

Appendix C – Cross reference to the NT EPA Terms of Reference

Cross reference to the Terms of Reference for the preparation of an EIS

Terms of Reference	Cross reference
2. Regulatory Context	
2.1 Approvals and Conditions	Sections 3.1, 3.2, 3.3, 3.4
The EIS should provide information on requirements for approval or conditions that apply, or that the Proponent reasonably believes are likely to apply to the Project, including but not limited to:	
<ul style="list-style-type: none"> • approvals required by State, Territory or Commonwealth agencies or authorities 	Sections 3.1, 3.2, 3.3, 3.4
<ul style="list-style-type: none"> • summary of current agreements between the Proponent and the Northern Territory Government, and/or the Australian Government, and/or other stakeholders, including Traditional Owners and/or land managers 	Sections 2.4.1, 12.4.1, 12.4.2
<ul style="list-style-type: none"> • any additional approvals required 	Sections 3.1, 3.2
<ul style="list-style-type: none"> • description of the regulatory monitoring, enforcement and review procedures that apply, or are proposed to apply, to the Project. 	Sections 3.1, 3.2, 3.3, 3.4 Appendix E
When identifying the individual approvals, certificates and permits etc. the Proponent should include details of the approvals, certificates, permits etc., including any conditions imposed. Consideration should be given, but not limited to, the following legislation:	
<ul style="list-style-type: none"> • Environment Protection and Biodiversity Conservation Act 1999 	Section 3.1.3
<ul style="list-style-type: none"> • Heritage Act 	Section 3.2.9
<ul style="list-style-type: none"> • Mining Management Act and Regulations 	Section 3.2.13
<ul style="list-style-type: none"> • Mineral Titles Act and Regulations 	Section 3.2.12
<ul style="list-style-type: none"> • Northern Territory Aboriginal Sacred Sites Act 	Section 3.2.14

<ul style="list-style-type: none"> Public and Environmental Health Act & Regulations. 	Section 3.2.16
<ul style="list-style-type: none"> Territory Parks and Wildlife Conservation Act 	Section 3.2.18
<ul style="list-style-type: none"> Waste Management and Pollution Control Act 	Section 3.2.21
<ul style="list-style-type: none"> Water Act 	Section 3.2.22
2.2 Environmental Approvals The EIS should include details of the environmental record of the Proponent, including:	Section 3.5
<ul style="list-style-type: none"> details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the Proponent, and details of the Proponent’s environmental management systems and processes subsequently upgraded as a result of those proceedings 	Section 3.5.1
<ul style="list-style-type: none"> obligations, non-compliances or incidents under the Mining Management Act, which includes the history in relation to environmental matters, compliance or non-compliance with the requirements of the Mining Management Plan and other relevant management plan 	Section 3.5.2
<ul style="list-style-type: none"> any international or national accreditations (e.g. ISO 14001 etc.), environmental awards or other recognition for environmental performance. 	Section 3.5.3
2.3 Ecologically Sustainable Development When considering the matters to be addressed in the EIS, the NT EPA are required under the Northern Territory Environment Protection Authority Act 2012 to: <ol style="list-style-type: none"> Promote ecologically sustainable development (ESD) Protect the environment, having regard to the need to enable ESD. 	Section 3.6
3 Project Description	
3.1 Project Details	

<p>3.1.1 Proponent Details</p> <p>Provide details of the Proponent, including: full name, contact details and postal address, details of the Proponent's company portfolio (e.g. a single entity or in joint venture, ownership being domestic or international, major commodities, position in the market and countries where key business dealings are undertaken).</p>	Section 1.2
<p>3.1.2 Development Context</p> <p>Provide details of the development context of the Project, including:</p>	Section 1.3
<ul style="list-style-type: none"> • title of the current Project 	Section 1.1
<ul style="list-style-type: none"> • current status of the Project 	Chapter 1
<ul style="list-style-type: none"> • background to the development of the Project, including discussion of previous environmental impact assessment and overview of historic mining, exploration and rehabilitation activities 	Section 2.1
<ul style="list-style-type: none"> • exploration activities, areas that may be mined in future, or any other potential future activities being planned 	Section 2.1
<ul style="list-style-type: none"> • explanation of how the Project relates to any other proposals or actions, of which the Proponent should reasonably be aware, that have been or are being taken, or that have been approved in the region 	Section 1.3.1
<p>3.1.3 Project Components</p> <p>Effective scoping of the Project will assist with the preparation of the EIS as well as clearly defining the footprint and operational details of the proposed action. The EIS should identify all the processes and activities intended for the Project and associated ancillary activities, for each Project stage. Similar examination should occur for each proposed Project option.</p>	Section 2.2
<p>3.1.4 Location and Infrastructure</p> <p>Describe the location of the Project in the region and its proximity to:</p>	
<ul style="list-style-type: none"> • major roads, railways, airstrips, 	Section 1.4.3
<ul style="list-style-type: none"> • rivers and landmark features 	Section 1.4.4
<ul style="list-style-type: none"> • towns and regional community centres 	Section 1.4.2

<ul style="list-style-type: none"> underlying and/ surrounding tenure and land use (e.g. pastoral, national park, town boundary etc.) 	Section 1.4.1
<ul style="list-style-type: none"> sites of cultural or social significance 	Section 1.4.5
<ul style="list-style-type: none"> significant natural or ecological features, such as areas on the National Reserve System, conservation reserves, major watercourses or significant groundwater resources. 	Section 1.4.5
Delineate the Project footprint using detailed maps and diagrams to show:	Chapter 2, figure 2-2 and 2-3
<ul style="list-style-type: none"> Project disturbance footprint development through Project stages 	Section 2.2
<ul style="list-style-type: none"> location of the mineral resources to be mined/developed, ore reserves and areas to be explored 	Section 2.1
<ul style="list-style-type: none"> variation across tenements of target-ore grades, non-target metal contaminant levels, depth to the resource, resource thickness / strip-ratio and topsoil depth 	Section 2.1
<ul style="list-style-type: none"> precise locations (including maps) of existing and new road infrastructure 	Section 2.2
<ul style="list-style-type: none"> locations of proposed infrastructure and other mine components, such as water resources 	Section 2.2
<ul style="list-style-type: none"> layout of the construction camp and accommodation village with respect to the work sites and mining and processing operations 	Section 2.2
<ul style="list-style-type: none"> location / extent of any other works to be undertaken, such as rehabilitation / closure activities. 	Section 2.2
Describe in detail Project infrastructure requirements through Project stages, including:	Section 2.2
<ul style="list-style-type: none"> proposed new infrastructure 	Section 2.3
<ul style="list-style-type: none"> existing infrastructure to be utilised, and/or upgraded for use 	N/A - no existing infrastructure
<ul style="list-style-type: none"> ancillary infrastructure requirements, such as for telecommunications, transport, accommodation, airstrip, waste management and water supplies. 	Chapter 2
For the linear infrastructure corridor(s), describe:	Section 2.8
<ul style="list-style-type: none"> corridor elements, such as haul road, pipeline(s) 	Section 2.8

<ul style="list-style-type: none"> • periodic elements, such as pumping stations, lay-down / turning areas, gravel pits and construction bores 	Section 2.8
<ul style="list-style-type: none"> • maximum width of corridors required for construction and operation 	Section 2.8.1
<ul style="list-style-type: none"> • plant and machinery required 	Section 2.8.2
<ul style="list-style-type: none"> • timeframes for corridor / haul road construction and upgrade, if relevant 	Section 2.3
<ul style="list-style-type: none"> • vegetation clearing methods and disposal of plant matter following clearing 	Section 2.8.2
<ul style="list-style-type: none"> • results of surface water investigations in and around corridor(s) 	Chapter 7 and Appendix G
<ul style="list-style-type: none"> • corridor inter-sections with potentially significant habitats, geology, watercourses, roads, linear infrastructure, places of cultural / heritage significance, etc. 	Surface water - Chapter 7 and Appendix G , Flora and fauna - Chapter 9 and Appendix J Heritage - Chapter 14 and Appendix N
<ul style="list-style-type: none"> • methods for crossing sensitive areas, such as waterways and/or land units with poor soil recovery potential 	Section 7.6.1 and Appendix G (Section 4.2.1)
<ul style="list-style-type: none"> • corridor vulnerabilities and risks, and designs to address these 	Section 7.6.1 and Appendix G (Section 4.2.1)
<ul style="list-style-type: none"> • construction methods and timing, including of: <ul style="list-style-type: none"> - survey / design / selection of the pipeline route - provision of access tracks and temporary facilities - clear and grade of the right of way - pipe stringing and bending - pipe welding - hydro-testing - rehabilitation of right of way. 	Sections 2.3 and 2.8
<ul style="list-style-type: none"> • corridor operational, maintenance and safety procedures 	Section 2.8.3
<ul style="list-style-type: none"> • proposed environmental management, including erosion and sediment control, flood protection, and maintenance of fauna / livestock access pathways to water, etc. 	Appendix E

