleum announced a ban on future uranium mining in WA. The ban does not apply to the four already State approved uranium projects (including the proposed action), namely, Toro Energy's Wiluna Project, Vimy Resources' Mulga Rock project, and Cameco's Kintyre and Yeelirrie projects.
26. On 4 July 2017, the Environmental Defenders Office (on behalf of the Conservation Council of WA and members of the Tjiwarl Native Title group) commenced proceedings in the Supreme Court of WA for a judicial review of the decision made by the former WA Environment Minister, the Hon Albert Jacob MLA, to approve the Yeelirrie uranium mine. The WA Supreme Court dismissed proceedings on 7 February 2018 (**Attachment D to the proposed approval decision brief**).

27. On 8 March 2018, the Conservation Council of WA lodged an appeal against the WA Supreme Court’s decision. That decision has yet to be heard.

Mandatory considerations

28. Under section 136(1) of the EPBC Act, in deciding whether or not to approve an action and what conditions to attach to the approval, you must consider the following, so far as they are not inconsistent with any other requirement of Subdivision B, Division 1 of Part 9 of the EPBC Act:
- a. matters relevant to any matter protected by the controlling provisions (a matter of national environmental significance or MNES); and
 - b. economic and social matters.

Matters relevant to any matter protected by the controlling provisions.

29. The provisions of Part 3 that a delegate determined to be controlling provisions for the proposed action are sections 18 and 18A (listed threatened species and ecological communities), sections 20 and 20A (listed migratory species), and sections 21 and 22A (protection of the environment from nuclear actions).
30. The assessment of the proposed action was undertaken by the WA EPA through consideration of nine (9) key environmental factors and an analysis of those factors in relation to their objectives (refer to Section 3 of the Assessment Report at **Appendix A**). The Department is satisfied that this process, combined with the additional information the proponent provided to the Department, provided sufficient information for you to be able to decide whether to approve the proposed action for each of the controlling provisions.
31. References to information in the Assessment Report that relate to each controlling provision and a summary of the WA EPA’s conclusions is provided below:

Controlling Provision	Relevant Section of the Assessment Report	Conclusion on acceptability of impacts
Sections 21 & 22A (Nuclear actions)	<ul style="list-style-type: none"> – Section 3 for consideration of all environmental factors and the WA EPA’s conclusions. – Section 4 provides further information particularly in relation to requirements under the EPBC Act relevant to the consideration of this controlling provision. – Appendix 3 provides further information on key environmental factors and principles considered by the WA EPA. – Appendix 5 identifies WA decision making authorities relevant to the proposed action. <p>The Assessment Report concludes that the proposal cannot meet the EPA’s environmental objective for subterranean</p>	Unacceptable

Controlling Provision	Relevant Section of the Assessment Report	Conclusion on acceptability of impacts
	fauna (as an element of the 'environment' on which the nuclear action has, will have or is likely to have an impact), having regard to the Precautionary Principle, the Principle of the conservation of biological diversity and ecological integrity, and the Principle of intergenerational equity, and therefore should not be implemented.	
Sections 20 & 20A (Listed migratory species)	<ul style="list-style-type: none"> – Section 3.3 for consideration of the key environmental factor - terrestrial fauna, including EPBC Act listed migratory species. – Section 4 provides further information particularly in relation to requirements under the EPBC Act relevant to the consideration of this controlling provision. <p>The Assessment Report concludes that the impacts from the proposal on listed migratory species are not expected to result in an unacceptable or unsustainable impact on the conservation status of these species.</p>	Acceptable
Sections 18 & 18A (Listed threatened species and communities)	<ul style="list-style-type: none"> – Sections 3.2 and 3.3 discuss impacts to flora and vegetation, and fauna species, including the EPBC Act listed Malleefowl (<i>Leipoa ocellata</i> - vulnerable), Black-flanked rock-wallaby (<i>Petrogale lateralis</i> - vulnerable), Princess parrot (<i>Polytelis alexandrae</i> – vulnerable, and the Greater bilby (<i>Macrotis lagotis</i>) - listed as vulnerable. – Section 4 provides further information particularly in relation to requirements under the EPBC Act relevant to the consideration of this controlling provision. <p>The Assessment Report concludes that the impacts from the proposal on listed threatened species and communities are not expected to result in an unacceptable or unsustainable impact on the conservation status of these species.</p>	Acceptable

32. The Department's analysis and conclusions in respect to each of the controlling provisions for the proposed action is set out below.

Sections 21 and 22A - the environment in relation to nuclear actions

33. The proposed action is a nuclear action under section 22(1) of the EPBC Act, as it involves the mining and milling of uranium ore. Under sections 21(1) and 22A(1) of the EPBC Act, a constitutional corporation must not take a nuclear action that has, will have or is likely to have a

significant impact on the environment. The Department is satisfied that the proponent is a constitutional corporation.

34. This means that, in deciding whether to approve the proposed action, you must consider the likely impacts of the action on the 'environment'.
35. Under section 528 of the EPBC Act, the 'environment' includes:
 - a. Ecosystems and their constituent parts, including people and communities; and
 - b. Natural and physical resources; and
 - c. The qualities and characteristics of locations, places and areas; and
 - d. Heritage values of places; and
 - e. The social, economic and cultural aspects of a thing mentioned in paragraph (a), (b), (c) or (d).
36. Impacts to the 'environment' as a result of the proposed action are addressed in the Assessment Report (**Appendix A**) through consideration of the following nine (9) key environmental factors identified by the WA EPA:
 1. Subterranean fauna
 2. Flora and vegetation
 3. Terrestrial fauna
 4. Human health
 5. Hydrological processes
 6. Inland waters environmental quality
 7. Heritage
 8. Rehabilitation and decommissioning
 9. Offsets
37. The Department considers that WA EPA's consideration of these environmental factors, including their analysis of the impacts of the proposed action on these factors, and the EPBC listed species discussed in the analysis of ss 20 and 20A (paragraphs 154 – 161) and ss 18 and 18A (paragraphs 162 – 226), adequately assesses the likely impacts of the proposed action on the 'environment' (as protected by sections 21 and 22A of the EPBC Act).

Subterranean fauna

38. No subterranean fauna species are listed threatened species under the EPBC Act. However, having regard to the definition of 'environment', impacts on subterranean fauna are relevant as part of the assessment of the impact of the proposed action, as a nuclear action, on the 'environment'.

39. The assessment documentation identified:
- a. A total of 73 species of stygofauna and 45 species of troglofauna were located within the fauna survey area that comprises the proposed impact area. Of these, a total of 11 stygofauna species and 5 troglofauna species are currently known to occur only within the proposed impact area (mine pit and groundwater drawdown area of 0.5 m).
 - b. the proponent has committed to the establishment of a troglofauna protection area, which would reduce the size of the proposed impact area, and subsequently reduce the impact on troglofauna species known to only occur within the proposed impact area to one.
 - c. Even with implementation of the troglofauna protection area, the proposed action has the potential to result in the loss of 12 subterranean fauna species (11 stygofauna and 1 troglofauna species) only known to occur within the proposed impact area.
40. The WA EPA assessed the potential impacts of the proposed action on subterranean fauna and formed the view that there was too great a chance of a loss of species that are only found in the proposed impact area. In particular, the WA EPA considered that the proposal could directly impact subterranean fauna through the removal of habitat during mining, surface disturbance that disrupts nutrient inputs, process chemical spills and changes to groundwater levels or quality.
41. On that basis, the WA EPA recommended that the proposal could not be managed to meet the objectives of the EP Act for subterranean fauna, and therefore should not be implemented.
42. In response to the WA EPA's recommendation, the proponent submitted additional information to the WA Appeals Convenor in relation to the use of environmental surrogates (the use of information on one species to infer the likely distribution of another poorly sampled species) together with survey information to infer that subterranean fauna species only known from within the impact area may also occur in other habitat types outside of the development footprint. The proponent also proposed a number of additional avoidance, mitigation and offset controls to reduce impacts on the subterranean fauna species.
43. In particular, the proponent committed to the following measures intended to reduce the likelihood that the proposed action could result in the loss of the 12 subterranean fauna known only to occur in the proposed impact area:

Avoidance measures

- Not locating any groundwater abstraction wells within the palaeochannel to the northwest of the proposed mine pit.

Mitigation measures

- Relocating groundwater abstraction wells to minimise groundwater impacts, and
- development and implementation of a groundwater management plan to manage drawdown and water quality by:
 - not exceeding groundwater quality or absolute groundwater level threshold criteria,

- not exceeding the 0.5 m drawdown contour, and reducing drawdown to less than 0.5 m at the location of some subterranean fauna species currently only known to the south-east of the mine pit,
- development of a water quality and groundwater level monitoring program at the site of the proposed water reinjection point that is within proximity to the troglofauna protection area,
- development of a subterranean fauna management plan that will include location of monitoring bores; detailed monitoring program for water quality and groundwater level; baseline data for water quality and absolute water level; trigger criteria, threshold criteria and associated contingency actions; and reporting.

Offsets

- troglofauna sampling and habitat mapping to improve knowledge and investigate surrogacy predictions, and
 - development and implementation of a research program to further develop the understanding of the impact on subterranean fauna from mining and groundwater abstraction in the region.
44. The WA Appeals Convenor was not satisfied that these additional measures would enable the WA EPA’s objectives for subterranean fauna to be met. In particular, the WA Appeals Convenor was not satisfied that the proponent had demonstrated that:
- a. the extent of habitat for subterranean fauna species could exist outside of the proposed impact area given the calcrete is considered to represent an island, and the proponent has not been able to demonstrate habitat pathways exist to other calcrete systems, and no physical or biological surrogate was provided, and
 - b. an appropriate groundwater management system may be able to manage groundwater drawdown around stygofauna species.
45. On 23 February 2017, the former Senator Scott Ludlam wrote to your predecessor regarding the potential loss of subterranean fauna that are only found in the proposed impact area. Mr Ludlum urged your predecessor to reject the proposed action because it is his belief that it is inconsistent with objects of the EPBC Act, in particular the principles of ecologically sustainable development (**Attachment E1 to the Proposed Approval Decision Brief**).

Department’s assessment of potential impacts on subterranean fauna

46. The Department has considered the information and analysis of the potential impacts of the proposed action on subterranean fauna as set out in section 3.1 and at Appendix 3 of the Assessment Report (**Appendix A**).
47. Based on this information, the Department is satisfied that the likely impacts of the proposed action on subterranean fauna include the removal of critical habitat during mining and surface disturbance that disrupts nutrient inputs, process chemical spills and changes to groundwater levels or quality.

48. Furthermore, the Department accepts that a potential consequence of these impacts is the loss of one or more of the 12 species of subterranean fauna that are only known to occur in the proposed impact area.
49. The Department has also considered the pages 5 – 23 of the Appeals Convenor Report (**Appendix B2**) and the additional information on subterranean fauna provided by the proponent on 21 November 2017 (**Appendix B5**). This additional information reflected the information submitted to the WA Appeals Convenor, as discussed above in paragraphs 42 – 44. In particular, the Department notes that the proponent has committed to implementing the avoidance and mitigation measures set out above at paragraphs 43.
50. The Department also notes that the proponent has indicated in the PER (**Appendix B1**), the WA Appeals Convenor Report (**Appendix B2**) and additional information on subterranean fauna provided by the proponent on 21 November 2017 (**Appendix B5**) that they believe it is possible to demonstrate by extension of habitat or surrogates that the subterranean fauna species, currently only known from within the impact area, exist outside. To assist in achieving this outcome, in 2017 the proponent approached the Western Australian Biodiversity Science Institute (WABSI) to initiate a subterranean fauna research project.
51. In June 2018, WABSI released a subterranean research program (**Appendix E**) with the intent of addressing the large knowledge gaps that exist in relation to basic biology and ecology of subterranean fauna and subsequently reduce the uncertainty surrounding conservation of subterranean fauna species. Four projects within the research program are currently being progressed, with three of them now fully funded and soon to be started. The timeframe for completion of the research projects is 1 – 5 years. This aligns with the proponents proposed 5-year lead time before activities associated with the proposed action will commence.
52. Based on this information, and noting the ongoing research in this field, the Department does not consider that the proposed action will inevitably result in the loss of the 12 subterranean fauna species.
53. Rather, while the Department acknowledges that there is a clear risk that this will be the consequence of taking the proposed action, it considers there are reasonable grounds to believe that this risk would be reduced if the proposed action was taken in accordance with the proposed conditions at **Attachment B2 to the Proposed Approval Decision Brief**, particularly in relation to risks posed to subterranean fauna by impacts to ground water. Relevantly, proposed conditions 2 – 9 of **Attachment B2 to the Proposed Approval Decision Brief** would require the proponent to:
 - a. ensure groundwater drawdown at bores within the south-east site is less than 0.5 metres for the life of the approval (proposed condition 2). The purpose of this condition is to avoid impacts on three of the stygofauna species known to only occur in the area;
 - b. not exceed the 0.5 metre groundwater drawdown contour (proposed condition 3). The purpose of this condition is to manage impacts on subterranean fauna species;
 - c. prior to the commencement of the action, develop and implement a ground water monitoring program with the objective of maintaining the ecological function of groundwater within the development envelope to manage the impacts on subterranean fauna species and troglofauna species (proposed conditions 4 – 8). This includes imposing trigger levels to both reduce and avoid impacts on subterranean fauna species and troglofauna species. The

ground water monitoring program must be reviewed by a suitably qualified subterranean fauna ecologist and suitably qualified hydrogeologist and must be submitted to the Department; and

- d. submit for the Minister's approval evidence that the proposed action will not result in the extinction of troglofauna species in Area 1 (proposed condition 9). Area 1 cannot be cleared until the Minister has approved the evidence. This condition is intended to protect the four troglofauna species within the proposed troglofauna protection area.
54. The Department considers that these are strong measures that, when combined with the ongoing research programs into extending habitat for the species in question, could reasonably be considered to mitigate the risks posed to subterranean fauna, particularly in relation to ground water impacts.
 55. On this basis, the Department considers that it is open to you to form the view that the proposed conditions at **Attachment B2 to the Proposed Approval Decision Brief** would be likely to reduce the impacts of the proposed action on the environment to an acceptable level – particularly when those risks are balanced against the social and economic benefits of the project (see paragraphs 227 – 234).
 56. That said, while the Department considers there is a reasonable basis for you to conclude that the proposed conditions at **Attachment B2 to the Proposed Approval Decision Brief** will be sufficient to ensure that risks to subterranean fauna are managed to an acceptable level when balanced with the social and economic outcomes of the proposal, it acknowledges that the environmental risks at issue are both serious and uncertain.
 57. The proposed conditions at **Attachment B2 to the Proposed Approval Decision Brief** are primarily directed at avoiding and reducing the likelihood of impacts to the subterranean fauna species. Given the scientific uncertainty surrounding the biology and ecology of the subterranean fauna species in question, there are significant uncertainties as to whether the proposed conditions at **Attachment B2 to the Proposed Approval Decision Brief** are likely to be effective in achieving good environmental outcomes in the event that neither the proponent, nor the ongoing research by third parties, are able to successfully demonstrate that these species exist outside the project area (either by an extension of habitat or surrogates).
 58. The Department therefore acknowledges that success in ensuring good environmental outcomes is ultimately dependent on scientific advancements occurring prior to the intended commencement of the proposed action. Therefore, there remains a real chance that if the action was taken in accordance with the proposed conditions at **Attachment B2 to the Proposed Approval Decision Brief**, one or more of the 12 subterranean fauna species known only to occur in the project area would still be lost.
 59. For this reason, applying the precautionary principle, the Department recommends that if you decide to approve the proposed action for the purposes of the controlling provisions in sections 21 and 22A, you instead attach the proposed conditions at **Attachment B1 to the Proposed Approval Decision Brief**. The proposed conditions at **Attachment B1 to the Proposed Approval Decision Brief** would (relevantly) require the proponent to:

- a. submit for your approval, evidence that the proposed action will not result in the extinction of troglotauna species in Area 1 (see proposed condition 2 – this is the same requirement as proposed condition 9 of **Attachment B2 to the Proposed Approval Decision Brief**); and
 - b. provide suitable evidence for your approval that demonstrates the action will not result in the extinction of the subterranean fauna species. The proponent would be required to provide the suitable evidence prior to the commencement of the action for your approval (refer to conditions 3 and 4, **Attachment B1 to the Proposed Approval Decision Brief**).
60. Proposed conditions 3 and 4 would take the place of the conditions in **Attachment B2 to the Proposed Approval Decision Brief** intended to manage the ground water impacts of the proposed action on the relevant subterranean species.
 61. The subterranean fauna species referred to are the eleven (11) stygofauna species - *Enchytraeidae* sp. Y5, *Enchytraeidae* sp. Y6, *Halicyclops* cf. *eberhardi* sp. B, *Novanitocrella* 'araia' sp. n., *Schizopera akolos*, *Schizopera emphysema*, *Schizopera* sp. 7439, *Philoscidae* sp. n. Y2, *Atopobathynella* sp. 'line K', *Enchytraeidae* sp. Y4 and *Kinnecaris* 'lined' sp. n., and one (1) troglotauna species - *Trichorhina* sp. n. F.
 62. The Department considers that the environmental risks posed to subterranean fauna are likely to be fully mitigated by the proposed conditions at **Attachment B1 to the Proposed Approval Decision Brief**, which will ensure that these species are not lost.
 63. However, the Department also acknowledges that, despite the proponent indicating that they believe it will be possible to demonstrate that the proposed action will not result in the loss of these species, the lack of scientific certainty that exists in relation to the biology and ecology of subterranean fauna species may result in the proponent not being able to commence taking the action if they cannot prove that extinction of subterranean fauna will be avoided.
 64. If the project does not proceed, the social and economic benefits discussed at 227 – 234 will not be realised. Taking this into account, it is open to you to form the view that the environmental risks posed to the subterranean fauna would still be mitigated to an acceptable level by attaching the proposed conditions at **Attachment B2 to the Proposed Approval Decision Brief**, even though this course of action is likely to result in a higher residual environmental risk than attaching the proposed conditions at **Attachment B1 to the Proposed Approval Decision Brief**.

