Appendix A –Commitments Summary (Revised to include supplementary commitments)

Introduction

This appendix identifies the commitments that have been detailed within the Draft EIS and Supplementary EIS for the Twin Bonanza gold project development. Commitments may have been repeated under different chapters and associated management plan headings; this is to ensure the commitments are captured in the context in which they apply to the differing aspects of the projects. If further details are required refer to the relevant section in the Draft EIS or Supplementary EIS comments as detailed in the column titled “Section in EIS”.

Commitment	Issue	Section in EIS
CHAPTER 1 - Introduction		
No major water courses are present or will be diverted as part of the project.	Project description	Chapter 1 – Section 1.3
To deliver on ABM’s commitment to stakeholders and the environment, ABM will: • *comply with legislative and regulatory requirements for the environment* • *proactively develop and maintain management systems to measure and continually improve environmental performance* • *operate in a responsible manner to minimise impacts on the environment and prevent pollution* • *care for the environment and its heritage value* • *work closely with the community and governing bodies to ensure that a good approach is always followed relating to environmental protection* • *encourage employees to value the heritage and the environment in which we work* • *reduce waste, recycle and recognise the by-product of our consumables* • *maintain an open consultation process with regulators, the community and stakeholders* • *minimise workplace exposure to hazards, ecosystem disturbance or degradation* • *re-establish disturbed areas as sustainable ecosystems and community assets* • *facilitate the training of employees and contractors in relation to their roles and responsibilities to environmental management* • *periodically audit ABM’s environmental systems and performance to further improve environmental outcomes.*	ABM policies	Chapter 1 – Section 1.5.2
CHAPTER 2 - Regulatory Environment		
Pursuant to the *Mining Management Act 2001* a Mining Management Plan (MMP) will be submitted once the mineral lease is approved and before operations proceed.	Approvals and Mining Management Plan	Chapter 2 - Section 2.1
ABM will comply with the MMP in force for the site and provide a financial security (bond) to the Minister for the purposes of securing costs and expenses in the event the Minister requires action to be taken to prevent, minimise or rectify environmental harm.	Mining Management Act 2001	Chapter 2 - Section 2.4.2
ABM will seek all appropriate permits and approvals required under the *Territory Parks and Wildlife Conservation Act 2000*.	Territory Parks and Wildlife Conservation Act 2000	Chapter 2 - Section 2.4.4
In accordance with the recommendations of archaelogical report, the *Heritage Act*, and in-conjunction with the *Sacred Sites Act*, ABM will adhere to the following: 1. Avoid direct and indirect disturbance and/or damage to all recorded sites during proposed works. 2. With respect to sites near the mining activities restrict all future works to areas of existing exploration and install as soon as possible temporary fencing or marking of this area. 3. Apply for Ministerial consent to disturb or destroy archaeological sites within the proposed mineral lease area should the archaeological materials/artefacts be within the footprint of the proposed mine development. Additional documentation of the site for scientific- and potentially cultural-purposes should be considered during this process. In this instance relocation to another site or area is not considered an appropriate strategy as it may reduce the research integrity of other sites and the area as a whole.	Heritage Act 2011 - Sacred Sites	Chapter 2 - Section 2.4.6

Commitment	Issue	Section in EIS
The Aboriginal Areas Protection Authority (AAPA) administers the issue of authority certificates in consultation with the relevant custodians under the *Sacred Sites Act*.	Northern Territory Aboriginal Sacred Sites Act 1989	Chapter 2 - Section 2.4.7
ABM Resources will adhere to any Central Desert Shire bylaws or requirements that may become applicable.	Local government requirements - Central Desert Shire	Chapter 2 - Section 2.5.1
The proposed Project's construction and operation will take into consideration and adhere to all applicable standards and codes of practice.	Standards and Codes of Practice	Chapter 2 - Section 2.6
CHAPTER 3 - Project Description		
The majority of the operational employees will work a 2 weeks on/1 week off roster (mill – day and night shift), or 2 weeks on/1 weeks off roster (mine – day shift only). Site based management, technical and support staff will work either a 2 weeks on/1 week off roster or other rosters as such as required commensurate with their roles.	Project background and history	Chapter 3 – Section 3.1
ABM proposes to conduct mining and processing at the Old Pirate deposit and surrounding prospects, including Golden Hind and Old Glory (collectively called the "Twin Bonanza - 1" project). It is hoped that further exploration and mining activity will identify other mineralised zones to expand the mining inventory in the future.	Proposed Project	Chapter 3 – Section 3.2
As stages two and three progress, ABM will look at the economic viability of processing Buccaneer mineralised material using some of the infrastructure of the Twin Bonanza gold project.	Beyond Stage three	Chapter 3 – Section 3.2.2.4
The project will be developed in stages, from the trial mining (2013) through to the full scale mining as proposed in this EIS report.	Beyond Stage three	Chapter 3 – Section 3.2.2.4
Once further developments are proven feasible, the company will consult with relevant regulatory authorities on the requirements for additional approvals.	Beyond Stage three	Chapter 3 – Section 3.2.2.4
The proposal will upgrade and expand the existing pilot processing plant and infrastructure (built for stage one).	Proposed Mining project	Chapter 3 – Section 3.3
It is intended that the tailings dam used for stage one will become the water storage dam for stage two. The tails will be progressively pumped out and potentially reprocessed through an improved gravity circuit, once reprocessed the tails will be placed into a larger tails dam.	Proposed Mining project	Chapter 3 – Section
The expanded mining process (stage two) will involve the construction and operation of the following components: a. The mining of three open pits using drill, blast, load and haul techniques. b. Converting the stage one tailings dam to a water storage dam. c. The expansion and operation of gravity processing equipment for refining ore with the addition of an enclosed intensive leach reactor, such as an Acacia Reactor, for cyanide leaching of concentrates. d. Installation of associated tailings dams, incorporating a dual cell tailings dam and a concentrate residual dam (CRD) for cyanide treated tailings. e. Constructing two waste rock dumps. f. Installing ancillary infrastructure, including: generators/power plants, staff accommodation, workshop and office areas.	Proposed Mining project	Chapter 3 – Section 3.3

