APPENDIX A: Stakeholder feedback on 2020 MCP cross-referenced to relevant 2022 MCP section

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A.1 SSB feedback on 2020 MCP and cross-reference to relevant section of 2022 MCP

Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
1	1. Scope and purpose		While the 2020 RMCP includes a list of future planned applications (Table 3-2), it only describes those applications that will require Ministerial approval, as opposed to all planned or potential future standalone applications (e.g. no HDS sludge disposal or RP6 remediation). The list of standalone applications should include all planned applications, noting (as appropriate) any that may be subject to change.	Standalone applications to the Minister are provided in Section 1.7 and other approvals planned for 2022 are provided in Section 3.4 (not all future approvals are included).	Section 1.7 and Section 3.4
2	7. Risk assessment and management		The 2020 RMCP Risk Assessment still doesn't include adequate information to justify assignment and ranking of risks, classes and controls. Further comments are provided in Table 3.	Likelihood and Consequence tables that generate rankings is included, as are existing controls.	Section 7.3 and 7.4
3	7. Risk assessment and management		There is no detail on control effectiveness, either in the Risk Assessment and Management section or contingencies in Closure Implementation section. Further, there are many risks where no control effectiveness has been assigned – specific comments are provided in Table 3.	Control effectiveness is included for all but 3 of the 45 risks.	Appendix 7.1
4	7. Risk assessment and management		Whilst the RMCP has been updated with details of risk assessments that have been undertaken, the minimum frequency of risk reviews (e.g. annual) isn't explicitly stated, or what other factors may trigger an update to the risk assessment.	Timing and triggers included.	Section 7.3.7
5	7. Risk assessment and management/9. Implementation		There are very few additional contingencies, or further detail added since the 2019 RMCP. The Supervising Scientist does not accept ERA's response that details on contingencies are 'not required' and it is particularly concerning that there are still no post-2026 contingencies presented in the 2020 RMCP for ecosystem restoration. Additional comments on contingencies presented in the 2020 RMCP are provided in Table 3.	Some contingencies are included in Appendix 7.1. A material review of risks is planned for 2023.	Appendix 7.1
6	6. Best Practicable Technology (BPT)		The HDS sludge disposal activity has been removed from the list of future BPT assessments since the 2019 RMCP, without explanation. Recommendation: Justify why HDS sludge disposal is no longer considered as a future BPT assessment.	The BPT for the HDS sludge plant was approved in February 2020 and is included in the 2022 MCP.	Section 6.4 and Appendix 6.1
7	10. Closure monitoring and maintenance		Additional specific comments on the TARP presented in the 2020 RMCP are provided in Table 3.	Refer Table A.2.	
8	5. Knowledge base and supporting studies		Information from KKN LAN1B should be incorporated into the RMCP when it is completed.	Noted.	Not included in 2022 MCP
9	5. Knowledge base and supporting studies		Information from KKN LAN2 should be incorporated into the RMCP when it is completed.	Updates included.	Section 5.1.2
10	5. Knowledge base and supporting studies		Results of long-term landform stability modelling being undertaken by both ERA and the Supervising Scientist should be included in the RMCP as they are completed.	LAN2 updates included.	Section 5.1.2 and Section 5.1.3

A.1 SSB feedback on 2020 MCP and cross-reference to relevant section of 2022 MCP

Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
11	8. Post mining land use, closure objectives and closure criteria	**SSB 2019 RMCP Assessment**: Noted that SSB is currently reviewing the Landform Rehabilitation Standard, which will provide ERA updated advice on the approach to assessing suspended sediments.	The assessment approach to closure criterion L7 is being finalised in consultation with ERA and will be reflected in the updated SSB Rehabilitation Standard and the next version of the RMCP should be updated accordingly.	Updates included.	Section 8.3.2
12	8. Post mining land use, closure objectives and closure criteria		Note that the denudation rate has been revised and will be reflected in the updated SSB Rehabilitation Standard. The next version of the RMCP should be updated accordingly.	Updates included.	Section 8.3.1
13	9. Implementation		The Supervising Scientist recently provided landform modelling technical advice to ERA (i.e. after submission of 2020 RMCP), indicating that although gullies may form over Pit 3 under some scenarios wouldn't be deep enough to expose tailings. This information should be summarised in the 2021 RMCP.	Updates included.	Section 5.1.3
14	5. Knowledge base and supporting studies		Section 5.5.1.1 of the 2020 RMCP contains the following text from the 2018 RMCP, which is either incorrect or has been completed: *A number of limitations of the modelling work were identified by the SSB. The following improvements are being implemented to ensure model outputs are both plausible and scientifically defensible. These improvements include:* • *the development of a stochastic synthetic rainfall dataset to generate a series of unique rainfall scenarios which may occur within a period of 10,000 years. This has allowed uncertainty in predictions to be better accounted for and will provide a range or probability of likely outcomes.* • *an enhancement of the effect of vegetation community growth (vegetation has a major effect on the erosion potential of the landform surface) on landscape evolution within the landform model. The vegetation parameter values used in the CAESAR-Lisflood model have been better defined and continue to be reviewed to better account for the effects of developing vegetation cover over the area of the Ranger minesite.* • *consideration of the role of fire, given its role in the northern Australian landscape and potential to disrupt or prevent the development of specific vegetation communities* • *integration of a dynamic vegetation model linking soil moisture to biomass growth* • *implementation of an effective weathering function into the model to reflect the natural rate of both physical and chemical weathering and to ensure the models do not prematurely predict sediment exhaustion from the environment*	Updates included.	Section 5.1.2 and Section 5.1.3
15	9. Implementation		Results of work being undertaken by ERA on landform design optimisation should be included in the RMCP as they are completed.	Updates included.	Section 5.1.2 and Section 5.1.3
16	9. Implementation	**SSB 2018 RMCP Assessment:** Provide a detailed backfill plan for Pit 3 including:	This information should be included in the RMCP following approval of the Pit 3 Backfill Application.	Pit 3 Capping, Backfill Application was provided April 2022, feedback has	Section 9.2.2

A.1 SSB feedback on 2020 MCP and cross-reference to relevant section of 2022 MCP

Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
		• types and volumes of contaminated material that will require disposal (e.g. hydrocarbons, soil, waste from HDS plant) • plans for material segregation (if required) • disposal methods to be used (e.g. mixing with waste rock, layering, cells, etc.) • schedule for plant demolition and disposal.		been received and the application is being revised.	
17	9. Implementation		Prior to inclusion in the 2021 RMCP, ERA should consult stakeholders via the Minesite Technical Committee on the proposed plan for cleaning of the floor and walls of the Tailings Dam at the completion of dredging.	Completed and updates included.	Section 6.4 and Appendix 6.1
18	9. Implementation	**SSB 2018 RMCP Assessment:** Improve the scheduling for disposal of contaminated material into the pits, including the 4.6 million tonnes of mineralised material from the northern wall of the Tailing Storage Facility that will be placed in Pit 3 in 2025, and the other mineralised material that will be placed in the lower sections of the pits. It should be clarified how this material will be placed below the low-grade 2 rock cap.	This information should be included in the RMCP as it is generated and following approval of the Tailings Storage Facility Deconstruction application.	Noted. Pit 3 application underway and TSF deconstruction application at least 12 months away.	Section 9.2.2 and Section 9.2.3
19	9. Implementation	**SSB 2019 RMCP Assessment:** There is insufficient information on planning / monitoring of material movements and proposed surface structures. Recommendation: Provide more detailed information to demonstrate adequate planning and monitoring of material movements, including a basis on which the progress of landform construction can be assessed over time.	The planning aspect of the recommendation has been adequately addressed in the 2020 RMCP but details of the monitoring to verify the landform during construction still needs to be included.	Updates included.	Section 10.1.1
20	9. Implementation	**SSB 2019 RMCP Assessment:** Further comments are provided in the 2019 RMCP Assessment Report in relation to tailings consolidation vs process water removal.	It remains to be demonstrated by ERA that the removal of process water from Pit 1 is consistent with that used in solute transport modelling.	Updates included.	Section 5.2.4
21	9. Implementation	**SSB 2019 RMCP Assessment:** Recommendation: Present a consistent and justified approach to surface ripping of the final landform that considers requirements for erosion control, infiltration (i.e. ecosystem establishment vs contaminant transport) and the views of Traditional Owners.	Inconsistencies on ripping have been removed from the 2020 RMCP. The RMCP should be updated once the approach for the overall landform has been agreed amongst stakeholders.	Updates included.	Section 9.3.5
22	Monitoring and maintenance	**SSB 2018 RMCP Assessment:** Provide further details on monitoring method to demonstrate how relevant information will be collected to assess landform performance over time, including: • how gully formation will be measured on the revegetated landform • details of monitoring data required for ongoing validation of erosion modelling	Information from relevant monitoring programs should be incorporated into the RMCP as they are developed. Noted that KKN LAN3E is in the process of being removed.	Updates included.	Section 10.1.1

A.1 SSB feedback on 2020 MCP and cross-reference to relevant section of 2022 MCP

Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
		• water quality monitoring methods to be used for assessing landform erosion (e.g. turbidity as a surrogate for suspended sediment in surface water).			
23	Monitoring and maintenance		The commitment to include further detail on tailings consolidation monitoring methods in the Pit 3 closure application and subsequent inclusion in the 2021 RMCP is acknowledged.	Updates included.	Section 10.1.1
24	Monitoring and maintenance	**SSB 2019 RMCP Assessment:** There is insufficient information on planning / monitoring of material movements and proposed surface structures. Recommendation: Provide more detailed information to justify the proposed surface structures, including up to date flood modelling, engineering designs and long-term management plans.	Updated flood modelling and engineering designs are included in the 2020 RMCP but long-term management plans for surface structures will still need to be incorporated into the RMCP.	Some updates in Section 10.1.1, further work will occur to inform the Final Landform application	Section 10.1.1
25	Monitoring and maintenance	**SSB 2018 RMCP Assessment:** Provide further detail on time frames that sediment control infrastructure is expected to remain in place (i.e. criteria for removal) and any ongoing maintenance requirements (e.g. sediment removal and disposal locations).	Long-term management plans for sediment control infrastructure will need to be incorporated into the RMCP.	Refer to comment above.	
26	Knowledge base		Information relevant to the nature and extent of contamination associated with the Tailings Storage Facility should be incorporated into the RMCP as it is acquired.	Updates included.	Section 5.2.3
27	Knowledge base		The information presented on source terms has been updated in the 2020 RMCP and once completed and approved in the Pit 3 application, further updated source term information should be incorporated into the 2021 RMCP.	Noted. Some updates included, Pit 3 application being revised.	Section 5.2.3
28	Knowledge base	**SSB 2019 RMCP Assessment:** Further information is required to support the approach to remediating contaminated groundwater and soils across the site. Recommendation: Provide more detailed information on the nature and extent of the existing contaminated groundwater and soil, demonstrating that the: • level of contamination has been adequately measured (i.e. that samples are representative) • volumes of contaminated material have been reliably estimated • environmental risk associated with leaving the contaminated material in place has been assessed, and where necessary, compared against the risk of remediation and disposal of the material in the upper levels of Pit 3 during the late stages of waste rock backfill (which according to the current schedule is when much of the material will be placed in the pit)	Information from the relevant studies should continue to be summarised in the RMCP as they are completed. It is expected that detailed contaminated site assessment reports will be provided for stakeholder review, in support of proposed site remediation plans. Note that additional comments on soil contamination are provided in this table under the ‘Soils’ closure theme below.	Updates provided throughout chapters 5 and 9, particularly 9.3.1 for contaminated sites	Section 9.3.1