Flora and vegetation

65. The proposed action will result in the loss of 2422 hectares of native vegetation. The Assessment Report (**Appendix A**) notes that this would result in the loss of conservation significant species, including *Eremophila arachnoides* subsp. *arachnoides*, *Bossiaea eremaea*, *Euryomyrtus inflata* and *Atriplex yeelirrie*, and disruption to ecosystem function. Impacts to flora and vegetation are likely to occur as a result of:
 - direct clearing and indirect impacts
 - groundwater drawdown
 - invasion by exotic species
 - altered fire regimes

- dust deposition and exposure to radio-nuclides
66. The WA EPA concluded that the objective for Flora and Vegetation could be met provided conditions were imposed to manage direct and indirect impacts on native vegetation. As a condition of the WA Approval the proponent is required to prepare and implement a Flora and Vegetation Management Plan to avoid and minimise direct and indirect impacts, as far as practicable, on conservation significant flora species and vegetation units (see condition 9 of the WA Approval).
 67. The Department has recommended attaching a condition to the approval of the proposed action that would require the approval holder to comply with this condition of the WA Approval (see condition 1(a) in both **Attachments B1** and **B2 to the Proposed Approval Decision Brief**) to ensure that impacts to the environment through risks to native vegetation will not be unacceptable. The Department is satisfied that this condition is necessary and convenient to protect the environment.
 68. The Appeals Convenor Report (**Appendix B2**) notes that submissions raised concerns about the vegetation assessment being inadequate and the lack of consideration regarding how to manage weeds. The Appeals Convenor Report concluded that the WA EPA assessment appropriately determined the vegetation assessment is consistent with relevant policy and guidance, and the proposed conditions adequately address weed management. This ground for appeal was dismissed.
 69. The Department is satisfied that the likely impacts of the proposed action on the environment in respect of flora and vegetation has been sufficiently addressed through the Assessment Report, Appeals Convenor Report, and the conditions of the WA Approval, and therefore does not require additional investigation or analysis; other than in respect of the likely impacts of the proposed action on *Atriplex yeelirrie*, which are discussed below at sections 71 – 91.
 70. Further information and analysis of the impacts of the proposed action to flora and vegetation is set out in section 3.2 and at Appendix 3 of the Assessment Report (**Appendix A**), and pages 33 – 34 of the Appeals Convenor Report (**Appendix B2**).

Flora and Vegetation – Atriplex yeelirrie

71. The threatened plant species *Atriplex yeelirrie* was listed as endangered under the EPBC Act on 22 October 2015 following the controlled action decision.
72. Under section 158A, approval process decisions are not affected by listing events that occur after a section 75 decision is made. However, as the proposed action is a nuclear action, the impact of the action on the plant species *Atriplex yeelirrie* is still relevant as part of the assessment of the impact of the proposed action on the ‘environment’.
73. *Atriplex yeelirrie* is a saltbush with a highly restricted distribution limited to two genetically distinct populations on Yeelirrie Station within a palaeovalley of the Yilgarn craton that contains significant near-surface uranium mineralisation. The two populations of *Atriplex yeelirrie* are referred to as the Western and Eastern populations. The Western and Eastern populations have been found to have similar levels of genetic diversity; however, there is also an unexpected level of genetic differentiation given the proximity.

74. The Western population occurs wholly within the proposed impact area over the highest grade ore. The Western population encompasses two sub-populations, located in close proximity to one another, comprising 85,542 individual plants over an area of 76 ha. The Eastern population occurs outside the proposed impact area, approximately 30 km south-east of the Western population, and encompasses 10 sub-populations also in close proximity to one another, comprising 190,755 individual plants over an area of 130 ha.
75. Western Botanical (2015) undertook regional surveys for *Atriplex yeelirrie* in late 2009, early 2010 and May 2010, targeting lake systems (including Annean, Mason, Miranda, Nabberu, Noondie and Way) and no new populations were discovered.
76. As set out in the Assessment Report (**Appendix A**), the potential impacts of the action on *Atriplex yeelirrie* considered by the WA EPA includes:
- a. the clearing of 31 per cent of the known individual plants of *Atriplex Yeelirrie*,
 - b. the clearing of one of the two known populations, being the entire Western population of the species,
 - c. a reduction in the known area occupied from 206 ha to 130 ha,
 - d. a loss of genetic diversity, given the Western population is genetically distinct from the Eastern population, and
 - e. the clearing of 37 per cent of the known extent of the *Atriplex yeelirrie* shrubland on calcrete vegetation unit.
77. The proponent committed to the following mitigation measures for *Atriplex Yeelirrie* that were outlined in the PER (**Appendix B1**):
- a. Fencing the Eastern population to exclude entry by livestock from neighbouring pastoral leases.
 - b. A research conservation program to address the following:
 - i. research activities to further understand the species and to support potential translocation including seed collection and propagation research and trials,
 - ii. implementation of a targeted research and trials program on ecophysiology, seed biology and translocation,
 - iii. development of an Interim Recovery Plan, leading to the development of a full Recovery Plan in consultation with Department of Parks and Wildlife, and
 - iv. development of a Trial Translocation Plan in consultation with the Department of Parks and Wildlife.
 - c. Reintroduction of the Western population to approximately 104 ha of a back-filled mine void within the proposed impact area, early in the mine development program.
 - d. Translocation to establish a new population or populations of the Western population of *Atriplex yeelirrie*. Cameco asserts that features of the species that may make it amenable to translocation include:

- i. individual plants hold seed over several seasons. Seed can be readily harvested and stored,
 - ii. seed can be readily germinated,
 - iii. as evidenced by the rehabilitation populations, the species can establish and grow in soil that differs from natural conditions, including soils that exhibit different salinity and profile characteristics to the soils of the natural populations, and
 - iv. potential translocation sites at Lake Mason and Yakabindie (totalling ~220 ha) with similar soil and landscape characteristics to those supporting the existing population have been identified (Cameco 2016) and partially assessed.
- e. Tenure options, including the establishment of a Conservation Area over the Eastern population, would be investigated to determine the best option to ensure long-term protection.
- f. A plan to protect the translocated population on the rehabilitated mine pit to ensure it would not be cleared during mine development.
78. The WA EPA concluded that the objective for Flora and Vegetation could be met provided a condition was imposed to:
- avoid direct and indirect impacts to the Eastern population of *Atriplex yeelirrie* (condition 8 of the WA approval), and
 - prior to ground disturbing activities, prepare and submit an *Atriplex yeelirrie* offset plan to meet the objective 'to ensure the survival of a self-sustaining population of mature individuals of the Western population of the *Atriplex yeelirrie*' (conditions 17 of the WA Approval). Should the objective of the *Atriplex yeelirrie* offset plan not be achieved within 20 years from implementation, the approval holder must submit a revised *Atriplex yeelirrie* offset plan.
- It is important to note that the approval holder is not required to meet the objective of the *Atriplex yeelirrie* offset plan prior to the clearing of the only known population of the Western population of *Atriplex yeelirrie* within the proposed impact area.
79. The Appeals Convenor Report (**Appendix B2**) notes that submissions raised concerns about:
- water drawdown and salinity impacting on the health of the Eastern population of *Atriplex yeelirrie*,
 - the use of the precautionary principle for Western population of *Atriplex yeelirrie*, and
 - the low likelihood of recreation of habitat and translocation being successful.
80. The Appeals Convenor Report concluded that the WA EPA assessment appropriately and adequately considered the potential impacts of the action on *Atriplex yeelirrie* and dismissed the ground of appeal.
81. The Department has considered the information and analysis of the potential impacts of the proposed action on *Atriplex yeelirrie* as set out in section 3.2 and at Appendix 3 of the Assessment Report (**Appendix A**).

82. Based on this information, the Department is satisfied with the WA EPA's assessment that the likely impacts of the proposed action on *Atriplex yeelirrie* would result in the complete loss of the only known population of the Western population of *Atriplex yeelirrie* and that in order to maintain the status of the Eastern population, direct and indirect impacts should be avoided.
83. The Department has considered pages 35 – 38 of the Appeals Convenor Report (**Appendix B2**), the additional information on *Atriplex yeelirrie* provided by the proponent on 11 October 2016 and 21 November 2017 (**Appendix B5**) and information gathered by Departmental officers during a site visit of the proposal area in November 2017. The additional information reflected the information submitted in the PER and to the WA Appeals Convenor, as discussed above in paragraphs 79 – 80. The Department notes that the proponent has committed to implementing the avoidance and mitigation measures set out above at paragraph 77.
84. To assist in achieving the outcome for the Western population of *Atriplex yeelirrie*, the proponent commissioned Western Botanical in 2011 to conduct germination trials at the Yeelirrie site to assess the germinability of seed from old and new fruit with the intention of re-establishing the species. Following this study, Western Botanical recommended a more extensive and detailed seed germination study of *Atriplex Yeelirrie* be undertaken (refer to **Appendix F**).
85. To confirm the potential for a self-sustaining population of Western population of *Atriplex yeelirrie* to be established outside the proposed impact area, in June 2017, the Department sought further advice from botanist Professor Kingsley Dixon from Curtin University and Kings Park Botanic Gardens (**Appendix G**). Professor Dixon confirmed that there is little known about the ecology and reproductive biology of *Atriplex Yeelirrie* and considers that to determine the success of a translocated population, a micro-genetic study of the Western population of *Atriplex Yeelirrie* would need to be carried out, including translocating the genetic material from the genetic study to different sites; analysing the natural regeneration of the species; undertaking corrective genetic work and carrying out (ongoing) genetic modelling.
86. The Department notes that the proponent has indicated in the PER (**Appendix B1**), the WA Appeals Convenor Report (**Appendix B2**), and additional information on *Atriplex yeelirrie* provided by the proponent on 11 October 2016 and 21 November 2017 (**Appendix B5**) that they believe it is possible to avoid the Eastern population of *Atriplex yeelirrie* and re-establish the Western population of *Atriplex yeelirrie* outside the development envelope from seed.
87. The Department has considered the WA EPA's assessment of the Eastern population of *Atriplex yeelirrie* and agrees that the potential impacts on the Eastern population of *Atriplex yeelirrie* would be avoided if the proposed action were undertaken in a manner that avoids any direct or indirect impacts on the Eastern population of *Atriplex yeelirrie*; therefore, the Department recommends the proponent be required to undertake the action in accordance with condition 8 of the WA approval (see condition 1(a) in both **Attachments B1 and B2 to the Proposed Decision Brief**).
88. The Department has also considered the WA EPA's assessment of the Western population of *Atriplex yeelirrie* and acknowledges that success in ensuring good environmental outcomes is ultimately dependent on scientific developments occurring prior to the intended clearing of the Western population of *Atriplex yeelirrie* within the proposed impact area. In particular, there is some doubt currently as to whether the Western population of the *Atriplex yeelirrie* can successfully be re-established outside the proposed impact area without further research on the reproductive biology of the species. Therefore, there remains significant uncertainties as to

whether condition 17 of the WA approval (**Appendix B2**) is likely to be effective in achieving good environmental outcomes in the event that the proponent is unable to successfully establish a self-sustaining population of the Western population of *Atriplex yeelirrie* prior to the clearing of the only known population of the Western population of *Atriplex yeelirrie*.

89. For this reason, applying the precautionary principle, the Department recommends that if you decide to approve the proposed action for the purposes of the controlling provisions in sections 21 and 22A, you attach a condition that would require the proponent, prior to the commencement of the clearing of the Western population of *Atriplex yeelirrie*, to:
- a. provide suitable evidence from a suitably qualified flora ecologist for your approval that demonstrates the survival of a self-sustaining population of mature individuals of the Western population of *Atriplex yeelirrie* outside the development envelope, and
 - b. avoid any direct and indirect impacts on the Western population of *Atriplex yeelirrie* within the development envelope until you are satisfied the evidence meets the requirements of above condition.

The Department's recommended condition is set out at proposed condition 5 of **Attachment B1** and condition 10 of **Attachment B2 to the Proposed Approval Decision Brief**.

90. The Department considers that the environmental risks posed to the Western population of *Atriplex yeelirrie* are likely to be fully mitigated by the proposed condition 5 of **Attachment B1** and condition 10 of **Attachment B2 to the Proposed Approval Decision Brief**, which will ensure that the Western population of *Atriplex yeelirrie* is not lost.
91. Further information and analysis of the impacts of the proposed action on *Atriplex yeelirrie* is provided in section 3.2 and at Appendix 3 of the Assessment Report (**Appendix A**), pages 35 – 38 of the Appeals Convenor Report (**Appendix B2**), and additional information at **Attachment B5**.

Terrestrial fauna

92. The proposed action has the potential to directly impact on terrestrial fauna species through the clearing of 2,422 hectares of potential fauna habitat. The Assessment Report (**Appendix A**) notes that this could cause the loss of conservation significant species and disrupt ecosystem function. Other impacts to terrestrial fauna are likely to occur as a result of:
- direct loss of habitat and individuals
 - altered surface water flows and groundwater hydrology
 - increased risk of vehicle strikes
 - feral predation
 - habitat fragmentation
 - weed infestation
 - altered fire regimes
 - increased dust emissions and radiation exposure.

93. Vertebrate and invertebrate fauna assessments confirmed the proposal site contains extensive areas of fauna habitat and significant fauna species were recorded, specifically:
- Australian Bustard (*Ardeotis australis*)
 - Brush-tailed mulgara (*Dasyercus blythi*)
 - Bush stone-curlew (*Burhinus grallarius*)
 - Peregrine falcon (*Falco peregrinus*)
 - Square-tailed kite (*Lophoictinia isura*)
 - Central long-eared bat (*Nyctophilus major tor*)
 - Striated grasswren (*Amytornis striatus striatus*)
 - Fork-tailed swift (*Apus pacificus*)
 - Slender-billed thornbill (Western) (*Acanthiza iredalei iredalei*) – since delisted as EPBC Act listed threatened species
 - Malleefowl (*Leipoa ocellata*) – EPBC Act listed threatened species
 - Black-flanked rock-wallaby (*Petrogale lateralis lateralis*) – Listed as vulnerable under the EPBC Act on 11 July 2000, and then uplisted to endangered on 7 December 2016, that is, following the controlled action decision
 - Shield-backed trapdoor spider (*Idiosoma nigrum*) – Listed as vulnerable under the EPBC Act on 26 April 2013, that is, following the controlled action decision.
94. In addition to those species identified by WA EPA, the Department has also identified the following additional EPBC listed species that will potentially be impacted by the proposed action: Greater Bilby (*Macrotis lagotis*), Princess Parrot (*Polytelis alexandrae*), Great desert skink (*Liopholis kintorei*), Night parrot (*Pezoporus occidentalis*) and Oriental plover (*Charadrius veredus*). These species are discussed in the analysis of ss 18 and 18A (paragraphs 162 – 226) and ss 20 and 20A (paragraphs 154 – 161), but also form part of the assessment of impacts of the proposed action on the environment for the purposes of ss 21 and 22A.
95. The Appeals Convenor Report (**Appendix B2**) notes that submissions raised concerns about potential for fauna to drink contaminated tailings dam water, and the impacts of loss of habitat for conservation significant species should have been taken into account in the assessment. The Appeals Convenor Report concluded that the WA EPA assessment appropriately and adequately considered the potential impacts and dismissed the grounds of appeal.
96. The WA EPA noted that due to the existence of continuous and extensive habitat outside the proposal site, the objective for terrestrial fauna could be met provided conditions were imposed to manage direct and indirect localised impacts on terrestrial fauna and their habitat (vegetation communities). On this basis, the WA Approval imposed a condition on the approval holder requiring them to avoid impacts on terrestrial fauna and to prepare and implement a terrestrial fauna management plan (condition 10 of the WA Approval).