Commitment	Issue	Section in EIS
g. Establishing a new sewage system and landfill area. h. Upgrading and expanding a reverse osmosis plant for producing potable water. i. Potentially upgrading and lengthening of the existing airstrip. j. Upgrading existing roads, and constructing new roads and haul roads. Sourcing of water initially from within and external to MLA 29822.		
As illustrated in Figure 3.2 and documented in Table 3.5 the facilities associated with the project's operations will include: a. three Run of Mine (ROM) pads containing ore stockpiles associated with the open pits and processing plant b. ore processing facilities c. tailings dams cells 2A and 2B (for deposition of gravity treated tailings only) d. CRD (for deposition of small volumes of cyanide treated tailings with cyanide removed prior to deposition) e. two waste rock dumps (Northern Waste Rock Dump and Southern Waste Rock Dump) f. borrow pit (for sourcing of clay material). g. topsoil, sandstone, siltstone and pisolite/gravel stockpiles associated with rehabilitation activities h. water management structures (water bores, pumps, monitoring bores pipelines, surface water diversion drains and sediment settlement ponds) i. accommodation, offices, and ablutions j. heavy vehicle hard-stands (parking areas) and light vehicle car parks k. heavy equipment workshop with associated wash down bays and service areas l. roads, haul roads and firebreaks m. stores warehouses and lay down areas n. explosives magazine k. airstrip (upgrade existing airstrip)	Proposed Mining project	Chapter 3 – Section 3.3
o. Only areas actually required for use will be cleared and all topsoil will be stockpiled for future rehabilitation.	Proposed Mining project	Chapter 3 – Section 3.3
The project will result in the clearing of 223.3 hectares during stages two and three, this is in addition to existing 32.5 hectares that has been disturbed during stage one.	Proposed Mining project	Chapter 3 – Section 3.3
The aim of the intensive leach circuit will be to extract gold from gravity concentrated product and will be dependent on recoveries from tabling processes.	Proposed Mining project	Chapter 3 – Section 3.3
The tailings will report to the two celled tailings dam with the intense leach material being deposited in a lined CRD once cyanide has been removed.	Proposed Mining project	Chapter 3 – Section 3.3
The tailings dam will be established in stages.	Proposed Mining project	Chapter 3 – Section 3.3
Initially a five metre deep below ground starter pit will be established with the capacity of 250 000 tonnes. This will be expanded to hold an additional 600 000 tonnes via an above ground 5 metre high embankment enclosed tailings dam. This process is to be completed again to produce a second tailings dam cell adjoining the first with the same configuration.	Proposed Mining project	Chapter 3 – Section 3.3
Tailings dams will be designed, constructed, and operated in line with the Australia National Committee on Large Dams Guidelines on Tailings Dams 2012 (ANCOLD, 2012). External parties have been engaged to design the tailings dams.	Proposed Mining project	Chapter 3 – Section 3.3
Site roads will require upgrading and new roads will need to be established to allow safe transit around the operation. This will include haul roads that allow for traffic to operate without disruption in both directions. Haul roads between the mine and processing facility will be designed and updated as operations are progressed.	Proposed Mining project	Chapter 3 – Section 3.3
The current accommodation facility is proposed to be expanded during stage two or three. The facility will be expanded to the west of the current camp, along the western side of the planned mineral lease. The upgraded accommodation facility is expected to largely consist of portable buildings. The existing disturbance will be retained for use as a recycling and laydown area and equipment storage area.	Proposed Mining project	Chapter 3 – Section 3.3
Water will be sourced from bores on the lease and bore fields to the west of the mineral lease, under a section 19 agreement with the CLC. Refer to Chapter 6: Water management.	Proposed Mining project	Chapter 3 – Section 3.3
Upgrading of the main access road will only require gravel sheeting to maintain the surface as the only large vehicles using the road will only be transporting mining infrastructure and logistical supplies. Material to maintain the road is to be sourced from mine pits. No bulk haulage is required for the product as the produced gold volumes can be easily transported by other means to the Perth Mint.	Proposed Mining project	Chapter 3 – Section 3.3
The ore will to be trucked from the open pit to one of three ROM pads for storage prior to crushing and processing.	Mining overview	Chapter 3 – Section 3.4.1

Commitment	Issue	Section in EIS
Final waste rock dump external batters will be at a gradient of 15 degrees to ensure effective rehabilitation and to blend sympathetically with existing natural topography of the area.	Mining overview	Chapter 3 – Section 3.4.1
In addition, selective siltstone and sandstone waste rock units and the top 800mm to 1000mm pisolitic/gravel horizon covering the pits will be selectively handled and stockpiled for the capping and rehabilitation of the tailings dam and CRD (Figure 3.7).	Mining overview	Chapter 3 – Section 3.4.1
All waste dumps will be rehabilitated with topsoil (which will be removed and stockpiled prior to establishment) and revegetated. For on-going expansion, it is expected that some open pits will be able to be partially backfilled to reduce waste dump expansion. Backfilling opportunities may be assessed as an ongoing part of mine planning and undertaken where sterilisation of the ore bodies are likely to occur.	Mining overview	Chapter 3 –Section 3.4.3
An abandonment bund will be constructed around each of the open cut pits using the most competent rock available.	Slope Design	Chapter 3 –Section 3.4.10
Water runoff from operational areas will be directed to 1:20 year peak flow, sized sedimentation traps. All traps will be designed to appropriate standards and sized in accordance with calculations from the site surface water modelling.	Mine water management	Chapter 3 –Section 3.4.10
ABM is committed to the efficient use and responsible management of water resources in its activities. By implementing water efficient work practices and recycling, the consumption of raw water will be minimised.	Mine water management	Chapter 3 – Section 3.5.4.1
If the in-situ materials at the proposed tailings dam location cannot be conditioned to produce permeability to $1x10^{-8}$ m/s, ABM intends to locally source clay from the Buccaneer borrow pit.	Clay source	Chapter 3 – Section 3.5.5
All water flows (including to and from the tailings dam, CRD and water storage dams) will be monitored and recorded on a daily basis.	Process Water	Chapter 3 – Section 3.5.6
Daily water level monitoring will be undertaken at the tailings dam, CRD and process water plant. Monthly sampling of the tailings/process dam water will be undertaken, including a full suite of metals, major ions and general parameters to monitor metal levels in the water.	Process Water	Chapter 3 – Section 3.5.6
The generator sets will be located centrally to infrastructure, on the south side of the main east – west access road between camp and mining operations and north of the processing facility.	Infrastructure – Power	Chapter 3 –Section 3.7.4
All fuel drums / chemical products shall be stored within either self bunded tanks, bunded lined areas or within portable self bunded pallets. Regular checks of the fuel and chemical storage areas will be undertaken to check for the presence of leaking drums. When leaking drums are identified the drum will be isolated and the liquids transferred into a suitable container for ongoing storage.	Fuel storage	Chapter 3 – Section 3.7.5
Septic tanks with associated leach/evaporation systems will be installed in line with the Public Health (General Sanitation, Mosquito Prevention, Rat Exclusion and Prevention) Regulations – Regulation 28.	Sewage	Chapter 3 – Section 3.7.7
Preparation and storage of food will be in accordance to the requirements of the Department of Health.	Accommodation village	Chapter 3 – Section 3.10
CHAPTER 4 - Project Rational and Alternatives		
ABM will meet all of the requirements of the Northern Territory and the Commonwealth in the establishment and operations of this project.	Environmental Objectives	Chapter 4 - Section 4.3
ABM is committed to a close working relationship with the Central Land Council, the communities and the Traditional Owners of the areas in which it works.	Environmental Objectives	Chapter 4 - Section 4.3.1