<ul style="list-style-type: none"> • type and sources of rock, gravel, fill and other construction materials 	Section 2.8.2
<ul style="list-style-type: none"> • legislation, standards and Guidelines applicable to corridor elements. 	Section 3.2
3.1.5 Mine Operation Describe proposed mine construction and operation, including, but not limited to:	
<ul style="list-style-type: none"> • types / categories, quantities and characterisation of materials to be mined annually (e.g. ore classes, top soil, waste rock classes, etc.). 	Section 2.1, 2.4
<ul style="list-style-type: none"> • processing, storage and management methods applicable to each category of mined material 	Section 2.4
<ul style="list-style-type: none"> • proposed mining methods 	Section 2.4, 2.5, 2.6
<ul style="list-style-type: none"> • equipment requirements 	Section 2.4.6
<ul style="list-style-type: none"> • proposed staging of the Project 	Section 2.4.2
<ul style="list-style-type: none"> • projected quantities of ore to be shipped each year 	Section 2.4.2
<ul style="list-style-type: none"> • target ore grades, such as for markets and proposed processing circuits, and how target grades will be achieved from a resource containing variable grades of P2O5 and contaminants 	Section 2.4
<ul style="list-style-type: none"> • presence and management of Naturally Occurring Radioactive Materials (NORM) in ore, waste streams and processing streams for each of the Project options 	Section 8.6.1 Appendix K
<ul style="list-style-type: none"> • sources and volumes of materials required to support construction of mine infrastructure, such as fill, clays and consumables 	Sections 2.4.1 and 2.8.1
<ul style="list-style-type: none"> • proposed design and methods of construction of the open pits, including proposed location, sequencing, design and construction of the open pits 	Section 2.4.4
<ul style="list-style-type: none"> • product handling requirements 	Section 2.4.7
<ul style="list-style-type: none"> • run of mine stockpile. 	Section 2.4.8
3.1.6 Processing	

Provide relevant information with respect to each processing circuit to be utilised for the Project, including but not limited to:	
<ul style="list-style-type: none"> • production of mechanically beneficiated ore 	Section 2.5.1
<ul style="list-style-type: none"> • ore beneficiation through floatation 	Section 2.5.4
<ul style="list-style-type: none"> • sulfuric acid production 	N/A – not within project scope.
<ul style="list-style-type: none"> • phosphoric acid production (wet process or thermal process? – provide information for all proposed options) 	N/A – not within project scope.
<ul style="list-style-type: none"> • potable water production 	Section 2.10.1
<ul style="list-style-type: none"> • other processing methods 	Section 2.5
<ul style="list-style-type: none"> • major components and equipment of each processing operation 	Section 2.5
<ul style="list-style-type: none"> • processing circuit inputs, outputs, volumes / feed grades of materials / consumables required, product recovery grades 	Section 2.5
<ul style="list-style-type: none"> • demonstrate and compare performance of similar processing plants 	-
<ul style="list-style-type: none"> • transport of materials to / from the processing circuits. 	Section 2.4.7
3.1.7 Energy	Section 2.9
Provide relevant information with respect to energy, including but not limited to:	
<ul style="list-style-type: none"> • information on the Project's energy requirements, including mining fleet fuels and electricity demand for mine operations 	Section 2.9
<ul style="list-style-type: none"> • details of energy infrastructure requirements, for all components of the Project, including fuel storage 	Section 2.9
<ul style="list-style-type: none"> • describe any initiatives proposed to improve energy efficiency and/or reduce emissions to air. 	Section 2.9
3.1.8 Tailings Management	Section 2.6

Provide detailed information with respect to tailings management, within each Project option/stage, including but not limited to:	
<ul style="list-style-type: none"> • Methods for managing tailings, process outputs and associated process water, including volumes 	Section 2.6
<ul style="list-style-type: none"> • proposed recycling / further processing, management and fate/destination of tailings components, including process waters, gangue materials and gypsum 	Gangue materials and gypsum - N/A not within project scope. Process waters - Section 2.10 Tailings – Section 2.6
<ul style="list-style-type: none"> • proposed final removal or rehabilitation/closure of the tailings storage facility 	Section 2.6.4
<ul style="list-style-type: none"> • anticipated quantities of tailings that would be produced and managed by the Project 	Section 2.6
<ul style="list-style-type: none"> • geochemical characterisation of the tailings, indicating its potential to generate seepage/ stormwater runoff of a poor quality with respect to the National Water Quality Management Strategy¹ 	Sections 2.6 and 8.7.7 Appendix I
<ul style="list-style-type: none"> • analysis of physicochemical mobility of contaminants under expected environmental conditions 	Sections 2.6 and 8.7.7 Appendix I
<ul style="list-style-type: none"> • design details, specifications, capacity and integrity of the proposed tailings storage facilities, including details of the location, layout, expected design life, material geotechnical specifications used in construction and permeability of walls/floors/underlying strata. 	Section 2.6
3.1.9 Water Management Provide information on proposed Project groundwater and/or surface water use, in terms of parameters such as extraction rates, quantities, qualities, sources, storage, treatments and infrastructure requirements. Details should include:	
<ul style="list-style-type: none"> • all phases and areas of the Project 	Section 2.10
<ul style="list-style-type: none"> • processing circuit(s) 	
<ul style="list-style-type: none"> • process / tailings water 	
<ul style="list-style-type: none"> • slurry water for product transport 	

<ul style="list-style-type: none"> dust suppression 	
<ul style="list-style-type: none"> drinking water 	
<ul style="list-style-type: none"> water treatments, and management of any reverse osmosis plant - hypersaline waste stream 	
<ul style="list-style-type: none"> waste water and sewage treatment, and disposal 	
<ul style="list-style-type: none"> reuse / recycling / disposal options 	
<ul style="list-style-type: none"> need for waste discharge of waters 	
<ul style="list-style-type: none"> any other uses. 	
<p>A water balance should be provided for the proposed Project, considering all Project areas and phases/options. Specific methods for dewatering should be provided where relevant. The water balance should predict Project-related changes to baseline surface and ground water conditions (volumes, flows and quality) locally and regionally, at Project component sites.</p>	
<p>The EIS should detail design, construction methods and proposed construction materials for:</p>	
<ul style="list-style-type: none"> water drainage management works 	<p>Appendix G (Section 4.1.1) Appendix E</p>
<ul style="list-style-type: none"> waterway diversion works 	<p>Appendix G (Section 4.1.1) Appendix E</p>
<ul style="list-style-type: none"> watercourse crossings, such as for roads and pipelines. 	<p>Appendix G (Section 4.1.2) Appendix E</p>
<p>3.1.10 Air</p> <p>Provide relevant information with respect to air quality, including but not limited to:</p>	
<ul style="list-style-type: none"> inventory (name, composition and quantities) of Project generated air emissions, including from land disturbance, all processing circuit options, vehicles, plants and machinery 	<p>Section 15.3.3 Appendix O</p>
<ul style="list-style-type: none"> proposed monitoring regime and equipment 	<p>Section 15.5 Appendix E (Section 3.1)</p>
<ul style="list-style-type: none"> reporting requirements and compliance with relevant health and/or environmental standards 	<p>Appendix O (Section 2.3) Appendix E (Section 3.1)</p>

<ul style="list-style-type: none"> air quality target thresholds with reference to regulatory industry-standard, health- related safe-limits, or aspirational parameter levels. 	Appendix O (Section 2.3)
<ul style="list-style-type: none"> proposed emission control methods. 	Appendix O (Section 5) Appendix E (Section 3.1)
3.1.11 Wastes and Hazardous Materials Provide relevant information with respect to other waste management, including but not limited to:	
<ul style="list-style-type: none"> descriptions of predicted waste streams, both industrial and domestic, including 	Chapter 2
<ul style="list-style-type: none"> solid and liquid wastes at/from the mine site, railhead, port, accommodation facilities and other relevant locations 	
<ul style="list-style-type: none"> descriptions of proposed waste management strategies, including reduction, reuse, recycling, storage, transport and disposal of waste 	
<ul style="list-style-type: none"> potentially hazardous materials to be used or produced and methods for storage, transport, handling, containment, disposal and emergency management of these materials 	
<ul style="list-style-type: none"> garbage disposal and management 	
<ul style="list-style-type: none"> management of any reverse osmosis plant - brine waste streams 	
<ul style="list-style-type: none"> the proposed size and construction details for landfill, and a list of wastes likely to be deposited in landfill 	
<ul style="list-style-type: none"> legislation, guidelines, and standards applicable to any Project landfill, waste disposal facility, and how such requirements will be fulfilled. 	Section 3.2
3.1.12 Workforce and Accommodation Provide details of the predicted workforce requirements during all phases of the Project, including:	
<ul style="list-style-type: none"> the number of people to be employed, skills base required, and likely sources (local, regional, overseas) 	Section 2.12.1
<ul style="list-style-type: none"> personnel handling requirements 	Section 2.12.1