97. The Department has recommended attaching a condition to the approval of the proposed action requiring compliance with condition 10 of the WA Approval (see condition 1(a) in both **Attachments B1 and B2 to the Proposed Approval Decision Brief**). In addition, the Department has recommended imposing a condition that the approval holder must not clear more than 2,422 hectares within the development envelope (see condition 1(b) in both **Attachments B1 and B2 to the Proposed Approval Decision Brief**). The Department is satisfied that these conditions would ensure that impacts to the environment through risks to terrestrial fauna will not be unacceptable, and therefore that the conditions are necessary and convenient to protect the environment.
98. The Department considers the impact of the proposed action on the environment in respect of terrestrial fauna has been sufficiently addressed through the Assessment Report, Appeals Convenor Report, and the conditions of the WA Approval, and therefore does not require additional investigation or analysis.
99. Further information and analysis of the impacts of the proposed action to terrestrial fauna is provided in section 3.3 and at Appendix 3 of the Assessment Report (**Appendix A**), and page 38 – 39 of the Appeals Convenor Report (**Appendix B2**).

Human health

100. The proposed action will result in the generation of radioactive material which can present a human health risk. The primary pathways of radiation exposure include:
- direct external gamma radiation
 - inhalation of radon gas
 - inhalation of dust containing radionuclides
 - ingestion of radioactive material
 - ingestion of bush tucker.
101. The Department notes that the proponent has undertaken radiation impact assessments and modelling relating to radiation exposure and radionuclide movement for the proposed action. The WA Radiological Council and the Department of Mines and Petroleum will monitor radiological conditions, the implementation of relevant management practices and compliance with regulatory public and occupational dose limits. This will be undertaken through the implementation of a Radiation Management Plan under the *Radiation Safety Act 1975* (WA) and the *Mines Safety and Inspection Act 1994* (WA). The WA Radiological Council is an independent statutory authority appointed in WA to assist the WA Minister for Health to protect public health and to maintain safe practices in the use of radiation.
102. The preparation of a Radiation Management Plan prior to commencement of the action is a statutory obligation under the *Mines Safety and Inspection Regulations 1995* (WA). The Radiation Management Plan must be approved by both the WA Department of Mines, Industry Regulation and Safety (the **WA DMIRS**) and the WA Radiological Council to meet the provisions of the *Mines Safety and Inspection Regulations 1995* (WA) and the *Radiation Safety Act 1975* (WA).
103. Because of these requirements, the WA EPA did not recommend a condition in relation to the preparation and implementation of the Radiation Management Plan. The Department agrees with

this conclusion, and consequently has not recommended attaching any conditions to any approval of the proposed action that relate to the management of radiation.

104. The Appeals Convenor Report (**Appendix B2**) notes that submissions raised concerns about the health impacts to the community and workers from radiation exposure, including bush tucker and food production, and drinking water.
105. The WA EPA concluded that the objectives for human health could be met, noting that the Radiological Council and the WA DMIRS would regulate:
 - a. monitoring of radiological conditions,
 - b. implementation of as-low-as-reasonably-achievable management practices, and
 - c. compliance to regulatory public and occupational dose limits.
106. The Department considers this matter has been sufficiently addressed through the Assessment Report, Appeals Convenor Report, and the conditions of the WA Approval, and therefore does not require additional investigation or analysis.
107. Further information and analysis on human health impacts as a result of the proposed action is provided in section 3.4 and at Appendix 3 of the Assessment Report (**Appendix A**), and pages 27 – 31 of the Appeals Convenor Report (**Appendix B2**).

Hydrological processes / Inland waters environmental quality

108. The proposed action will require the construction of a bund and channel to divert natural flows around the operations, mine pit dewatering, groundwater abstraction, groundwater reinjection, surface water diversion and other onsite uses. Based on the information in the Assessment Report, impacts to water resources as a result of the proposed action may include:
 - groundwater deficit
 - groundwater mounding (at reinjection sites)
 - changes to water chemistry and seepage from storage facilities
 - changes to water quality
 - changes in surface water flow regimes
 - impacts to terrestrial environments through use of groundwater in dust suppression activities
109. The Assessment Report (**Appendix A**) notes that the WA Department of Water and Environmental Regulation (the **WA DWER**) advised that the hydrogeology of the area is well understood and that the available hydrogeological studies provide sufficient rigor and accuracy to enable an adequate assessment of impacts on the environment, other users and the aquifer system, and that it has no objections to the proposal.
110. The Assessment Report does note, however, that changes in groundwater quality may have the potential to affect subterranean fauna habitat down flow from the mine and tailings storage

facilities. This is discussed above in the analysis of risks to subterranean fauna at paragraphs 38 – 64.

111. The WA EPA concluded that the objectives for Hydrological Processes could be met, provided conditions were imposed that require independent expert review of the ground water monitoring program prior to implementation and the results from that program on a regular basis; and the development of surface water and ground water management, monitoring and reporting plans (see conditions 11 and 12 of the WA approval).
112. The Department has recommended attaching a condition to the approval of the proposed action that requires the approval holder to implement the relevant conditions of the WA Approval in respect of preparing a Baseline Survey Plan, obtaining independent expert review of the ground water monitoring program in the Baseline Survey Plan, and preparing and implementing a Hydrological Processes Monitoring and Management Plan (see condition 1(a) in both **Attachments B1 and B2 to the Proposed Approval Decision Brief**). The Department is satisfied that these conditions, combined with a condition requiring compliance with WA approval condition 13 (below), would ensure that impacts to the environment through risks to water resources will not be unacceptable, and therefore that the conditions are necessary and convenient to protect the environment.
113. The Appeals Convenor Report (**Appendix B2**) notes that submissions raised concerns about the impacts to neighbouring bores from the proposed wellfields, including at Dempsey Bore and No-ibla.
114. The Department notes that groundwater abstraction management objectives are outlined in the WA Approval (**Appendix B4**), and the Appeals Convenor Report (**Appendix B2**) also notes that the WA DWER will have further involvement in regulating the proposed action through its licensing role under the *Rights in Water and Irrigation Act 1914* (WA).
115. The Department further notes that should the proposed action be approved, the WA EPA concluded that the objectives for Inland Waters Environmental Quality could be met if conditions were attached to the approval of the action requiring:
 - the development and implementation of a Surface Water Management and Monitoring Plan
 - the development and implementation of a Groundwater Management and Monitoring Plan, including provisions to prevent the abstraction of groundwater down flow from the tailings storage facility within the boundaries of Yeelirrie Station for stock use, where uranium levels are above the low risk trigger value for stock listed in the *ANZECC Guidelines for Fresh and Marine Water Quality*, and
 - the development and implementation of a program of work on uranium transport in groundwater from tailings.
116. The Department considers this matter has been sufficiently addressed through the Assessment Report, Appeals Convenor Report, and the conditions of the WA Approval and therefore do not require additional investigation or analysis. The Department has recommended attaching a condition to the approval of the proposed action that requires the approval holder to implement the relevant condition of the WA Approval (WA approval condition 13) in respect of the development of Surface Water and Groundwater Management and Monitoring Plans (see condition 1(a) in both **Attachments B1 and B2 to the Proposed Approval Decision Brief**). The

Department is satisfied that these conditions, combined with a condition requiring compliance with WA approval condition 11 and 12 (above) would ensure that impacts to the environment through risks to water resources will not be unacceptable, and therefore that the conditions are necessary and convenient to protect the environment.

117. Further information and analysis on these matters is provided in sections 3.5 and 3.6, and at Appendix 3 of the Assessment Report respectively (**Appendix A**), and pages 23 – 27 of the Appeals Convenor Report (**Appendix B2**).

Heritage

118. The proposed action has the potential to result in an impact to heritage through destruction of heritage sites, culturally modified Kopi Gum trees (*Eucalyptus gypsophila*), and various flora and fauna bush tucker species.
119. The Assessment Report (**Appendix A**) states that the proposed action area is not currently inhabited by Aboriginal people. Surveys undertaken to-date have catalogued the location of artefacts and cultural material or activities. The WA Department of Aboriginal Affairs reported there are two registered Aboriginal heritage sites located partially within the proposed impact area, and that four artefact scatters were recorded in proximity to the proposed action.
120. The proposed action area is located within one native title claim area, lodged by the Tjiwarl Native Title claimant group, which includes Aboriginal people from the Leonora and Wiluna regions.
121. As noted in the Appeals Convenor Report (**Appendix B2**), the proponent has held meetings with the native title claimants, including Aboriginal people from Leonora and Wiluna regions since 2013. The meetings have included explanation of the proposed action and its environmental impacts on fauna and flora, and from dust, radiation and transport.
122. The WA EPA concluded that if the proposed action is approved, impacts on heritage could be managed by attaching a condition to the approval requiring the preparation and implementation of an Aboriginal Heritage Management Plan to minimise impacts as far as practicable to Aboriginal Heritage (WA approval condition 14).
123. The Department considers this matter has been sufficiently addressed through the Assessment Report, Appeals Convenor Report and the conditions of the WA Approval, therefore, does not require additional investigation or analysis. Having regard to the WA EPA's assessment of how impacts on heritage may be managed, the Department has recommended attaching a condition to the approval of the proposed action that requires the approval holder to comply with WA Approval condition 14 in respect of the development of an Aboriginal Heritage Management Plan (See condition 1(a) in both **Attachments B1 and B2 to the Proposed Approval Decision Brief**). The Department is satisfied that this condition would ensure that impacts to the environment through risks to heritage will not be unacceptable, and therefore that the conditions are necessary and convenient to protect the environment.
124. Further information and analysis on the heritage impacts of the proposed action is provided in section 3.7 and at Appendix 3 of the Assessment Report (**Appendix A**), and pages 31 – 33 of the Appeals Convenor Report (**Appendix B2**).

Rehabilitation and decommissioning

125. Mine closure is regulated by the WA DMIRS through the *Mining Act 1978* (WA), and through the *Mines Safety and Inspection Act 1994* (WA).
126. The development of a Mine Closure Plan is a statutory obligation under the *Mining Act 1978*. The Mine Closure Plan is required to be prepared in accordance with *Mine Closure Guidelines* which have been jointly prepared by the WA EPA and the WA DMIRS.
127. The WA Approval (**Appendix B4**) includes conditions requiring the proponent to prepare and submit a Mine Closure Plan and to undertake further research on the rate at which revegetation cover can be established to prevent erosion (condition 15 of the WA Approval).
128. A Conceptual Mine Closure Plan was included in the PER (**Appendix B1**). The proponent states that key objectives of the Mine Closure Plan are to:
 - protect the health and safety of public and workforce
 - minimise off-site impacts
 - return the environment to as close to pre-mining as practicable
 - establish self-sustaining ecosystems that do not require ongoing maintenance
 - develop and implement post-closure monitoring and contingency plan
 - develop a long-term conservation management plan for the Yeelirrie pastoral lease.
129. The WA EPA considered that the objective of rehabilitation and decommissioning could be met provided that conditions are attached to the approval of the proposed action that require:
 - the preparation of a mine closure plan that is regularly updated, effectively implemented, and made publicly available,
 - further research on the rate at which revegetation cover can be established, the effect of vegetation cover on the erosion rate and the need for alternative surface treatments to prevent erosion,
 - updates to the Landform Evolution Model using digital elevation modelling data, and
 - on-ground data collection to calibrate erosion models.
130. The Department considers that matters associated with the rehabilitation of the proposed impact area and decommissioning of the mine have been appropriately addressed through the Assessment Report, Appeals Convenor Report and the conditions of the WA Approval; therefore, do not require additional investigation or analysis. Having regard to the WA EPA's conclusions regarding management of the rehabilitation and decommissioning of the mine, the Department has recommended attaching a condition to the approval of the proposed action that requires the approval holder to comply with condition 15 of the WA approval in respect of the development of a Mine Closure Plan (see condition 1(a) in both **Attachments B1 and B2 to the Proposed Approval Decision Brief**). The Department is satisfied that this condition would ensure that impacts to the environment associated with the decommissioning and rehabilitation of the mine will not be

unacceptable, and therefore that the conditions are necessary and convenient to protect the environment.

131. Further information and analysis are provided in section 3.8 and at Appendix 3 of the Assessment Report (**Appendix A**), and pages 42 – 44 of the Appeals Convenor Report (**Appendix B2**).

Offsets

132. In respect of the impact of the proposed action on subterranean fauna, the WA EPA noted that, should the decision be taken to approve the proposed action, an offset could take the form of further research to improve scientific understanding of subterranean fauna, including to determine whether such species extend beyond the proposed impact area or whether their habitat is continuous and extensive beyond the impact area.
133. As discussed at paragraphs 59 – 64 above, while the Department’s recommendation is that you attach the proposed conditions at **Attachment B1 to the Proposed Approval Decision Brief** to any approval (in which case no offset would be required, as the proponent would be required, as a condition of approval, prior to commencement of the action, to provide suitable evidence that demonstrates the action will not result in the extinction of any subterranean fauna species), it considers that there are reasonable grounds available on which you could form a view that the risks posed to subterranean fauna could be mitigated to an acceptable level by instead attaching the proposed conditions at **Attachment B2 to the Proposed Approval Decision Brief**, particularly when the environmental risks are balanced against the social and economic benefits of the project proceeding. If you form this view, the Department considers that the proponent should be required to offset any residual impact on subterranean fauna by developing and implementing a research program to further develop the understanding of the impact on subterranean fauna from mining and groundwater abstraction in the region, required under condition 16 of the WA approval (**Appendix B4**). This is reflected in proposed condition 1(a) of **Attachment B2 to the Proposed Approval Decision Brief**.
134. Further information and analysis are provided in section 3.9 and at Appendix 3 of the Assessment Report (**Appendix A**), pages 5 – 23 and 35 – 38 of the Appeals Convenor Report (**Appendix B2**) and additional information (**Appendix B5**).

Other aspects of the ‘environment’ considered in the Assessment Report

135. The lifecycle and global implications of uranium mining such as the generation of nuclear waste, the wider nuclear cycle, nuclear incidents and proliferation of nuclear weapons was raised during the public comment period and in the Appeals Convenor Report (**Appendix B2**). The Appeals Convenor and WA EPA considered that this issue was beyond the scope of the appeal.
136. Export of uranium from the proposed action will be addressed by comprehensive international frameworks and national legislative requirements for nuclear safety and security. The *Nuclear Non-Proliferation (Safeguards) Act 1987* (Cwth) applies to the export of nuclear material and export permits are required under the *Customs (Prohibited Exports) Regulations 1958* (Cwth). Australia’s safeguard arrangements include approvals from the Australian Safeguards and Non-proliferation Office.
137. Section 3.4 of the Assessment Report (**Appendix A**) notes the transport of radioactive material in WA can be adequately managed under the *Radiation Safety (Transport of Radioactive Substances) Regulations 2002* (WA). The Department agrees with this assessment.

Terrestrial environmental quality

138. The WA EPA initially considered that the proposed action had the potential to impact on Terrestrial Environmental Quality as a result of erosion and sedimentation, flooding of water storage facilities, spills, seepage from the tailings storage facility, waste storage and dust deposition. The WA EPA also considered that mineralised material could be deposited outside the proposed action area during the hauling process.
139. Having regard to additional information provided by the proponent, the WA EPA determined that based on the proponent's management of impacts on terrestrial environmental quality, the proposed action was unlikely to have a significant impact on terrestrial environmental quality and could meet the objective for this factor. Accordingly, the WA EPA did not identify terrestrial environmental quality as a key environmental factor in its assessment. The Department has considered the WA EPA's analysis in the Assessment Report and based on that analysis, agrees that there is sufficient evidence to support this conclusion.
140. Further information and analysis is provided in Appendix 3 of the Assessment Report (**Appendix A**).

Air quality and atmospheric gases

141. The WA EPA initially considered that the generation of radionuclide-containing dust from mining, stockpiling, processing, crushing and milling, and SO₂, NO₂, CO and dust emissions from power generation and haulage had the potential to impact on the environment and human health. The WA EPA also considered that greenhouse gas emissions from diesel-fired power generation could impact on the environment.
142. Having regard to the WA EPA's evaluation of radionuclides under the key environmental factor of human health, operational measures proposed by the proponent, and modelling of air quality and greenhouse gas emissions, the WA EPA determined the proposed action was unlikely to have a significant impact on air quality and atmospheric gases and could meet the objective for this factor. Accordingly, the WA EPA did not identify air quality and atmospheric gases as a key environmental factor in its assessment. The Department has considered the WA EPA's analysis in the Assessment Report and, based on that analysis, agrees that there is sufficient evidence to support this conclusion.
143. Further information and analysis is provided in Appendix 3 of the Assessment Report (**Appendix A**).