Commitment	Issue	Section in EIS
ABM will ensure that operations at Twin Bonanza 1 will: •operate safely and constantly strive to minimise health and safety risk to employees, contractors and visitors to ABM's areas of business •identify, assess and manage other risks to employees, contractors and the communities in which ABM operate •support and encourage ABM's employees to not only be a contributor to the company but to be contributors to the well-being of their own families and communities •conduct ABM's business ethically and honestly and within the legal frameworks of local, territory and federal government •operate under the process of equality with equity – (treating all people fairly) •acknowledge and uphold human rights respecting Traditional Owners and indigenous Australians along with the other races, religions and diversity of multi-cultural Australia •strive to review ABM's performance and report progress to shareholders and the wider populous •always strive for energy efficiency and to limit greenhouse gas emmisions reducing and preventing pollution. •strive to protect and even enhance biodiversity with emphasis on the native flora and fauna and reducing the negative effects of introduced species where possible •engage openly and honestly with the governments, their representatives and the statutory offices and authorities.	Sustainable Development	Chapter 4 - Section 4.3.2
ABM proposes to manage vehicle and bilby interaction and potential collisions by regulating speeds through these areas to afford both the vehicle driver and bilby time to adjust so that a collision can be avoided.	Alternative location - Project Alternatives	Chapter 4 - Section 4.4.2
For most inert items such as general waste, the rubbish will be disposed of on site. Where practicable ABM will recycle and reuse when the process is a viable option.	Waste disposal	Chapter 4 - Section 4.4.3
As the project develops investigation will be undertaken to assess the prospect of back filling the disused pits where economically practicable.	Final void management	Chapter 4 - Section 4.4.3
Using multiple water sources for water extraction to manage the drawdown effect on the palaeochannels as those areas have been identified as containing higher biodiversity..	Alternative water sources	Chapter 4 - Section 4.4.3
All water used will be recycled or evaporated thus reducing risk of contamination.	Waste Water	Chapter 4 - Section 4.4.3
CHAPTER 5 - Risk Assessment		
A full risk management plan for the mine will be written as a standalone document following the submission of this EIS. Until that time chapter 5 will serve as a risk management plan for the company. Existing risk management plans for exploration and bulk sampling are already in place.	Risk Management	Chapter 5
Employees and contractors entering areas of environmental significance will be briefed prior to commencing work to outline other specific environmental issues and special requirements.	Environmental Training and Education	Chapter 5 - Section 5.1.5.1
A regular review of risk assessment will also be conducted during the operational phase of the Project to ensure that it remains appropriate and to incorporate any project design changes.	Risk assessment	Chapter 5- Section 5.2
In the event of an incident within the project, ABM will implement the following: •on-going maintenance of the register for personnel to identify and report hazards and incidents. •establishing and maintaining a process for the investigation of all incidents. Additionally, a process for follow-up, close-out, and feedback of information to relevant personnel will be undertaken on the success of any implemented corrective actions. •priority given to corrective and preventive actions •establishing and maintaining a process to ensure all legislative recording and reporting requirements are met	Incident Management	Chapter 5 - Section 5.5

Commitment	Issue	Section in EIS
recording and investigating internal and external complaints related to safety, health and environmental aspects of the operations using findings from incidents and non-conformance to improve systems, procedures and processes.		
“Significant” environmental incidents and spills will be reported to the Department of Mines and Energy (DME) and in some situations reported to the Department of Land Resource Management (DLRM). All environmental events/incidents/near misses and investigation reports will be documented in the site environmental register.	Environmental Incidents	Chapter 5 - Section 5.5.2
CHAPTER 6 - Biodiversity		
Mitigation measures to reduce the risk of impacts on vegetation communities include:. •Vegetation clearance planning that aims to clear the smallest possible area of vegetation.. •All approved clearing boundaries to be shown on maps and clearly marked on the ground when clearing actually takes place.	Vegetation communities - vegetation clearing activities	Chapter 6 - Section 6.7.1.1
Progressive clearing will be implemented to reduce surface disturbance at any one point in time (thereby reducing erosion/dust hazard, weed risk, and general disturbances to local habitat).	Vegetation communities - vegetation clearing activities	Chapter 6 - Section 6.7.1.1
Mitigation measures to reduce the risk that weeds may impose on vegetation communities include: •Progressive vegetation clearing rather than wide scale clearing at the start of the project. •Implementation of the Weed Management Plan (forms part of the BMP – Appendix D), which includes the control and monitoring of existing Buffel grass infestations, enforcing weed hygiene protocols during construction and operation, and regular weed monitoring (especially after periods of rainfall when germination is most active).	Vegetation communities - Introduction of spread of weeds	Chapter 6 - Section 6.7.1.2
Mitigation measures to reduce the risk of vegetation clearing on palaeochannels include: •Positioning water supply bores to limit disturbance and reduce fragmentation. •Avoiding deep rooted trees where possible (i.e. all trees present within palaeochannel). •Minimising size of drill pads.	Sensitive Habitats - Vegetation Clearing	Chapter 6 - Section 6.7.2.1
Mitigation measures to reduce the risk of groundwater extraction on palaeochannels include: •Strict groundwater monitoring schedule using monitoring bores. •Conduct tree health monitoring within water supply area, and also in control sites. •If monitoring detects significant drawdown that cannot be rapidly replenished, water extraction will cease at that particular bore and rotate to another bore in a separate system	Sensitive Habitats - Groundwater extraction	Chapter 6 - Section 6.7.2.2
ABM will protect environment, human safety, and property through fire-break installation, equipment maintenance, and onsite procedures.	Sensitive Habitats - Habitat modifications	Chapter 6 - Section 6.7.2.3
Mitigation measures to reduce the risk that habitat modifications may have on palaeochannels include: •Implementation of the Weed Management Plan. •Implementation of the Fire Management Plan.	Sensitive Habitats - Habitat modifications	Chapter 6 - Section 6.7.2.3