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Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
29	Knowledge base	**SSB 2019 RMCP Assessment:** Recommendation: Remove inconsistencies in relation to groundwater contamination in the processing area and update to reflect what the latest groundwater monitoring has identified in terms of downgradient groundwater impacts.	It is acknowledged that inconsistencies have been removed in the 2020 RMCP. Completed works to be included in the Pit 3 closure application should also be summarised in the 2021 RMCP.	Noted. Some updates included, Pit 3 application being revised.	Section 5.2.3 and Section 10.2.2
30	Knowledge base		The method for determining infiltration rate has been presented to SSB and ARRTC and assessed as part of the Conceptual model update with no major issues identified. It is also included as a key parameter in the uncertainty analysis. The sulfide material knowledge should be addressed in the source term model update.	Updates included.	Section 5.2.3 and Section 5.2.4
31	Knowledge base		The updated source term modelling takes into account the heterogeneous nature of tailings in the two pits. Results of ongoing tailings consolidation modelling work will need to be considered in further updates (if required) to the source term modelling and summarised in the RMCP.	Updates included.	Section 5.2.3 and Section 5.2.4
32	Knowledge base		Tailings consolidation modelling continues to be revised by ERA and it is expected this will be included in the upcoming Pit 3 application and summarised in the 2021 RMCP.	Updates included. Pit 3 application being revised.	Section 5.2.3 and Section 5.2.4
33	Knowledge base		The updated source term modelling considers the existing groundwater plumes (TSF, processing area, LAAs, RP2 etc). Proposed remediation options should be detailed in the RMCP once all the studies and modelling are completed.	Noted.	-
34	Knowledge base		The acid sulfate soil conceptual model has been completed and reported to stakeholders' satisfaction (ARRTC45) in the 2020 RMCP. The Supervising Scientist has indicated to ERA that an acid sulfate soil risk assessment should be presented in the Pit 3 Application, scheduled for submission in late 2020. Sediment sampling has been planned and the results of ensuing phases of this work should be summarised in the RMCP when completed.	Some updates included. Pit 3 application being revised.	Section 5.2.2 and Section 5.2.6
35	Knowledge base		Once completed in accordance with the recommendations provided by the Supervising Scientist, results of all contaminant transport modelling should be summarised in the RMCP.	Updates included.	Section 5.2.3 and Section 5.2.4
36	Knowledge base	**SSB 2018 RMCP Assessment:** To enable more reliable predictions of contaminant concentrations in surface water, the contaminant transport modelling, particularly the surface water model, needs to be refined using more relevant and appropriate data and assumptions, including: • undertaking contaminant transport modelling at increased temporal and spatial resolution (particularly around the period of peak solute delivery to the surface water system) • developing better understanding of groundwater/surface water interactions that will control the location and timing of delivery of contaminated groundwater to the surface water system	The Supervising Scientist has provided ERA with feedback on the final scope of work for surface water modelling, including the need to address the above recommendations from SSB's assessment of the 2018 RMCP. This information has not been captured in the 2020 RMCP.	Section updated. Updates to the surface water modelling are ongoing following completion of the groundwater solute transport modelling studies.	Section 5.2.5

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Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
		• implications of groundwater recovery as groundwater levels return to a stable state after rehabilitation • improved understanding of the role of groundwater/surface water interactions in solute migration • assessment of confidence in modelled outputs using statistical, sensitivity and uncertainty analyses for each model, as well as analysis of cumulative uncertainty where multiple models are interconnected.			
37	Knowledge base		The scope for groundwater-surface water interactions work has been included in 2020 RMCP. However, further detail on how the groundwater model results are fed into the surface water model should be included in the Pit 3 application and in the 2021 RMCP.	Some updates included. Pit 3 application being revised.	Section 5.2.5
38	Knowledge base		Results of the completed surface water modelling to be included in the Pit 3 closure application should be summarised in the 2021 RMCP.	Some updates included. Pit 3 application being revised.	Section 5.2.5
39	Knowledge base	**SSB 2018 RMCP Assessment:** Reactive transport modelling is required for calcium so that its effect on magnesium toxicity in the receiving surface waters can be understood (calcium has been shown to ameliorate magnesium toxicity). **ERA Response 2019 RMCP:** ERA project 1260-02 - Mg:Ca input into Surface Water Model - is underway to address this. Outcomes will be reported in the next MCP and inform inputs to the surface water model. This project is listed against KKN WS3C. What factors are likely to be present that influence contaminant (including nutrients) transport in the surface water pathway?	The ERA study specified above has been completed but not yet summarised in the RMCP. ERA has acknowledged that updates to water and solute transport models (or corrections to previously reported results) may be required, depending on the outcome of updated surface water modelling (with Ca turned off from the mine sources).	Updates included.	Section 5.2, Section 5.2.5
40	Knowledge base	**SSB 2018 RMCP Assessment:** Further work is required to provide reliable predictions of surface water contaminant concentrations post-rehabilitation; including (i) the characterisation of contaminant source terms, (ii) verifying the conceptualisation of key groundwater contaminant pathways, (iii) additional information on the interactions between surface water and groundwater, and (iv) more detailed ground and surface water modelling.	The updated summary of information presented in the 2020 RMCP is acknowledged and current work to update the predicted nature and extent of surface water contamination following rehabilitation should be incorporated into the 2021 RMCP.	Updates included.	Section 5.2
41	Knowledge base		KKN WS7C is currently in the process of being closed out and results of the above SSB project have been provided to ERA. This information should be summarised in the 2021 RMCP.	Noted but not included in 2022 MCP	-
42	Knowledge base		ERA's commitment to include the above information in the RMCP is acknowledged and it is noted that the Supervising Scientist has provided ERA with some of the relevant information via the KKN WS7C.	Noted but not included in 2022 MCP	-

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43	Knowledge base	**SSB 2018 RMCP Assessment:** Provide additional details on remediation of onsite waterbodies.	There does not appear to be any update provided by ERA in the 2020 RMCP. Outcomes of the above assessments should be incorporated into the RMCP when they are completed.	Some updates included, studies ongoing.	Section 5.2.2, Section 9.2.7 and Section 9.3.1
44	Knowledge base		The following text was included in the 2020 RMCP but not in the ERA response table: *SSB and ERA have agreed that the current AALL are not suitable for closure criteria and that KKN WS6b can be removed. ARRTC45 agreed to this KKN removal.* *ERA is working with SSB to conduct a third tier risk review based on an expanded literature review of biological effects of nutrients and initial results of modelling predicting post closure surface water quality.* SSB notes progress against this item. Outcomes of the above work should be incorporated into the RMCP when they are completed.	Noted. Studies ongoing.	Section 5.2.7
45	Knowledge base	**SSB 2018 RMCP Assessment:** Assess the risk of contaminated groundwater on riparian and aquatic vegetation.	The above-mentioned studies being conducted by NESP (CDU researchers) for the Supervising Scientist are nearing completion and results will be provided to ERA for incorporation into the 2021 RMCP.	Some updates included, studies ongoing.	Section 5.2.6 and Section 5.4.2
46	Knowledge base	**SSB 2018 RMCP Assessment:** Assess the potential risk of contaminant plumes in creek channels forming a barrier that inhibits organism migration and connectivity.	The above-mentioned study being conducted by NESP (CDU researchers) for the Supervising Scientist is nearing completion and results will be provided to ERA for incorporation into the 2021 RMCP.	Some updates included, studies ongoing.	Section 5.2.6 and Section 5.4.2
47	Knowledge base		KKN WS7C is currently in the process of being closed out and results of the above SSB project have been provided to ERA. This information should be summarised in the 2021 RMCP.	Noted but not included in 2022 MCP	-
48	Knowledge base	**SSB 2018 RMCP Assessment:** Determine potential levels of exposure of humans to contaminants from drinking water from onsite waterbodies (i.e. consumption rates, locations, concentrations) and assess the risk to human health.	Relevant information from the above-mentioned studies being conducted by ERA should be incorporated into the 2021 RMCP.	Some updates included, studies ongoing.	Section 5.2.2
49	Post mining land use, closure objectives and closure criteria	**SSB 2019 RMCP Assessment:** Further clarification of this comment was provided in the 2019 RMCP Assessment Report: ERA provides an interpretation of ER 1.2(d) in the second outcome of the Water and Sediment Objectives 2 (RMCP: Table 8-2) that contaminants off the RPA *do not cause detrimental impact to the ecosystem health of the Alligators River Region* which would imply an effect to be regional in nature to be considered detrimental. Rather, ER 1.2(d) states that to be considered detrimental a change must be in excess of that observed naturally in the region, which the Supervising Scientist interprets as outside the range of natural variability, not that changes must be regional in nature.	ERA has not responded to this concern in the 2020 RMCP, and has applied the same interpretation in the 2020 RMCP. The Supervising Scientist remains concerned with ERA's interpretation of the ERs and will actively engage with ERA on this issue, with the objective of reaching a resolution prior to the 2021 RMCP.	Section 8.3.2 notes the second management goal as being: 'mine sourced solutes do not increase contaminants in sediments off the RPA to levels that would be detrimental to ecosystem health off the RPA'.	Section 8.3.2

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Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
50	Post mining land use, closure objectives and closure criteria		KKN WS7A is currently in the process of being closed out and results of the above SSB project have been provided to ERA. This information should be summarised in the 2021 RMCP.	Noted but not included in 2022 MCP	-
51	Post mining land use, closure objectives and closure criteria		Use of BPT to determine outcomes for the Ranger site that are ALARA is supported by SSB but, and in accordance with ER 12.5, requires consultation with, and having regard to the views of, the major stakeholders (including SSB, NLC and Traditional Owners). Stakeholders have also sought quantitative values as closure criteria associated with ALARA in order to demonstrate the environmental outcomes for on-site have been achieved. Future RMCPs will need to describe the outcomes of these stakeholder consultations, including agreed quantitative closure criteria.	Noted. Closure criteria, and stakeholder engagement in closure criteria, discussed throughout Chapter 8	Chapter 8
52	Post mining land use, closure objectives and closure criteria	**SSB 2018 RMCP Assessment:** Undertake modelling of the potential contaminant accumulation in sediments post-closure, based on the results of surface water contaminant modelling, to demonstrate that sediment closure criteria are likely to be met.	This comment is yet to be addressed, noting that the Supervising Scientist and ERA have recently completed work against KKN WS3G that should be summarised in the 2021 RMCP.	Updates included.	Section 5.2.6
53	Post mining land use, closure objectives and closure criteria		Comments to the separate Supervising Scientist recommendation, “Assess the risk of eutrophication to on and offsite waterbodies when surface water model results predicting nutrient concentrations become available”, are directly relevant to this topic. Thus, it is noted that closure criteria for eutrophication are currently being developed (i.e. KKN WS6C). Further, KKN WS6B has been removed, with ARRTC45 agreement, on the basis that AALLs are not applicable as closure criteria.	Updates included, studies ongoing.	Section 5.2.7
54	Post mining land use, closure objectives and closure criteria		The Supervising Scientist’s Turbidity and Sedimentation Rehabilitation Standard is close to completion and should be incorporated into the 2021 RMCP.	Turbidity included within relevant criteria.	Section 8.3.1 and Section 10.1
55	Post mining land use, closure objectives and closure criteria		The draft closure criteria for sediments presented in the 2020 RMCP includes uranium but should also include sulfate, in accordance with relevant guidelines: *EPHC & NRMMC 2011. National guidance for the management of acid sulfate soils in inland aquatic ecosystems. Environment Protection and Heritage Council and the Natural Resource Management Ministerial Council, Canberra. It is noted that there also are surface water closure criteria for uranium and sulfate, which aim to protect sediments from accumulating levels of these contaminants that could result in environmental impacts.*	There is currently no agreed sulfate in sediment closure criteria. Sulfate is included in Table 8-5 for water.	Section 8.3.2, Table 8-5
56	Closure implementation		An ‘Integrated Water Treatment Strategy’ is no longer listed in the 2020 RMCP as a future application but it is understood that ERA may be planning to provide an Integrated Water Strategy as part of the Ranger Water Management Plan. Relevant information from this document should be incorporated into the next RMCP, including a conceptual diagram summarising the various proposed treatment activities.	Updates included, and process water flow diagram included. Ranger Mine Water Management Plan (RWMP) also produced annually.	Section 9.3.3
57	Closure implementation		There is no acknowledgement in the RMCP of the need to demonstrate the suitability of the TSF for process water storage.	Noted.	Section 9.2.3