Amenity

144. The WA EPA also considered that the generation of dust and noise from land clearing, mining activities, stockpiling and transport may impact on sensitive receptors. No submissions were noted specifically in relation to the factor of amenity. Submissions received about dust are noted under the factors of human health, air quality and atmospheric gases above.
145. The WA EPA determined that based on the distance between the proposed action and nearest residents, and the results of noise and air quality monitoring, the proposed action was unlikely to have a significant impact on amenity and could meet the objective for this factor. Accordingly, the WA EPA did not identify amenity as a key environmental factor in its assessment. The Department

has considered the WA EPA's analysis in the Assessment Report and based on that analysis, agrees that there is sufficient evidence to support this conclusion.

146. Further information and analysis is provided in Appendix 3 of the Assessment Report (**Appendix A**).

Conclusion on sections 21 and 22A

147. As set out above, the Department considers that the primary risks to the environment posed by the proposed action relate to the potential impacts on subterranean fauna species that are currently only known to occur within the project area, and the only known Western genotype population of *Atriplex Yeelirrie*. Other risks to the environment posed by the proposed action can, in the Department's view, be adequately mitigated by attaching conditions requiring compliance with relevant conditions of the WA approval (as set out in the analysis above), in addition to the conditions recommended by the Department.
148. The Department considers that, on balance, there are reasonable grounds for you to form a view that these risks can be mitigated to an acceptable level if the action is taken in accordance with the proposed conditions at **Attachment B2 to the Proposed Approval Decision Brief**, particularly when weighed against the social and economic benefits of the project. The Department considers that the proposed conditions at **Attachment B2 to the Proposed Approval Decision Brief** are the minimum level of regulation that is necessary for you to be able to be satisfied that impacts on the environment will not be unacceptable. The Department is therefore only recommending approval for the purposes of sections 21 and 22A if, at a minimum, the proposed conditions at **Attachment B2 to the Proposed Approval Decision Brief** are attached to the approval.
149. That said, for the reasons set out above, particularly the inherent uncertainties in whether the 12 subterranean fauna species can be demonstrated to exist outside the project area, the Department has serious concerns that the proposed conditions at **Attachment B2 to the Proposed Approval Decision Brief** may not be effective in ensuring good environmental outcomes. The Department further acknowledges that there remains a real chance that even if the proposed action is taken in accordance with the proposed conditions at **Attachment B2 to the Proposed Approval Decision Brief**, it could still result in the loss of the 12 subterranean species.
150. Therefore, applying a precautionary approach, the Department recommends that you instead attach the more stringent conditions proposed in **Attachment B1 to the Proposed Approval Decision Brief**. The Department considers that the proposed conditions at **Attachment B1 to the Proposed Approval Decision Brief** would further reduce the risks to subterranean fauna species (by requiring the proponent to provide sufficient evidence that the proposed action will not result in the loss of these matters) and therefore ensure that impacts to the environment will not be unacceptable.
151. The Department acknowledges that there is a risk that the project could not proceed if the proposed conditions at **Attachment B1 to the Proposed Approval Decision Brief** were attached to the approval and the proponent (despite their current views on the matter) was not able to successfully demonstrate that the relevant subterranean fauna species would not be lost. In those circumstances, the social and economic benefits of the project would not be realised.
152. For that reason, the Department considers that if, after considering the likely social and economic benefits of the project, you were to form a view that, on balance, the risks to the environment are

able to be mitigated to an acceptable level if taken in accordance with the proposed conditions at **Attachment B2 to the Proposed Approval Decision Brief**, you could:

- a. approve the proposed action for the purposes of sections 21 and 22A; and
 - b. attach the conditions at **Attachment B2 to the Proposed Approval Decision Brief** to the approval, on the basis that you are satisfied that these conditions are necessary and convenient to protect the environment, being the relevant matter protected.
153. Alternatively, if you form the view that the conditions at **Attachment B1 to the Proposed Approval Decision Brief** are necessary to satisfy you that the impacts on the environment would not be unacceptable even when weighed against the likely social and economic benefits of the project, you could:
- a. approve the project for the purposes of sections 21 and 22A; and
 - b. attach the conditions at **Attachment B1 to the Proposed Approval Decision Brief** to the approval, on the basis that you are satisfied that these conditions are necessary and convenient to protect the environment, being the relevant matter protected.

Sections 20 and 20A - Listed migratory species

154. Sections 20 and 20A of the EPBC Act prohibit the taking of an action if that action has, will have, or is likely to have, a significant impact on a listed migratory species.
155. At the time of the controlled action, sections 20 and 20A were determined to be controlling provisions for the proposed action on the basis that the proposed action was likely to result in a significant impact to species that were listed migratory species under the EPBC Act (see ERT report at **Appendix D1**). The listed migratory species determined as likely to be significantly impacted were:
- Rainbow bee-eater (*Merops ornatus*) – since delisted
 - Great egret (*Ardea alba* = *Ardea modesta*) – since delisted
 - Fork-tailed swift (*Apus pacificus*)
 - Oriental plover (*Charadrius veredus*)
 - Malleefowl (*Leipoa ocellata*) – delisted, although still a listed threatened species
156. On 26 November 2013 (after the controlled action decision), the Malleefowl was removed from the list of migratory species under the EPBC Act (though the Malleefowl remained a listed threatened species – see below). Subsequently the Rainbow bee-eater and Great egret were also removed from the List of Migratory Species on 14 April 2016. As these species are no longer listed migratory species for the purposes of the EPBC Act (and therefore are no longer matters protected by sections 20 and 20A) impacts on these species are not considered further for the purposes of the assessment of the impact of the proposed action on listed migratory species.
157. The Assessment Report (**Appendix A**) outlined that the Fork-tailed Swift was found during surveys conducted at the proposal site, but that the species is recognised as a summer migrant found throughout Australia. Accordingly, the Assessment Report considered that the Fork-tailed Swift is unlikely to be critically dependant on habitat in the proposed impact area.

158. The Oriental Plover was not discussed in the Assessment Report. The Department notes that analysis within the PER (**Appendix B1**) found that the Oriental Plover is unlikely to occur in the proposed impact area, except possibly as a vagrant, as the species was not recorded as present during either the time the species is known to be in Australia or when the wetlands were inundated within the proposal site.

Conclusion on sections 20 and 20A

159. The Department has considered the WA EPA's assessment of listed migratory species and accepts the conclusion in the Assessment Report that the proposed action is not expected to result in an unacceptable or unsustainable impact on the Fork-tailed Swift. The Department has also considered the information in the PER regarding the likely impacts of the proposed action on the Oriental Plover and is satisfied that the proposed action will not result in an unacceptable impact on this species.

160. The Department is therefore satisfied that it was not necessary to attach any specific conditions to the approval of the action to protect listed migratory species.

161. On this basis, the Department recommends that the proposed action be approved for the purposes of the controlling provisions in sections 20 and 20A of the EPBC Act, without conditions.

Sections 18 and 18A - Listed threatened species and ecological communities

162. Sections 18 and 18A prohibit the taking of an action if that action has, will have, or is likely to have, a significant impact on a listed threatened species or ecological community.

163. At the time of the controlled action, sections 18 and 18A were determined to be controlling provisions for the proposed action on the basis that the proposed action was likely to result in a significant impact to five species that are listed threatened species under the EPBC Act (see ERT report at **Appendix D1**). The listed threatened species determined as likely to be significantly impacted were:

- Slender-billed thornbill (Western) (*Acanthiza iredalei iredalei*) – since delisted
- Malleefowl (*Leipoa ocellata*) – listed as vulnerable
- Greater bilby (*Macrotis lagotis*) - listed as vulnerable
- Princess parrot (*Polytelis alexandrae*) – listed as vulnerable
- Great Desert Skink (*Liopholis kintorei*) – listed as vulnerable

164. On 14 December 2013 (after the controlled action decision), the slender-billed thornbill (Western) was removed from the list of threatened species under the EPBC Act. As this species are no longer listed threatened species for the purposes of the EPBC Act (and therefore are no longer matters protected by sections 18 and 18A) impacts on this species are not considered further for the purposes of the assessment of the impact of the proposed action on listed threatened species.

165. Other EPBC Act listed threatened species referred to in the Assessment Report include the Black-flanked rock-wallaby (*Petrogale lateralis lateralis*) uplisted to endangered on 24 November 2016, and the shield-backed trapdoor spider (*Idiosoma nigrum*) listed as vulnerable on 26 April 2013.

166. Under section 158A, approval process decisions are not affected by listing events that occur after a section 75 decision is made. Therefore, the impact of the action on the:
- a. shield-backed trapdoor spider (*Idiosoma nigrum*) can only be assessed as part of the assessment of the impact of the proposed action on the 'environment' (refer to sections 86 – 93), and
 - b. Black-flanked rock-wallaby can only be assessed in accordance with its listing status under the EPBC Act at the time of the controlled action decision, which was vulnerable.
167. Further information and analysis on the impacts to listed threatened species and communities is provided in section 3.3, section 4 and Appendix 3 of the Assessment Report (**Appendix A**), pages 38 – 39 of the Appeals Convenor Report (**Appendix B2**), additional information at **Appendix B5**, and below.

Malleefowl (Leipoa ocellata)

168. The Malleefowl is a ground dwelling bird found in semi-arid to arid shrublands and low woodlands, dominated by mallee and/or acacias. They have a large home range from one to several square kilometres (km²), and home ranges can overlap considerably.
169. At the referral stage of the EPBC Act assessment, the Department determined that the proposed action was likely to have a significant impact on Malleefowl as a result of the clearance of potential habitat for the species.
170. The Assessment Report (**Appendix A**) states Malleefowl were confirmed as present during field surveys approximately 2 km from the proposal boundary, and two Malleefowl mounds were located within the proposal site. The two Malleefowl mounds will be disturbed as a result of the proposed action.
171. The WA EPA noted that due to the existence of continuous and extensive habitat outside the proposal site, the objective for terrestrial fauna, including the Malleefowl, could be met provided conditions were imposed to manage direct and indirect localised impacts on terrestrial fauna and their habitat (refer to paragraphs 92 – 99 above).
172. The Department has considered the WA EPA's assessment in the context of the Recovery Plan for the Malleefowl (**Appendix D2**), and considers that in the absence of an offset, the clearing of Malleefowl habitat as a result of the proposed action will cause a decline in the known area of Malleefowl habitat and would therefore be inconsistent with the recovery plan for this species.
173. The Department recommends attaching a condition to the approval of the proposed action that prior to the commencement of the action, requires the approval holder to:
- a. legally secure an offset area(s) containing Malleefowl habitat that is equal to or greater in size and quality to the Malleefowl habitat that will be lost as a result of the proposed action, and
 - b. to submit for the Minister's approval, a Malleefowl Offset Strategy detailing the environmental attributes of the offset area(s). The approval holder must not commence the action unless the Minister has approved the Malleefowl Offset Strategy in writing (see condition 10 of **Attachment B1** and condition 13 of **Attachment B2 of the Proposed Decision Brief**).

174. The Department is satisfied that these offset conditions will result in no net loss of Malleefowl habitat as a result of the proposed action and, therefore, that there would be no decline in the known area of occupied or mapped potential Malleefowl habitat if the proposed action were approved subject to the recommended conditions.
175. Consistent with the analysis of impacts to the environment for the purposes of section 21 and 22A above, the Department also recommends attaching a condition to the approval of the proposed action that would require the approval holder to comply with condition 10 of the WA Approval (see condition 1(a) in both **Attachments B1 and B2 to the Proposed Approval Decision Brief**) which requires the proponent to prepare and implement a terrestrial fauna management plan to meet the objective to avoid, where possible, and minimise direct and indirect impacts as far as practicable on terrestrial fauna species within the impact area, including the Malleefowl.
176. On this basis, the Department is satisfied that, provided the proposed action is undertaken in accordance with the proposed conditions, it will not have an unacceptable impact on the Malleefowl, and therefore the conditions are necessary and convenient to protect the species.
177. Further information and analysis of the impacts of the proposed action on Malleefowl is provided in sections 3.3 and 4, and at Appendix 3 of the Assessment Report (**Appendix A**) and pages 38 – 39 of the Appeals Convenor Report (**Appendix B2**).

Greater bilby (*Macrotis lagotis*)

178. The Greater bilby is a medium-sized solitary marsupial that shelters in burrows during daylight. The species is an omnivore that primarily digs for food such as *lepidopteran* larvae, termites, ants, grasshoppers, spiders and beetles, and other items such as seeds, bulbs, and fungi.
179. The remaining populations of the Greater bilby occupy three main habitats: open tussock grassland on uplands and hills; *Acacia aneura* (mulga) woodland/shrubland growing on ridges and rises; and hummock grassland in plains and alluvial areas. Males range more widely than females from their home burrows, and home ranges can vary considerably in size in different locations. The mean female home range is 0.18 km², and the mean male home range is 3.16 km². The Greater bilby can use up to 18 of these burrows concurrently over several months, as well as construct a new burrow on average every two and a half weeks.
180. The PER states that suitable habitat exists within the proposed impact area in the form of spinifex sandplains although no records of the species were recorded during targeted surveys. There are anecdotal records of the species at Rosslyn Hill, Wiluna, located approximately 120 km north of the proposed impact area, and the species is thriving at Lorna Glen Conservation Reserve located 180 km north-west of the proposed impact area.
181. While there were no bilbies recorded during surveys, suitable habitat is present in the proposed impact area, and it possible that individuals may move through.
182. The Assessment Report indicates the Greater bilby was not recorded during targeted surveys, and the habitat type for the Greater bilby that is likely to be affected by the proposal, exists as continuous and extensive habitat outside the area of direct and potential indirect impact. For this reason, the WA EPA are satisfied the objective for terrestrial fauna, including the Greater bilby, could be met provided conditions were imposed to manage direct and indirect localised impacts on terrestrial fauna and their habitat (refer to paragraphs 92 – 99 above).

183. The Department has considered the WA EPA's assessment in the context of the *Recovery Plan for the Greater bilby* (**Appendix D3**) and *Conservation Advice for Greater Bilby* (**Appendix D4**), and considers that the impact of the proposed action on the Greater bilby, as a listed threatened species, has been appropriately addressed, and the measures necessary to avoid and mitigate impacts on Greater bilby are adequately addressed by the conditions of the WA Approval (**Appendix B4**).
184. The Department recommends attaching a condition to any approval of the proposed action that would require the approval holder to comply with condition 10 of the WA Approval (see condition 1(a) in both **Attachments B1 and B2 to the Proposed Approval Decision Brief**) which requires the proponent to prepare and implement a terrestrial fauna management plan to meet the objective to avoid, where possible, and minimise direct and indirect impacts as far as practicable on terrestrial fauna species, including the Greater bilby.
185. On this basis, the Department is satisfied that provided the proposed action is undertaken in accordance with the proposed conditions, it will not have an unacceptable impact on the Greater bilby.
186. Further information and analysis of the impacts of the proposed action on Greater bilby is provided in section 4, and at Appendix 3 of the Assessment Report (**Appendix A**) and pages 38 – 39 of the Appeals Convenor Report (**Appendix B2**).

Princess parrot (Polytelis alexandrae)

187. The Princess parrot is a medium-sized slender parrot growing to 40–45 cm long. It has pointed backswept wings and a long tapering tail. Plumage is mostly dull olive-green, paler on the underparts, with a blue-grey cap, yellow-green shoulder patches, blue back and rump, pale blue-green upper tail and pink chin, throat and foreneck.
188. The Princess parrot irregularly occurs across Australia's arid zone from near Oodnadatta in South Australia, west to near Coolgardie and the east Murchison River in WA, north to near Fitzroy River in WA, and to Howell Ponds in the Northern Territory.
189. The species is usually recorded from shrubland in swales between sand dunes, with occupied sites typically having a variety of shrubs (including *Grevillea*, *Hakea*, *Cassia* and *Eremophila* species) among scattered emergent trees, with a ground-cover of spinifex *Triodia* species. The species occurs less often in woodland, and sometimes occurs in vegetated riverine and littoral areas. The species feeds on grass seeds, *Acacia* seed pods, nectar from flowering trees and shrubs, and leaves.
190. The PER states that potential habitat for the species is present within the proposed impact area in the form of *Eucalyptus gypsophila* and hollow-bearing trees, although the Princess parrot is an irregular visitor to the area (sometimes at intervals of more than 20 years) and to most sites within its range. The species has been recorded at Wanjarri Nature Reserve, located approximately 80 km east of the proposed impact area; however, few other records exist for the region.
191. The Assessment Report indicates the Princess parrot was not recorded during targeted surveys, and the habitat type for the Princess parrot that is likely to be affected by the proposal, exists as continuous and extensive habitat outside the area of direct and potential indirect impact. For this reason, the WA EPA are satisfied the objective for terrestrial fauna, including the Princess parrot,

could be met provided conditions were imposed to manage direct and indirect localised impacts on terrestrial fauna and their habitat (refer to paragraphs 92 – 99 above).