Commitment	Issue	Section in EIS
•Construction of access roads and pads to reduce chance of erosion development.		
Mitigation measures to reduce the risk that discharge of bore suppled water may have on palaeochannels include: •Regular inspections of bore equipment.	Sensitive Habitats - Poor management of supply water	Chapter 6 - Section 6.7.2.4
Mitigation measures to reduce the risk level that vegetation clearing imposes on threatened species, including: Siting of infrastructure in areas that will least impact threatened species. •Pre-clearance fauna surveys for all developments that require removal of previously undisturbed native vegetation. •Adhering to agreed clearing boundaries as part of the EIS approvals.	Threatened Fauna Species - Vegetation Clearing Activities	Chapter 6 - Section 6.7.3.1
While it is known that the great desert skink occurs in similar habitat within the Tanami, there are no known occurrences of the species along or nearby to the project area (closest records are from 95 km South West). Pre-clearance surveys will attempt to identify burrows of this species and contingencies will be applied if detection occurs.	Threatened Fauna Species - Vegetation Clearing Activities	Chapter 6 - Section 6.7.3.1
Pre-clearance fauna surveys for threatened species will be conducted prior to vegetation clearing to advise ABM on presence of potential activity. If evidence of threatened species is recorded during the pre-clearance surveys, contingencies will be triggered and follow-up actions implemented.	Threatened Fauna Species - Vegetation Clearing Activities	Chapter 6 - Section 6.7.3.1
Mitigation measures to reduce the risk that weeds may impose on threatened species include: •Minimise land clearing (thereby reducing soils that are susceptible for weed incursion). •Progressive clearing of land, followed by progressive rehabilitation (thereby reducing soils that are susceptible for weed incursion). •Implementation of the Weed Management Plan	Threatened Fauna Species - Introduction or spread of weed species	Chapter 6 - Section 6.7.3.2
Mitigation measures to reduce the risk level that pest species may impose on threatened species include: •Properly designed land fill area that includes barrier fencing •Burning all putrescible waste on a daily basis to reduce attraction of scavenger species such as feral cats and dingos. •Avoiding creation of artificial water points. •Weekly inspections of land fill fencing to ensure that target species cannot enter the area. •Monitoring of feral cats and dingos within the general area. •Designing the camp area to reduce chance of dingos and cats using structures for shelter. •Educating on-site personnel to make them aware not to feed or otherwise interact with animals on the site.	Threatened Fauna Species - Introduction or spread of pest species	Chapter 6 - Section 6.7.3.4
Mitigation measures to reduce the risk level that vehicle movements impose on threatened species include: •Speed restrictions •Night driving restrictions or awareness •Signage along roads that remind drivers of threatened species presence within the project area •Restrictions on off road driving with the focus on areas containing known Greater Bilby burrows and requirement to use existing roads.	Threatened Fauna Species - Vehicle movements	Chapter 6 - Section 6.7.3.4
Mitigation measures to reduce the risk level that lights, noise, and vibrations impose on threatened species include: •Avoid areas currently inhabited by greater bilby. •Ensure that machinery and equipment is installed with appropriate noise mufflers. •Ensure that machinery and equipment is service regularly. •Driving at night in known bilby areas will be minimised and staff will be informed of active zones during inductions, tool box meetings, and signage.	Threatened Fauna Species - Lights, noise and vibrations	Chapter 6 - Section 6.7.3.5

Commitment	Issue	Section in EIS
Mitigation measures to reduce the risk that migratory species are adversely impact by process water and sewerage water include: •Properly design and operate the tailings dam to minimise the size of the decant pond. •If required installation and implementation of bird deterrent items and activities, especially in the concentrate residual dam. •Regular monitoring of tailings facility and sewerage dam to determine presence of waterbird/migratory species and if any illness or fatalities are occurring as a result of water quality.	Migratory species and water birds - Poor management of process water	Chapter 6 - Section 6.7.4.1
CHAPTER 7 - Water Management		
ABM will not take, direct or use surface water without first notifying all relevant stakeholders. No rivers or creeks will be diverted as part of the project.	Risk to groundwater and surface water quality	Chapter 7 – Section 7.1
All of the surface water storage facilities (i.e. the tailings dam, CRD, and water storage dam) will be designed, constructed, and managed to prevent the release of water into the surrounding environment.	Surface Water	Chapter 7 – Section 7.3
The main site diversion banks have been designed to convey a 1:1,000-yr peak flow event, and all temporary drains have been designed for a 1:100-yr peak flow event.	Surface Water	Chapter 7 – Section 7.3.1
Sediment control structures (i.e. “sediment traps” or “sediment basins”) will be installed in each of the main infrastructure areas to collect and remove sediment from runoff water.	Surface Water	Chapter 7 – Section 7.3.1
The following strategies will be implemented to mitigate the risks to surface water identified in Section 7.4.1: • Overtopping of water storages: In order to avoid overtopping of the water storages, each of these facilities (i.e. tailings dam, CRD, water storage dam, and sewage pond) will be constructed and operated with a minimum freeboard sufficient to hold the entire volume of a 1:100-yr, 72-hr rainfall event. The water level within each of these facilities will be monitored (daily at minimum) to ensure that the maximum operating level is not exceeded, and that the minimum freeboard is always available in the event of an extreme rainfall event. • Erosion of constructed landforms: An Erosion and Sediment Control Plan (Appendix E) has been prepared for the Twin Bonanza gold project, which outlines in detail specifically how erosion and sedimentation will be minimised and managed across the project area. The main steps taken will include: 1. the use of diversion drains and banks to redirect any “clean” surface water flows, thus minimising the potential for erosion by limiting the amount of water flowing through the site 2. the use of erosion-resistant materials to construct the tailings dam and WRDs, as identified by a soil assessment 3. limiting constructed slope gradients to angles that have been demonstrated to be stable for the given construction materials (i.e. ≤15° for the sandstone material).	Surface Water	Chapter 7 – Section 7.5.1