<ul style="list-style-type: none"> the number of people that may be employed to manage or undertake environmental duties on the site, including the specific qualifications and the level of experience with mining or other related activities 	-
<ul style="list-style-type: none"> Discuss arrangements for transport of workers to and from Project areas, including air services required. 	Section 2.12.1 and 13.4.3
<ul style="list-style-type: none"> For the mine camp that will be used to accommodate staff, provide brief information on aspects of the facility such as: <ul style="list-style-type: none"> accommodation arrangements proposed for workers proximity to the nearest town, work sites and mining operations whether the premises will be licensed to serve alcohol compliance with licensing requirements associated with food preparation and storage for catering premises proposed at Project sites compliance with Environmental Health Fact Sheet No. 700. Requirements for Mining and Construction Projects. 	
	Section 2.2
	Section 1.4
	-
	Section 3.2
	Section 2.12.1
3.1.13 Transport Provide details of road, rail, air and sea transport requirements during all phases of the Project, including:	
<ul style="list-style-type: none"> methods to convey all site traffic (including materials, workers and product) to and from the Project 	Section 13.4 Appendix M
<ul style="list-style-type: none"> road, rail and port networks to be utilised by the Project 	Appendix M
<ul style="list-style-type: none"> type, size and number of vehicles / aircraft / vessels required, hours of operation and peak times 	Section 13.4 Appendix M
<ul style="list-style-type: none"> types and quantities of materials to be transported to/from the Project (e.g. heavy machinery, equipment, fuel, hazardous materials) <ul style="list-style-type: none"> estimated frequency of Project vehicles / aircraft use on public infrastructure. 	Section 2.13.2
	Section 13.4.3
<ul style="list-style-type: none"> Describe the proposed methods and areas for transporting and exporting product, including: <ul style="list-style-type: none"> road, rail, air and port networks to be utilised by the Project product handling requirements 	Section 1.1, 2.1
	Section 2.2, 2.8
	Section 2.4.7

○ storage / laydown areas and loading facilities	Section 2.4.7, 2.4.8, 2.8
○ methods of truck/train/vessel loading, load constraint, product containment and spillage prevention	Section 2.8
○ safety management	Section 11.3.3
○ additional transport infrastructure works required, including site access and signage	Section 2.8, 2.13 and 13.6
○ discussion of the Project transport facilities purposes and capability (e.g. East Arm Wharf, Alice Springs to Darwin Railway Terminal, etc.) to meet the transporting and exporting requirements of the Project.	Section 2.8, 2.12.1, 2.13
Describe the intended use and capacity of the airfield to service the Project. Detail any upgrades, area of disturbance and commitments to meet aviation legislative obligations (e.g. Civil Aviation Safety Authority).	-
3.2 Alternatives	
The EIS should describe any feasible alternatives to carrying out the Project. The choice of the preferred option(s) should be clearly explained, including how it complies with the principles and objectives of ecologically sustainable development. Alternatives should include:	
• not proceeding with the Project	-
• site selection for all Project components	-
• mining and processing methods	Section 2.4.7
• management of clean, dirty or contaminated water	-
• management of site water surpluses	-
• prevention and remediation of acid and/or metalliferous drainage, neutral mine drainage and/or saline drainage (AMD/NMD/SD)	-
• management of wastes and overburden	-
• rehabilitation methods	-
• methods of product treatment, storage, transport and export	-
• energy sources for power generation, including renewable energy sources	-

<ul style="list-style-type: none"> • alternative life-of-mine schedule 	-
<ul style="list-style-type: none"> • designs and construction methods of infrastructure 	-
<ul style="list-style-type: none"> • consideration of alternative environmental management measures for key risks. 	-
Discussion should include:	
<ul style="list-style-type: none"> • sufficient detail to make clear why a particular alternative is preferred to another 	-
<ul style="list-style-type: none"> • adverse and beneficial effects (direct and indirect) of alternatives at national, Territory, regional and local levels 	-
<ul style="list-style-type: none"> • the comparison of short (whilst operational), medium (post closure) and relevant long term advantages and disadvantages of the options. 	-
3.3 Cumulative impacts	
Cumulative impacts can arise from compounding activities of a single operation or multiple mining and processing operations, as well as the aggregation and interaction of mining impacts with other past, current and future activities that may not be related to mining. Considerations include:	N/A
<ul style="list-style-type: none"> • Landscape change originates not only from single projects and management actions, but also from complex and dynamic interactions of multiple past, present and future management actions. 	Chapter 9
<ul style="list-style-type: none"> • Biophysical, social and economic change accumulates through additive or interactive (or synergistic) processes. The aggregate impact of multiple actions on the environment can be complex and may result in impacts that are more significant because of interactive processes. 	Section 12.3.1 Section 9.3.4, 9.5, 10.3, 10.5
<ul style="list-style-type: none"> • Any given action does not operate in isolation. The most significant changes are often not the result of the direct effects of an individual action, but from the combination of multiple minor effects over the accumulation of time. 	Section 12.3.1 Section 9.3.4, 9.5, 10.3, 10.5
An assessment of cumulative environmental impacts should be undertaken that considers the potential impact of the Project in the context of previous, existing and reasonably foreseeable future developments, to ensure that any potential environmental impacts are not considered in isolation. The extent of cumulative impacts to be considered depends on the nature of the environmental issue. The risk assessment should consider and discuss cumulative assessment, where relevant, and account for impacts on an appropriate scale.	-

Impacts on the general environment, ecosystems and matters of national environmental significance could be permanent. If the impacts are not permanent, describe how long recovery from any impacts is anticipated to take, and identify how soon restoration of habitat could be achieved to reinstate ecosystem function.	-
4 Existing Environment The EIS should outline the environmental context of the Project area. Description should include:	Chapter 4
<ul style="list-style-type: none"> • climate and atmospheric characteristics relevant to the Project, such as temperatures; rainfall / evaporation; flood / drought / fire regime, winds, extreme weather events 	Section 4.1.1
<ul style="list-style-type: none"> • regional landscape characteristics / features 	Section 4.1.3
<ul style="list-style-type: none"> • proximity / downstream connection to sites of ecological, social or cultural significance or sensitivity, surface / groundwater resources, conservation reserves. 	Section 1.4.5
4.1 Topography and Geology The EIS should describe and map geology, topography, soils and significant landscape features of the project area and surrounding areas.	Section 4.1.2 and 4.1.4
Discuss geological factors relevant to the Project construction, operation, rehabilitation, closure and/or the stability of any final landforms or infrastructure. Where relevant, discuss: resource geology, hydrogeology, geological faults, dust / erosion potential, topsoil / overburden depths, strata, and AMD/NMD/SD potential.	Chapter 4, Section 4.1.2 and 4.1.4 Appendix I
4.2 Water The EIS should describe surface and ground water resources locally, regionally and seasonally, including their extent, connectivity, catchments, flow-paths, volumes/capacities, depths, types, chemistry, biological characteristics, areas of recharge / expression, environmental values, uses and third party users of the surface waterways and groundwater aquifers potentially affected by the Project. Consideration should be made of areas/waters within and around all Project elements, upstream and downstream, within identified hydrogeological units, and in waterways (ephemeral and permanent) to be crossed by any infrastructure utilised for the Project (i.e. haul roads, pipeline, rail loading facility, etc.).	Section 7.2 and 7.3 Section 8.2, 8.3, and 8.4