192. The Department has considered the WA EPA's assessment in the context of the *Conservation Advice for Princess parrot* (**Appendix D5**) and considers that the impact of the proposed action on the Princess parrot, as a listed threatened species, has been appropriately addressed, and the measures necessary to avoid and mitigate impacts on Princess parrot are adequately addressed by the conditions of the WA Approval (**Appendix B4**).
193. The Department recommends attaching a condition to the approval of the proposed action that would require the approval holder to comply with condition 10 of the WA Approval (see condition 1(a) in both **Attachments B1 and B2 to the Proposed Approval Decision Brief**) which require the proponent to prepare and implement a terrestrial fauna management plan to meet the objective to avoid, where possible, and minimise direct and indirect impacts as far as practicable on terrestrial fauna species, including the Princess parrot.
194. On this basis, the Department is satisfied that provided the proposed action is undertaken in accordance with the proposed conditions, it will not have an unacceptable impact on the Princess parrot.
195. Further information and analysis of the impacts of the proposed action on the Princess parrot is provided in section 4, and at Appendix 3 of the Assessment Report (**Appendix A**), and pages 38 – 39 of the Appeals Convenor Report (**Appendix B2**).

Black-flanked rock-wallaby (Petrogale lateralis lateralis)

196. The Black-flanked rock-wallaby (also referred to as the Black-footed rock-wallaby) is endemic to WA. Its distribution is confined to small patches of suitable habitat in central and southern WA where suitable shelter and food co-exist. During the daytime they shelter under deep shade in rocky areas such as caves, cliffs, screes and rock piles, and emerge at dusk to feed on grasses, forbs, shrubs and occasionally seeds and fruits. Feeding occurs as near to shelter as possible, particularly where predators are present; however, if food is unavailable near shelter they will move up to several hundred metres away to obtain it.
197. At the referral stage of the EPBC Act assessment, the Department determined that the proposed action was likely to have a significant impact on Black-flanked rock-wallaby, as a result of the clearance of potential habitat for the species.
198. The Assessment Report (**Appendix A**) states that the Black-flanked rock-wallaby is known to occur in the region of the proposed impact area with several anecdotal reports of the species and records of scats along, and within a cave, at the Barr Smith Range located approximately 40 km east of the proposed action. Whilst the species is not expected to inhabit the proposed impact area, the species may persist in rocky habitat to the north and south of the proposal site.
199. The WA EPA noted that due to the existence of habitat outside the proposal site, the objective for terrestrial fauna, including the Black-flanked rock-wallaby, could be met provided conditions were imposed to manage direct and indirect localised impacts on terrestrial fauna and their habitat (refer to paragraphs 92 – 99 above).
200. The Department has considered the WA EPA's assessment in the context of the *Recovery Plan for the Black-flanked rock-wallaby* (**Appendix D6**) and *Conservation Advice for Black-flanked rock-*

wallaby (**Appendix D7**), and considers that the impact of the proposed action on the Black-flanked rock-wallaby, as a listed threatened species, has been appropriately addressed, and the measures necessary to avoid and mitigate impacts on Black-flanked rock-wallaby are adequately addressed by the conditions of the WA Approval (**Appendix B4**).

201. The Department recommends attaching a condition to any approval of the proposed action that would require the approval holder to comply with condition 10 of the WA Approval (see condition 1(a) in both **Attachment B1 and B2 to the Proposed Approval Decision Brief**) which requires the proponent to prepare and implement a terrestrial fauna management plan to meet the objective to avoid, where possible, and minimise direct and indirect impacts as far as practicable on terrestrial fauna species, including the Black-flanked rock-wallaby.
202. On this basis, the Department is satisfied that, provided the proposed action is undertaken in accordance with the proposed conditions, it will not have an unacceptable impact on the Black-flanked rock-wallaby.
203. Further information and analysis of the impacts of the proposed action on Black-flanked Rock-Wallaby is provided in sections 3.3 and 4, and at Appendix 3 of the Assessment Report (**Appendix A**), and pages 38 – 39 of the Appeals Convenor Report (**Appendix B2**).

Great desert skink (Liopholis kintorei)

204. The Great desert skink (*Liopholis kintorei*) was considered relevant in the referral decision (made on 18 June 2009) as it was identified as potentially occurring in the area of the proposed action; however, the Assessment Report (**Appendix A**) did not consider the Great desert skink in the assessment.
205. The PER states that no evidence of the species was recorded during surveys, however, there is potential for the species to occur at proposal area due to the availability of suitable habitat (spinifex sandplains) and records of the Greater desert skink at Wanjarri Nature Reserve located approximately 80 km from the proposed impact area. If the species is present, potential impacts include increased mortality, loss of habitat, and increase in feral predators and changes in fire regime.
206. Based on the Department's Species Profile and Threats Database (SPRAT), three populations of Great desert skink occur in WA at Patjarr (population estimated to be less than 2500 individuals); near the Kiwirrkura community, including the vicinity of Lake Mackay (less than 500 individuals); and in Rudall River National Park (unknown population size). The nearest population to the proposed impact area is located more than 900 km away.
207. The Great desert skink is a burrowing skink well known and important to Aboriginal people throughout the western deserts region of Australia for lore and as a food source. It is characterised by its large size, blunt head, smooth scales, pale fawn to rich reddish-brown dorsal colouring and its contrasting creamy or yellow ventral surface.
208. The Great desert skink is endemic to the Australian arid zone in the western deserts region. It occurs in the Northern Territory (NT), Western Australia (WA) and South Australia (SA) but knowledge of its distribution in these jurisdictions is imprecise, due to the remoteness and inaccessibility of much of the potentially suitable habitat. There appears to have been a range contraction in WA with surveys failing to detect the species in former strongholds in the Gibson Desert north of Warburton and in the Great Victoria Desert.

209. The Great desert skink constructs and maintains an interconnected network of tunnels within which it aggregates with tunnels being up to 13 metres long and having up to 20 entrances. The tunnels provide protection from predators and the extreme thermal environment in the region and can be continuously occupied for up to seven years with multiple generations participating in construction and maintenance of burrows.
210. The Department has considered the potential impacts of the proposed action in the context of the *Recovery Plan for the Great desert skink* (**Appendix D8**) and *Conservation Advice for the Great Desert Skink* (**Appendix D9**), and the available information and is of the view that measures necessary to avoid and mitigate impacts on Great desert skink can be adequately addressed by the conditions of the WA Approval (**Appendix B4**).
211. The Department recommends attaching a condition to any approval of the proposed action that would require the approval holder to comply with condition 10 of the WA Approval (see condition 1(a) in both **Attachments B1 and B2 to the Proposed Approval Decision Brief**, referring to condition 10) which require the proponent to prepare and implement a terrestrial fauna management plan to meet the objective to avoid, where possible, and minimise direct and indirect impacts as far as practicable on terrestrial fauna species, including the Great desert skink.
212. On this basis, the Department is satisfied that, provided the proposed action is undertaken in accordance with the proposed conditions, it will not have an unacceptable impact on the Great desert skink.

Night parrot (Pezoporus occidentalis)

213. The Night parrot (*Pezoporus occidentalis*) was not a matter considered relevant in the referral decision (made on 18 June 2009) as it was not identified as potentially occurring in the area of the proposed action. The Assessment Report (**Appendix A**) also did not consider the Night parrot in the assessment.
214. The PER (**Appendix B1**) provided some discussion on the species, noting that suitable habitat for the Night parrot is present within the proposal area and there are historical records; however, an extant population has not been confirmed in the region. A targeted survey has not been undertaken within the proposal site.
215. The Night parrot is listed as endangered under the EPBC Act. The Night parrot conservation advice notes that the ecology of the species is largely based on anecdotal observations and that its current distribution is not known (**Appendix D10**). Departmental line area advice suggests the species is nomadic, with a large home range. It is considered to be highly mobile and can travel up to 200 km during the night.
216. The proposed action will result in the clearing of Night parrot habitat and there is the possibility of increased mortality on roadsides, if the species is present in the area.
217. Based on comments received on 24 May 2017 (**Appendix B6**) in relation to the proposed decision for EPBC 2014/7138 – Wiluna uranium mine, confirmation was provided by the WA Minister for Environment; Disability Services that the Night parrot was sighted in the vicinity or within the footprint of the extension of Wiluna mine. There was also a separate possible recording of a Night parrot call within the area. Up until the Wiluna sighting, there have only been two accepted historical records of the species from remote arid and semi-arid regions of WA.

218. The Wiluna uranium mine is located approximately 90 km east of the proposed Yeelirrie ore body and as the PER indicates, there is suitable habitat for the Night parrot within the proposal site. Based on this information, the Department considers there is a possibility, albeit low, that the proposed action may impact the Night parrot; and therefore, has applied the precautionary principle (section 391 of the EPBC Act) to attach conditions to the proposed approval to avoid and mitigate the possibility of any such impacts.
219. The Department has considered the potential impacts of the proposed action on the Night parrot in the context of the *Conservation Advice for the Night parrot* (**Appendix D10**) and the available information and is of the view that any potential impacts on the Night parrot could be addressed through the application of conditions. The Department has therefore recommended that you attach four related conditions to the approval of the proposed action in order to ensure that impacts to the Night parrot are not unacceptable (see conditions 6 – 9 of **Attachment B1** and conditions 11 – 14 of **Attachment B2 to the Proposed Approval Decision Brief**).
220. In particular, the Department has recommended a condition requiring that, prior to the commencement of the action, the approval holder must engage a suitably qualified expert to undertake a Night parrot survey within the development envelope in accordance with the Night parrot survey methods recommended by the WA Department of Biodiversity, Conservation and Attractions (DBCA) (see condition 6 of **Attachment B1** and condition 11 of **Attachment B2 to the Proposed Approval Decision Brief**). Those same conditions also require the results to be provided to the Department within three months of the completion of the survey. Furthermore, should the Night parrot or evidence of the Night parrot be recorded during the survey, the approval holder must submit a Night parrot management plan for your approval and cannot commence the action prior to receiving your approval of that management plan (see conditions 7 and 8 of **Attachment B1** and conditions 12 and 13 of **Attachment B2 to the Proposed Approval Decision Brief**). The recommended requirements for the Night parrot management plan are set out in condition 9 of **Attachment B1** and condition 14 of **Attachment B2 to the Proposed Approval Decision Brief**.
221. On the basis of the above, the Department is satisfied that, provided it is taken in accordance with the proposed approval conditions, the proposed action will not have an unacceptable impact on the Night parrot.

Atriplex yeelirrie

222. The threatened plant species *Atriplex yeelirrie* was listed as endangered under the EPBC Act on 22 October 2015, following the controlled action decision made under section 75 of the EPBC Act in relation to the proposed action. The listing of *Atriplex yeelirrie* was therefore a 'listing event' for the purposes of section 158A of the EPBC Act in relation to the proposed action and must be disregarded in making any further approval process decisions for the purposes of sections 18 and 18A in relation to the action. An 'approval process decision' includes a decision under section 133 whether to approve an action. Accordingly, the listing of *Atriplex yeelirree* cannot be taken into account in deciding whether or not to approve the proposed action.
223. However, as the proposed action is a nuclear action (sections 21 and 22A) the impact of the action on the *Atriplex yeelirrie* species has been assessed as part of the impact of the proposed action on the 'environment', as set out above at paragraphs 33 – 153 above.

Conclusion on sections 18 and 18A

224. The Department has considered the WA EPA's assessment of listed threatened species and communities and accepts the conclusion in the Assessment Report that the proposed action is not expected to result in an unacceptable or unsustainable impact to the Greater bilby, Princess parrot, Black-flanked rock-wallaby, or Great desert skink, provided that the action is taken in accordance with the proposed conditions set out above.
225. In addition, based on the Department's assessment of the Malleefowl and the Night Parrot, the Department considers any potential impacts on these species can be adequately addressed through the proposed conditions (set out above), and therefore the proposed action is not expected to result in an unacceptable impact on this species, provided it is taken in accordance with those conditions.
226. The Department therefore recommends that the proposed action be approved, for the purposes of the controlling provisions in sections 18 and 18A, subject to the above-mentioned conditions.

Economic and social matters

227. Under section 136(1) (b), in deciding whether or not to approve the taking of an action, and what conditions to attach to an approval, you must consider economic and social matters.
228. On 23 February 2017, Senator Ludlam raised concerns regarding the current economic factors influencing the uranium industry, in particular, the low uranium price, the proponent's withdrawal from their other uranium projects, and closure and reduced production at their operating mines (**Attachment E2 to the Proposed Approval Decision Brief**).
229. The Appeals Convenor Report (**Appendix B2**) gave regard to similar concerns raised by appellants although considered it to be beyond the scope of the appeal on the basis that the appeal related to the WA EPA's recommendation which could not consider social and economic matters.
230. Appellants requested the WA Minister to consider the risk of the proponent not implementing the proposal or management commitments, or the mine prematurely closing due to instability in the uranium price, the negligible employment benefits and the economic outlook for uranium.
231. The economic and social impacts of the proposed action have been addressed by the proponent to the extent described in the PER (**Appendix B1**) and in further information provided to the Department on 17 January 2017 and 18 July 2018 (**Appendix B5**).
232. The Department considers that the proposed action would result in significant social and economic benefits to the local, regional and State communities. These include:
- a. The proposed action is expected to have a strong economic impact on the region generating between \$77 million and \$145 million a year of economic activity. It is also expected to generate between \$226 million and \$424 million in economic activity for the State.
 - b. It is envisaged the operation will generate an average annual production of 3,850 tonnes of uranium oxide concentrate and the estimated uranium sale value is estimated to be around \$500 million a year for 15 years based on a long-term average price of A\$60 a pound. This represents close to a 25 per cent addition to the estimated current value of regional production.

- c. The proposed action is expected to generate between 739 – 1,338 full time jobs over the 2.5 years of construction. During operation, it is likely to generate between 230 and 410 jobs for the fifteen years of mining and processing.
- d. The proponent has committed to adapting and implementing location-specific programmes and initiatives based on ongoing engagement with local communities, in particular supporting indigenous communities in the Wiluna and Leonora regions through assisting and supporting Aboriginal youth, men and women by improving opportunities in the areas of education, educational options, sporting pathways, health, rehabilitation, discipline, self-confidence and employment prospects.
- e. The proponent operates within a Five Pillar approach in supporting, building capacity and providing opportunities to local and regional communities. Application of the Five Pillar approach has been successfully demonstrated by the proponent's parent company in international operations for at least the last 15 to 20 years. Cameco has worked with first nations and other communities providing employment, business development, community engagement and community investment.
- f. It is intended that the Five Pillar approach will be the foundation for the proponent's practice in Australia, which would see Cameco working with communities nearest the proposed Yeelirrie project, Leonora and Wiluna, to provide employment, business development and community engagement opportunities, and community investment.
- g. The proposed action will use existing regional and national infrastructure, including road and rail networks between Perth, Esperance, Kalgoorlie and Geraldton; port facilities at Adelaide; and airport facilities at the BHP Billiton Nickel West Pty Ltd Mount Keith operation. This is likely to have indirect and flow-on social and economic benefits through increased use of such infrastructure.
- h. The Commonwealth Government will receive custom duties on imported plant and equipment, tax on employees and company tax from profits.

The Department also notes the following relevant social and economic matters:

- i. The proponent's parent company announced on 8 November 2017 that due to the prolonged weakness in the uranium market that they would temporarily cease production at two of their international operations - McArthur River and Key Lake, northern Saskatchewan. On 20 December 2017, the proponent also made the decision to place their operations in Australia into care and maintenance.
- j. The proposed action is currently in the pre-feasibility state. Development of the mine would only be considered once market conditions improve and there is a significant improvement in uranium prices.
- k. The population in the local area of Yeelirrie is considered extremely small and limited to those working on pastoral properties and an Aboriginal population. Cameco owns the Yeelirrie pastoral station, therefore the impact on the local community and economy is minor.
- l. The small local labour force means it is unlikely that the proponent will employ many people from the local community; however, the proponent is committed to maximise potential

employment and community development opportunities with the Aboriginal population and will strive for a 15 per cent indigenous employment target.

- m. Due to the location and limited mine life, the mine will operate primarily as a fly-in fly-out workforce, with a temporary mine village and workers operating on extended rosters. The workforce will be transported to the mine site via bus from the airstrip at Mt Keith 50 km east of the proposed action area.
 - n. The proponent states that there is not expected to be any adverse social impacts as a result of the proposed action due to the large distances to the closest local community and purpose-built accommodation and facilities for all staff will be erected on-site.
 - o. Cameco acknowledge the instability in the uranium market and state in the PER (**Appendix B1**) that the expected growth in the market due to the predicted increase in electricity consumption will require new sources of uranium supply in the future, at a time when secondary supplies (such as down-blended weapons material) diminish.
 - p. Current uranium prices are insufficient to drive new production, and the timing of primary uranium supply in the future may well be muted in the near term due to the extension of the over-supply situation; however, new uranium supplies will be required this decade. The development and execution of new uranium supply projects, as well as continued performance of existing supply, will play a significant role in determining the timing and pace of uranium market recovery.
233. As discussed above, Cameco have estimated the long-term economic value of the uranium oxide concentrate based on an average price of A\$60 a pound. This is a speculative market price. The average spot price for uranium has not been A\$60 since 2008.
234. For more information on economic and social matters refer to additional information provided by proponent on 17 January 2017 and 18 July 2018 (**Appendix B5**).

