Appendix 18
Commitments register

COMMITMENTS

ERA is committed to adopting management controls which will protect the environmental values of the surrounding Kakadu National Park; the health and safety of the public and ERA employees. These management controls are described and discussed in the various chapters of the Draft EIS, in particular, Chapter 6 *Emissions*, Chapter 7 *Human Health and Safety*, Chapter 8 *Water*, Chapter 9 *Flora and Fauna*, Chapter 10 *Cultural and Historic Heritage*, Chapter 11 *Social and Economic Considerations*, Chapter 12 *Transportation*, Chapter 13 *Rehabilitation and Closure*, Chapter 14 *Matters of National Environmental Significance*, Chapter 15 *Environmental Management Framework*, Appendix 17 *Environmental Management Plan*, Appendix 15*, Social Impact Management Plan*.

Each of the Draft EIS chapters includes a description of the residual impact. That is, the level of impact remaining after mitigation measures (commitments), have been applied.

For the purpose of the Draft EIS, commitments are defined as those safeguards that ERA will commit to as a component of designing and implementing the Project.

They include:

- Project design decisions that mitigate a potential impact.
- Outcome based commitments (e.g. ensuring worker radiation doses are below statutory limits).

To assist regulatory agencies and stakeholders, the following table provides a list of the Project's key health and safety, environment, cultural and social commitments.

The commitments provided in the Draft EIS are consistent with, or in addition to, normal ERA business practice. It is implicit that ERA will comply with all necessary legal obligations and internal health, safety, environment and community standards.

No	Commitment	Draft EIS cross reference
POLICIES AND STANDARDS		
1	ERA will comply with all necessary legal obligations and internal health, safety, environment and community standards applicable to managing the potential impacts of the Project.	Chapter 7, section 7.2.3
2	The Project will conduct operations in accordance with existing ERA and Rio Tinto policies and standards for environment, safety and radiation protection. The objectives of these policies and standards are to minimise environmental harm, not compromise future land use, not harm anyone while working for ERA and minimising radiation doses to "As low as reasonably achievable" (ALARA).	Chapter 7, section 7.4.2 Chapter 10
3	To mitigate risks associated with worker safety underground, the Project will comply with and incorporate the Rio Tinto Underground Safety Standard into relevant management plans.	Chapter 7, section 7.4.1
4	ERA will continue to advocate for and collaborate with the Gundjeihmi Aboriginal Corporation regarding implementation of the 2013 suite of mining agreements, Jabiru Town Development Authority, Kakadu West Arnhem Social Trust, Relationship Committee and Gunbang action group.	Appendix 15
OCCUPATIONAL HEALTH AND SAFETY (RADIATION)		
5	A Ventilation Management Plan will be developed and implemented.	Chapter 7, section 7.4.2
6	A sufficient number of suitably qualified ventilation and radiation staff will be employed to manage and monitor the ventilation system and radiation protection program.	Chapter 7, section 7.4.2
7	Heavy mining equipment will be fitted with air conditioned cabins with filters to reduce the concentration of contaminants in the operator’s immediate air supply.	Chapter 7, section 7.4.3
8	A "stope ventilation plan" will be developed and implemented, covering the entire life of each stope (development, operation, closure and filling) and will include: ducting requirements, barricades, area and time restrictions, consideration of adjacent stope impacts, stope specific risk assessment and contingencies.	Chapter 7, section 7.4.3
9	Personal and area monitoring programs will be implemented for radon decay products, gamma radiation and radioactive materials in dust.	Chapter 7, section 7.4.3
10	Access to areas of the underground mine with radon decay product concentrations above the trigger action response plan upper level will be prohibited without the use of a radiation work permit.	Chapter 7, section 7.4.2
11	Underground workers occupying high gamma exposure areas will be monitored using an electronic personal gamma monitor.	Chapter 7, section 7.4.2