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58	Closure implementation		Section 9.3.2.4 of the 2020 RMCP states: *ERA is currently engaging with contractors to complete a broad investigation of alternatives across the industry for current best practice. This work will build on the previous options analysis completed in 2012. Options selected will be subjected to a best practical technology assessment with any viable contingencies included in the 2021 MCP.* Further details on brine injection contingencies should be included in the 2021 RMCP, as stated by ERA above.	Updates included throughout Section 9.2.2. Contingencies included in 9.2.2.4.	Section 9.2.2
59	Closure implementation		An 'Integrated Water Treatment Strategy' is no longer listed in the 2020 RMCP as a future application but it is understood that ERA may be planning to provide this as part of the Ranger Water Management Plan. Relevant information from this document in relation to pond water disposal should be incorporated into the next RMCP.	Updates included. Ranger Mine Water Management Plan (RWMP) also produced annually.	Section 9.3.3
60	Closure implementation	**ERA Response 2020 RMCP:** ERA will be completing OPSIM-based water balance studies to determine the ability to dispose of treated pond and process water, throughout closure and as Land Application Areas are removed from service and rehabilitated. This water balance will also assess the balance between other disposal methods and demand from revegetation irrigation. This work is expected to be completed during 2021 and will be provided in an updated MCP.	ERA's commitment to include the above information in the 2021 RMCP is acknowledged.	Studies ongoing, for OPSIM refer Section 9.6.4.2.	Section 9.6.4
61	Closure implementation		A methodology for monitoring consolidation in Pit 3 should be included in the Pit 3 application and the 2021 RMCP, as committed to above.	Updates included. Pit 3 application being revised.	Section 5.2.3 and Section 5.2.4
62	Closure implementation	**ERA Response 2020 RMCP:** An assessment to inform material management strategy for the TSF sub floor material and the Pit 3 closure application was undertaken in late 2019. The key finding of the study was that removing the subfloor material from below the TSF and placing it in Pit 3 would result in higher solute loadings to the environment. Refer to Section 9.3.3.3.	The ERA response above refers to the contaminated material management but how the contaminated groundwater will be managed still needs to be determined and reported. This will be informed by groundwater modelling, surface water modelling and the TSF deconstruction application.	Noted. Pit 3 application underway and TSF deconstruction application at least 12 months away.	Section 9.2.2 and Section 9.2.3
63	Closure implementation		The 2020 RMCP (Section 5.5.2.5) provides an update on contaminated soil assessments in the processing area, indicating that a contaminated site drilling program and bore installation program was undertaken in late 2019/early 2020 to target areas where there are knowledge gaps. A summary of the results is provided and it is expected that this information will be used to update remediation plans (i.e. volumes of soil/water, recovery methods and placement for disposal) for the processing area in the 2021 RMCP.	Results from the 2019/2020 contaminated sites assessment have been used to inform other studies such as the source terms and the water pathway risk assessments. Results will also be used to inform future remediation plans, when completed.	Section 5.2.3 and 5.2.4
64	Monitoring and maintenance	.	The post-closure monitoring section of the RMCP should include a commitment to periodically review contaminants.	Updates included.	Section 10.2

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65	Monitoring and maintenance		The groundwater closure monitoring plan remains subject to stakeholder agreement and the RMCP should be updated when agreement is reached.	Noted. Updates included.	Section 10.2.2
66	Monitoring and maintenance		The RMCP should be updated when agreement is reached on the surface water closure monitoring plan. The Supervising Scientist recommends the inclusion of nutrients and pesticides to the water and sediment analysis suite during the early phases of revegetation establishment, when fertiliser is being added to revegetation and large-scale weed spraying is occurring. The monitoring should be periodic, not “opportunistic” (Section 10.3.1) and during the early period following rehabilitation, the surface water monitoring should be continued as event-based sampling, rather than monthly sampling (Table 10-4). The sampling intensity/frequency could be reduced in the long term, once it has been demonstrated that the risk of downstream contamination is acceptably low.	Noted. Updates included.	Section 10.2.1
67	Knowledge base	**ERA Response 2020 RMCP:** Radionuclide concentrations in surface water are predicted within the surface water model (Section 7.8). ERA are in the process of updating the surface water model, the results of which will be available in the 2021 MCP.	ERA’s commitment to include the above information in the RMCP is acknowledged.	Studies ongoing.	Section 5.3.2
68	Knowledge base	**ERA Response 2020 RMCP:** Radiological parameters required for the radiation dose assessment will be outlined in future iterations of the MCP and provided in detail within ERA's application for approval to construct the final landform. See Section 7.10.1 for further detail.	ERA’s commitment to include the above information in the RMCP is acknowledged.	Studies ongoing.	Section 5.3.2
69	Knowledge base	**ERA Response 2020 RMCP:** Radiological parameters required for the radiation dose assessment will be outlined in future iterations of the MCP and provided in detail within ERA's application for approval to construct the final landform. See Section 7.10.1 for further detail.	ERA’s commitment to include the above information in the RMCP is acknowledged.	Studies ongoing.	Section 5.3.2
70	Knowledge base	**ERA Response 2020 RMCP:** Radiological parameters required for the radiation dose assessment will be outlined in future iterations of the MCP and provided in detail within ERA's application for approval to construct the final landform. See Section 7.10.1 for further detail.	ERA’s commitment to include the above information in the RMCP is acknowledged.	Studies ongoing.	Section 5.3.2
71	Knowledge base	**ERA Response 2020 RMCP:** Radiological parameters required for the radiation dose assessment within ERA's application for approval to construct the final landform due for submission in 2022. See Section 7.10.1 for further detail.	ERA’s commitment to include the above information in the RMCP is acknowledged.	Studies ongoing.	Section 5.3.2
72	Knowledge base	**ERA Response 2020 RMCP:** The radiation dose assessment is contingent upon the completion of current and future closure studies. The completed dose assessment will be included in future	ERA’s commitment to include the above information in the RMCP is acknowledged.	Studies ongoing.	Section 5.3.2

A.1 SSB feedback on 2020 MCP and cross-reference to relevant section of 2022 MCP

Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
		iterations of the MCP. See Section 7.10.1 for further detail.			
73	Knowledge base	**ERA Response 2020 RMCP:** The prediction of radiation dose to wildlife forms part of the radiation dose assessment. This study is underway and will be included in future iterations of the MCP. See Section 7.10.1 for further detail.	ERA's commitment to include the above information in the RMCP is acknowledged.	Studies ongoing.	Section 5.3.2
74	Knowledge base	**ERA Response 2020 RMCP:** The prediction of radiation dose to wildlife forms part of the radiation dose assessment. This study is underway and will be included in future iterations of the MCP. See Section 7.10.1 for further detail.	ERA's commitment to include the above information in the RMCP is acknowledged.	Studies ongoing.	Section 5.3.2
75	Knowledge base	**ERA Response 2020 RMCP:** The prediction of radiation dose to wildlife forms part of the radiation dose assessment. This study is underway and will be included in future iterations of the MCP. See Section 7.10.1 for further detail.	ERA's commitment to include the above information in the RMCP is acknowledged.	Studies ongoing.	Section 5.3.2
76	Monitoring and maintenance		A list of terrestrial bushfood groups to be targeted for post-closure (i.e. beyond 2026) monitoring of radionuclides has not been provided. Also, given that ERA's permits and approvals to collect bushfoods expire in 2025, this does not address the aspect of post-closure monitoring of radionuclides in bush foods nor is it consistent with the intended duration set out in Table 10-9 "Until demonstrated progression towards closure criteria, i.e. low levels have been confirmed".	Studies ongoing (Section 5.3.2), bush diet listed in Section 5.3.1, monitoring is included (Section 10.3)	Section 5.3.2, Section 5.3.1, Section 10.3
77	Monitoring and maintenance		ERA's permits and approvals to collect bushfoods expire in 2025. ERA should seek further approval for the collection of bushfoods to enable post-closure (i.e. beyond 2026) monitoring of radionuclides in aquatic bushfoods in potentially contaminated waterbodies.	Noted.	
78	Knowledge base		The 2020 RMCP (Section 5.5.2.5) provides an update on contaminated soil assessments in the processing area, indicating that a contaminated site drilling program and bore installation program was undertaken in late 2019/early 2020 to target areas where there are knowledge gaps. A summary of the results is provided and it is expected that this information will be used to update remediation plans (i.e. volumes of soil/water, recovery methods and placement for disposal) for the processing area in the 2021 RMCP.	Results from the 2019/2020 contaminated sites assessment have been used to inform other studies such as the source terms and the water pathway risk assessments. Results will also be used to inform future remediation plans, when completed.	Section 5.2.3 and 5.2.4
79	Knowledge base		The 2020 RMCP (Section 5.5.2.4) provides an update on contaminated soil assessments in the land application areas, indicating that the information will inform the approach to remediation of each LAA, if required.	Noted. Studies ongoing. Section 9.3.1 provides some information regarding contaminated sites.	Section 9.3.1
80	Knowledge base	**ERA Response 2020 RMCP:** Details on the contaminated sites assessment completed in the past 12 months are provided in the 2020 MCP	ERA's commitment to include the above information in the RMCP is acknowledged.	Noted. Studies ongoing. Section 9.3.1 provides some information regarding contaminated sites.	Section 9.3.1

A.1 SSB feedback on 2020 MCP and cross-reference to relevant section of 2022 MCP

Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
		(Refer to Section 5). As assessments are completed they will continue to be provided in the annual MCP updates.			
81	Post mining land use, closure objectives and closure criteria		The 2020 RMCP indicates that soil contamination sampling has been undertaken, therefore it is expected that this comment should be addressed in the 2021 RMCP.	Noted. Studies ongoing. Section 9.3.1 provides some information regarding contaminated sites.	Section 9.3.1
82	Knowledge base		The inclusion of draft fauna closure criteria in the 2020 RMCP is acknowledged. Some initial comments are provided in Table 3 and Attachment A, noting that further consultation will occur via the Ecosystem Restoration Working Group.	Updates included.	Section 8.3.5
83	Knowledge base		The inclusion of draft fauna closure criteria in the 2020 RMCP is acknowledged. Some initial comments are provided in Table 3 and Attachment A, noting that further consultation will occur via the Ecosystem Restoration Working Group.	Updates included.	Section 8.3.5
84	Knowledge base		It is noted that agreement to a final revegetation species list is subject to ongoing work by ERA and consultation with stakeholders. Additional specific comments on information presented in the 2020 MCP are provided in Table 3.	Noted. Current list provided.	Appendix 5.5
85	Knowledge base	**SSB 2018 RMCP Assessment:** Provide details on which species would be included in the understorey (in consideration of requirements for faunal colonisation), and evidence to support the assumption that direct seeding is the best option for the establishment of such species. **ERA Response 2019 RMCP:** Planned trials on rehabilitation understorey species are described in Section 7.6.3. It is not assumed that these species will be direct seeded, but predominantly introduced via tubestock. Habitat requirements for fauna return will be considered under KKN ESR2B, and will be reported on in the 2020 MCP.	It is noted that the original comment was in relation to understorey establishment, not fauna. As it is generated, the required information should be presented in updates to the RMCP and the Final Landform and Revegetation Application.	Noted. Updates included.	Section 5.4.3
86	Knowledge base		The 2020 RMCP includes brief descriptions of planned fauna habitat trials for the TLF, although there is no indication of when results will be available. As it is generated, the required information should be presented in updates to the RMCP and the Final Landform and Revegetation Application.	Noted. Updates included.	Section 5.4.6
87	Knowledge base	**SSB 2018 RMCP Assessment:** Provide information on nitrogen dynamics in the rehabilitated landform, including an assessment of the potential for nitrogen to be a limiting factor for nutrient cycling, and nutrient availability and presence of soil biota to assist in plant growth.	There do not appear to be any significant updates in the 2020 RMCP to address this recommendation.	Noted. Studies ongoing.	Section 5.4.2
88	Knowledge base	**SSB 2018 RMCP Assessment:** Provide information demonstrating that waste rock can maintain long-term species diversity through recruitment	Limited information is presented in the 2020 RMCP which is based only on observations on the Trial Landform. This indicates that some species have the ability to recruit/regenerate in waste rock. It is recommended that a summary of	Noted. Some updates included. Studies ongoing.	Section 5.4.2