<p>The EIS should include a detailed, comprehensive, pre-mining hydrological model for the proposed main Project sites, at an appropriate scale to enable identification of any future impacts, including regional/off site impacts. The model should to be prepared by an appropriately qualified person.</p>	<p>Chapter 7 Appendix G (section 3.6), (Appendix A of appendix G)</p>
<p>4.3 Biodiversity</p>	
<p>Describe fauna, flora and vegetation communities of the Project area and local region. Surveys should be in accordance with the NT EPA Guidelines for Assessment of Impacts on Terrestrial Biodiversity and/or Australian Government Guidelines for the surveying of threatened species. Describe survey/program timing, locations and methodology, to demonstrate appropriate and statistically sufficient survey designs. Where indicated, describe and map:</p>	<p>Chapter 9, Section 9.3 Appendix J</p>
<ul style="list-style-type: none"> any areas that have already been subject to clearing activities or disturbance previously 	<p>Section 9.5.1</p>
<ul style="list-style-type: none"> any significant or sensitive vegetation types 	<p>Section 9.3.2</p>
<ul style="list-style-type: none"> habitat within and adjacent to the Project area suitable for species of conservation significance potentially present, including consideration of habitat suitable for breeding, foraging, aggregation or roosting 	<p>Section 9.4.2, 9.5, Section 10.2.2, 10.3, 10.4, 10.5, 10.6</p>
<ul style="list-style-type: none"> the presence or likely presence of species listed under the Territory Parks and Wildlife Conservation Act (TPWC Act) and/or the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), and other un-listed species of conservation significance 	<p>Section 9.4.1</p>
<ul style="list-style-type: none"> any riparian or aquatic ecosystems or groundwater dependent ecosystems 	<p>Section 9.3.2, 10.5.3. 10.5.4</p>
<ul style="list-style-type: none"> the presence, or likely occurrence, of introduced and invasive species (both flora and fauna) within the Project area, and regionally, including weed species declared under the NT Weeds Management Act. 	<p>Section 9.3.4, and 9.4.3 10.5</p>
<p>4.4 Indigenous and Cultural Heritage</p>	
<p>The EIS should outline the cultural and heritage significance of any sites or objects located on the Project areas or that could be impacted by Project activities. The EIS should include the results of searches on the Northern Territory Government database and identify any sites or places protected or nominated for protection under the following legislations:</p>	<p>Chapter 14</p>

<ul style="list-style-type: none"> Aboriginal and Torres Strait Island Heritage Protection Act 1984 	Chapter 3 and Appendix E, Section 4.6
<ul style="list-style-type: none"> Environment Protection and Biodiversity Conservation Act 1999 	
<ul style="list-style-type: none"> Heritage Act 	
<ul style="list-style-type: none"> Northern Territory Aboriginal Sacred Sites Act. 	
Describe :	
<ul style="list-style-type: none"> indigenous and non-Indigenous sites, places or objects of historic or cultural heritage significance 	Chapter 14, Section 14.4.2 and 14.5
<ul style="list-style-type: none"> surveys used to identify sites or objects of historic or cultural heritage significance, with outline of survey location and effort 	Chapter 14, Section 14.2
<ul style="list-style-type: none"> areas nominated for listing or listed on Commonwealth and Northern Territory registers of Indigenous cultural heritage 	Chapter 14, Section 14.4
<ul style="list-style-type: none"> current status of any approvals, permits or clearances under the above legislation. 	14.4
The EIS should outline consultations with Indigenous stakeholders and Traditional Owners for all areas potentially affected by the Project. Determination and details should be provided of any current Traditional Owner utilisation of Project areas, and spiritual/cultural significance of potentially affected areas.	Chapter 14, Section 14.2.3
4.5 Air Provide information with respect to existing air quality across seasons, including:	Chapter 15, Section 15.2
<ul style="list-style-type: none"> ambient levels of Project generated air emissions 	Chapter 15, Section 15.2.3
<ul style="list-style-type: none"> locations of nearest sensitive receptors to Project generated emissions, considering as a minimum, sites of human habitation and use, and flora and fauna and their habitats. 	Chapter 15, Section 15.2.1
5 Risk Assessment 5.1 Risk Assessment Approach The EIS should be undertaken with specific emphasis on the identification, analysis and mitigation of risks through a whole-of-project risk assessment. Through this process, the EIS will:	Chapter 6

<ul style="list-style-type: none"> • identify and discuss the full range of risks presented by the Project 	6.4.2, Table 6-8
<ul style="list-style-type: none"> • identify relevant direct and indirect impacts 	Table 6-8
<ul style="list-style-type: none"> • quantify and rank risks so that the reasons for proposed management responses are clear 	Chapter 6, table 6-8
<ul style="list-style-type: none"> • identify levels of any uncertainty about estimates of risk and the effectiveness of risk controls in mitigating risk 	Chapter 6, table 6-8
<ul style="list-style-type: none"> • explicitly identify those members of the community expected to accept residual risks and their consequences, providing better understanding of equity issues 	-
<ul style="list-style-type: none"> • demonstrate that the Project represents best practicable technology. 	-
5.3 Water	Chapter 7 and Chapter 8
Proposed extraction of water will be within the sustainable limit of the aquifer or water supply to fulfil the Project needs over the predicted life-of-mine, without causing environmental or social impacts.	Chapter 8, Section 8.7.4
Water resources will be protected both now and in the future, such that ecological health and land uses, and the health, welfare and amenity of people are maintained.	Chapter 7, Section 7.6 Chapter 8, Section 8.8
5.3.2 Assessment of Risks The EIS should identify and assess risks presented by the Project to surface and/or groundwater resources, including:	
<ul style="list-style-type: none"> • progressive water table drawdown from unsustainable groundwater extraction rates, particularly where aquifers are utilised by other users and/or groundwater dependent ecosystems. Where risks to sensitive receptors are identified, drawdown modelling should quantify potential impacts 	Chapter 8, Section 8.7.2 and 8.7.3
<ul style="list-style-type: none"> • discharge or seepage of contaminated waters from the Project into surface and/or groundwater resources, such as AMD/NMD/SD seepage from pit walls, process water/waste/tailings storage facilities or gypsum stockpiles 	Chapter 7, Section 7.5.2 and 7.5.4 Chapter 8, Section 8.7.3 and 8.7.7
<ul style="list-style-type: none"> • erosion of Project component sites, infrastructure corridors and utilised roads, and associated sedimentation of waterways 	Chapter 7, Section 7.5.2 and 7.5.3

<ul style="list-style-type: none"> • loss of control / containment of poor quality mine waters, such as associated with extreme weather events 	Chapter 7, Section 7.5.2 and 7.5.4
<ul style="list-style-type: none"> • uncontrolled release, spills or passive discharge of hazardous materials, such as hydrocarbons, to surface and/or groundwater resources 	Chapter 7, Section 7.5.2 and 7.5.4 Chapter 8, Section 8.7.3 and 8.7.8
<ul style="list-style-type: none"> • need for the Project to discharge surplus contaminated waters to local creeks or aquifers (particularly at times of low creek flow) 	N/A
<ul style="list-style-type: none"> • increasing contaminant concentrations in evaporation ponds, reflecting in water quality in pond seepage and groundwater plumes 	-
<ul style="list-style-type: none"> • 'first flush' surge of stored oxidation products (AMD/NMD/SD) generated in mine storage facilities over extended dry periods, discharging downstream with the first heavy rains 	Chapter 8, Section 8.6
<ul style="list-style-type: none"> • major weather events (e.g. 5 to 100 year average recurrence interval [ARI]) and extreme weather events (e.g. 100 year ARI, or greater) on water management and infrastructure, including contingency management 	Chapter 7, Section 7.5.2 and 7.5.3
<ul style="list-style-type: none"> • Project disturbance of surface-water catchments, groundwater recharge zones, flowpaths, riparian zones or aquatic ecosystems. 	Chapter 7, Section 7.5.3 Chapter 8, Section 8.7.6
The EIS should also provide the following information:	
<ul style="list-style-type: none"> • Provide results of characterisation of expected waste streams (for all Project options). 	Chapter 2, Section 2.11.1 Chapter 8, Section 8.6
<ul style="list-style-type: none"> • Describe proposed methods to characterise future mine wastes, in terms of their potential to generate environmental contaminants. 	Appendix I (Section 6)
<ul style="list-style-type: none"> • Identify risks of AMD/NMD/SD or other environmental contaminants being generated or concentrated by the Project. 	Chapter 8, Section 8.6
<ul style="list-style-type: none"> • Detail proposed management (and contingency management) that identifies, systematically addresses, remedies and monitors any occurrence of environmental contaminants to prevent environmental impacts during mine operations and beyond mine closure. 	Chapter 7, Section 7.6.2 - 7.6.4, Chapter 8, Section 8.8.2, 8.8.3