No	Commitment	Draft EIS cross reference
12	Sufficient shielding (e.g. shotcrete, clean fill or steel plating) will be applied to underground development in order to reduce the gamma dose rate to below 10 µSv per hour in the centre of the drive. Where this is not possible, additional radiation protection measures will be implemented to keep exposures consistent with the ALARA principle.	Chapter 7, section 7.4.2
13	Stockpiling of ore underground will be minimised to reduce radiation doses.	Chapter 7, section 7.4.2
14	Controlled areas, provision of clean/dirty change room and the adoption of hygiene rules will be implemented to minimise the risk of ingesting radioactive materials.	Chapter 7, section 7.4.2
15	A trigger action response plan will be established for gamma exposures which will include dose constraints for each shift, month, quarter and annual.	Chapter 7, section 7.4.2
16	A trigger action response plan will be established for radon decay products and radioactive dust.	Chapter 7, section 7.3.1
OCCUPATIONAL HEALTH AND SAFETY (GROUND SUPPORT)		
17	The outcome of geotechnical studies undertaken will be incorporated into the design and construction of underground workings (e.g. stope dimensions and access drive locations).	Chapter 7, section 7.3.1 Chapter 7, section 7.3.3.4
18	The paste backfill has been designed so that it will set with sufficient strength to allow mining to be conducted adjacent to, or on top of, the material. Quality control procedures will be implemented to confirm that paste meets these design standards.	Chapter 7, section 7.3.3.2
19	To minimise the potential for mud rush during stope backfilling, paste backfill procedures will include the partial filling of the stope with paste and allowing material to initially set to create a stable barrier (or plug) at the base of the stope. Once this has occurred, the rest of the stope will be filled.	Chapter 7, section 7.3.3.2
OCCUPATIONAL HEALTH AND SAFETY (OTHER)		
20	During construction of the ventilation raises, an exclusion zone defined by a physical barrier will be established at the surface and underground to prevent unauthorised entry by people or fauna.	Chapter 7, section 7.3.3.1
21	Mines rescue personnel will undergo specialist training for underground emergencies, including vehicle fires.	Chapter 7, section 7.3.3.6
22	Underground emergency infrastructure will comprise a means of secondary egress to the surface, refuge chambers and a communication system.	Chapter 3, section 3.5.5.9 Chapter 7, section 7.4.1.2
23	New equipment, plant and fuel storage facilities will be designed with appropriate firefighting and suppression equipment.	Chapter 3, section 3.7.2.1 Chapter 7, section 7.3.3.3

No	Commitment	Draft EIS cross reference
24	The current site traffic management plan for surface activities will be extended to include underground traffic coming to the surface.	Chapter 7, section 7.3.3.5
25	An underground traffic management plan will be developed. Elements will include: speed control, passing bays, driver training and pedestrian protocols.	Chapter 7, section 7.3.3.5
26	Remote mining equipment used underground will comply with AS/NZS 4240.2:2009 *Remote controls for mining equipment – Operation and maintenance for underground metalliferous mining.*	Chapter 7, section 7.3.3.12
27	Ventilation raises and associated infrastructure will have flood mitigation installed that is appropriate for the level of flood risk.	Chapter 7, section 7.3.1 Chapter 7, section 7.3.3.7
28	A trigger action response plan will be established for underground contaminants such as nitrogen dioxide.	Chapter 7, section 7.3.1
29	A trigger action response plan will be established for the management of underground noise levels.	Chapter 7, section 7.3.3.9
PUBLIC SAFETY		
30	Access by the public to any construction and operational areas will be restricted; however, arrangements and procedures will be established to enable access for Traditional Owners.	Chapter 7, section 7.3.3.1
NOISE AND VIBRATION		
31	Taking guidance from the outcomes of the noise impact assessment to comply with noise criteria, noise attenuation will be integrated into the design of the exhaust ventilation fans, refrigeration plants and compressors. Where practicable, for other infrastructure, low noise emitting equipment will be selected.	Chapter 3, section 3.5.2.2 Chapter 7, section 7.3.3.9 Chapter 10, section 10.4.2.1
32	Surface vibration monitoring will be undertaken at culturally significant locations in the first 12 months of mine development to validate predicted vibration identified in the vibration impact assessment.	Chapter 10, section 10.4.2.3
33	A buffer, consistent with geotechnical and hydrogeological assessments, will be retained between stope development for the Project and Pit 3.	Chapter 10, section 10.4.2.3
AIR QUALITY		
34	Underground heavy mining trucks will be equipped with emission control technology.	Chapter 7, section 7.3.3.10
35	The ventilation system will be designed to enhance dispersion characteristics to minimise ground level concentration and deposition in the surrounding environment.	Chapter 6, section 6.4.6

No	Commitment	Draft EIS cross reference
36	The final design and construction of the ventilation system will be based on the maximum full mining fleet at maximum production and informed by heat modelling and radon decay product modelling.	Chapter 7, section 7.3.1
37	Refrigerated air will be added to the intake side of the primary ventilation system when required to maintain safe working air temperatures throughout the year.	Chapter 7, section 7.3.3.11
38	To reduce carbon monoxide and particulate emissions, the Project power generation units will be fitted with a catalytic converter.	Chapter 6, section 6.4.6
39	To enhance dispersion characteristics and limit ground level concentrations, power generators for the Project will have exhaust routed to a common stack.	Chapter 6, section 6.4.6
40	The Project power plant will be integrated with existing power generation to improve energy efficiency and limit greenhouse gas emissions.	Chapter 6, section 6.4.6
41	Nitrogen dioxide monitoring will be undertaken at the nearest residential receptor (Ranger mine village contractor camp) until such time as the air modelling outcomes are validated.	Chapter 6, section 6.4.6 Chapter 15
42	Continuous ventilation monitoring stations will be installed in underground work areas to confirm that air flow and quality is acceptable.	Chapter 7, section 7.3.1
43	Throughout all Project phases, dust suppression techniques will be applied including regular watering of roads and watering of broken rock piles to keep dust concentrations as low as practicable.	Chapter 7, section 7.4.3
44	A preventative maintenance program will be established for diesel particulate control systems on vehicles.	Chapter 7, section 7.3.3.10
FLORA AND FAUNA		
45	Open holes that occur during the construction of ventilation raises, will be physically cordoned off and temporarily capped to prevent fauna access/injury.	Chapter 9, section 9.5.2
46	Bulk air coolers (installed on ventilation intakes) will incorporate engineering controls such as screens and low air velocities to protect inadvertent entry by fauna.	Chapter 9, section 9.5.2
47	To limit the need for vegetation clearance and the potential for weeds, where practicable, Project infrastructure will be sited on the existing operational mine footprint and otherwise in an already disturbed area.	Chapter 9, section 9.5.1
48	Progressive rehabilitation will be prioritised to those areas in the immediate vicinity of new infrastructure to minimise dust and weeds.	Chapter 9, section 9.5.1