A.1 SSB feedback on 2020 MCP and cross-reference to relevant section of 2022 MCP

Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
		and regeneration and whether there are factors that could be manipulated to facilitate this. **SSB 2019 RMCP Assessment:** Further comments on the application of information obtained from revegetation trials are provided in the 2019 RMCP Assessment Report.	all available information be presented in the 2021 RMCP, with a focus on quantitative data where possible (i.e. over the entire Trial Landform).		
89	Knowledge base		While information from the Trial Landform fire study has been incorporated into the 2020 RMCP, this still needs to be put into the context of other relevant information available on plant survivability from fire in the region.	Updates included.	Section 5.4.4
90	Knowledge base		While information from the Trial Landform fire study has been incorporated into the 2020 RMCP, it is noted that ERA has an additional study allocated to KKN ESR8A which will further inform the development of a fire regime.	Updates included.	Section 5.4.4
91	Knowledge base		Updates on weed status have been provided in the 2020 RMCP, although these only appear to include the Trial Landform. While relevant studies may be underway and it is acknowledged that the Supervising Scientist is undertaking work to address KKN ESR4A (introduced species in areas surrounding the RPA), the RMCP should include a commitment by ERA to undertake comprehensive surveys on the RPA to inform the status of weeds and feral animals before and during the rehabilitation process.	Updates included.	Section 5.4.5 and Section 10.4.1
92	Knowledge base		A list of the species present on the RPA has been presented in the 2020 RMCP, which is based on previous work and doesn't include densities or areas adjacent to the RPA. The Supervising Scientist will undertake studies to address KKN ESR4A (introduced species in areas surrounding the RPA) and provide the information to ERA as it becomes available for inclusion in the RMCP.	Noted. Updates included.	Section 5.4.5 and Section 10.4.1
93	Knowledge base	**SSB 2018 RMCP Assessment:** Assess the risk of feral animals impacting on faunal colonisation of the rehabilitated site.	There does not appear to be any updated information from studies (or their status) presented in the 2020 RMCP. It is noted that the 'KKN for fauna outside the RPA' (ESR4A) is not the most relevant KKN to this question. Both ERA and the Supervising Scientist have allocated studies to address the relevant KKN ESR2C ('What is the risk of introduced animals (e.g. cats and dogs) to faunal colonisation and long-term sustainability?') and as the results of these studies become available, they should be incorporated into the RMCP.	Noted. Updates included.	Section 5.4.5 and Section 10.4.1
94	Knowledge base	**SSB 2018 RMCP Assessment:** Assess the risk of potential impacts of contaminants leached from waste rock on revegetation and fauna, including details on how this would be avoided or mitigated. **ERA Response 2019 RMCP:** SSB are undertaking KKN ESR6A. What concentrations of contaminants from the rehabilitated site may be available for uptake by terrestrial plants? ESR6B will be completed and reported on in updated MCP. **SSB 2019 RMCP Assessment:** Noted that the need for KKN ESR6A (i.e. impact of contaminants on vegetation) is currently subject to discussion between SSB, ERA and ARRTC. Noted that	The Supervising Scientist has agreed that the KKN ESR6A could possibly be removed, if the relevant groundwater modelling (e.g. shallow aquifers) when completed by ERA indicates there is a low risk of exposure of revegetation on the final landform to contaminants. As noted previously, KKN RADA (assigned to ERA) is intended to assess the risk to fauna.	Noted.	

A.1 SSB feedback on 2020 MCP and cross-reference to relevant section of 2022 MCP

Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
		the need to assess risk of contaminants to fauna is identified in KKN RAD8.			
95	Knowledge base	**SSB 2018 RMCP Assessment:** Mitigations to address integrated landscape risks, such as weather, should be addressed in the Ecosystem Restoration Strategy. **ERA Response 2019 RMCP:** When further studies are completed, these mitigations will be included within the ecosystem rehabilitation strategy.	The commitment to include further detail on landscape risk mitigation measures in the RMCP is acknowledged.	Noted. Studies ongoing.	Section 5.5
96	Knowledge base	**SSB 2019 RMCP Assessment:** Noted that it is not clear if the results discussed in section 7.5 of the RMCP from the analysis of the FLV5.2 landform are the same as those from the FLV6.2 landform. **ERA Response 2020 RMCP:** During the monitoring and maintenance phase, the landform may settle over time and there is also the potential for subsidence and/or erosion to occur. Revegetation must also progress towards a self-sustaining ecosystem. Potential remedial management practices to ensure continued progress towards a stable landscape and self-sustaining ecosystem in this phase are described in Section 10.	The additional information presented in the 2020 RMCP is acknowledged, noting that the risk will need to be assessed following the completion of all studies allocated to the KKN LAN3B.	Noted. Updates included.	Section 5.1.3
97	Knowledge base	**SSB 2018 RMCP Assessment:** Provide information on soil formation properties for each type of waste rock to be used in landform construction, including: • weathering rates • soil texture information for the entire waste rock substrate (i.e. not just < 2mm fraction).	Soil formation and PSD information have been presented in Appendix 5.1 but this is not consistent with what is presented in the main body of the RMCP. It is also noted that soil formation needs to be determined for other parameters in addition to PSD, such as organic content and nutrients.	Noted. Particle Size Distribution (PSD) updates included.	Section 5.4.2
98	Post mining land use, closure objectives and closure criteria		There are several current and planned studies by both SSB and ERA allocated to KKN ESR5 and the information generated by these studies should be summarised in the RMCP as they are completed. There has not yet been significant progress in studies to address this comment in the 2020 RMCP.	Noted. Updates included.	Section 5.4.7
99	Post mining land use, closure objectives and closure criteria		Draft fauna closure criteria have been included in the 2020 RMCP. These are subject to ongoing consultation with stakeholders and specific comments are provided in Table 3 and Attachment A (Assessment of Closure Criteria) where appropriate.	Noted. Updates included.	Section 8.3.5
100	Post mining land use, closure objectives and closure criteria		Draft fauna closure criteria have been included in the 2020 RMCP. These are subject to ongoing consultation with stakeholders and specific comments are provided in Table 3 and Attachment A (Assessment of Closure Criteria) where appropriate.	Noted. Updates included.	Section 8.3.5

A.1 SSB feedback on 2020 MCP and cross-reference to relevant section of 2022 MCP

Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
101	Post mining land use, closure objectives and closure criteria		Draft fauna criteria have been included in the 2020 RMCP but there is not yet evidence to support the assumption that fauna will colonise the rehabilitated site, once suitable habitat has established. There are several current and planned studies by both SSB and ERA allocated to KKN ESR2B and the information generated by these studies should be summarised in the RMCP as they are completed.	Noted. Updates included.	Section 5.4.6 and Section 8.3.5
102	Closure implementation		The ongoing plant propagation studies being undertaken by ERA to address the KKN ESR3A are acknowledged and the resulting information should be incorporated into the RMCP as it is generated.	Noted. Updates included.	Section 5.4.3 and Section 9.3.6
103	Closure implementation		The contingency plan presented in Section 9.4.6.2 of the 2020 RMCP only considers the nurseries capacity to produce tubestock, not the availability of seed to produce tubestock, or contingencies that may be required during the establishment phase. If the short-lived seeds are not producing well prior to the 24/25 planting season, then a significant lack of tubestock could occur with no potential for collection prior to the large-scale planting following final landform completion. The contingency plan should address the possibility on having low availability/low productivity in short-lived seeds prior to the final rounds of planting. To give confidence that the seed collection practices and contingencies will be able to produce the required number of plants in their ecologically-relevant proportions, more information on the seed collection database needs to be provided. For example, there may be logistical constraints and risks associated with the timely planting of a particular reference ecosystem (compared to another) if species are considered individually in terms of their seed collection requirements and progress against the plan. Information should include: • the number of seeds currently collected per species, including specification of framework/culturally-important species • when the peak seed requirement is for each species • seed proportions collected relating to reference ecosystem/s proposed rankings of species/community types on seed collection and storage difficulty.	Noted. Updates included (also included as a risk in Chapter 7 and Appendix 7.1).	Section 9.3.6
104	Closure implementation	**SSB 2018 RMCP Assessment:** Additional information on the works proposed in the revegetation application should include: • detailed action plans and timelines, including methods (i.e. planting, irrigation) • seed availability and collection plan • nursery details and propagation studies • target and planned planting densities and methods (e.g. final target density for each species) • habitat to be installed (e.g. nesting boxes, rock piles) • ongoing management activities, including weed control and infill planting • any other project specific assumptions or information which would be required to conduct a detailed assessment of the activity.	The information should be summarised in the RMCP as it becomes available and detailed in the Final Landform and Revegetation application, as noted above.	Noted. Updates included in MCP and will be included in Final Landform application	Section 5.4.3 and Section 9.3.6

A.1 SSB feedback on 2020 MCP and cross-reference to relevant section of 2022 MCP

Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
105	Closure implementation	**SSB 2018 RMCP Assessment:** Refine the vegetation mortality contingencies to consider mortality beyond the first 6 months and the potential for mortality to vary between species and locations.	While ongoing studies may inform specific contingencies, high-level contingencies should be developed for inclusion in the RMCP that can be updated as the relevant information becomes available.	Noted. Some updates included.	Section 9.3.6.7
106	Monitoring and maintenance	**SSB 2018 RMCP Assessment:** The vegetation and fauna monitoring program should include detailed information about: • justification for site selection • survey methods and quantitative metrics being to assess condition and natural variability • how the data from these surveys are being used to derive or update closure criteria.	There does not appear to be any updated information on vegetation/fauna monitoring programs presented in the 2020 RMCP. It is noted that consultation on ecosystem restoration monitoring programs is ongoing.	Updates included.	Section 8.3.5
107	Monitoring and maintenance		The State-and-Transition Model is mentioned in the 2020 RMCP with respect to refining the *'trajectories for key parameters for revegetation, to identify milestones and thresholds to inform the ERA Adaptive Management Plan'*. It is understood this information will be gathered in 2020/21 and it is also noted that both the Supervising Scientist and ERA are undertaking additional studies to address the relevant KKN ESR5B.	Updates included, studies ongoing.	Section 5.4.7

A.2 SSB feedback on 2020 MCP

Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
108	Section 1.4 Table 1-2 Future applications to be submitted	*Final Landform: Some information will have already been included within the MCP. Thus this application is to include any updates or additional information since July 2021 (MCP 2021).* This could result in a disconnect on approval of final landform with some elements approved through the RMCP and some approved through the final landform 'update' in May 2022.	All information included in the RMCP that is relevant to a given stand-alone application should be included in that application.	Noted.	-
109	Executive Summary	*This Feasibility Study, which developed the technical, costing and scheduling aspects of Ranger Mine closure to a very high level of detail, was subject to scrutiny during multiple internal and external reviews.* This could be interpreted as inferring that Ranger Minesite Technical Committee (MTC) stakeholders (including the Supervising Scientist) have reviewed the feasibility study, which is not the case.	Clarify that the Feasibility Study was not reviewed or endorsed by the MTC, except through the elements provided in the RMCP.	Clarification provided.	Section 6
110	Section 7.4 Current risk profile	Several Class 3 risks identified in the 2019 RMCP appear to have been removed entirely from the 2020 RMCP, including: • *Actual consolidation of tailings (Pit 1 and Pit 3) does not match consolidation modelling and associated closure schedule leading to*	Provide clear justification for changes in levels of risk and/or risks that have been removed as a result of risk reviews.	Subject matter experts review the likelihood and consequence of a risk event, together with existing controls, to determine the risk	Section 7.3 and Section 7.4 and Appendix 7.1