Factors that must be taken into account

235. Section 136(2) of the EPBC Act provides that in your consideration of matters relevant to any matter protected by a controlling provision and economic and social matters, you must take into account certain factors. The Department's analysis of these factors is set out below.

Section 136(2) (a) - The principles of ecologically sustainable development (set out in section 3A of the EPBC Act) including the precautionary principle (set out in section 391(2) of the EPBC Act)

- a) *Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations*
236. Economic and social benefits of the proposed action have been considered to the extent described in the PER (**Appendix B1**) and the further information provided by the proponent on 17 January 2017 and 18 July 2018 (**Appendix B5**), as described above (paragraphs 227 – 234).
237. The Department considers that those documents, combined with this Attachment and the Assessment Report, provide sufficient information to allow you to properly conclude that the decision-making processes have effectively integrated both short and long-term social, economic and environmental considerations.

238. The Department further considers that the proposed action, if undertaken in accordance with the recommended approval conditions in either **Attachment B1 or Attachment B2 to the Proposed Approval Decision Brief**, would be consistent with this principle of ecologically sustainable development.

b) Precautionary principle

239. Under sections 3A(b) and 391(2) of the EPBC Act, the precautionary principle provides that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

240. In the Assessment Report, the WA EPA relied on the precautionary principle in concluding that the proposed action cannot meet the environmental objective in relation to subterranean fauna. The WA EPA concluded that, while not certain, there remains too great a chance of a loss of subterranean fauna species that are restricted to the proposed action area and therefore considers that the likely impact is such that the proposal should not be implemented.

241. The Department has taken the precautionary principle into account in its assessment of the proposed action and, for that reason, has recommended that you attach the conditions in **Attachment B1 to the Proposed Approval Decision Brief**. In addition, the Department has recommended that relevant conditions be attached to any approval of the proposed action to ensure that, to the extent that there is any absence of full scientific certainty regarding the impacts of the action on listed threatened species (and particularly the Night Parrot), and the environment, measures must be still taken to prevent environmental degradation.

242. On this basis, the Department considers that there is sufficient information for you to conclude that any lack of full scientific certainty relating to the proposed action's potential impacts was not being used as a reason for postponing measures to prevent environmental degradation. Instead, the lack of full certainty was being addressed by conditions restricting environmental impacts and imposing strict monitoring with the adoption of environmental standards which, if not achieved, would trigger the Department's compliance monitoring and enforcement mechanisms to avoid adverse impacts and provide for remedies.

c) Inter-generational equity

243. From its assessment of this proposed action, the WA EPA considers that the health, diversity and productivity of the environment can be maintained and enhanced for the benefit of future generations.

244. Noting the assessment by the WA EPA of the likely impacts of the proposed action, and the recommended conditions to manage those impacts, the Department considers that the principle of intergenerational equity has been taken into account in the assessment of the proposed action.

245. The Department further considers that the proposed conditions of approval would ensure the protection of listed threatened species and ecological communities, and the environment. Those conditions would allow for the proposed action to be delivered and operated in a sustainable way to protect the environment for future generations and preserve listed threatened species and ecological communities and the environment in perpetuity.

246. On this basis, even though the WA EPA recommended against approving the proposed action, the Department considers that approving the proposed action subject to the proposed approval conditions would not be inconsistent with the principle of inter-generational equity.

d) Conservation of biological diversity and ecological integrity

247. Section 3A(d) of the EPBC Act provides that the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making.

248. In assessing the proposed action (including consideration of the Assessment Report) and developing the proposed approval conditions to manage the impact of the proposed action on listed threatened species, and the environment, the Department took into account the conservation of biological diversity and ecological integrity.

249. In addition, in its assessment of the proposed action, the WA EPA recommended that, if the action is approved (against its recommendation), adaptive management mechanisms be implemented to maintain ecological processes. This is given effect through management plans that are required as conditions of the WA Approval. In addition, the WA EPA recommended that mine closure and rehabilitation requirements are imposed to ensure that the post-mine environment is ecologically sustainable.

250. The Department's assessment of the proposed action concludes that the combination of scientific evidence, on-site avoidance, mitigation and offset measures will contribute towards the continued resilience of the environment within the region of the proposed action.

251. Having regard to the above, the Department considers that the likely impacts of the proposed action on biological diversity and ecological integrity have been adequately identified and the environmental impacts of the proposed action evaluated. Consistent with the analysis above, the Department considers that it is open for you to reasonably form a view that, provided the proposed action is taken in accordance with the proposed conditions at **Attachment B2 to the Proposed Approval Decision Brief** (at a minimum), any risk of conservation values potentially being lost as a result of the proposed action have been adequately mitigated when taking account of social and economic matters.

e) Promotion of improved valuation, pricing and incentive mechanisms

252. The Department's advice includes reference to and consideration of a range of information on the economic costs, benefits and impacts of the proposal. The mitigation and offset measures to be implemented reflect that improved valuation, pricing and incentive mechanisms are being promoted by placing a financial cost upon the proponent to mitigate and offset the environmental impacts the proposal will generate.

Section 136(2)(b) - The Assessment Report relating to the action

253. The Assessment Report prepared by the WA EPA is at **Appendix A**. The Department is satisfied that this document is an 'assessment report' within the meaning of section 130(2) of the Act.

254. As set out throughout this document, the Department has reviewed and considered the information in the Assessment Report in detail in coming to its conclusions and making its recommendations to approve the proposed action subject to conditions.

Section 136(2)(e) - Any other information you have on the relevant impacts of the action (including in a report on the impacts of actions taken under a policy, plan or program under which the action is to be taken)

255. The Department considers that the following documents contain additional information on the relevant impacts of the action:

- the Public Environmental Review is at **Appendix B1 (sections 9, 10 and 12, and Appendices D – O)**
- the WA Appeals Convenor Report is at **Appendix B2 (pages 5 – 44)**
- the WA Minister’s Appeal Determination is at **Appendix B3,**
- the WA Minister’s approval decision is at **Appendix B4,**
- additional information provided by the proponent is at **Appendix B5,** and
- letters from Senator Scott Ludlam at **Attachments E1 and E2 to the Proposed Approval Decision Brief.**

256. The Department has taken into account the information in these documents in forming its conclusions and making its recommendations to approve the proposed action subject to conditions.

Section 136(2)(f) - Any relevant comments given to you by another Minister in accordance with an invitation under sections 131 or 131A

257. Under section 131 of the EPBC Act, you must also inform any other Minister whom you believe has administrative responsibilities relating to the action of the decision you propose to make and invite the other Minister(s) to give comments to you within 10 business days.

258. In the Department’s view, the following Ministers have administrative responsibilities relating to the proposed action: The Minister for Health, the Minister for Resources and Northern Australia, and the Minister for Indigenous Affairs. The Department also recommends that you notify the WA Minister for Environment; Disability Services.

259. Draft letters inviting comment from the following Ministers are attached for your signature at **Attachment C to the Proposed Approval Decision Brief:**

- the Minister for Health, the Hon Greg Hunt MP;
- the Minister for Resources and Northern Australia, Senator the Hon Matt Canavan;
- the Minister for Indigenous Affairs, Senator the Hon Nigel Scullion; and
- a delegate for the WA Ministers for Environment and Mines.

260. Any comment received in response to these invitations will be included in the final approval decision briefing package for your consideration.

261. Under section 131A of the EPBC Act, you can choose to invite public comments on the proposed decision and any conditions proposed to be attached to the decision before making your final

approval decision. The Department considers that this is not necessary because there has been sufficient public consultation through the WA assessment process and State appeals process.

Section 136(2)(g) - Any information given to you in a notice under section 132A

262. Section 132A provides that before you decide whether or not to approve the taking of the action for the purposes of a controlling provisions, and what conditions (if any) to attach to an approval, you may request the appropriate Minister of the State or Territory to give you a notice stating the method that has been used to assess the certain and likely impacts of the action on things other than matters protected by the controlling provisions for the action.
263. Given the proposed action is a nuclear action and the relevant impacts of the action have been assessed under Part 8 (accredited assessment), section 132A does not apply (see section 132A(2)).

Factors that may be taken into account

Section 136(4) - Person's environmental history

264. In accordance with section 136(4) you may also consider whether the person proposing to take the action is a suitable person to be granted an approval, having regard to the person's history in relation to environmental matters and, if the person is a body corporate, the history of its executive officers in relation to environmental matters. In addition, if the person is a body corporate that is a subsidiary of another body or company, you may also have regard to the history of the parent body and its executive officers in relation to environmental matters.
265. The proponent is a wholly owned subsidiary of Canadian based uranium miner, Cameco Corporation. Cameco was created in 1988 from two government owned corporations and is one of the world's largest uranium producers with uranium assets on three continents, including Australia.
266. Senator Ludlam raised concerns regarding the proponent's environmental history, in particular, leaks and spills of radioactive material (**Attachment E2 to the Proposed Approval Decision Brief**).
267. The Appeals Convenor Report (**Appendix B2**) gave regard to similar concerns raised by appellants although considered it to be beyond the scope of the appeal, noting that the appeal related to the WA EPA recommendation. Appellants considered that the WA EPA had not had regard for the proponent's corporate record and past performance in environmental management. In response to this matter, the WA EPA noted that should the proposal be implemented, the proponent would be required to comply with the conditions imposed under WA and Commonwealth legislation. The WA EPA also advised that the past performance of proponents is a matter that may be relevant to a final decision on a proposal by the Minister under Section 45 of the EP Act.
268. An assessment of the proponent's environmental history was undertaken by the Department on 9 August 2018, including both the parent company and its executive officers, both within Australia and overseas. This assessment process relies upon compliance records and information provided by the proponent. The Department's assessment found no adverse environmental history relating to environmental matters by the proponent, Cameco Australia Pty Ltd, Cameco Corporation or associated directors.
269. The Department notes that there are a number of allegations of non-compliance against the parent company, Cameco Corporation, in relation to environmental matters (refer to **Attachment**

E2 to the Proposed Approval Decision Brief). These allegations (provided by the former Senator Scott Ludlam) do not directly relate to the proponent; however, as a precautionary approach, the Department has recommended attaching conditions (to both **Attachment B1** and **Attachment B2 to the Proposed Decision Brief**) that require the approval holder to:

- a. prepare and submit a compliance report every 12 months following the date of commencement of the action, and
 - b. ensure independent audits of compliance with conditions are conducted for the 12 month period from the date of approval and for every subsequent 12 month period.
270. Having regard to the proponent's environmental history, and the precautionary approach being taken to ensure compliance with conditions, the Department considers that the proponent is a suitable person to be granted an approval.

Other mandatory considerations

No approval for certain nuclear installations – section 140A

271. Section 140A provides that you must not approve an action consisting of, or involving the construction or operation of any of the following nuclear installations:
- a. a nuclear fuel fabrication plant;
 - b. a nuclear power plant;
 - c. an enrichment plant;
 - d. a reprocessing facility.
272. On this basis, the Department considers that the prohibition in section 140A would not prevent you from approving the proposed action.

Bioregional plans – section 176(5)

273. In accordance with section 176(5), you are required to have regard to any relevant bioregional plan in making any decision under the EPBC Act to which the plan is relevant.
274. The proposed action is a terrestrial action located approximately 490 km north of Kalgoorlie. The Department is satisfied that no bioregional plans are relevant to the proposed action.

Requirements for decisions about threatened species and communities – Section 139

275. Section 139(1) provides that in deciding whether or not to approve, for the purposes of a subsection of section 18 or section 18A, the taking of an action, and what conditions to attach to such an approval, you must not act inconsistently with:
- a. Australia's obligations under:
 - i. the Biodiversity Convention; or
 - ii. the Apia Convention; or
 - iii. CITES; or

- b. A Recovery Plan or threat abatement plan.

Recovery Plans and Threat Abatement Plans

276. The Department is satisfied that the only recovery plans that are relevant to the assessment of the proposed action are:
- Benschmesh, J. (2007) *National Recovery Plan for Malleefowl*. Department for Environment and Heritage, South Australia.
 - Pavey, C. (2006) *National Recovery Plan for the Greater Bilby*. *Macrotis lagotis*. Northern Territory Department of Natural Resources, Environment and the Arts.
 - Pearson, D. J. (2013) *Recovery Plan for five species of rock wallabies: Black-footed rock wallaby (Petrogale lateralis), Rothschild rock wallaby (Petrogale rothschildi), Short-eared rock wallaby (Petrogale Brachyotis), Monjon (Petrogale burbidgei) and Narbarlek (Petrogale concinna) 2012-2022*. Department of Parks and Wildlife, Perth, Western Australia.
 - McAlpin, S. (2001) *A Recovery Plan for the Great Desert Skink Egernia kintorei*. Arid Lands Environment Centre, Alice Springs, Northern Territory.
277. These recovery plans are provided at **Appendix D2**, **Appendix D3**, **Appendix D6** and **Appendix D8** respectively.

National Recovery Plan for Malleefowl

278. The overall objective of the recovery plan is to de-list the Malleefowl as a threatened species under the EPBC Act. Specific objectives involve managing populations (including reducing permanent habitat loss, reducing fire threats and predation and promoting Malleefowl-friendly agricultural practices), planning, research and monitoring, and facilitating community awareness of, and involvement in, the recovery process.
279. The specific objective that is most relevant to the proposed action is the objective to reduce permanent habitat loss. According to the recovery plan, clearing causes permanent loss of Malleefowl habitat and has been a major factor in the decline of the Malleefowl. The recovery plan sets out the main recovery action that relates to this objective as to retain areas that support the Malleefowl and protect them from incremental clearing. The performance criteria for this recovery action is to ensure that there is no decline in the known area of occupied or mapped potential Malleefowl habitat over the life of the recovery plan.
280. As set out above in the analysis for section 18 and 18A, the proposed action will result in the clearing of two Malleefowl mounds within the proposal site. The Department is satisfied that, in the absence of an offset, this clearing would result in a decline in the known area of Malleefowl habitat and would therefore be inconsistent with the recovery plan for this species. However, the recommended conditions of approval would require the proponent to provide an offset to compensate for the loss of Malleefowl habitat that would result from the proposed action. This would be done by condition 10 of **Attachment B1** or condition 15 of **Attachment B2 of the Proposed Decision Brief**, which would require the proponent to legally secure an offset area or areas containing Malleefowl habitat that is equal to or greater in size and quality to the Malleefowl habitat that will be lost as a result of the proposed action.

281. The Department is satisfied that this offset will result in no net loss of Malleefowl habitat as a result of the proposed action and, therefore, that there would be no decline in the known area of occupied or mapped potential Malleefowl habitat if the proposed action were approved subject to the recommended conditions.
282. The Department is also satisfied that none of the other specific objectives, recovery actions or performance criteria are relevant to the proposed action. In particular, the Department notes that the proposed action will not result in an increase in fire threats or predation, nor will the proposed action detract from promoting Malleefowl-friendly agricultural practices. Any residual risks from predation will be avoided and minimised where possible under the recommended conditions, as the proponent will be required to prepare and implement a terrestrial fauna management plan for the approval of the WA Minister.
283. Accordingly, as there will be no net loss of Malleefowl habitat as a result of the proposed action (provided that it is taken in accordance with the recommended conditions of approval), the Department is satisfied that approving the action, subject to the recommended conditions, would not be inconsistent with the National Recovery Plan for the Malleefowl.

National Recovery Plan for the Greater Bilby

284. The overall objective of the recovery plan is to improve and at least maintain the national conservation status of the Greater Bilby (currently listed under the EPBC Act as vulnerable) over the duration of the plan, to achieve an accurate assessment of distribution and trends in occurrence and to successfully reduce the impacts of key threatening processes. To achieve this objective, the recovery plan focusses on the managing the threatening processes to this species, which it identifies primarily as predation by introduced carnivores, competition with introduced herbivores, and habitat degradation resulting from introduced herbivores and from unsuitable fire regimes.
285. The recovery actions listed in the recovery plan are directed at reducing these threats, particularly the impact of predation by introduced carnivores by controlling predators and key bilby populations and reintroducing the species to predator-free or predator-controlled sites across its former.
286. As set out above in the analysis for section 18 and 18A, the impacts of the proposed action on the Great Bilby relate to the potential loss of a small amount of suitable habitat within the proposal site. These impacts will be avoided and minimised where possible under the recommended conditions, as the proponent will be required to prepare and implement a terrestrial fauna management plan for the approval of the WA Minister. The recovery plan does not identify loss of habitat through clearing as a key threat to the bilby, nor does it require there to be no decline in the known habitat for the species.
287. Further, the proposed action would not, in any way, result in an increased risk to the species from predation or from any of the other identified threats to this species, nor would it detract from the ability of relevant persons to achieve the recovery actions and objectives of the recovery plan.
288. For this reason, the Department is satisfied that approving the action, subject to the recommended conditions, would not be inconsistent with the National Recovery Plan for the Greater Bilby.