<ul style="list-style-type: none"> Site-wide management of environmental contaminants should be summarised in the environmental management plan (Section 6) for the Project. 	Appendix E, water management plan
<ul style="list-style-type: none"> Provide a detailed conceptual site model describing potential sources, pathways, receptors, and fate of any contaminated waters, and products, from the Project, and 	Appendix E, water management plan
<ul style="list-style-type: none"> Project components. The model should be of sufficient detail for the general reader to understand the sources of potential contaminants, mechanisms of their release, pathways for transport, and potential for human and ecological exposure to these potential contaminants. 	-
<p>The minimum data required to support the model should include, but not be limited to:</p> <ul style="list-style-type: none"> laboratory and field testing data required to characterise AMD/NMD/SD potential and acid neutralisation potential of mine products and infrastructure. permeability and depths of geological strata across the mine site and underlying mine waste/water storage facilities, with identification of preferential flow pathways/strata, such as paleochannels and faults groundwater modelling and from Section 4.2, and flow modelling where appropriate physicochemical mobility of contaminants baseline water quality of receiving waters (from Section 4.2) contaminant transport modelling of seepage plumes where appropriate. biological receptors, vectors and their habitats other complementary technical studies, at appropriate temporal and spatial scales. 	Section 8.6 and Appendix I Section 8.7.2 and Appendix H
<p>An appropriately qualified and experienced person should be involved with the supervision and interpretation of test results and the development of the conceptual site model. Appropriate statistical design details including the number of samples, sampling site selection procedures and QA/QC protocols to support the development of the model should be provided and justified.</p>	Appendix G, H, I
<p>Estimate the quality and quantities of seepage discharging to aquifers and creeks from proposed mine components through all mine phases, including post closure (long term).</p>	Sections 8.7.7, 17.1.7
<p>Summarise how water quality and flows in local creeks and aquifers will potentially be impacted by the Project in the short and long term.</p>	Chapter 7, Section 7.5.4
<p>Describe and assess the significance of residual risks to sensitive receptors from mine- induced water quality impacts. Include consideration of downstream ecosystems and stakeholders, in the short and long terms.</p>	Chapter 7, Section 7.6.4, 8.7.6 and Chapter 9, Section 9.5.4, 9.5.5
<p>Mitigation The EIS should describe proposed management of water for the Project for all mine-life stages and seasons, according to its source, quality, volume, end use or other parameters, including:</p>	

<ul style="list-style-type: none"> • proposed management to contain contaminants onsite 	Sections 7.4
<ul style="list-style-type: none"> • water quality thresholds triggering management actions 	Sections 8.8.2
<ul style="list-style-type: none"> • description of site surplus water volumes, and proposed management 	Sections 7.4
<ul style="list-style-type: none"> • management of stormwater, erosion and sediment loads during seasonal and extreme rainfall events. 	Sections 7.6.1, 7.6.2
<p>The EIS should provide a draft Water Management Plan (WMP) that outlines clear and concise measures to mitigate identified risks of the Project to water resources. All mitigation and monitoring measures in the WMP should be adequately detailed to demonstrate best practice management and that environmental values of receiving waters will be maintained. The WMP should include but not be limited to measures that:</p> <ul style="list-style-type: none"> • avoid and remedy Project contamination of surface or groundwater resources • ensure the protection and resilience of water dependent ecosystems • protect water quality and levels for existing users of bores and/or surface waterways • avoid the exposure of sensitive biological receptors to contaminants or water of a poor quality that may be harmful • prevent release of contaminated Project waters or hazardous materials to the environment, and ensure treatment / neutralisation occurs to identified safe levels before any controlled environmental release is considered • treat and manage domestic wastewater and sewage. 	Appendix E
<p>The WMP should be related to, but separate from Management Plans for:</p>	
<ul style="list-style-type: none"> • . Erosion and Sediment Control 	-
<ul style="list-style-type: none"> • . Management of Environmental Contaminants. 	AMD management plan in Appendix I
<p>The Erosion and Sediment Control Plan (ESCP) should be undertaken by a suitably qualified and experienced professional in erosion and sediment control planning. The ESCP should be consistent with the International Erosion Control Association's Best Practice Publications.</p>	-
<p>The WMP should undergo a process of peer review by an independent, appropriately qualified expert. Feedback should be included as an attachment to the WMP.</p>	-
<p>Monitoring</p>	
<p>The WMP and related management plans should outline details of monitoring programs to be implemented throughout the life of the Project to determine effectiveness of the mitigation measures, and to monitor for risks to water resources from the Project.</p>	Section A10

Proposed monitoring should be described for leaks or spills of materials from pipelines, storage facilities (including tailings storage facilities) and transport operations to ensure protection of local soils, aquifers, environments, workers and the general public.	-
The monitoring programs should include relevant water quality target values based on appropriate guidelines and/or standards. The monitoring program should outline reporting procedures and contingencies that will be implemented in the event that monitoring activities identify that any performance indicators have been triggered, or other water related hazard or emergency.	-
The monitoring programs should consider: <ul style="list-style-type: none"> · methods to monitor the impacts of the Project on surface and groundwater quality and quantity · Provisions to notify and respond to environmental and human health risks associated with water quality, or other water related emergency. 	
5.4 Biodiversity	Appendix J, Chapter 9, Chapter 10
· analysis of the potential impact of the Project to ecosystems at a local and regional scale, including the potential for ongoing indirect impacts	9.5
· detailed assessment of any likely impact that the Project may facilitate on listed threatened species at the local, regional, state, and national scale	9.4.2, 10.3, 10.4, 10.5
· analysis of the potential for Project impacts (direct, indirect and consequential) to other flora and fauna species of conservation significance. Where a risk has been identified, the EIS should include discussion of the severity of those risks to individuals and regional populations	9.3.2
· analysis of the potential impact of the Project to vegetation at a local and regional scale, including the potential for ongoing indirect impacts as a result of edge effects, weed incursion or other processes exacerbated through construction or operation of the Project.	9.5.4
Consideration, where relevant, should include potential for impacts from linear developments, road strikes, discharge or seepage of poor quality water, ground/surface water contamination, groundwater drawdown, vegetation clearance, habitat fragmentation, edge effects, erosion and sedimentation, soil compaction, inappropriate/ineffective rehabilitation, waste material, transport / storage of hazardous chemicals, noise / vibration, dust / air quality impacts or other processes exacerbated through construction or operation of the Project.	9.5, 10.5
Detailed assessment is required of the potential of the Project to introduce and/or increase the presence of introduced and invasive species (both flora and fauna) in the region, and the potential impacts of such species. Show consideration of relevant Threat Abatement Plans ¹¹ , such as: <ul style="list-style-type: none"> · Threat Abatement Plan for Predation by Feral Cats · Threat Abatement Plan for Predation by the European Red Fox · Threat Abatement Plan to reduce the Impacts on Northern Australia's Biodiversity by the Five Listed Grasses. 	9.5, 10.5

<p>Mitigation The EIS should contain a detailed Biodiversity Management Plan (BMP) that outlines clear and concise methods to mitigate likely impacts to biodiversity. All mitigation measures should be in accordance with best practice advice from relevant Northern Territory and Australian Government advisory agencies. The BMP should detail preventative management and treatment measures in relation to:</p> <ul style="list-style-type: none"> • procedures to be adopted during vegetation clearing, including wildlife rescue procedures • weed and feral animal management • potentially significant impacts to the biodiversity on-site as a whole • mitigating the impacts to vegetation • rare or threatened species at risk of being adversely impacted • weed control measures and hygiene protocols as required under the Weeds Management Act. 	Biodiversity management plan in Appendix E, Section 2.7
<p>Management measures should be prepared by a suitably qualified expert that has demonstrated experience in the mitigation and monitoring of adverse impacts to biodiversity and threatened species.</p>	Appendix J
<p>Proposed mitigation measures must be incorporated in relevant Sections of the Environmental Management Plan (EMP) (see Section 6).</p>	Appendix E, Section 2.7
<p>Monitoring The BMP should include details of monitoring that is proposed to be undertaken to monitor the effectiveness of the mitigation measures proposed, including the methodology for monitoring the impacts to biodiversity. Where relevant, outline contingency measures to be implemented in the event that monitoring indicates that mitigation measures are ineffective. Provide explicit thresholds / trigger-points for intervention.</p>	-
<p>5.5 Human Health and Safety</p>	Chapter 11
<p>Assessment of Risks The EIS should identify and assess risks and hazards to human health and safety associated with all stages and components of the Project, including pathways for development of risks and hazards.</p>	11.3.2 and 11.3.3
<p>Sensitive receptors to risks and hazards should be identified, including their location and patterns of activity and occupation, with the potential for exposure to the risks and hazards as a consequence of the Project. Include identification and assessment of:</p>	11.3.2 and 11.3.3
<ul style="list-style-type: none"> • health and safety risks for the workforce and the general public for the duration of the Project including post-closure 	11.3.2 and 11.3.3
<ul style="list-style-type: none"> • safety risks associated with fire, including combustible materials and bushfires 	11.3.2 and 11.3.3
<ul style="list-style-type: none"> • risks relating to the environment and public health and safety from the transportation of personnel, ore, explosives (bulk emulsion), consumables and dangerous goods, on public roads 	11.3.2 and 11.3.3
<ul style="list-style-type: none"> • hazardous materials exposure, and proposed management of hazardous process inputs and outputs 	11.3.2 and 11.3.3
<ul style="list-style-type: none"> • potential risks associated with naturally occurring radiation materials 	11.3.2 and 11.3.3