A.2 SSB feedback on 2020 MCP

Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
		longer than planned process water treatment • *No disposal option for high density sludge post tailings deposition (end of 2020)* • *Exposed land surface contributes to increased weed recruitment, decreasing revegetation success and spread into Kakadu NP* Further, the following Class 3 risk identified in the 2019 RMCP has been downgraded to a Class 2 risk in the 2020 RMCP, without any justification provided: *Cannot achieve the desired tailings surface for post-deposition activities in Pit 3*		ranking. This can result in a change to risk rankings, typically where controls reduce the likelihood of an event occurring.	
111	Section 7.3.6 ERA closure risk assessment methodology Risk Evaluation	The probability range for different likelihood classifications has changed from the 2019 RMCP.	Provide an explanation on the changes to the probabilities for likelihood classifications.	Explanation for removal of 10,000 year likelihood criteria included.	Section 7.3.6
112	Section 7.4 Current risk profile	The effectiveness of a large proportion of the identified controls are 'Unrated', which means that it is not possible to assess the potential effectiveness of these controls.	Provide details of, and as previously raised in reviews of both the 2018 and 2019 RMCP, justification for effectiveness for all controls identified to address risks.	Control effectiveness is included for all but 3 of the 45 risks.	Appendix 7.1
113	Section 9.2 Closure Planning		Where contingencies for existing or ongoing approved activities are derived from a BPT described in Section 6, the options that are considered as contingencies should be clearly identified and the risks associated with using any contingencies based on BPT assessment should be discussed.	Noted. Updates included throughout Section 9 with regards to contingencies, and a material update of the risk assessment is planned for 2023.	Section 9
114	Section 9.3.3.4 Tailings Storage Facility Contingency planning	*TSF deconstruction methods are currently being finalised by ERA in preparation for the TSF deconstruction application. This involves a best practical technology assessment of the options. The options not selected for progression, that have not been show stopped for environmental or cultural reasons, will then form the basis of ERA's contingency plan.* This statement suggests that options which are show stopped for other reasons will be used in the contingency plan. It is not clear how ERA will give confidence that ALARA will be achieved via identified contingencies. Alternatively, it may be that ERA foresees that there are only show stopped options remaining in the BPT which can then be used as a contingency. If options selected in the BPT are all show stopped except the one selected, then the options should be reselected/new options should be realised.	Clarify how ALARA will be achieved if options for the contingency planning are those that have been ruled out for implementation during closure (which do not meet BPT assessment criteria as they are show stopped).	ERA does not rule out advances in technology or understanding that may result in a previously ruled-out option becoming considered. Typically, this would not occur for options that have hard-showstoppers. Options with soft-showstoppers may be considered in contingency planning.	Section 6.3
115	Section 9.3.1.4 Pit 1 Contingency planning		Include contingencies for greater settlement than expected for Pit 1 e.g. add additional material to ensure the landform achieves modelled landform expectations, excessive erosion may be remediated with waste rock etc.	Added with regards to erosion.	Section 9.2.1.4
116	Section 9.3.5.4 Process plant, water treatment plants & other infrastructure Contingency planning	*If the demolition of specific infrastructure planned to be deposited into Pit 3 is delayed, then RP2 has the capacity to take extra material than currently planned.* It is unclear what level of capacity RP2 has and therefore how much of the demolished material it may contain to ensure all plant is buried at least 6m	Provide further information on the RP2 burial contingency, including the capacity available vs current planned vs how much contingency this allows.	Not included in the 2022 MCP, studies ongoing. Will be included in the Final Landform application.	-

A.2 SSB feedback on 2020 MCP

Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
		below the final landform surface. It is therefore difficult to assess the effectiveness of this proposed contingency.			
117	Section 9.3.6.4 Stockpiles Contingency planning		Provide further information on contingencies to be implemented if the material mass balance is incorrect and results in a material deficit for the final landform.	Not included in the 2022 MCP, studies ongoing. Will be included in the Final Landform application.	-
118	Section 9.4.3.6 Closure activities Water treatment Contingency plans		Determine whether contingencies are required for pond water treatment.	Not included in the 2022 MCP, studies ongoing. Will be included in the Final Landform application.	-
119	Section 9.4.6.8 Closure activities Revegetation implementation Contingency plans		Provide details of other contingency methods that are being considered for seed collection.	Updates included.	Section 9.3.6.7
120	Section 12 Management of Information and Data		Post-closure data retention and handover requirements need to be determined in close consultation with government.	Noted.	-
121	Section 5.5.1 Supporting Studies Landform	The table at the start of this section suggests that it includes summaries of the completed studies in relation to the KKNs LAN2 and LAN3 (i.e. Pit 1 studies) but it does not appear to include this information.	Provide summaries of relevant studies completed to date to address KKNs LAN2 and LAN3.	Updates included.	Section 5.1.2 and 5.1.3
122	Section 9.4.5.3 Closure activities Final landform / Surface preparation Erosion and sediment controls	*Channels previously reporting to Djalkmarra Creek (flowing over Pit 3) in pre-mining conditions have been diverted to Corridor Creek (flows south of Pit 1) for the final landform. This reduces erosion possibilities over Pit 3.* This appears to be inconsistent with Figure 9-88 (footprint of final landform requiring ripping), which still shows Djalkmara Creek re-establishing across Pit 3.	Ensure there is consistency in planned/predicted drainage pathways from Pit 3.	Updated.	Section 9.3.5.3
123	Section 10.3 Landform Monitoring		Note that the Supervising Scientist is currently revising the Rehabilitation Standard for Landform Stability, which will provide updated advice on the optimal method of monitoring and assessing against the closure criterion for suspended sediment (L6). This should be incorporated into the 2021 RMCP.	Turbidity included within relevant criteria.	Section 8.3.1 and Section 10.1
124	Section 5.2.8 Physical environment Surface water	The concentrations of Cu are high in Table 5-8 and the Supervising Scientist has derived a median background concentration of 0.2 µg/L, which was used as our previous Rehabilitation Standard. The median of 1 µg/L from Klessa (2000) is the same as the national DGV concentration and is double SSB's new effects-based, site-specific GV. The discrepancy between SSB's and the Klessa (2000) background concentratoin is most likely due to the dataset being acquired from an early upstream site affected by Georgetown Billabong outflows (as noted by ERA); inappropriate use of mine-affected "reference" data may affect other concentrations quoted in Table 5-8.	Considering the data may be affected by Georgetown Billabong outflows, include a more accurate analysis of background surface water concentrations.	Updates included.	Section 5.2.6
125	Section 5 Figure 5-55 Control Charts of TPM concentrations in surface sediments	The conceptualisation of the linkages between various models and reports is out of date.	Update the RMCP each year to reflect most recent information/data.	Noted.	-

A.2 SSB feedback on 2020 MCP

Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
	of Georgetown Billabong				
126	Section 5.5.2.15 Supporting studies Water and Sediment Eutrophication risk study	*The sources of nutrients at Ranger to the water management system are from; waste rock, ammonia and phosphate (in lime) added to the mill process circuit, residual nitrates from blast residue in waste rock, and fertiliser application.* The sources listed in the eutrophication risk study are not consistent with those used in the groundwater modelling.	Ensure consistency between studies and models for contaminant sources.	Noted.	-
127	Section 5.5.2.16 Supporting studies Water and Sediment Aquatic ecosystem assessment & framework development	*Less conservative water quality objectives are required to support the RPA goal of impacts that are ALARA.* This statement negates the possibility of the highest level of protection potentially being achievable.	Revise language to reflect that ALARA should aim to meet the highest level of protection as a first principle.	Updates included.	Section 5.5.1.1
128	Section 8.3.2.3 Closure criteria Water and sediment	*Less likely, though still possible, is the potential that predicted concentrations exceed the draft W/SQO in small areas close to the RPA lease under certain (low) flow conditions* It is not clear what is meant by “small offsite areas”.	Until all relevant modelling is completed SSB considers all surface water quality predictions as “interim”. The final predictions should be provided in the Pit 3 application and the 2021 RMCP.	Noted. Pit 3 application being revised.	Section 8.3.2
129	Section 8.3.2.3 Closure criteria Water and sediment	*Assessing the need to revise the guideline values or add additional indicators and lines of evidence will be done by the stakeholder working group. The approach would depend on the nature (extent, duration, intensity, location etc.) of any predicted exceedance.* SSBs rehabilitation standards will not be revised for the off-site environment based on predicted exceedances. It is up to ERA to mitigate in the event of predicted exceedances.	Statements suggesting that guideline values off the RPA will be revised based on predicted exceedances should be removed. Predicted exceedances offsite should be managed through mitigation strategies.	Clarified.	Section 8.3.2
130	Section 8.3.2.3 Closure criteria Water and sediment	*Justification for outcome, parameter and criteria, Step 7: Consider additional indicators or refine the water/sediment quality objectives* It is the Supervising Scientist’s position the W/SQO for the offsite receiving waters should be considered ‘final’ and not in ‘draft’	Remove references to draft guideline values.	Still included as draft as not yet finalised.	Section 8.3.2
131	Section 8.3.2.3 Closure criteria Water and sediment		Ensure that the wishes of Traditional Owners are considered when undertaking BPT assessment for onsite waterbodies.	This is considered BAU. Traditional Owners now specifically identified as a stakeholder in this section.	Section 8.3.2
132	Section 8.3.2.3 Closure criteria Water and sediment	*Water quality off the RPA meets the national drinking water health guidelines (at times when they would be met in non-mine effected local creeks)*	Clarify what is meant in the statement “(at times when they would be met in non-mine effected local creeks)”.	Clarified.	Section 8.3.2, Table 8-5.
133	Section 9.4.1 Closure activities Contaminated sites	Insufficient information is provided on the potential risks associated with disposal of contaminated site infrastructure and other materials in Pit 3.	Assess the potential risks associated with disposal of contaminated site infrastructure and other materials in Pit 3, including the effect(s) this may have: • as potential future contaminant sources on tailings consolidation	Pit 3 application being revised. Pit 3 risks included in risk register.	Chapter 7, Appendix 7.1