Commitment	Issue	Section in EIS
In general, most monitoring activities will be conducted monthly, by following the relevant Standard Operating Procedure (SOP). Monitoring results will be compared against site-specific trigger values to determine if any contingency measures are necessary. Monitoring results will be reported annually.	Monitoring	Chapter 7 – Section 7.6
Monitoring of surface water storages, sediment traps, and other surface water infrastructure will be conducted according to the Australian Guidelines for Water Quality Monitoring and Reporting (ARMCANZ, 2000).	Monitoring – Surface water	Chapter 7 – Section 7.6.1
In addition to this chemical analysis, water depth / level and inflow and outflow rates will be monitored in the surface water storage facilities.	Monitoring – Surface water	Chapter 7 – Section 7.6.1
A standard set of monitoring parameters will be implemented for all monitoring locations.	Monitoring – Groundwater	Chapter 7 – Section 7.6.2
All surface water runoff will either be diverted around the main disturbance areas, or directed into one of the four sediment traps to be installed within the infrastructure areas.	Conceptual Water Account	Chapter 7 – Section 7.7
CHAPTER 8 - Air quality and greenhouse gas emissions		
ABM respects the traditional land use practices of the aboriginal landowners and through this management plan will aim to reduce the effect that dust, emissions have on their land and odours may have on their activities	Air quality and greenhouse gas - sensitive receptors	Chapter 8 - Section 8.4.2
Potential sources of nuisance odours at the project are the refuelling areas, landfill, sewage system and the concentrated leach. Thesefacilities that have the potential to produce nuisance odours will be located away from accommodation areas and the concentrated leach area will be fully enclosed so the potential nuisance odour risk to onsite receptors is deemed to be low.	Air quality and greenhouse gas - Existing sources of emissions Odours	Chapter 8 - Section 8.4.3.2
ABM's environmental manager will conduct a baseline study during the 2014 dry season and implement ongoing monitoring of air quality in respect to dust. This monitoring will aid in ongoing assessment of air quality around the site.	Air quality and greenhouse gas - Management and Mitigation	Chapter 8 - Section 8.6.1
To reduce greenhouse gases staff and contractors will: •maintain equipment including tyres to maximise efficiency and prevent incomplete combustion of hydrocarbons •source and procure machinery with high fuel efficiencies and combustion technologies including catalytic convertors when practicable •investigate alternative energy sources (i.e. solar power) where applicable •purchase fuel from produces that contains a low sulfur content if practicable.	Air quality and greenhouse gas - Management and Mitigation	Chapter 8 - Section 8.6.1.1
Odour will be mitigated by: •managing chemicals and hydrocarbons appropriately under the standard AS1940-2004 - *The storage and handling of flammable and combustible liquids* •containing putrescible waste and disposing of it in accordance to on site waste management procedures that includes incineration and/or disposal in a landfill •treating sewage via onsite septic and waste water disposal systems •ensuring the concentrate leach system is closed to prevent the release of cyanide gases into the environment.	Air quality and greenhouse gas - Management and Mitigation	Chapter 8 - Section 8.6.1.1
Dust mitigation through:. •Minimum area is clear at any one time and the majority of the area is still vegetated and undistributed. •Topsoil will be removed during periods when soil moisture and wind conditions limit dust generation •Dust generation will be mitigated by regular applications of water by a water cart along haul roads and cleared areas to reduce dust from mine traffic and wind. •Dust from blasting will be managed by blasting personnel to ensure fine material produced by drilling is used to stem blast holes and adequate stemming will be used at all times. •A vegetative cover will be established by progressively ripping and rehabilitating areas no longer required. •Vehicle speeds will be limited around site.	Air quality and greenhouse gas - Management and Mitigation	Chapter 8 - Section 8.6.1.2

Commitment	Issue	Section in EIS
ABM proposes to mitigate and manage GHG generation through: 1. regular maintenance of all vehicles and machinery to ensure efficient machine performance and minimisation of GHG emissions a. tyre pressure management b. engine life 2. maintenance of roads to achieve optimum fuel efficiency and reduce annual fuel consumption 3. ensuring all operators are aware of optimum operating conditions and pay load capacities to ensure optimum usage of fuel and prevent unnecessary excess GHG emissions 4. ensuring all endeavours will be made to reduce traveling distances where practicable, particularly for hauling 5. minimising clearing at the site and conducting progressive rehabilitation where practicable 6. using renewable energy sources where practicable (see below) 7. use of ultra-low sulphur diesel.	Air quality and greenhouse gas - Management and Mitigation	Chapter 8 - Section 8.6.1.3
ABM will also monitor its operations by recording and trending complaints over time by entering these in the complaints register and reviewing the nature of complaints on an annual basis.	Air quality and greenhouse gas - Monitoring and compliance	Chapter 8 - Section 8.7.2
CHAPTER 9 - Waste Management		
ABM in all practicable cases will endeavour to achieve the best possible environmental outcome by minimising waste generation, maximising waste re-use, maximising recycling and safely treating and disposing of non-recyclable materials.	Waste Management	Chapter 9 - Section 9.3
ABM will segregate wastes that are recyclable and reusable, and will endeavour to recycle wastes in appropriate recycling facilities or use on site if applicable.	Waste Management	Chapter 9 - Section 9.4
The Twin Bonanza Mine site will endeavour to: 1. Utilise processes/products that produce zero or minimal waste requiring disposal. 2. No contamination of surrounding environment. 3. Recycle all wastes that can be recycled.	Waste Management - Recycling	Chapter 9 - Section 9.4
The landfill will receive uncontaminated waste (solid and putrescible) from on-site operation activities, in addition to accommodation activities. To prevent the creation of new habitats for feral animals and manage the potential for windblown rubbish, the landfill will be surrounded by a wire mesh fence with entry via a gate.	Existing waste facilities - Landfill	Chapter 9 - Section 9.4.3.1
Future landfill developed as part of the Twin Bonanza Project when applicable will be constructed and managed in accordance to the *Guidelines for the Siting, Design, and Management of Solid Waste Disposal Sites Northern Territory (2013).* This includes: •The location based on consideration of geology, surface water and ground water. •The establishment of fencing and a gate around the area.	Existing waste facilities - Landfill	Chapter 9 - Section 9.4.3.1
Contaminated wastes, including materials that have been in contact with lubricants, greases, hydrocarbons and other hazardous chemicals, will be placed in designated disposal bins for transporting off site and disposal in a licenced facility in either the Northern Territory or Western Australia.	Existing waste facilities - Contaminated waste	Chapter 9 - Section 9.4.3.3
Hydrocarbon and chemical storage areas are designed, constructed and managed in accordance with AS 1940. All fuel drums / chemical products shall be stored within bunded, lined areas or within portable self bunded pallets. Permanent bunded storage areas are to be located away from the accommodation site and drainage lines. Regular checks of the fuel and chemical storage areas will be undertaken to check for the presence of leaking drums. When leaking drums are identified the drum will be isolated and the liquids transferred into a suitable container for ongoing storage.	Existing waste facilities - Contaminated waste	Chapter 9 - Section 9.4.3.3