<ul style="list-style-type: none"> risks associated with remote area construction, operations and transport, such as due to: - reduced access to communications and monitoring networks, and to emergency, health and vehicle breakdown services. -extreme climates, -fauna -long travel distances 	11.3.2 and 11.3.3
<ul style="list-style-type: none"> risks to the safety of transport network users and communities adjacent to haul routes 	11.3.2 and 11.3.3
<ul style="list-style-type: none"> capacities of current and proposed infrastructure and services to allow the Project to operate safely 	11.3.2 and 11.3.3
<ul style="list-style-type: none"> other direct and indirect health and safety risks for the workforce and the general public associated with Project components. 	11.3.2 and 11.3.3
5.5.3 Mitigation and Monitoring	
Detail preventative, management, treatment and monitoring strategies used to minimise the impacts of the Project on human health and safety. Outline environmental management strategies necessary for human health and safety, and describe how these strategies will be incorporated into the EMP (Section 6).	11.3.2 and 11.3.3
Describe the emergency plans and response procedures developed as a contingency in the event of an emergency or accident (e.g. chemical spillages, leaks, fire and explosions, traffic accident, plane crash, etc.), including management of all emergencies that may impact on the facility, its surrounds, personnel or the public. Responsibilities and liabilities in such an event should be included.	11.3.2 and 11.3.3
5.6 Socio-economic	Chapter 12
5.6.2 Assessment of Risks	Section 12.3
<ul style="list-style-type: none"> summary of the Project's economic feasibility 	12.3.2 and confidential addendum
<ul style="list-style-type: none"> details of the financial capacity to implement the Project, the significance of potential risks to project implementation and associated proposed mitigation measures, including the capacity to cost for mine closure and care and maintenance activities 	Confidential addendum
<ul style="list-style-type: none"> opportunities available to regional centres based on the activity generated by the Project (construction, rehabilitation and operation) 	12.3.2 and confidential addendum
<ul style="list-style-type: none"> current and projected availability of goods and services. 	12.3.2 and confidential addendum
The ESIA should include analysis of the current and projected financial capacity of the Proponent to allocate sufficient resources to:	
<ul style="list-style-type: none"> implement the Project, mitigation measures, and contingency management measures 	confidential addendum
<ul style="list-style-type: none"> maintain its environmental obligations should the Project be temporarily closed or suspended 	confidential addendum
<ul style="list-style-type: none"> meet all stabilisation, rehabilitation and closure requirements, once operations have ceased. 	confidential addendum

<p>5.6.3 Mitigation and Monitoring Economic and Social Impact Management Plan (ESIMP) should be prepared to address any risks identified in the ESIA. The ESIMP should:</p> <ul style="list-style-type: none"> · describe how the Proponent proposes to manage any identified economic, social, cultural or tourism risks from the Project, or its associated workforce · describe how potential local and regional business and employment opportunities related to the Project will be identified and managed · include a mechanism for monitoring and reporting any identified potential socio- economic and cultural impacts · include measures to mitigate negative economic and social impacts on the locality and region · provide outcome and assessment criteria that will give early warning that management and mitigation measures are not achieving the outcomes and benefits expected and identified by the Proponent · provide a stakeholder communications strategy including identification of, and ongoing consultation and negotiations with, all relevant stakeholders, ensuring the full range of community viewpoints are sought and included in the EIS. 	<p>An Appendix E Section 4.7</p>
<p>5.7 Transport</p>	
<p>Assessment of Risks The EIS should identify and analyse direct and indirect risks, hazards, costs and benefits associated with Transport components of the Project. Sensitive receptors to risks, hazards, costs and benefits should be identified, including their location and the potential for exposure. Aspects to be discussed include:</p>	<p>Section 13.5.2</p>
<ul style="list-style-type: none"> • support services and infrastructure to be provided by the Proponent for transport components of the Project 	<p>Section 13.6</p>
<ul style="list-style-type: none"> • risks to regional community access to emergency and breakdown services, fuel supplies and accommodation from increased demands due to the Project 	<p>Section 12.2.8</p>
<ul style="list-style-type: none"> • risks to marine waters and ecosystems associated with loading/unloading of vessels, and stockpiles of product and materials 	<p>–</p>
<ul style="list-style-type: none"> • risks from Project heavy vehicles to the condition and usability of public roads, including the Sandover Highway (tourist 4WD route), and consideration of seasonal variability of road surface conditions 	<p>Section 13.5</p>

<ul style="list-style-type: none"> risks to other users and available capacities of shared railway resources 	Section 13.5.2
<ul style="list-style-type: none"> risks associated with other transport components of the Project, including personnel and air transport, rail and sea haulage. 	-
5.7.3 Mitigation and Monitoring	Section
Description should be included of safeguards, management and monitoring strategies to be implemented to minimise potential transport (air, road rail, sea) health, safety and environmental risks, such as:	
<ul style="list-style-type: none"> measures to reduce any road traffic nuisance impacts (e.g. noise, dust, light) 	Appendix E , Section 2.6.2
<ul style="list-style-type: none"> road / airstrip maintenance and upgrades where relevant to human safety and continued access 	-
<ul style="list-style-type: none"> methods for complying with any relevant road vehicle axle limits 	-
<ul style="list-style-type: none"> methods for securing loads 	-
<ul style="list-style-type: none"> consultation with local communities affected by transport impacts 	Chapter 5, Section 5.5. and 5.6
<ul style="list-style-type: none"> spill prevention and management during ship loading/unloading operations, transport of product, and stockpiles of product and materials 	
<ul style="list-style-type: none"> management of driver fatigue. 	-
5.8 Historic and Cultural Heritage	Chapter 14
Assessment of Risks The EIS should:	
<ul style="list-style-type: none"> identify and assess risks of the Project to impact on sites / objects of sacred, heritage, cultural or indigenous cultural significance 	Chapter 14, Section 14.6
<ul style="list-style-type: none"> detail any requirements to disturb or destroy a prescribed archaeological place and/or object under the Heritage Act 	Section 14.6.1
<ul style="list-style-type: none"> identify and assess any risks to significant cultural sites from Project generated vibration and dust. 	Section 14.6.2

<p>Mitigation</p> <p>The EIS should describe the prevention and mitigation of potential risks to existing sites or items of historic and cultural heritage in a Cultural Heritage Management Plan (CHMP). The CHMP should include:</p> <ul style="list-style-type: none"> · procedures to avoid significant sites and areas · protection of key sites during construction, operation and decommissioning work · measures to enable the Proponent, or contractor to the Proponent, to meet its duty of care to protect the cultural and heritage values of any places or items of significance · procedures for the discovery of surface or sub-surface items during the course of the Project. 	<p>Section 14.6.3 and Appendix E, Section 4.6</p>
<p>5.8.4 Monitoring</p> <p>The CHMP should include details of a monitoring and reporting program to determine the effectiveness of mitigation measures (Section 5.8.3). The monitoring and reporting program should identify when further action is required and outline contingency measures should the proposed mitigation measures result in degradation to the values of sites or items with heritage or cultural significance.</p>	<p>Section 14.6.3 and Appendix E, Section 4.6</p>
<p>5.9 Air</p>	
<p>Assessment of Risks</p> <p>Risks to air quality and sensitive receptors generated by Project activities should be identified and assessed, including emissions of chemicals, particulates, biological materials and dust, from:</p>	
<ul style="list-style-type: none"> • each processing circuit option, sulfuric acid plant, vehicles, power plants, machinery 	<p>Processing options, sulfuric acid plant - no longer applicable due to updated project scope.</p> <p>Vehicle, power plants, machinery –Appendix O (Section 4)</p>
<ul style="list-style-type: none"> • drilling, blasting and materials handling (including transportation from the pit to export facilities) 	<p>Drilling, blasting - no longer applicable due to updated project scope.</p> <p>Materials handling - Appendix O (Section 4)</p>
<ul style="list-style-type: none"> • crushing and processing 	<p>Appendix O (Section 4)</p>
<ul style="list-style-type: none"> • general site movements over unsealed surfaces 	<p>Appendix O (Section 4)</p>
<ul style="list-style-type: none"> • haulage and transport of material along the haul road between the pit, stockpiling site and export facilities 	<p>Appendix O (Section 4)</p>
<ul style="list-style-type: none"> • wind erosion mobilising dust from exposed surfaces, such as from waste dumps, laydown areas, stockpiles, roads and sites of vegetation clearing. 	<p>Appendix O (Section 4)</p>