A.2 SSB feedback on 2020 MCP

Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
134	Section 2.2.9.4 Overview of operations Water management Brine Squeezer	*The Brine Squeezer has been approved to treat both pond and process water.* Regulatory approval has been given to conduct process water treatment trials but release of the resulting permeate will require a further approval, demonstrating that the permeate is of suitable quality for release.	Ensure that the process water treatment status (as a trial) is accurately described and more generally, that all activities described in the RMCP accurately reflect their regulatory approval status.	Updated.	Section 2.1, Table 2.1
135	Section 2.2.9.9 Overview of operations Water management Site water model	*The understanding of the site's water systems, as captured in the model, is routinely tested by an annual validation and calibration process* *The most recent validation and calibration was completed in June 2019 by an external contractor and no major changes that pertain to water management were found.* *Figure 2-12 shows the site water model process water inventory.* There have been several significant changes in the site water model since the last validation in June 2019. For example, there has been an increase in the estimated tailings-entrained process water, resulting in less free process water than expected. It is concerning that an “annual validation” has not been undertaken since June 2019.	Clarify/summarise any significant changes in site water systems and knowledge that have occurred since the previous RMCP.	Updated.	Section 2.1.9
136	Section 10 Closure Monitoring and Maintenance	The surface water and groundwater closure monitoring programs outlined in the RMCP remain very high level, with little change from previous years. However, there is acknowledgement that these monitoring programs will need to be refined with stakeholder agreement in the coming years. The described frequency of the monitoring (especially for groundwater) does not yet align with the modelling outputs to target the key periods of risk.	Update the water monitoring program in the RMCP to reflect modelling outputs and as agreement is reached through stakeholder consultation.	Updates included.	Section 10.2
137	Section 10.4.2.1 Table 10-7 General background groundwater chemistry for the RPA		Update the RMCP for whole site groundwater monitoring once the current groundwater modelling is complete, and then periodically as required.	Updates included and studies ongoing.	Section 10.2
138	Section 5.5.3.1 Supporting studies Health impacts of radiation and contaminants Radiological impact assessment		Provide complete details of the methods, data and assumptions used in the radiological impact assessment.	Updates included, studies ongoing.	Section 5.3.2
139	Section 9 Closure Implementation		Provide an updated estimate of the average uranium content of the surface waste rock layer on the final landform and the data and analyses to support the estimate.	Studies ongoing.	Section 9.3.1 (Table 9-4) and Section 9.3.4
140	Section 10 Closure Monitoring and Maintenance Table 10-13 Trigger, action, response plan	The trigger on all radiation exposure pathways is: “*Exceedance of the baseline radiation dose as defined in the closure criteria*” It appears that this should be an exceedance of the dose constraint as defined in the closure criteria.	Provide clarification of the trigger for radiation pathways.	Update included.	Section 10.6
141	Appendix 10.1 Table 7 Pit 1 Targeted Research Tasks	*To verify that radon-222 exhalation flux densities* The objective for the aspect radon-222 exhalation flux densities is unclear.	Provide clarification of what is being verified.	Updates included.	Section 10.3.1.2

A.2 SSB feedback on 2020 MCP

Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
		It appears that this should be to verify the numerical values of radon-222 exhalation flux densities used in modelling of the radon exposure pathway for the final landform.			
142	Appendix 10.1, Table 7 Pit 1 Targeted Research Tasks	The method for the aspect “Gamma dose rate, waste rock radium-226 activity concentration” does not include any sampling or analysis of waste rock for radium-226.	Update the method to include waste rock sampling and analysis for radium-226.	Updates included.	Section 10.3.1
143	Appendix 5.1 Revegetation knowledge base	A key driver of ERA’s Ranger revegetation strategy is ensuring that plant assemblages can be sustained in waste rock in the face of drought, including a greater frequency of drier spells predicted in future climate projections. There is an emphasis on drought-proofing the revegetated site by introducing what are regarded as dry-tolerant species (so-termed “climate change contingency species).	The Supervising Scientist will consult with ERA on these issues via the stakeholder Ecosystem Restoration Working Group, with a view to reaching a resolution prior to the next RMCP.	2020 MCP Appendix 5.1 removed and information provided within relevant section of 2022 MCP. Updates included.	Section 5.4.1, Section 5.4.4, Section 5.6.3, Section 5.6.4
144	Appendix 5.1 Revegetation knowledge base	There is scant information in the RMCP demonstrating evidence-based knowledge of overstorey species suitability for ecosystem establishment.	The Supervising Scientist will consult with ERA on these issues via the stakeholder Ecosystem Restoration Working Group, with a view to reaching a resolution prior to the next RMCP.	Updates included.	Section 5.4.1
145	Appendix 5.1 Revegetation knowledge base		The Supervising Scientist will provide more detailed feedback to ERA on the information presented in the RMCP on conceptual reference ecosystems, via detailed technical review of the referenced reports and consultation via the stakeholder Ecosystem Restoration Working Group.	Updates included.	Section 5.4.1
146	Appendix 5.1 Revegetation knowledge base	*Once construction and land-forming is completed, and inspection of the planting area will enable the final revegetation plan to identify the most suitable target native ecosystem and propagation and planting execution can proceed* It is assumed that this statement is suggesting that final minor ‘tweaks’ to the planting plan could occur once the final landform is completed, rather than basing the entire revegetation plan on the as-built landform.	Clarify what is meant by the above statement regarding revegetation planning in relation to the completion of the final landform.	Updates for revegetation monitoring on final landform included.	Section 9.3.6 and Section 10.4.1
147	Appendix 5.1 Revegetation knowledge base	Table 2-1 presents the results of a land capability assessment (LCA) of the final landform, in context of the region. The rationale for undertaking a LCA is not clear, as these types of assessments are generally used to assess the potential of land for broad land use (such as agriculture) and determine if there are any development constraints and risks associated with development. However, a LCA could be applicable at Ranger if there was an alternative being considered to the standard for restoration outlined in the ERs.	Clarify the rationale for undertaking a land capability assessment and how this will be used to inform the rehabilitation of Ranger.	No longer included in MCP.	-
148	Section 8 Table 8-3 Closure objectives		Include ER 2.1 as a relevant closure objective for flora and fauna**.**	This is implied throughout ecosystem closure section and specifically included in Table 8-3.	Table 8-3
149	Section 8.3.5.1 Closure criteria Ecosystem	“*Fauna habitat including the provision of hollow bearing tree species and edible fruit species is addressed in the flora closure criteria*”	State explicitly which of the flora closure criteria address fauna habitat requirements or include a specific closure criterion for fauna habitat.	Included in Table 8-9 but also noted as a work in progress (Text box start of Section 8.3.5).	Table 8-9
150	Section 8.3.5.1 Closure criteria Ecosystem	The term ‘framework species’ is used throughout the closure criteria and is not clearly defined.	Clearly define what a framework species is, including quantitative measures (i.e. abundance, response to fire, life-history strategy, life-form etc.).	Definition included.	Section 5.4.3

A.2 SSB feedback on 2020 MCP

Comment #	2020 SSB Assessment report Section	Correspondence from previous MCP assessments if required to provide context to feedback on 2020 MCP	SSB response in 2020 assessment report	ERA response	2022 MCP Section
151	Section 8.3.5.1 Closure criteria Ecosystem	*Assessment of achievement of* [naturalness] *criteria will be based on surveys conducted according to the Northern Territory vegetation survey guidelines (Brocklehurst et al. 2007).* This assessment approach is not recommended as it would likely not assess 'naturalness' on an ecologically appropriate spatial scale.	Engage with stakeholders in selecting the most appropriate survey method in assessing 'naturalness', which should include measures of understorey.	Updates note that 'naturalness' not included and captured in agreed criteria.	Section 8.3.5
152	Section 10.7.1 Ecosystem (revegetation) monitoring	*Ongoing annual monitoring of establishment success will continue until all initial establishment and subsequent infill plantings have developed sufficiently and attrition rates have dropped to a recoverable level.*	Clarify what is meant by 'recoverable level' in relation to attrition rates in revegetation.	Updated to say that attrition rates should stabilise in the first three to five years following planting.	Section 10.4.1
153	Section 10.7.1 Ecosystem (revegetation) monitoring	It appears that monitoring will only take place after infill planting occurs. However, there needs to be a strategy in place to confirm that the site has been prepared to the conditions expected/specified (i.e. ripped, scarified etc.), before revegetation starts. If this assurance check is already specified, then it should be referred to in this section.	Include monitoring of the final landform prior to large-scale revegetation, to confirm that it has been prepared according to design and will therefore be suitable for revegetation.	Included in landform monitoring.	Section 10.1.1
154	Section 10.7 Ecosystem monitoring		Develop a statistically-rigorous monitoring framework for ecosystem restoration that meets the requirements for adaptive management.	Adaptive management included throughout the sections.	Section 10.4 and 10.6
155	Section 10 Closure Monitoring and Maintenance Table 10-13 Trigger, action, response plan	*Trigger = Exceedance of final criteria defined in closure criteria* A developing ecosystem isn't going to statistically look like a mature "final" ecosystem, so it should be made explicit if the comparison between the reference and the restored ecosystems is done at a successional stage along the restoration trajectory, or when at "maturity". Criteria should consider both values that are too high (i.e. require thinning of certain species) and too low (i.e. require infill planting), not just "exceedance".	Clarify what 'exceedance' of final criteria means and when this is expected to apply. The TARP should be clearly linked to the risks identified in the Ecosystem Restoration Trajectory Model.	It is recognised that closure criteria for ecosystem restoration will be achieved over time.	Section 10.6, Table 10-18

A.4 2019 MCP feedback from DITT requiring further comment

Comment #	MCP Overarching Section	2019 MCP reference	MCP theme	Correspondence from previous RMCP assessments	ERA Response	MCP Section 2022
1	General	N/A	'How to read this document' Section	**DITT 2019 RMCP Assessment:** Whilst the WA Closure Guidelines have been used, given the scale and size of the MCP, access into the document by stakeholders could be strengthened by a Section on 'How To Read' the document. Elements of this are throughout the Executive Summary.	Executive Summary has been revised to be more reader-friendly. MCP remains technically-focused and Table of Contents provided.	Executive Summary
2	Scope & Purpose	1-7 (1.4 Review and updates)	Section 11 addresses closure implementation and includes outlined schedules for the rehabilitation activities with the agreed assessment process and the draft content proposed for each additional application required for closure activities. The 2018 MCP was subject to stakeholder review and detailed feedback has been considered for the preparation of this document (Appendix A). The 2019 MCP incorporates substantive changes in content compared to the 2018 version, as outlined in the summary of changes table at the front of this document.	**DITT 2019 RMCP Assessment:** This is a repeat of the kinds of information in the Exec Summary. Suggest transferring from the Exec Summary such references to Sections in the MCP to this Section. Or the creation of a dedicated 'How to Read ... " or "What's in this document" Section.	Executive Summary has been revised to be more reader-friendly. MCP remains technically-focused and Table of Contents provided.	Executive Summary
3	Supporting Studies	95 (General use of brackets)		**DITT 2019 RMCP Assessment:** Throughout the MCP (as opposed to the MMP) there is the propensity (albeit with good intentions) to use too many ( ) (which is a sign that the body text (that which is not in the ( )) is insufficiently explanatory. Rule of thumb is to simplify body text to avoid needing ( ) . Over us of ( ) breaks up reading of the document and thus makes understanding it more difficult.	Noted and hopefully improved.	2022 MCP
4	Best Practicable Technology	7 (9.2 Completed BPT)	Completed closure related BPT assessments	**DITT 2019 RMCP Assessment:** Is there a valid reason to have 24 pages of completed closure-related BPT assessments this Section in the MCP? It discusses how ERA applied BPT to various activities and technologies which are now in the MCP. Important is to know that ERA applied BPT to all technologies and techniques in the MCP. And will do for future ones. The MCP should focus on closure planning and activities. Information such as Section 7: supporting studies, and this Section from 9.2 could be appended. It would reduce the size of the actual MCP, yet keep information available for stakeholders.	Completed BPTs summarised and MCP and detail moved to Appendix 6.1	Section 6 and Appendix 6.1
5	Risk Assessment	6 (10.4.4)	The hazards were analysed to identify any significant risk to human health, safety or the natural environment with all current and proposed mitigation measures in place.	**DITT 2019 RMCP Assessment:** 'hazards analysed with mitigation measures in place' A text box informing the reader about why analysing hazards with mitigation measures in place, vs not in place and the difference would be handy.	This section was re-worded for the 2022 MCP and the method explained.	Section 7.3