National Recovery Plan for the five species of rock wallabies: Black-footed rock wallaby, Rothschild rock wallaby, Short-eared rock wallaby, Monjon and Narbarlek

289. This recovery plan is relevant to the Black-footed Wallaby (*Petrogales lateralis lateralis*), also known as the Black-flanked Wallaby. The overall objective of the recovery plan is to ensure the survival of populations and maintain or, where applicable, improve the conservation status of these species through increased knowledge and understanding, the protection of habitat and abatement of threats, and involving the community in recovery actions. In relation to the Black-flanked wallaby, the recovery plan lists a number of recovery actions directed at conducting feral predator control, managing problem herbivores, conducting translocations, captive breeding and reintroductions to establish new or supplement existing populations, managing habitat to maintain or improve its carrying capacity and permit successful breeding and undertaking research to improve understanding of the species' biology, management and monitoring techniques.
290. As set out above in the analysis for section 18 and 18A, the impacts of the proposed action on the black-flanked wallaby relate to the potential loss of a small amount of suitable habitat to the north and south of the proposal site. These impacts will be avoided and minimised where possible under the recommended conditions, as the proponent will be required to prepare and implement a terrestrial fauna management plan for the approval of the WA Minister.
291. While managing habitat to maintain or improve its carrying capacity and permit successful breeding is listed as a recovery action, the description in the recovery plan of the tasks required to implement this action relate to conserving lands that are important for sustaining populations of (relevantly) the Black-flanked wallaby. The Department is satisfied that the assessment of the proposed action demonstrates that the proposal site, as well as the rocky habitat to the north and south of the proposal site where WA EPA found that the species may persist, are not important lands that are important for sustaining rock wallaby populations. In particular, the Department notes that the only reports of the species in the area are anecdotal or located 40 km away. The WA EPA also notes that there is extensive habitat for this species outside the proposal site. This information, considered in light of the recommended conditions which require the proponent to prepare and implement a terrestrial fauna management plan to avoid and mitigate the impacts to Black-flanked Wallaby habitat, is sufficient to satisfy the Department that the proposed action will not detract from managing habitat of this species to maintain or improve its carrying capacity and permit successful breeding.
292. Further, the proposed action would not, in any way, result in an increased risk to the species from predation or from any of the other identified threats to this species, nor would it prevent achieving the recovery actions and objectives of the recovery plan.
293. For this reason, the Department is satisfied that approving the action, subject to the recommended conditions, would not be inconsistent with the National Recovery Plan for the Black-flanked Wallaby.

A Recovery Plan for the Great Desert Skink

294. The overarching objectives of the recovery plan is to maintain or improve the conservation status of the Great Desert Skink over the next 10 years, and to change fire and feral animal management in three focus areas of the western deserts to benefit populations of the Great Desert Skink. The recovery actions listed in the plan are directed at implementing fire management (specifically re-

establishing patch burning regimes) around key populations and undertaking predator control work in areas where the impact of fox and cat predation on the Great Desert Skink is shown to be unsustainable.

295. As set out above in the analysis for section 18 and 18A, based on the Department's species profile and threats database, the nearest population to the proposal site is located more than 900km, however the PER noted that there is potential for the species to occur at the proposal site due to the availability suitable habitat. However, the Department notes that potential impacts on this suitable habitat, as well as risks from predation, will be avoided and minimised where possible under the recommended conditions, as the proponent will be required to prepare and implement a terrestrial fauna management plan for the approval of the WA Minister.
296. The Department is satisfied that the proposed action would not, in any way, result in an increased risk to the species from predation, nor would it prevent or otherwise inhibit the implementation fire management around key populations or predator-control activities, as required by the recovery actions and objectives of the recovery plan.
297. For this reason, the Department is satisfied that approving the action, subject to the recommended conditions, would not be inconsistent with the recovery plan for the Great Desert Skink.
298. The Department is satisfied that there are five (5) threat abatement plans relevant to the proposed action. These are:
- a. Australian Government Department of the Environment and Energy (2016). *Threat abatement plan for competition and land degradation by rabbits (Oryctolagus cuniculus)*. Commonwealth of Australia, Canberra.
 - Competition and land degradation by feral rabbits are listed as a key threatening process under the EPBC Act and pose a threat to a large number of native species, including the Malleefowl and Night parrot.
 - The Department notes that as the Assessment Report (**Appendix A**) was published in August 2016, it drew upon the 2008 iteration of the threat abatement plan regarding rabbits rather than the 2016 version of the threat abatement plan, which was made in December 2016; however, having reviewed both threat abatement plans, the Department considers the content of the framework for managing rabbits in both the 2008 and the 2016 versions to be the same. The 2016 version has been provided at **Appendix D11** and has been considered by the Department in the analysis below
 - b. Australian Government Department of the Environment, Water, Heritage and the Arts (2008). *Threat abatement plan for competition and land degradation by unmanaged goats (Capra hircus)*. Commonwealth of Australia, Canberra.
 - Competition and land degradation by unmanaged goats are listed as a key threatening process under the EPBC Act and pose a threat to a number of native species, including the Malleefowl.
 - c. Australian Government Department of the Environment, Water, Heritage and the Arts (2008). *Threat abatement plan for predation by the European red fox (Vulpes vulpes)*. Commonwealth of Australia, Canberra.

- Foxes have direct impacts on a range of native fauna species. They prey particularly on ground-dwelling birds, including the Malleefowl and Night Parrot.
- d. Australian Government Department of the Environment (2015). *Threat abatement plan for predation by feral cats (Felis catus)*. Commonwealth of Australia, Canberra.
- Feral cats are a serious vertebrate pest in Australia and have severe to catastrophic effects on native fauna. They prey particularly on ground-dwelling birds, including the Malleefowl, Night Parrot and Fork-tailed Swift.
- e. Australian Government Department of the Environment (2017). *Threat abatement plan for predation, habitat degradation, competition and disease transmission by feral pigs (Sus scrofa)*. Commonwealth of Australia, Canberra.
- This threat abatement plan, which came into effect on 18 March 2017 applies to the vulnerable listed Malleefowl (*Leipoa ocellata*) as it is identified as a species threatened or potentially threatened by feral pigs due to grazing and trampling of habitat.
299. The Threat Abatement Plans are provided at **Appendix D11**, **Appendix D12**, **Appendix D13**, **Appendix D14** and **Appendix D15** respectively.
300. In considering these plans, the Department notes that rabbits, goats and feral cats have been recorded within the area of the proposed action. The area of the proposed action is also within the range of the European Red Fox and the Department considers that there is potential for the species to occur.
301. The intent of the abovementioned threat abatement plans is to minimise the impact of the feral species on biodiversity by protecting affected threatened species and communities and preventing further threats.
302. The Department notes that feral animal control measures including those addressed in the above threat abatement plans will be subject to a risk-based assessment during the formulation of the terrestrial fauna management plan required in the conditions of the WA Approval (and recommended as a condition of any EPBC Act approval for this proposed action). This aligns with the effective management of feral species, which, as identified above, is a key objective of the above plans.
303. Given the potential threat to the Malleefowl, Night parrot and the fork-tailed swift as a result of these feral species will be addressed through relevant conditions attached to the WA Approval (which the Department recommends that you also attach to the approval of the proposed action), the Department is of the view that approval of this action, subject to the recommended conditions at either **Attachment B1** or **Attachment B2 to the Proposed Approval Decision Brief**, would not be inconsistent with the above plans.

Convention on Biological Diversity (the Biodiversity Convention)

304. The Biodiversity Convention is available at:
<http://www.austlii.edu.au/au/other/dfat/treaties/ATS/1993/32.html>
305. The objectives of the Biodiversity Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources,

including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

306. As the requirement to not act inconsistently with Australia's obligations under the Biodiversity Convention is in section 139 and relates to the decision to approve for sections 18 and 18A, the relevant 'biodiversity' that must be considered is EPBC-listed threatened species and ecological communities.
307. The Department considers that approval of the proposed action subject to the recommended conditions at either **Attachment B1** or **Attachment B2 to the Proposed Approval Decision Brief**, would not be inconsistent with Australia's obligations under the Biodiversity Convention, which promotes environmental impact assessment (such as this process) to avoid and minimise adverse impacts on biological diversity. The Department has also given particular consideration to an appropriate combination of avoidance and mitigation measures for the management of listed threatened species potentially impacted by the proposed action.
308. In the Department's view, approving the action and attaching the proposed conditions to the approval, which require scientific evidence, avoidance, mitigation and management measures for listed threatened species and ecological communities (including the Night Parrot) would not be inconsistent with the Biodiversity Convention. The WA approval conditions also requires information related to the proposed action to be publicly available to ensure equitable sharing of information and improved knowledge relating to biodiversity.

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

309. CITES is available at:

<http://www.austlii.edu.au/au/other/dfat/treaties/ATS/1976/29.html>

310. CITES is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival.
311. The Department considers that approval of the proposed action subject to the recommended conditions would not be inconsistent with Australia's obligations under CITES as the proposed action does not involve international trade in endangered species.

Convention on the Conservation of Nature in the South Pacific (Apia Convention)

312. The Apia Convention is available at:

<http://www.austlii.edu.au/au/other/dfat/treaties/ATS/1990/41.html>

313. The Apia Convention encourages the creation of protected areas which together with existing protected areas will safeguard representative samples of the natural ecosystems occurring therein (particular attention being given to endangered species), as well as superlative scenery, striking geological formations, and regions and objects of aesthetic interest or historic, cultural or scientific value.
314. The Apia Convention was suspended with effect from 13 September 2006. While this Convention has been suspended, Australia's obligations under the Convention have been taken into consideration by the Department in the forming its conclusions and recommending that the proposed action be approved subject to conditions. The Department considers that approval of

the proposed action subject to the recommended conditions would not be inconsistent with Australia's obligations under the Convention which has the general aims of conservation of biodiversity. As the requirement to not act inconsistently with Australia's obligations under the Apia Convention is in section 139 and relates to the decision to approve for sections 18 and 18A, the relevant 'biodiversity' that must be considered is EPBC-listed threatened species and ecological communities.

Conservation Advice (section 139(2))

315. Section 139(2) provides that if you are considering whether to approve the taking of an action for the purposes of a subsection of sections 18 or 18A, and the action has, will have or is likely to have a significant impact on a particular listed threatened species, then in deciding whether to approve the taking of the action, you must have regard to any approved conservation advice for the species.
316. The conservation advices relevant to this proposed action are:
- Threatened Species Scientific Committee (2016). *Approved Conservation Advice for Macrotis lagotis* Greater bilby. Commonwealth of Australia, Canberra.
 - Threatened Species Scientific Committee (2018). *Approved Conservation Advice for Polytelis alexandrae* Princess parrot. Commonwealth of Australia, Canberra.
 - Threatened Species Scientific Committee (2016). *Approved Conservation Advice for Petrogale lateralis* Black-flanked rock-wallaby. Commonwealth of Australia, Canberra.
 - Threatened Species Scientific Committee (2016). *Approved Conservation Advice for Liopholis kintorei* Great desert skink. Commonwealth of Australia, Canberra.
 - Threatened Species Scientific Committee (2016). *Approved Conservation Advice for Pezoporus occidentalis* Night Parrot. Commonwealth of Australia, Canberra.

These conservation advices are provided at **Appendix D4**, **Appendix D5**, **Appendix D7**, **Appendix D9** and **Appendix D10** respectively.

317. The Assessment Report considers the conservation advices listed above (section 4 of the Assessment Report at **Appendix A**). The Assessment Report noted that the WA EPA has generally considered the intent of Commonwealth policy, guidelines and plans considered to be relevant to the assessment of matters of national environmental significance. The Department has had regard to the conservation advices for the Greater bilby, Princess parrot, Black-flanked rock-wallaby, Great desert skink and Night parrot in determining the habitat requirements, relevant biology and ecology for these species, and their known or potential threats. Discussion of this assessment is provided in paragraphs 178 – 186, 187 – 195, 196 – 203, 204 – 212 and 213 – 221 above.

Requirements for decisions about migratory species – Section 140

318. Section 140 provides that in deciding whether or not to approve for the purposes of a of section 20 or 20A the taking of an action relating to listed migratory species, and what conditions to attach to such an approval, you must not act inconsistently with Australia's obligations under whichever of the following conventions and agreements because of which the species is listed:

- a. the Bonn Convention;
- b. CAMBA;
- c. JAMBA;
- d. an international agreement approved under subsection 209(4).

The Bonn Convention

319. The Bonn Convention is available at: <http://www.cms.int/en/convention-text>.
320. The Bonn Convention aims to conserve terrestrial, aquatic and avian migratory species throughout their range.

China-Australia Migratory Bird Agreement (CAMBA)

321. The CAMBA agreement can be found at: <http://austlii.edu.au/au/other/dfat/treaties/1988/22.html>
322. The CAMBA agreement list terrestrial, water and shorebird species which migrate between Australia and respective countries. In both cases the majority of listed species are shorebirds.
323. The agreement requires the parties to protect migratory birds by:
- a. limiting the circumstances under which migratory birds are taken or traded;
 - b. protecting and conserving important habitats;
 - c. exchanging information; and
 - d. building cooperative relationships.

Japan-Australia Migratory Bird Agreement (JAMBA)

324. The JAMBA can be found at: <http://www.austlii.edu.au/au/dfat/treaties/1981/6.html>
325. The JAMBA list terrestrial, water and shorebird species which migrate between Australia and respective countries. In both cases the majority of listed species are shorebirds.
326. The agreement requires the parties to protect migratory birds by:
- a. limiting the circumstances under which migratory birds are taken or traded;
 - b. protecting and conserving important habitats;
 - c. exchanging information; and
 - d. building cooperative relationships.

An international agreement approved under subsection 209(4)

327. Under subsection 209(4) of the EPBC Act the Government of Australia approved an international agreement with the Republic of Korea on the Protection of Migratory Birds (ROKAMBA).
328. The ROKAMBA can be found at: <http://www.austlii.edu.au/au/other/dfat/treaties/2007/24.html>

329. The Fork-tailed Swift (*Apus pacificus*) is listed as a migratory bird under CAMBA, JAMBA and the Agreement between the Government of Australia and the Government of the Republic of Korea on the Protection of Migratory Birds (ROKAMBA), which is an international agreement approved under subsection 209(4). The Oriental Plover is also listed as a migratory bird under ROKAMBA.
330. The Department's assessment of the impacts on migratory species determined the Fork-tailed Swift and the Oriental Plover were unlikely to be critically dependant on habitat in the proposed impact area, and are unlikely to occur, except possibly as vagrants. For this reason, the Department is satisfied that approving the proposed action, subject to the recommended conditions of approval, would not be inconsistent with Australia's obligations under the Bonn convention, CAMBA, JAMBA or ROKAMBA in respect of these listed migratory bird species.

Section 136(5) - Minister not to consider other matters

331. In deciding whether or not to approve the taking of an action, and what conditions to attach to an approval, you must not consider any matters that you are not required or permitted, by Subdivision B, Division 1, Part 9 of the EPBC Act, to consider.

Considerations in deciding on conditions

Sections 134(1) and (2)

332. In accordance with sections 134(1) and (2), you may attach a condition to the approval of the action if you are satisfied that the condition is necessary or convenient for:
- a. protecting a matter protected by a provision of Part 3 for which the approval has effect (whether or not the protection is protection from the action); or
 - b. repairing or mitigating damage to a matter protected by a provision of Part 3 for which the approval has effect (whether or not the damage has been, will be or is likely to be caused by the action).
333. Section 134(3) provides examples of the kinds of conditions that you may attach to an approval under the power in sections 134(1) and (2).
334. For the reasons discussed above, the Department's view is that the conditions proposed at **Attachment B2 to the Proposed Approval Decision Brief** are the minimum level of regulation that would be necessary or convenient to protect the matters protected by a provision of Part 3 for which the approval has effect, or to repair or mitigate damage to a relevant matter protected.
335. Therefore, if you form the view that the conditions proposed at **Attachment B2 to the Proposed Approval Decision Brief** would be sufficient to mitigate the likely impacts on the environment to an acceptable level (particularly when weighed against the likely social and economic benefits of the project), the Department considers that you have the power to attach these conditions under section 134(1) and (2).
336. If you were to form the view that:
- a. the conditions at **Attachment B2 to the Proposed Approval Decision Brief** were not sufficient to reduce the environmental risks of the proposed action to an acceptable level, and

- b. there are likely to be unacceptable impacts to the environment unless the action is taken in accordance with the conditions proposed at **Attachment B1 to the Proposed Approval Decision Brief**.