Identify existing variability in air quality target parameters, such as the impact of seasonal smoke haze, and any relevance to potential risks to sensitive receptors from Project emissions.	Section 15.3.2 Appendix O (Sections 3.3 and 5)
The potential nuisance and human health issues associated with air quality, including dust, and mitigation measures should be discussed in Sections 5.4 and 5.5.	Section 15.4 Appendix O (Section 5)
Consideration should be given to the acute and chronic exposure and pathways, such as inhalation, ingestion and dermal contact. Potential sensitivity of receptors to air quality, including dust, and mitigation measures should be discussed in relevant Sections of the EIS. Identified risks and contaminant pathways should also be included in the conceptual site model for the Project (Section 5.3.2).	Appendix O (Section 5)
Mitigation The EIS should provide details of mitigation measures to avoid, mitigate and/or minimise identified risks, including but not limited to:	
<ul style="list-style-type: none"> risks associated with toxic or nuisance emissions from Processing plants (all options), vehicles, machinery, power plants or a sulfuric acid plant 	Appendix E (Section 3.1)
<ul style="list-style-type: none"> Project emissions to air 	Appendix O (Section 6) Appendix E (Section 3.1)
<ul style="list-style-type: none"> mobilisation of dust from disturbed areas and roads, where risks exist to identified sensitive receptors 	Appendix E (Section 3.1)
<ul style="list-style-type: none"> contingency measures to be implemented in the event that monitoring demonstrates that management measures have not been effective 	Section 15.5 Appendix E (Section 3.1)
5.9.3 Monitoring	
The EIS should provide details of a proposed monitoring program, including:	
<ul style="list-style-type: none"> technique, location, frequency and target parameters 	Appendix O (Section 2.3) Appendix E (Section 3.1)
<ul style="list-style-type: none"> proposed monitoring and reporting to be used to evaluate and report on the effectiveness and performance of the mitigation measures 	Appendix E (Section 3.1)
<ul style="list-style-type: none"> outcome and assessment criteria that will give early warning that management and mitigation measures are not achieving the outcomes and benefits expected and identified by the Proponent. 	Appendix O (Section 2.3) Appendix E (Section 3.1)
5.10 Rehabilitation, Decommissioning and Closure	

<ul style="list-style-type: none"> rehabilitation will achieve a stable and functioning landform that is consistent with the surrounding landscapes and other environmental values and will remove potential for long term, post closure impacts on downstream water quality, beneficial uses and environmental values. 	Section 17.1.4 Appendix Q (Section 2.6)
<ul style="list-style-type: none"> identified risks associated with closure and rehabilitation of the Project have been prevented or adequately mitigated. 	Section 17.1.7 Appendix Q (Chapter 5)
Assessment of Risks The EIS should identify and assess risks to successful rehabilitation and closure, including risks of:	
<ul style="list-style-type: none"> the Project not realising its projected outcomes, such as associated with delays, unexpected / forced closure, or falling market prices 	Section 17.1.7 Appendix Q (Chapter 5)
<ul style="list-style-type: none"> inadequate identification and management of materials with AMD/NMD/SD potential 	Appendix I
<ul style="list-style-type: none"> changes in the assumptions used as a basis for the post-closure risk assessment 	-
<ul style="list-style-type: none"> natural events, including earthquakes, cyclones, rain depressions, fire and flood. 	-
Discuss and assess risks associated with proposed levels of pit backfilling and rehabilitation including:	
<ul style="list-style-type: none"> target level of backfilling of pits and progressive rehabilitation according to strip- mining principles, or other principles 	Section 2.4.3 Section 17.1.6 Appendix Q (Chapter 3)
<ul style="list-style-type: none"> proposed methods and location for stockpiling and final placement of tailings / process waste streams, overburden and topsoils 	Section 2.4.3 Section 2.6
<ul style="list-style-type: none"> variability / mapping of the resource in terms of P2O5 concentrations and depth 	Section 2.1
<ul style="list-style-type: none"> the extent of ore-grade mixing that will be required to meet target P2O5 concentrations, required by markets or processing circuits. Discuss how target grades will be achieved, such as through mine sequencing using multiple pits 	Section 2.1 Sections 2.4.2 to 2.4.5
<ul style="list-style-type: none"> potential need for creation of temporary vs permanent overburden stockpiles, and double handling of overburden and processing waste / gypsum 	Section 2.4.8 Section 2.6
<ul style="list-style-type: none"> costs / affordability of material double-handling 	-

<ul style="list-style-type: none"> implications of the above to the level of pit backfilling proposed, and to final landscape topography 	Appendix Q (Chapter 3)
<ul style="list-style-type: none"> management of waste rock landform(s) (if relevant) 	N/A – all waste rock will be returned to the pit.
<ul style="list-style-type: none"> visual amenity of the proposed final landscape topography, its acceptability to future owners, including traditional owners, and suitability of that profile to projected future uses of the sites. 	Appendix L (Section 9.7.9)
Discuss and assess risks that the Project will create an ongoing environmental, social and/or economic legacy if operations are required to cease ahead of schedule due to unforeseen circumstances, prior to the planned closure and rehabilitation of the site.	Appendix Q (Chapter 3 and Chapter 5)
Mitigation Provide details of proposed rehabilitation and closure planning for the Project, including:	
<ul style="list-style-type: none"> an outline of final rehabilitation, revegetation and closure plans for all aspects of the Project on completion of mining on site 	Appendix Q (Chapter 3)
<ul style="list-style-type: none"> rehabilitation objectives for the Project area beyond the intended use 	Appendix Q (Sections 2.5 and 2.6)
<ul style="list-style-type: none"> final topographic and drainage morphology, including design concepts and methodology to be used 	Appendix Q (Chapter 3)
<ul style="list-style-type: none"> proposed staging and timing of rehabilitation and closure 	Appendix Q (Chapter 3)
<ul style="list-style-type: none"> removal of plant, equipment, structures, linear infrastructure, hardstand and concrete footings, buildings, water storages, and methods proposed for stabilisation of affected areas 	Appendix Q (Chapter 3)
<ul style="list-style-type: none"> protocols for the safe and stable securing of the mine 	Appendix Q (Chapter 3)
<ul style="list-style-type: none"> rehabilitation techniques to be used 	Appendix Q (Chapter 3)
<ul style="list-style-type: none"> investigation of various methodologies of topsoil management and their effectiveness for rehabilitating disturbed areas 	-
<ul style="list-style-type: none"> ancillary preparations for rehabilitation/closure, such as: establishment of an on-site nursery, local native species selection/collection/grow-out and revegetation trails 	-