A.4 2019 MCP feedback from DITT requiring further comment

Comment #	MCP Overarching Section	2019 MCP reference	MCP theme	Correspondence from previous RMCP assessments	ERA Response	MCP Section 2022
6	Implementation	14 (11.2.2 Schedule)	Pit 1 backfill, final landform contouring and ripping is schedule to be completed by mid-2020.	**DITT 2019 RMCP Assessment:** For when information describing schedule like this is presented in text, perhaps place the relevant part of App 11.1 as a visual guide. Also perhaps place a small schematic map of the direct impacted area with the area under discussion highlighted to assist the reader in understanding where they are. Perhaps based on Fig 11.66.	Noted. High-level sequence provided in Executive Summary. Will be engaging with stakeholders on suggested improvements to readability of MCP.	Executive Summary
7	Implementation	16 (11.3 Pit 3)	Closure activities, bullet list	**DITT 2019 RMCP Assessment:** Perhaps this could be shifted to Chap 2_project overview. It's good background info but it's historic. Or as an appendix to this chapter. This Chap is or should be forward looking.	Noted. Section updated. Will be engaging with stakeholders on suggested improvements to readability of MCP.	Section 2
8	Implementation	22 (aa)		**DITT 2019 RMCP Assessment:** Whilst the CSIRO diffuser design is interesting, it is not sure whether this information is needed here. There's a Chapter on BPT where it could be discussed.	Noted. Section updated. Will be engaging with stakeholders on suggested improvements to readability of MCP.	Section 6
9	Implementation	25 (aa)		**DITT 2019 RMCP Assessment:** Useful information that along with a similar description of sub-aerial deposition should be much earlier in the Section. It is how the tailings are to be deposited.	Noted. Section updated. Will be engaging with stakeholders on suggested improvements to readability of MCP.	Section 6 and Section 9
10	Implementation	59 (aa)	The demolition contractor The bulk material movement contractor	**DITT 2019 RMCP Assessment:** This is the first time such contractors are mentioned. Please provide a short description of the competences require in the various contractors who will support ERA during closure including what phase and works each will undertake. This could be in a Section at the beginning of the Implementation Chapter (11.0) describing the EPC/EPCM resources (& perhaps too the financial ones) who shall undertake the works.	Noted. Will be engaging with stakeholders on suggested improvements to readability of MCP.	-
11	Implementation	82 (Table 11.10)	Demolition processes	**DITT 2019 RMCP Assessment:** Table should be at front of Section.	Noted. Section updated. Will be engaging with stakeholders on suggested improvements to readability of MCP.	Section 9.2.5.3
12	Implementation	87 (aa)	Key assumptions of Phase I (&2)	**DITT 2019 RMCP Assessment:** Key data, information, lists, etc, should be presented at the start of the relevant Section.	Noted. Section updated. Will be engaging with stakeholders on suggested improvements to readability of MCP.	Section 9.2.5

A.4 2019 MCP feedback from DITT requiring further comment

Comment #	MCP Overarching Section	2019 MCP reference	MCP theme	Correspondence from previous RMCP assessments	ERA Response	MCP Section 2022
13	Implementation	89 (11.7.1 Ranger deeps closure activities)	First paragraph starting 'The Ranger Deeps … ".	**DITT 2019 RMCP Assessment:** Tabulate. Not particularly relevant for the closure plans and activities.	Paragraph has been tabulated.	
14	Implementation	90 (aa)	Paragraph starting … "ERA has now commenced … "	**DITT 2019 RMCP Assessment:** This paragraph should start the Section. Heavy use of parenthesis breaks up text and makes understanding what the author wants the reader to know more difficult.	Noted. Will be engaging with stakeholders on suggested improvements to readability of MCP.	-
15	Implementation	94 (Figure 11-55)	Perspective of figure	**DITT 2019 RMCP Assessment:** Without the surface included for reference, figure is not informative. Suggest also including a photo with final cutting gradient superimposed.	Noted. Will be engaging with stakeholders on suggested improvements to readability of MCP.	-
16	Implementation	98 (11.7.1.6 Hydro conditions)	The results also suggest that the long-term impact of depressurisation from excavation and dewatering of the exploration decline and shaft on the local groundwater system and Magela Creek will be negligible.	**DITT 2019 RMCP Assessment:** This and other assessments of impacts could be in a dedicated Section.	Noted. Will be engaging with stakeholders on suggested improvements to readability of MCP.	-
17	Implementation	106 (Table 11-18)	Ore grades and material type	**DITT 2019 RMCP Assessment:** This information would be good to have when first mentioned in the text and/or in a Section dedicated to ore-grades and material types to which the reader is referred.	Noted. Will be engaging with stakeholders on suggested improvements to readability of MCP.	-
18	Implementation	121 (Figure 11-67 & 11-21)	Correlation between the figure and table	**DITT 2019 RMCP Assessment:** Is it possible to correlate the figure and the table? They are complementary.	As part of an update to the contaminated sites section, the figure and table have been removed.	-
19	Implementation	140 (Figure 11-76)	Flow direction	**DITT 2019 RMCP Assessment:** Flow direction indicator would be handy	The upstream side of the sediment control structure is marked on the figure.	Figure 9-119

A.5 DITT feedback on 2020 MCP

Comment #	MCP Overarching Section	MCP reference	MCP theme	DITT Comment/Question/Recommendation	ERA Response	MCP Section 2022
1	Closure Obligations and Commitments	3.1.5		At time of writing ERA does not have the right to access the RPA after Jan 2026.How will access post 2026 be assured? How will this monitoring program be developed in consultation and engagement with end land users. Consequently, who will be conducting the monitoring for the estimated 25 years?	Updates included.	Section 3.1.4
2	Closure Obligations and Commitments	3.1.5.1	ERA supports a minor amendment of the Atomic Energy Act, which would enable ERA to apply for a further Section 41 Authority.	Further the comment above (p3-12 s3.1.5), it would be informative for ERA to provide a more detailed discussion on its efforts to secure an amendment to the AEA to allow it to conduct the monitoring it identifies will take 25 years. This discussion should include what is the 'minor amendment' ERA supports. The discussion should also describe what happens if an amendment is not delivered by 2026.	Updates included.	Section 3.1.4
3	Closure Obligations and Commitments	3.4 & Table 3.2		The list of applications requiring Ministerial/MTC approval was agreed between the Cth & NT ministers in May 2018. In addition to those in Table 3.2, the deconstruction of the Processing Plant was also agreed. Please explain why the Processing Plant is not included in the table and other sections of the MCP where future applications are discussed. As Pit 3 Closure does not include the capping the Pit, please describe in which application the capping will be described and approvals sought for. Additionally, what other applications for minor works not requiring Ministerial approval that ERA anticipates may be submitted to the MTC?	Standalone applications to the Minister are provided in Section 1.7 and other approvals planned for 2022 are provided in Section 3.4 (not all future approvals are included).	Section 1.7 and Section 3.4
4	Risk Assessment and Management	7.3.5		The list does not include a dedicated risk related to legislation, in particular to amendments to the AEA. Until the AEA is amended, the risk of ERA not being permitted to conduct long term monitoring after Jan 2026 remains and should be assessed. This includes efforts to secure amendments to the AEA to mitigate the risk.	Risk included for extension beyond 2026.	Section 7.4.2 and Appendix 7.1
5	Risk Assessment and Management	Table 7.4		Not clear if this risk includes not being able to comply with statutory deadlines such as Jan 2026. Please confirm that this risk also includes not being able to comply with statutory deadlines. If not, where is the consequence of such risk defined?	Risk included for extension beyond 2026.	Section 7.4.2 and Appendix 7.1
6	Risk Assessment and Management	7.4.2 Class III risks	- site condition at 8 Jan 2026 does not meet Stakeholder expectations	Where are 'stakeholder expectations' defined & discussed? Unless defined the 'risk' of not meeting stakeholder expectations will or can be very high. And dynamic. Stakeholder expectations are unlikely to be static. Where is how ERA is mitigating this risk described?	As above. Stakeholder expectations more generally are largely tied to agreed closure criteria.	Section 8
7	Risk Assessment and Management	Appendix 7.1 Ranger Closure Risk Assessment Risk ID: 504047		The controls cannot mitigate the risk. 'Engagement', 'public updates', an SIA cannot themselves mitigate 'businesses become unviable'. How 'local employment programs' can 'build a future employable workforce' is unclear. What future work will they perform? If socio-economic impacts of closure and their mitigation are to be a part of the MCP, it will require substantially more work and discussion than is presented in the MCP. If such work is coordinated by parallel initiatives under, perhaps, the Jabiru Steering Committee, the MCP should provide	Further work on SIA planned to occur in 2023.	-

A.5 DITT feedback on 2020 MCP

Comment #	MCP Overarching Section	MCP reference	MCP theme	DITT Comment/Question/Recommendation	ERA Response	MCP Section 2022
				links. If not, then the socio-economic aspects require substantial expansion in the MCP.		
8	Risk Assessment and Management	Appendix 7.1 Ranger Closure Risk Assessment Risk ID: 694650	694650 Contaminants in bush tucker. Consequences: Non-compliance with ER 3.1. Control: Bush food consumption restrictions to particular areas of the RPA may apply post closure. [694655].	This suggests ERA's closure strategy is not suitable for final post-closure land use. Related to comment above regarding 'stakeholder expectations'. Should be Class III risk, as it risks the entire point of the closure process. The controls do not appear to actually mitigate the risk: bioaccumulation of contaminants. Which requires an engineering solution to ensure contaminant mobilisation is reduced to mitigate risk. Suggest ERA provide some context on the probability of this risk being realised. Unless such probability is very low, successfully achieving the objectives of the ERs is going to be questioned, indicating alternative closure strategies will be required.	Elevated levels of contaminants (metals) in bush tucker identified as a Class III risk.	Section 7.4.2
9	Risk Assessment and Management	Appendix 7.1 Ranger Closure Risk Assessment Risk ID: 504069	504069 No mechanism is currently available to allow access to RPA from 9th January 2026. Controls: Acknowledgement by stakeholders that certain monitoring and maintenance activities are required for a number of years post January 2026. [504071]. Evaluation Rationale: Long lead time until 2026 and good working relationship therefore unlikely the ability to access will not be available.	This should be a Class IV risk. A large number of closure activities occur just prior to Jan 2026. The control does not mitigate the risk. Achieving compliance with the ERs requires timeframes extending beyond the completion of such activities and the current mandated deadline. Whilst ERA state that there is a 'long lead time' to 2026, until a mechanism is in place to permit access after 2026 the risk of not having access needs to be appropriately assigned.	Risk included for extension beyond 2026 (Class III).	Section 7.4.2 and Appendix 7.1
10	Risk Assessment and Management	Appendix 7.1 Ranger Closure Risk Assessment Risk ID: 500614		Lacking in the 'controls' is agreement with Stakeholders, specifically TOs as to what to expect. Engagement is not the same as agreement. Suggest ERA provide information on its intentions and efforts to achieve agreement with Traditional Owners on their expectations of 'site condition' at various stages of rehabilitation.	Updates included.	Section 8.3.6 and Section 10.5
11	Post Closure Land use, Closure Objectives and Closure Criteria	8.1 & 8.1.1		As per earlier comments, the degree by which post-closure rehabilitation and land use is contingent on Traditional Owner acceptance suggests (strongly) that an agreement with Traditional Owners on what would 'satisfy' them would be constructive.	Updates included.	Section 8.3.6 and Section 10.5
12	Post Closure Land use, Closure Objectives and Closure Criteria	8.3.5.1	8.3.5.1 Justification for outcome, parameter & criteria. The target revegetated ecosystem/s in the case of Ranger Mine will be a conceptual ecological model synthesised from numerous appropriate reference sites, revegetation trials, cultural values and historical and predictive records.	Please present the cultural values that are agreed with Traditional Owners and how are they integrated into the conceptual ecological model. If this has already been done, please provide the link to where it is in the MCP.	Updates included.	Section 8.3.6 and Section 10.5
13	Post Closure Land use, Closure Objectives and Closure Criteria	8.3.5.1		ERA to present an assessment of the possible changes on fire regimes due to the effects of accelerating climate change and how this may impact successful establishment of an ecosystem.	Updates included.	Section 5.4.4