Commitment	Issue	Section in EIS
Putrescible waste will be disposed in the landfill to prevent both endemic and feral fauna from utilising this material as a potential food source. The landfill will be fenced with regular maintenance inspections of the fence to prevent the entry of fauna.	Existing waste facilities - Putrescible and solid waste	Chapter 9 - Section 9.4.3.4
Septic tanks and leach and evaporation systems will be installed in line with the Public Health (General Sanitation, Mosquito Prevention, Rat Exclusion and Prevention) Regulations – Regulation 28.	Existing waste facilities - Sewage treatment	Chapter 9 - Section 9.4.3.5
Material that has the potential to generated small volumes of acid will be contained within non-acid forming material (NAF) material to reduce any negative effects on the environment through leaching.	Waste management - Waste rock	Chapter 9 - Section 9.5.1 - Table 9-1
The final landforms will be physically stable, safe, non-polluting and suitable for the agreed post mining land use so as not to affect the receiving environment.	Waste management - Waste rock	Chapter 9 - Section 9.5.1 - Table 9-1
Testing of the tailings water is to be conducted monthly.	Waste management - Tailings	Chapter 9 - Section 9.5.1 - Table 9-1
The tailings dam will be monitored to ensure the facility will be stable; adequate freeboard is available, seepage is controlled and storage capacity of tailings waste is sufficient during operations.	Waste management - Tailings	Chapter 9 - Section 9.5.1 - Table 9-1
The tailings concentrates are leached in an Acacia reactor once detoxified, the cyanide free waste solution will be discharged to the lined Concentrate Residual Dam (CRD).	Waste Management - Operational Wastes	Chapter 9 - Section 9.5.1 - Table 9-1
All chemicals on-site have a Material Safety Data Sheet (MSDS) to provide details of the chemical and safety requirements relevant to use and disposal.	Waste Management - Operational Wastes	Chapter 9 - Section 9.5.1 - Table 9-1
Waste oil will be stored in waste oil tanks/containers prior to offsite disposal. Waste oil is removed off-site for disposal at an appropriately licensed facility.	Waste Management - Operational Wastes	Chapter 9 - Section 9.5.1 - Table 9-1
Hydrocarbon contaminated soils are placed within the dedicated bioremediation area. Once remediated, soil will be disposed on site or off site depending on the nature of the residual contamination.	Waste Management - Operational Wastes	Chapter 9 - Section 9.5.1 - Table 9-1
Where practicable, runoff water (i.e. ‘clean water’) is diverted away from mining operations and re-directed back into existing drainages. Runoff that cannot be diverted away from mining operations (i.e. ‘dirty water’) is collected in sediment ponds or sumps and where practicable. Excess water is released into the environment once sediment is liberated.	Waste Management - Operational Wastes	Chapter 9 - Section 9.5.1 - Table 9-1
The consumption of raw water is kept to a minimum by the implementation of water recycling where possible. Decanted water from the tailings dam is re-used in the processing plant to reduce water consumption and assist in the consolidation of tailings.	Waste Management - Operational Wastes	Chapter 9 - Section 9.5.1 - Table 9-1
CHAPTER 10 - Tailings and Waste Management		
ABM in all practicable cases will endeavour to achieve the best possible environmental outcome by safely treating and disposing of tailings and waste rock.	Waste management principals	Chapter 10 – Section 10.3
ABM’s tailings and waste rock management strategy also reduces the level of risk associated with pollution generation, onsite and off-site. ABM’s waste	Waste management principals	Chapter 10 – Section 10.4