<ul style="list-style-type: none"> closure criteria and future land tenure and land-use arrangements. 	Appendix Q (Chapter 3)
<p>A draft Mine Closure Plan (MCP), specific to the Project should be prepared to address identified risks associated with rehabilitation, decommissioning and closure. The MCP must provide an outline of the issues that require management at closure and demonstrate that all relevant issues and appropriate management measures have been identified. The MCP should demonstrate that ecologically sustainable mine closure can be achieved consistent with agreed post-mining outcomes and land uses, and without unacceptable liability to the Territory.</p>	Appendix Q
<p>The MCP should include:</p>	
<ul style="list-style-type: none"> mitigation measures to address identified risks 	Appendix Q (Chapter 5)
<ul style="list-style-type: none"> measures required to prevent contamination of surface and groundwater resources 	Appendix Q (Chapter 3)
<ul style="list-style-type: none"> measures to ensure that tailings and overburden with AMD/NMD/SD potential, and poor quality mine waters, will be physically isolated from the environment, and not result in any short (whilst operational), medium (post closure and under institutional control) or long term (post-institutional control) detrimental ecological impacts 	Appendix I (Section 6) Appendix Q (Chapter 3)
<ul style="list-style-type: none"> measures to minimise the long term introduction and control of weeds 	Appendix E (Section 3.2.3)
<ul style="list-style-type: none"> revegetation strategies for disturbed sites to utilise local native plant species similar in type, density and abundance to those existing in adjacent areas 	Appendix Q (Chapter 3)
<ul style="list-style-type: none"> measures to ensure the environmental sustainability and full containment of contaminated drainage / runoff post-closure 	Appendix I Appendix Q (Chapter 3)
<ul style="list-style-type: none"> measures to ensure the stabilisation of erosion, to a level similar to comparable landforms in surrounding undisturbed areas 	Appendix Q (Chapter 3)
<ul style="list-style-type: none"> contingencies to make landforms and mine components secure and non-polluting in the event of unexpected or temporary closure, or failure of rehabilitation, revegetation or closure actions. 	Appendix Q (Chapter 3)
<p>The MCP should include a Care and Maintenance Plan based on the MCP. The Care and Maintenance Plan should include measures outlining how the Proponent will maintain its environmental obligations and commitments should the Project be temporarily or unexpectedly closed or suspended at any stage in the Project life.</p>	-

Monitoring	
The EIS should:	
<ul style="list-style-type: none"> Describe proposed post-mining monitoring and reporting to be used to evaluate and report on the effectiveness and performance of the mitigation measures. 	Appendix Q (Chapter 3)
<ul style="list-style-type: none"> Describe contingency measures to be implemented in the event that monitoring demonstrates that management measures have not been effective. 	Groundwater contingency measures in Appendix H
Provide outcome and assessment criteria that will give early warning that management and mitigation measures are not achieving the outcomes and benefits expected and identified by the Proponent	Appendix Q (Chapter 3)
5.11 Other Risks	
Other risks not assessed in the preceding Sections (5.3 - 5.9) should be identified and management strategies proposed that detail avoidance, minimisation, mitigation and monitoring for the risks. The following risks and advice should also be addressed as a minimum:	Chapter 6
<ul style="list-style-type: none"> Bushfires and Emergency The Proponent should be aware of Sections of the Bushfires Act and Regulations that apply to the Project and address risk and management of bushfires, in a Fire Management Plan for the Project. The Plan should be developed in consultation with traditional owners, pastoralists and their representative organisations, where appropriate, that have specialist knowledge in fire management. The Fire Management Plan should be incorporated into the Environmental Management Plan (Section 6) for the Project. 	Appendix E (Section 3.2.2)
<ul style="list-style-type: none"> Noise and Vibration The potential sensitivity of human and biological receptors to noise and vibration and mitigation measures should be discussed in a relevant Section of the EIS. The Proponent should address the impact of noise and vibration resulting from the Project on residents and the community in a relevant Section of the EIS. The EIS should outline methods for communicating with, and reducing the impact on, residents within the vicinity of the Project who may be affected by the Project. 	Chapter 6 Chapter 16
<ul style="list-style-type: none"> Visual Amenity The extent and significance of the changed landscape on visual amenity during all stages of the Project should be discussed in a relevant Section of the EIS. Aspects of the project that would be 	Chapter 6

visible from key vantage points, publicly accessible areas and areas of significance, should be discussed.	
<p>5.11.4 Mosquito Breeding</p> <p>There is potential for mine sites to create mosquito breeding sites. The Proponent should be aware of Sections of the Public and Environmental Health Act that apply to the Project and address risk and management of biting insects in a relevant Section of the EIS. In particular, the EIS should provide:</p>	-
<ul style="list-style-type: none"> measures to ensure water pond (i.e. sediment pond) is designed with minimal mosquito breeding potential (i.e. steep sides, deep open water). The Project should conform to 'Guidelines for Preventing Mosquito Breeding Associated with Mining Sites' 13 	Section 3.4.3 Chapter 11 (assessed as low risk and therefore no further control required)
<ul style="list-style-type: none"> Measures to prevent mosquito breeding should be outlined in a biting insect management Section in the Environmental Management Plan. Information on personal protection can be found in 'Personal protection from mosquitoes and biting midges in the Northern Territory' 14 	-
6 Environmental Management	
The specific safeguards and controls proposed to be employed to minimise or remedy environmental impacts identified in the risk assessment process are to be included in an EMP. The EMP should be strategic, describing a framework for continuing management, mitigation and monitoring programs for the significant environmental impacts of the Project.	Appendix E
The scope, content and structure of the EMP will be a function of the outcomes of the environmental risk assessment and determined by the significance of the environmental impacts. The EMP should not be prepared in isolation but should be consistent and integrated with the principles of an environmental management system. The EMP should include specialised management plans where it is necessary to provide a high level of operational detail (e.g. Water Management Plan, Erosion and Sediment Control Plan, etc.). As much detail as is practicable should be provided to enable adequate assessment of the proposed environmental management practices and procedures	Appendix E (with reference to Chapter 6 of the EIS) including specialist plans for: Air quality Biodiversity Waste and hazardous material Traffic and transport Water Historic and cultural heritage Social and economic
The EMP needs to address the Project phases (development, operation, decommissioning, closure and post-closure) separately. It must state the environmental objectives, performance criteria, monitoring, reporting, corrective action, necessary resourcing, responsibility and timing for each environmental issue.	Appendix E (Chapter 3)
The EMP should include:	

<ul style="list-style-type: none"> the proposed management structure of the Project and its relationship to the environmental management of the site, including personnel responsible for maintaining and approving the EMP 	Appendix E (Section 2.4)
<ul style="list-style-type: none"> description of the main elements of the environmental management system and reference to related documents determined by the Proponent to be necessary to ensure the effective planning, operation and control processes that relate to the environmental management system 	Appendix E (Section 2.5)
<ul style="list-style-type: none"> a register of ownership for the mining and infrastructure interests associated with the Project, including the title numbers, title holders and status 	-
<ul style="list-style-type: none"> the name of the agency responsible for endorsing, approving and/or overseeing each mitigation measure or monitoring program 	-
<ul style="list-style-type: none"> proposed reporting procedures consistent with Territory and Australian Government legislative requirements 	-
<ul style="list-style-type: none"> a summary table listing the commitments made in the EIS, including clear timelines for key commitments and performance indicators, with cross-references to the text of the EIS 	-
<ul style="list-style-type: none"> management targets and objectives for relevant environmental impacts and/or factors 	Appendix E (Chapter 3)
<ul style="list-style-type: none"> performance indicators by which all anticipated and potential impacts can be measured 	Appendix E (Chapter 3)
<ul style="list-style-type: none"> proposed monitoring programs to allow early detection of adverse impacts 	Appendix E (Chapter 3)
<ul style="list-style-type: none"> sampling procedures and frequency, where relevant: <ul style="list-style-type: none"> - how results will be recorded - laboratory techniques and methods of data analysis - equipment and instruments calibrated or verified at specified intervals - sample preservation techniques. 	Appendix E (Section 2.5.6)
<ul style="list-style-type: none"> contingencies for emergency events, such as hydrocarbon and other hazardous chemical spills or natural disasters 	Appendix E (Sections 2.5.3 to 2.5.5)

<ul style="list-style-type: none"> procedures for dealing with failure to meet performance criteria and targets, non-compliance with environmental management controls, environmental incidents and emergencies 	Appendix E (Section 2.5.7)
<ul style="list-style-type: none"> Where interpretation of the monitoring data or other observations have detected the potential for or actual adverse trends in performance or impacts, detail what remedial/corrective strategies and actions will be implemented. Include scopes of work where appropriate together with a commitment to an implementation timetable and any modifications to the monitoring program required in order to assess the performance of the actions. 	Appendix E (Section 2.5.7)
<ul style="list-style-type: none"> an overview of the environmental awareness training and education process regarding responsibilities, including: <ul style="list-style-type: none"> -the induction program (e.g. general, site, department) - communication of the requirements of the EMP to all employees and contractors - environmental emergency response training - particular training requirements for targeted personnel - any other environmental training or education requirements 	Appendix E (Section 2.5.1)
<ul style="list-style-type: none"> provision for the periodic review of the EMP 	Appendix E (Section 2.5.8)
<ul style="list-style-type: none"> provision for independent environmental auditing of the Project. 	-
<p>The EMP would continue to be developed and refined following the conclusion of the assessment process, taking into consideration the proposed timing of development activities, comments on the EIS and incorporating the Assessment Report recommendations (if any) and conclusions.</p>	Appendix E (Section 2.5.8)