No	Commitment	Draft EIS cross reference
49	Directional lighting will be installed, where required, to minimise impacts to fauna.	Chapter 9, section 9.5.1
CLOSURE		
50	During rehabilitation and closure, all open surface holes will be made safe to people and wildlife through grouting or capping.	Chapter 13, section 13.3.5
51	At completion of operations the ventilation shafts and decline will be backfilled with appropriately engineered materials.	Chapter 8, section 8.5.5 Chapter 13, section 13.3.2
52	The Ranger 3 Deeps closure strategy will be integrated into the overall Ranger closure plan.	Chapter 13, section 13.3
WATER MANAGEMENT		
53	Underground water will be managed in accordance with the existing water management system, including designation and treatment of various water classes dependent on quality.	Chapter 3, section 3.7
54	To reduce the risk of *Legionella*, all water for underground services will be treated.	Chapter 3, section 3.7.2.2 Chapter 8, section 8.5.2.4
55	Equipment containing hydrocarbons will be designed and maintained to minimise the likelihood of a hydrocarbon spill.	Chapter 8, section 8.5.2.5
56	Consistent with existing practice, new water management ponds will be acid dosed to maintain pH levels below prescribed limits.	Chapter 8, section 8.5.2.5
57	Underground material will be classified in two stages via: (1) grade control as part of the mine design and (2) a surface discriminator that measures gamma emissions, avoiding mis-assignment of ore as waste.	Chapter 8, section 8.5.2.5
CULTURAL HERITAGE		
58	In addition to engineering requirements, where practicable, potential impacts associated with visual amenity will be considered in the detailed design phase.	Chapter 10, section 10.4.2.5
59	Dust deposition monitoring will be undertaken at R-34 cultural heritage site to validate the predictions of air quality modelling which indicate very low levels of incremental impact. Dust suppression will be undertaken on all earthen areas	Chapter 10, section 10.4.2.2 Chapter 15 Appendix 4
60	Implementation of joint cultural heritage projects on the RPA in collaboration with the Gundjeihmi Aboriginal Corporation and the Northern Land Council. ERA will collaborate with relevant agencies and organisations to improve communications aimed at addressing concerns about environmental performance and possible or perceived contamination of water and food resources over the life of the Project.	Chapter 10, section 10.4.5 Appendix 14, section 11 Appendix 15 Appendix 14, chapter 7 Appendix 15

No	Commitment	Draft EIS cross reference
61	ERA has an extensive cultural heritage management system. In parallel with and incorporating the Project, this system will be formalised into a cultural heritage management plan for the RPA.	Chapter 10, section 10.5 Appendix 15
62	Inclusive of the Project, ERA will continue to incorporate local and traditional indigenous knowledge into the closure planning process	Chapter 10, section 10.4.5 Appendix 15
63	Where a sensitive anthropological site is encountered, during the mining process, ERA will discuss and negotiate appropriate action with the Traditional Owners and relevant agencies.	Chapter 10, section 10.4
COMMUNITY AND STAKEHOLDERS		
64	ERA will continue to engage with all key stakeholders to develop a plan and a process which considers the social and community implications associated with the closure of Ranger including impacts and opportunities of the Project.	Appendix 14, chapter 5 Appendix 15
65	ERA will collaborate with the Gundjeihmi Aboriginal Corporation and health authorities to develop a health partnership.	Appendix 14, chapter 7 Appendix 15
66	ERA will maintain its existing focus on regional employment including its pre-employment, indigenous traineeships and apprenticeship programs, diversity, employment and recruitment selection policies. ERA will expand its focus to build capacity and employment pathways for the regional population through support for local businesses, and improved involvement with the Regional Jobs and Communities provider.	Appendix 14, chapter 9 Appendix 15
67	ERA will continue to invest in the local community such as through support for the West Arnhem Social Trust, Education Partnership, Community Partnership Fund, and local services and infrastructure.	Appendix 14, chapter 5, 6, 8 Appendix 15
68	ERA will include underground mining related aspects in its traineeships programs.	Appendix 14, chapter 9 Appendix 15
69	ERA commits to maintaining a local presence in Jabiru, a local employment focus and use of local business for services and goods whilst the Project is in operation.	Appendix 14, chapter 9 Appendix 15
70	ERA will continue with regional investment and community participation such as support for partnerships, the Kakadu West Arnhem Trust, implementation of the 2013 suite of mining agreements and its community relations strategy.	Appendix 14, chapter 10 Appendix 15