Commitment	Issue	Section in EIS
management objectives are to: • minimise the production of tailings and waste rock wherever possible • prevent waste rock and tailings from contaminating the surrounding environment • manage and control disposal of all tailings and waste rock • optimise the use of waste rock to ensure rehabilitation success.		
The dams will be constructed and managed in accordance with the ANCOLD Guidelines - Guidelines on tailings dams; planning, design, construction, operation and closure.	Operational Wastes	Chapter 10 – Section 10.4.1
Mitigation and management measures will be further detailed in this Chapter and Chapter 13 - Environmental Management Plan (EMP).	Operational Wastes	Chapter 10 – Section 10.5.1
Material that has the potential to generate small volumes of acid will be contained within non-acid forming material (NAF) material to reduce any negative effects on the environment through leaching.	Operational Wastes	Chapter 10 – Section 10.5.1
The final landform will be physically stable, safe, non-polluting and suitable for the agreed post mining land use so as not to affect the receiving environment	Operational Wastes	Chapter 10 – Section 10.5.1, Table 10-3
Surface and groundwater monitoring and sampling will also be conducted to determine the water quality around the tailings dam.	Operational Wastes	Chapter 10 – Section 10.5.1, Table 10-3
The tailings dam will be monitored to ensure the facility is stable; adequate freeboard is available, seepage is controlled and storage capacity of tailings is sufficient during operations.	Operational Wastes	Chapter 10 – Section 10.5.1, Table 10-3
Intensive cyanide leaching would involve a small fraction of the total material with approximately 1 to 2 tonnes of concentrate recovered daily from tailings via a Knelson concentrator or similar expected to be leached. The concentrate will be leached in an intensive leach reactor, such as an Acacia reactor, a closed system that is isolated from the environment, which introduces cyanide to the concentrate material. ABM proposes to use additional modules in the system to eliminate the discharge of cyanide into the environment.	Tailings processing	Chapter 10 – Section 10.6.2
The waste at the end of this process will be known as the concentrate residual and will be disposed in a lined Concentrate Residual Dam.	Tailings processing	Chapter 10 – Section 10.6.2
To ensure the small volumes of cyanide do not have an effect on the environment, the following measures will be implemented: • Storage and handling in accordance with recognised standards. • Management by staff who are trained to be competent in the management of cyanide. • Ensuring quarantine from the environment by the use of containment structures and exclusion of wildlife from cyanide solutions. • Having secondary containment within the cyanide transfer system (including storage tanks, mixing systems and pipelines). • Instigating preventative maintenance on storage facilities. • Holding sufficient neutralising agent on site in the case of an accident. • Removal of cyanide prior to deposition in the lined Concentrate Residual Dam.	Tailings processing	Chapter 10 – Section 10.6.2
In 2006, the International Cyanide Management Code was established to provide a risk based process to improve cyanide management. The code consists of nine principles relating to production, transportation, handling and storage, operations and decommissioning, worker safety, emergency response, training and dialogue. Where practicable, ABM will align itself to the principles and related standards of the code.	Tailings processing	Chapter 10 – Section 10.6.2
The proposed management and disposal of cyanide residual leach tailings during operations will involve a single CRD either lined with HDPE or clay.	Conceptual CRD design	Chapter 10 – Section 10.6.4
Tailings will be pumped along a bunded pipeline from the mill to the tailings dam.	Tailings deposition and water management	Chapter 10 – Section 10.6.5

Commitment	Issue	Section in EIS
A monitoring bore network will be established around the tailings dams and CRD to test both the up and down gradient water levels and quality.	Seepage management measures	Chapter 10 – Section 10.6.6
Monitoring of the tailings dam and CRD is to include both geotechnical and geochemical monitoring.	Tailings dam and CRD monitoring	Chapter 10 – Section 10.6.8
Diversion structures within the site will be designed for the expected peak surface water flow rate for a 1:100-yr event with all bunds and diversion drains constructed from compacted nature soils due to their high gravel	Waste rock dump surface water management	Chapter 10 – Section 10.7.6
Recovered topsoil will be placed in a number of locations across the site. At each location topsoil is to be paddock dumped to improve water infiltration and maximise the surface to volume ratio thus improving natural vegetation establishment. This stockpiling technique is aimed at limiting erosion of the topsoil.	Topsoil and rehabilitation stockpiles	Chapter 10 – Section 10.7.8
During rehabilitation it is proposed that topsoil will be blended with competent waste rock and integrated to the landform or surface; this will allow the layer to armour overtime thus reducing erosion. Further details on soil and erosion analysis are presented in Appendix AB.	Topsoil and rehabilitation stockpiles	Chapter 10 – Section 10.8
Once topsoil has been removed, the top 800mm to 1000mm of the pits (representing the shallow gravel and saprolite horizon) will be selectively mined and stockpiled for later used in rehabilitation.	Topsoil and rehabilitation stockpiles	Chapter 10 – Section 10.8
• **CHAPTER 11- Closure and Rehabilitation**		
ABM is committed to ensure appropriate planning, scheduling and resourcing of rehabilitation to ensure success of eventual mine closure and relinquishment. The cost of closure will be reviewed annually to ensure financial provisioning reflects the liability of closure.	Rehabilitation strategy	Chapter 11- Section 11.4
To ensure closure success, closure planning will be an adaptive process as closure strategies are improved based on the emergence of new site information and changing levels of uncertainty.	Rehabilitation and decommissioning success factors	Chapter 11- Section 11.6
Clearing will be carried out progressively as the project develops to provide an opportunity for fauna to relocate from disturbed areas.	Land disturbance areas	Chapter 11- Section 11.7
Disturbance areas/domains across the site will be rehabilitated to stable landforms with self-sustaining vegetation covers for integration into the larger land use area.	Rehabilitation	Chapter 11- Section 11.8.2
Clearing will be undertaken progressively to reduce the effects of soil degradation and erosion. Progressive rehabilitation will be undertaken during the life of the mine, to optimise topsoil properties. Topsoil stockpiles that are retained for longer periods will be paddock dumped to increase the surface to volume ratio to encourage natural re-vegetation. The vegetation material, where practicable, is to be retained for fauna habitat and later rehabilitation.	Topsoil management	Chapter 11- Section 11.8.4
Topsoil stockpile areas will be signposted to prevent inadvertent use.	Topsoil management	Chapter 11- Section 11.8.7
At closure the main site diversion drains will remain in place after closure to protect the landforms from erosion during extreme rainfall-runoff events. These main diversion structures are to be constructed based on the modelled 1:1000 year peak flow event.	Flood mitigation	Chapter 11- Section 11.8.8
Management of fire directly associated with the site will focus primarily on the prevention and control of fires accidentally generated by site activities (Appendix Z: Fire Management Plan).	Fire management	Chapter 11- Section 11.11.2
Once agreed upon, the closure completion criteria and associated measurement tools will be used to demonstrate the closure objectives for the site have been obtained. When the closure objectives have been met the Mineral Lease will be relinquished and the transfer of any infrastructure to be used in conjunction with the post mining land use completed.	Final site relinquishment and infrastructure handover	Chapter 11- Section 11.11.3
CHAPTER 12- Road transport and traffic management		
No upgrade of the access point to the Tanami Road is presently planned; however if this is deemed necessary ABM will seek the relevant legislative approvals.	Road transport and traffic management	Chapter 12 - Section 12.1
The existing intersection with the Tanami Road may need to be modified, if this is necessary approval will be sought from the Department of Transport with road design adhering to the Austroads – Road design and Guidelines (AGRD - applicable to Rural road design; AGRD02-06, AGRD03-1, AGRD04-09, AGRD04A-10, AGRD06-10, and others as necessary).	Existing road infrastructure	Chapter 12 - Section 12.2.2