A.5 DITT feedback on 2020 MCP

Comment #	MCP Overarching Section	MCP reference	MCP theme	DITT Comment/Question/Recommendation	ERA Response	MCP Section 2022
14	Post Closure Land use, Closure Objectives and Closure Criteria	8.3.5.1	Resilience. A resilient ecosystem can be simply thought of as one which can experience the range of reasonably anticipated, 'natural' disturbance events and maintain (or return to) its pre-disturbance condition (given natural degrees of inherent variation).	ERA to present how potential changes to resilience has been assessed in the context of accelerating climate change changing fire regimes.	Updates included.	Section 5.4.4
15	Post Closure Land use, Closure Objectives and Closure Criteria	Table 8-13 cultural closure criteria ER 1.1 (a) & 2.1	Parameter: General aesthetics - does it look 'natural'. Natural aesthetic verified by Bininj monitoring – confirm most areas look natural, limit of a few not satisfactory.	With respect to this criteria/indicator and others that are 'predicted to occur far beyond the 25 year timeframe for achievement of closure criteria' ERA to explain its mitigation strategy if it doesn't look 'natural'.	'Naturalness' no longer included as a criteria but captured in agreed criteria.	Section 8.3.5
16	Post Closure Land use, Closure Objectives and Closure Criteria	8.3.6.1	Justification for outcome, parameter and criteria. Significant emphasis will be placed on ensuring that culturally important flora and fauna are present on the final landform.	'Emphasis' is not quantifiable. ERA need to present how it shall ensure culturally important flora and fauna are present on the final landform.	Noted. Updates included.	Section 8.3.6
17	Post Closure Land use, Closure Objectives and Closure Criteria	Table 8-14 & supporting text	Proposed indicators … are largely based on visual and aesthetic factors. The design of the program will involve long-term periodic assessment of attitudes and opinions of Traditional Owners and their kin in relation to the dynamics of rehabilitation over time. These assessments will be undertaken annually and will determine whether or not the Traditional Owners feel that rehabilitation in the RPA is progressing towards a desirable trajectory.	It would be illustrative for ERA to present indicators reflecting the attitudes of Traditional Owners. When does ERA intend to start the annual assessments in collaboration with Traditional Owners to ensure rehabilitation on the RPA is progressing towards a desirable trajectory in relation to cultural indicators?	Updates included and engagement ongoing.	Section 8.3.6
18	Implementation	9.3.1.3	Direct Seeding Trials However, newly discovered 'finer' waste rock material (such as that present at Pit 1) may provide an opportunity for improved establishment of some species from seed.	'newly discovered 'finer' waste rock material (such as that present at Pit 1)'. Is there a comparison between the waste rock used for the TLF, Stage 13 and Pit 1? What effects the different types of waste rock may or may not have had on revegetation success? If there is a difference in success rates attributable to differences in waste rock, and how that is likely to influence planning for the final landform?	Updates included.	Section 5.4.3
19	Implementation	9.4.1.1	Prior to demolition of some components of the processing plant, ERA will obtain a 'Permit to Decommission Facility' from the Australian Safeguards and Non-Proliferation Office (ASNO).	ERA has received such a permit, which can be referred to in the next MCP.	Included.	Section 9.2.5.1
20	Implementation	9.4.1.1	Decommissioning phase, bullet list: • draining of oil from transformers, gearboxes, hydraulic systems and lubrication systems and steam cleaning of large oil reservoirs • removal of all hazardous materials as per ERA standard	A short discussion on the fate of such oil and hazardous material would be useful. If this is elsewhere in the MCP, a link to where it is discussed would suffice.	Updates included.	Section 9.2.5 and Section 9.3.2

A.5 DITT feedback on 2020 MCP

Comment #	MCP Overarching Section	MCP reference	MCP theme	DITT Comment/Question/Recommendation	ERA Response	MCP Section 2022
21	Implementation	9.3.5.3	Removal and final disposal of the materials and hazardous waste.	How is hazardous waste to be disposed? If elsewhere in the MCP, please provide a link.	Updates included.	Section 9.2.5 and Section 9.3.2
22	Implementation	Table 9.32 & in text	Schedule for closure activities for the stockpile area.	The schedule of these activities: landform, erosion control and revegetation for 2025 is very close to the when ERA must complete rehabilitation. Somewhere in the MCP a discussion on efforts to secure permission to continue beyond Jan 2026 would increase confidence that any delays will not compromise the ERs and that ERA can legitimately perform long term planning.	Updates included.	Section 3.1.4 and Executive Summary
23	Implementation	Table 9.32 & in text	Revegetation. Revegetation of other stockpile areas will be undertaken following the Ranger Mine revegetation strategy (Appendix 5.1).	Admittedly a minor point, but Appendix 5.1 is named Revegetation Knowledge Base, not Revegetation Strategy.	Amended to Revegetation Strategy.	Appendix 5.1
24	Implementation	Table 9.32 & in text	A detailed revegetation plan for the stockpiles will be provided in future updates of this MCP.	Revegetation of stockpiles to be described in future MCP. There are only 4 more iterations of the MCP before rehabilitation must be complete. Which MCP shall describe all revegetation plans? Please provide sufficient detail and surety to understand how 'complete rehabilitation' will be complete by Jan 2026.	Updates included and a standalone Final Landform application is planned for submission Q1 2024	Section 3.1.4 and Executive Summary
25	Implementation	9.4.2	9.4.2 waste and hazardous material management. Reference to other legislative drivers for aspects of closure, such as NT asbestos disposal and general landfill requirements.	Please provide some context on how ERA intend to coordinate between different legislative drivers concerning specific aspects of closure. This may be implicit in other sections (S03 f.eg), but it would be reassuring to know that aspects driven by other legislation (asbestos, landfill, etc) dovetail into actions the cumulative effects of which is achievement of the ERs.	Updates included and a standalone Final Landform application is planned for submission Q1 2024	Chapter 3, Section 9.3.2
26	Implementation	9.4.3.1	Brine Concentrator The BC as described in 9.4.3.1 is the principle process water treatment strategy.	What happens if it is offline for an extended period? Is there a contingency should something serious happen to the functioning of the brine concentrator?	Updates, including contingencies, included.	Section 9.3.3
27	Implementation	9.4.3.2	HDS Plant. Sludge is pumped for co-disposal with mill and dredge tailings in Pit 3 until the cessation of mill operations. After this, the sludge must be disposed of in an alternative manner. The options for disposal after cessation of mill operations are the subject of a BPT assessment and will be subject to a separate application to the MTC.	Cessation of mill operations occurred in Jan 2021. Between then and anticipated approval in May 21 (MTC Oct 20), what happens to the sludge?	Sludge, along with any remnant tailings from the TSF and mill, has continued to be directed to the Pit 3 tailings store through the mill tailings lines.	Section 9.3.3
28	Implementation	9.4.3.4	Pond water treatment. Currently, reject is discharged to the TSF, though it may be recycled back into the pond water inventory if pond water quality permits. If available reject from WTP1 and WTP2 may be diverted to the Brine Squeezer.	It seems that after January 2021 when dredging ceases the reject cannot be discharged to the TSF. If so, what shall happen to the reject after dredging ceases?	Updates included.	Section 9.3.3

A.5 DITT feedback on 2020 MCP

Comment #	MCP Overarching Section	MCP reference	MCP theme	DITT Comment/Question/Recommendation	ERA Response	MCP Section 2022
			Reject from WTP3 will continue to be handled as before.			
29	Implementation	Fig 9-80 & Fig 9-81		The creation of the final landform is scheduled for around May 2025. Rehabilitation is required to be completed by January 2026. Approximately 6 months. Can ERA please include a discussion on how it shall comply with S41 clause 5.2 given that clause 6 requires ERA to 'complete the rehabilitation' of the RPA 'in accordance with Appendix A (ERs)' which, according to clause 5.2, means by 8 January 2026.	Updates included.	Section 3.1.4 and Executive Summary
30	Implementation	9.4.5.6	9.4.5.6 Schedule. The remainder of the final landform construction will not commence until March 2023.	Demonstrate how ERA shall comply with clause 5.2 of S41 given that clause 6 requires ERA to 'complete the rehabilitation' of the RPA 'in accordance with Appendix A (ERs)' by 8 January 2026, given that the final landform construction doesn't start until March 2023.	Updates included.	Section 3.1.4 and Executive Summary
31	Implementation	9.4.5.7	9.4.5.7 Contingency Planning. Following construction of the final landform the post closure monitoring and maintenance phase will commence. Adaptive management processes will be used to manage erosion and ensure long term revegetation success.	The information presented in 9.4.5.7 does not present information on planning for the contingency of issues with the construction of the final landform. Instead, adaptive management processes are the contingency. Can ERA please elaborate more on what contingencies exist for the construction of the final landform?	Updates included.	Section 9.3.5
32	Implementation	9.4.6.2	9.4.6.2 seed collection & propagation. The majority of planting will occur in the 2024-2025 (inclusive) period.	If the majority of planting occurs 2024-25, how can/does ERA intend/expect to comply with S41 Clauses 5.2 & 6? As in, what criteria are ERA proposing to establish S41 clauses 5 & 6 are achieved in such a short time frame?	Updates included.	Section 3.1.4 and Executive Summary
33	Implementation	9.4.6.2	Tubestock propagation. If any particular species is not available exactly on time for propagation … can always be introduced later on during the infill planting program	What is the risk to effective ecosystem establishment if such species are delayed in being introduced into the ecosystem?	Updates included.	Section 9.3.6, Section 7.4.2 and Appendix 7.1
34	Closure Monitoring and Maintenance	10	The closure criteria represent direct, measurable and quantifiable target values or tiered assessment processes, based on industry best practice frameworks to develop suitable monitoring programs.	'Industry best practice' is a nice catch-all but is also not definitive. A footnote elaborating on what ERA sees as 'industry best practice' would help frame the concept for the reader.	Clarification added.	Section 8.3
35	Closure Monitoring and Maintenance	10.4.1.2	ERA is planning to shift to event-based auto-sampling regime for monitoring, with sample collection triggered by changes in continuous EC data. This approach, currently used by the SSB, should be suitable for the monitoring program after closure and will be considered by WASWG.	Does WASWG 'approve' this? Or how will this be formally identified and agreed as suitable? Considering the MCP is a public document care should be exercised regarding such statements. Is, for example, WASWG a statutory body which can approve actions? And, in this case, what means 'will be considered by WASWG'.	Noted. Wording amended.	Section 10.2.1

A.5 DITT feedback on 2020 MCP

Comment #	MCP Overarching Section	MCP reference	MCP theme	DITT Comment/Question/Recommendation	ERA Response	MCP Section 2022
36	Closure Monitoring and Maintenance	10.7	10.7 Ecosystem monitoring. Monitoring provides feedback to identify problems and inform adaptive management or intervention and is also needed to demonstrate acceptable performance against criteria and standards, ultimately leading into stakeholder acceptance of the ecosystem restoration	Stakeholder acceptance likely to occur, if at all, well into the future. It will influence close-out and issuance of a closure certificate. Has there been an agreement on what, provisionally, 'stakeholder acceptance' looks like? Assume this would be closely related to closure and completion criteria. But what is the process by which to agree?	Agree that Stakeholder acceptance largely tied to agreed closure criteria.	Section 8
37	Closure Monitoring and Maintenance	10.7.1	10.7.1 Ecosystem (revegetation) monitoring. Long-term ecosystem monitoring will need to continue on an annual basis, until the developmental trajectory can be seen to be steadying and the risk of deviation (due to mortality, weeds or fire) and any requirement for active management intervention is sufficiently reduced.	This reinforces that 'stakeholder acceptance' is likely to be a long-term consideration. Stakeholder expectations, including regulatory, may change during this period. Has ERA (and project Stakeholders) considered how to manage changing expectations based on lessons learned during the closure period?	Agree. Focus is on reaching agreed closure criteria.	Section 8