The Department considers that you would have the power under sections 134(1) and (2) to attach the conditions at **Attachment B1 to the Proposed Approval Decision Brief** to the approval, on the basis that you are satisfied that those conditions are necessary and convenient to protect a matter protected by a provision of Part 3 for which the approval has effect.

Section 134(4)

337. In accordance with section 134(4), in deciding whether to attach a condition to an approval, you must consider the following:
- a. *Any relevant conditions that have been imposed, or that you consider are likely to be imposed, under a law of a State or self-governing territory or another law of the Commonwealth on the taking of the action;*
338. In forming the proposed conditions at both **Attachment B1** and **Attachment B2 to the Proposed Approval Decision Brief**, the Department has considered conditions of the WA Approval at **Appendix B4**.
339. In accordance with the Department's *EPBC Act Condition-setting Policy (2015)*, the Department has avoided regulatory duplication in the drafting of the proposed approval conditions where possible.
340. The proposed approval conditions rely upon the State conditions to the extent that they align with the Department's recommendations (see condition 1 of both **Attachment B1** and **Attachment B2 to the Proposed Approval Decision Brief** which requires that the approval holder implement conditions 8 – 15 of the WA Approval (**Attachment B1**) and 8 – 16 of the WA Approval (**Attachment B2**).
341. Additional conditions have then been recommended that relate to subterranean fauna, *Atriplex yeelirrie*, the Night Parrot and the Malleefowl (conditions 2 – 15 of **Attachment B2** and conditions 2 – 10 of **Attachment B1 to the Proposed Approval Decision Brief**). These are discussed above in the analysis of impacts to matters protected by sections 21 and 22A, and sections 18 and 18A.
342. As noted in the Assessment Report (**Appendix A**), the preparation of a Mine Closure Plan is a statutory obligation under the *Mining Act 1978* (WA). The WA Department of Mines and Petroleum (WA DMP) has confirmed it would require a condition of the mining lease under the *Mining Act 1978*.
343. The Assessment Report (**Appendix A**) also notes that the WA Radiological Council and the WA DMP would regulate impacts to human health by the provision of a Radiation Management Plan (required under the *Radiation Safety Act 1975*) and through the *Mines Safety and Inspection Regulations 1995*.
344. Also noted in the Assessment Report (**Appendix A**) is that the WA DWER would regulate the use of water, including groundwater extraction and disposal, through its licensing role under the *Rights in Water and Irrigation Act 1914*.

345. Consistent with the view of the WA EPA, the Department considers that the requirements relating to the management of mine closure, radiological impacts and water use, including the preparation of relevant plans, can be adequately regulated through WA regulatory processes rather than requiring duplicate conditions under the EPBC Act.

aa. Information provided by the person proposing to take the action or by the designated proponent of the action (section 134(4)(aa)).

346. Section 134(4)(aa) provides that in deciding whether to attach a condition to an approval, you must consider information provided by the person proposing to take the action. The proponent provided the Department the following information in relation to the proposed action:

- public environmental review prepared by the proponent is at **Appendix B1**, and
- Additional information in response to a request from the Department. The additional information is at **Appendix B5**.

A letter is provided at **Attachment C to the Proposed Approval Decision Brief** for your signature, requesting the proponent's comments on the proposed decision. Responses to this letter will be considered in the final decision brief.

347. The Department took into account this information in recommending the conditions to be attached to the approval of the proposed action.

b. The desirability of ensuring as far as practicable that the condition is a cost-effective means for the Commonwealth and the person taking the action to achieve the object of the condition (section 134(4)(b)).

348. Section 134(4)(b) provides that in deciding whether to attach a condition to an approval, you must consider the desirability of ensuring as far as practicable that the condition is a cost-effective means for the Commonwealth and a person taking the action to achieve the object of the condition. The Department considers that the conditions imposed are cost effective and the costs of implementing the conditions of approval are commensurate with the conservation outcome the conditions are designed to achieve.

349. Based on the information provided in the assessment documentation, the recommended approval timeframe for the proposed action is 25 years to allow time for development of the mine, a 15 year life of mine, and the completion of decommissioning and mine closure activities.

APPENDICES:

Appendix A: [Assessment Report](#)

Appendix B: Additional Assessment Documentation

B1: [Public Environmental Review](#)

B2: [WA Appeals Convenor Report](#)

B3: [WA Minister's Appeal Determination](#)

- B4:** [WA Minister's Approval](#)
- B5:** Additional Information received [11 October 2016](#), [17 January 2017](#), [19 June 2017](#), [21 November 2017](#), and [18 July 2018 - Attachment](#)
- B6:** [Comment received from WA Minister for Environment; Disability Services](#) (24 May 2017)

Appendix C: [EPBC Act Policy Statement - Translocation of Listed Threatened Species](#)

Appendix D: Supporting Documents

- D1:** [Environment Reporting Tool Report](#) (2009) and [Environment Reporting Tool Report](#) (2018)
- D2:** [National Recovery Plan for Malleefowl](#)
- D3:** [National Recovery Plan for Greater bilby](#)
- D4:** [Conservation Advice for Greater bilby](#)
- D5:** [Conservation Advice for Princess parrot](#)
- D6:** [National Recovery Plan for Black-flanked rock-wallaby](#)
- D7:** [Conservation Advice for Black-flanked rock-wallaby](#)
- D8:** [Recovery Plan for Great desert skink](#)
- D9:** [Conservation Advice for Great desert skink](#)
- D10:** [Conservation Advice for Night parrot](#)
- D11:** [Threat Abatement Plan](#) and [Background](#) - Rabbits
- D12:** [Threat Abatement Plan](#) and [Background](#) - Goats
- D13:** [Threat Abatement Plan](#) and [Background](#) – European Red Fox
- D14:** [Threat Abatement Plan](#) and [Background](#) – Feral Cats
- D15:** [Threat Abatement Plan](#) and [Background](#) – Feral Pigs

Appendix E: [Western Australian Biodiversity Science Institute Research Program](#)

Appendix F: [Germination Trial of *Atriplex Yeelirrie* \(2015\)](#)



11 October 2016

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Dear Mr Edwards

**Notification of extension to decision timeframe and request for further information
Yeelirrie Uranium Project, Shire of Wiluna, Western Australia (EPBC 2009/4906)**

Thank you for your correspondence advising of the proposal to extend the time to decide on the Yeelirrie Project and also requesting further information.

I note that much of the information requested was presented in the PER and the Response to Submissions, however, I have summarised the information here and have also provided reference back to the relevant reports, of which I have provided additional hard copies.

1. Request for further information on how the proponent intends to meet the objective of establishing self-sustaining populations of *Atriplex yeelirrie*.

Cameco has completed a comprehensive range of studies and investigations to support the proposal to translocate *Atriplex yeelirrie*. While these studies will be built on in the future as implementation continues, Cameco considers that the work completed so far provides a very sound base and a reasonable level of confidence that translocation of *Atriplex yeelirrie* could be successfully achieved.

A summary of this work along with proposals for translocation was presented in the PER and in the Response to Submissions. A copy of Appendix 8 of the Response to Submission – “Revised Proposal for the Protection of *Atriplex yeelirrie*” is attached. (see Attachment 1)

In your correspondence you have requested that we provide “further information to support how the proponent intends to meet the objective – to ensure a self-sustaining population of mature individuals of the western population of the *Atriplex yeelirrie*, referred to as part of the “*Atriplex yeelirrie* Offset Plan” (potential Condition 14-2 in Appendix 6 of the WA EPA Assessment Report # 1574).

Potential Condition 14-2 states;

Prior to ground disturbing activities or otherwise agreed to by the CEO, the proponent shall prepare and submit an Atriplex yeelirrie Offset Plan to the CEO on advice of Parks and Wildlife.

The objective of the Atriplex yeelirrie Offset Plan is to ensure a self-sustaining population of mature individuals of the western population of the Atriplex yeelirrie.

The Atriplex yeelirrie Offset Plan shall:

- (1) identify the ecology, ecophysiology and habitat requirements and determinants of the western population;*
- (2) identify the number of mature plants that each translocation site should support;*
- (3) identify the appropriate sex ratio distribution;*
- (4) describe the plant material to be used for translocation, to promote the viability of the species;*
- (5) identify suitable translocation sites similar to those within the western population of the Yeelirrie palaeochannel through investigations such as but not limited to soil investigations, drainage, land tenure and potential for long-term protection of the site;*
- (6) undertake a trial translocation program, testing surface and sub-surface soils through relocation and potential seeding techniques;*
- (7) confirm that irrigation would be feasible for the first two (2) years at each translocation site;*
- (8) describe the ongoing protection measures afforded to the translocated plants from threats including fire and future exploration and mining;*

To address your request for further information I have responded to each of the parts of the Potential Condition 14-2 separately to outline what work has been completed, including preliminary results and what work is planned to be completed with a timeline for this work.

14-2 (1) identify the ecology, ecophysiology and habitat requirements and determinants of the western population;

Cameco has completed considerable investigations on the ecology, ecophysiology and habitat requirements and determinants of *Atriplex yeelirrie* at both the Eastern and Western populations and at a number of potential translocation sites. This included investigations of the soil profile, particle size distribution, clay mineralogy and aggregation behaviour of clays, salinity, pH, water retention properties and nutrients. The study also looked at *Atriplex* distribution across the sites as well as rooting depth.

These results were presented in Appendix E5 of the PER.

<https://www.camecoaustralia.com/projects/yeelirrie/project-development/per-documents>

Following on from the work described above, additional detailed laboratory analysis was undertaken on soil samples collected from the field plots associated with the original 15 sites from Yeelirrie and 11 potential translocation sites and multivariate statistical analysis was conducted to determine if soil properties differ between sites that have a native *Atriplex yeelirrie* population and those that do not, and to identify the common soil properties linked to successful *Atriplex yeelirrie* growth.

This work was presented in Attachment 8 of Cameco's Response to Submissions (Attachment 1).

The results of the completed work will guide Cameco in the selection of translocation sites including the sites for the trail translocation program scheduled to commence in 2017.

The results of the analysis conducted over the Atriplex sites will be compared with results of analysis conducted on soils from the proposed trial translocation sites and more detailed investigations would be conducted on each translocation site as required.

This additional work would be detailed in the *Atriplex yeelirrie* Offset Plan prepared for the approval of DPaW.

14-2(2) identify the number of mature plants that each translocation site should support;

Cameco undertook a preliminary review of the demographics of the Western and Eastern populations in 2014. This was followed by a more comprehensive study in 2015. The reports of both studies were appended to the PER as Appendices E7 and E8.

<https://www.camecoaustralia.com/projects/yeelirrie/project-development/per-documents>

The 2015 study looked at plant density and recruitment in the Eastern and Western population as well as a small population called the Rehabilitation population. This study along with ongoing follow up demographic studies will provide guidance on historical plant density and inform estimations of the numbers of plants each translocation site might support.

The demographic studies completed have also been designed to allow statistical analysis of plant demographics so that future translocated populations can be statistically compared against the historical information of the Western population and the status of the Eastern population.

The studies will provide a guide to the plant density we should expect to achieve on a translocation site.

14-2(3) identify the appropriate sex ratio distribution;

The 2015 demographic study also considered plant sex and ratios within each population. It also compared plant sex ratios of the Western and Eastern populations and the Rehabilitation population. In general terms plant sex ratios were about 50:50 and there was no significant differences between the populations. Plant sex ratios will continue to be analysed in future demographic studies and will then be able to be compared to future translocation populations.

14-2(4) describe the plant material to be used for translocation, to promote the viability of the species;

The plant will be propagated from seed.

Seed collecting programs have been conducted since 2010 and currently there is approximately 2.23 kg (~3.5 million seeds) of *Atriplex yeelirrie* seed in refrigerated storage.

Seed biology investigations including germination testing was conducted in 2015 and the report was appended to the PER as Appendix E6 (Attachment 5). The test work showed that the seed has good levels of viability and that high levels of viability remain for seed held in storage since 2010.

Should the Yeelirrie Project be approved, seed collection would be increased to achieve greater stores of seed for use in future translocation programs.

14-2(5) identify suitable translocation sites similar to those within the western population of the Yeelirrie palaeochannel through investigations such as but not limited to soil investigations, drainage, land tenure and potential for long-term protection of the site;

In the PER and supporting documentation Cameco has reported on the identification and testing of a number of translocation sites. Our objective is to identify and investigate a number of locations for translocation to reduce the overall risk to the species. Cameco has identified potential sites upstream from the orebody on Yeelirrie Station (owned by Cameco) other sites on Lake Mason (currently VCL and proposed to be vested with DPaW for conservation purposes) and on Yakabindi Station (currently held by BHPB). Cameco has also proposed to re-establish habitat in a section of mined out open pit that is not required for tailings storage. The soil profile in the open pit would be recreated using soil from the Western Population of *Atriplex yeelirrie*.

Preliminary investigations into the suitability of the sites on Yeelirrie, Yakabindi and Lake Mason have been completed and reported in Appendices E5 and E9 of the PER

<https://www.camecoaustralia.com/projects/yeelirrie/project-development/per-documents>

and in Attachment 8 of Cameco's Response to Submissions (see Attachments 1). Consideration of ways to achieve long term protection of the translocation sites on land that is not controlled by Cameco is ongoing.

14-2(6) undertake a trial translocation program, testing surface and sub-surface soils through relocation and potential seeding techniques;

In the PER and Response to Submissions, Cameco has committed to undertake a trial translocation program. Sites on Yeelirrie Station have been identified and preliminary investigations have been completed to inform a Trial Translocation Plan which would be submitted to DPaW for approval prior to commencement of the work.

The Plan will be finalised and submitted in 2016 and the on-ground works including seeding are scheduled to be completed in 2017. The preliminary planning has involved a senior lecturer from the School of Environmental Science at Murdoch University. The School has experience in plant translocation and pending the resolution of a number of administrative issues, it is proposed that a long term partnership be established involving the School in future trials and research into all aspects of translocation.

14-2(7) confirm that irrigation would be feasible for the first two (2) years at each translocation site;

While this level of detailed planning has not been completed at this stage, irrigation will be trialled as part of the translocation trial.

14-2(8) describe the ongoing protection measures afforded to the translocated plants from threats including fire and future exploration and mining;

The risks to each translocation site varies. These are discussed in some detail in Attachment 8 of the Response to Submissions (Attachment 1).

Some of the risks including security of land tenure will need to be resolved before each site is established. Once these are resolved and the translocation sites established, it is considered that the other risks are manageable.

Cameco considers that the work conducted so far and outlined above is substantial for a Project at pre-feasibility phase of development. The results so far provide clear direction and evidence of how Cameco intends to meet the objective of establishing a self-sustaining population of mature

individuals of the western population of *Atriplex yeelirrie*. Further we believe the work completed so far provides reasonable evidence that the objective can be achieved.

2. Having regard to the Departments Translocation Policy

With regard to the Departments translocation policy, the work outline above addresses many of the issues raised by the Departments Policy Statement. The outstanding issues including the impact on the receiving sites and the management of pathogens will be addressed by an environmental impact assessment of the receiving sites and plans to manage operational aspects of translocation.

It should also be noted that the proposal has been considered by the Western Australian Department of Parks and Wildlife and assessed by the Environmental Protection Authority and they have concluded that the project could be managed to meet the EPA's objective for Flora and Vegetation provided that a number of conditions are set and Cameco has committed to implementing the work required by the proposed conditions.

Cameco is an experienced operator operating in sensitive environments including Arnhem Land where we have Plans and Procedures in place to manage and control the spread of weed seed between different exploration programs in the region and this experience would be directly relevant to operational aspects of translocation.

3. Information on Cameco's international environmental history

Cameco Corporation produces an annual Sustainability Report. It is published on the internet and can be found at <https://www.cameco.com/about/sustainability/>.

In the first instance please refer you to information available in the Sustainability Report. If having reviewed it, you would like further information we would be happy to compile that for you.

4. Further information on the social and economic impacts of the Project

Cameco has recently commissioned an economic impact assessment. It will consider the local and regional economic benefits arising from the development and operation of the Yeelirrie Project. The report will be finalised around the end of October 2016 and it will be made available to the DotE as soon as it is available.

Cameco has a long history of community and regional economic and social development in the regions in which we work and an overview and discussion of the metrics for economic and social development are provided in the Sustainability Report at https://www.cameco.com/sustainable_development/2016/gri-index/#CA1.

I hope the above information addresses the issues raised in your letter. If you require any further information please contact me at your earliest convenience.

Yours faithfully

s47F

Simon Williamson

**Environmental Manager
Cameco Australia**

Attachments

Attachment 1 - Attachment 8 from the Response to Submissions – Revised proposal for the protection of *Atriplex yeelirrie*.