Commitment	Issue	Section in EIS
Heavy and light vehicle haul roads will be demarcated with appropriate signage.	Existing road infrastructure	Chapter 12 - Section 12.2.2
It is likely that the airstrip will require upgrading for the Twin Bonanza project, to have a capacity to fly in aircraft with greater than 9 seats. When an upgrade is required, ABM will seek all relevant approvals from CASA and regulatory authorities.	Airstrip	Chapter 12 - Section 12.3.1
Prior to clearing ABM's Ground Disturbance Management Plan (GDMP) form will be completed requiring: •Confirmed extent of clearing area has all required approvals •Confirm clearing area and stockpile areas are delineation based on clearly marked out scale maps and/or set of co-ordinates consistent with approvals •Land to be cleared is demarcated by cones/flagging/pegs •Clearing supervised •Check for the presence of Bilby or Mulgara a. if present avoid habitat if possible. b. If unable ensure individuals are appropriately managed- see Biodiversity Management Plan •Clearing is progressive to avoid the potential for soil erosion and dust generation •Stockpiling of cleared vegetation within defined areas •Stockpiling of salvaged topsoil (topsoil removal to a depth of 10cm) within defined areas •Topsoil stockpiles do not exceed 2 metres in height	Vegetation Clearing Methods	Chapter 12 - Section 12.5.3
Vegetation and topsoil (top 10cm of soil profile) will be cleared and stockpiled separately to prevent composting in the interim before rehabilitation.	Vegetation Clearing Methods	Chapter 12 - Section 12.5.3
Water for road construction and dust suppression will be extracted from the existing and proposed bores detailed in and in accordance to the Water Management Plan.	Surface water and sources of water	Chapter 12 - Section 12.5.5
ABM proposes to use low crossings and minimise windrows across paleochannel areas. The roads will be well maintained and compacted to prevent erosion during and after inundation.	Methods including creek crossing techniques	Chapter 12 - Section 12.5.7
In relation to road safety and dust emissions during the trucking of ore and waste onsite from the pit to the ROM, water trucks will water the haul roads to ensure that dust creation is limited.	Dust and noise	Chapter 12 - Section 12.5.9
All equipment (both fixed and mobile) will comply with *AS/NZS 1269.3:2005 - Occupational noise management – hearing protector program* in regard to design and operating noise levels. It is the duty of the supplier to ensure equipment is compliant with safe levels of noise and vibration and suppliers must provide documented proof of compliance, such as test results.	Dust and noise	Chapter 12 - Section 12.5.9
Regular inspection and maintenance will be conducted in accordance with the Code of Practice- Worksafe – Managing and preventing hearing loss at work.	Dust and noise	Chapter 12 - Section 12.5.9
Windrows on all dumps where vehicles are required to tip over the edge will be maintained at a minimum height of half the wheel height of the largest truck using the tip head. The windrows shall be constructed of competent material. Where an adequate windrow cannot be provided, trucks are to dump at least 5 metres short of the tip edge.	Additional transport infrastructure and design	Chapter 12 - Section 12.6.3
CHAPTER 13- Social, economic, cultural and heritage risks		
ABM will have an Indigenous work force liaison officer who will source appropriate personnel as roles become available.	Indigenous Employment	Chapter 13 - Section 13.3.4
All plant, accommodation and other infrastructure will be installed on a temporary basis and will be removed following the completion of the mine.	Residual Infrastructure	Chapter 13 - Section 13.3.7

Commitment	Issue	Section in EIS
ABM will work closely with the CLC's employment unit and the relevant local employment organisation in Balgo. A skills audit will form part of this process.	Economic and social impact assessment	Chapter 13 - Section 13.4.2
ABM will establish a committee to assess requests. ABM will liaise with the CLC and Traditional Owners to minimise negative effects.	Economic and social impact assessment	Chapter 13 - Section 13.4.2 - Table 13-7
Voluntary and discretionary contributions by ABM to individual programs for support of Indigenous Australians. Upon request ABM will consult with the Central Land Council to establish the appropriateness and legitimacy of such a request.	Voluntary and discretionary contributions	Chapter 13 - Section 13.4.2.1
ABM will not have conducted disturbance beyond what is required. By having a stepwise process ABM will not disturb areas beyond the current stage thus managing environmental liabilities and aiding progressive rehabilitation.	Disturbance of areas and overall environmental impact	Chapter 13 - Section 13.4.3.6
The Company will adhere to agreements with the CLC on behalf of the Traditional Owners. A register of scheduled payment dates is to be kept and the Senior Management is to ensure that all commitments are met.	Social Impact Management Plan - Mitigation and monitoring	Chapter 13 - Section 13.5.2.1
The Company will establish a committee to respond to individual or group requests for financial support. Subject to available funds, the Company proposes $100,000 per annum to be made available.	Social Impact Management Plan - Mitigation and monitoring	Chapter 13 - Section 13.5.2.1
ABM will not block access at any-time (other than for reasons of immediate safety) for Traditional Owners who wish to visit the land and the Project	Social Impact Management Plan - Mitigation and monitoring	Chapter 13 - Section 13.5.2.1
As per agreements with the Traditional Owners, should there be roles that become available for which local people are suitable or may be trained for, ABM must seek to employ via the communities first.	Social Impact Management Plan - Mitigation and monitoring	Chapter 13 - Section 13.5.2.1
Skills based training is to be offered to Indigenous employees. In particular, there will be an emphasis on vocational training that is considered useful to the worker back in their own community.	Social Impact Management Plan - Mitigation and monitoring	Chapter 13 - Section 13.5.2.1
Complaints and enquiries for the calendar year will also be reported in the Mining Management Plan under the Mining Management Act 2001 and with the CLC and Traditional Owners through on ground meetings, discussing the scope and project direction, and through Technical reporting under the Mining Agreement with the CLC.	Social Impact Management Plan - Mitigation and monitoring	Chapter 13 - Section 13.5.3.3
ABM is committed to preserving sites that have, or have the potential for cultural / heritage significance.	Assessment of risks to areas of cultural / heritage significance	Chapter 13 - Section 13.6.5
ABM Resources is committed to the preservation and conservation of areas of cultural heritage. These primarily relate to areas of archaeological significance.	Cultural Heritage Risk Management Plan - Company policy of cultural heritage	Chapter 13 - Section 13.7.1
All employees, contactors and visitors to site will be inducted on the Company's Cultural Heritage Risk Management Plan.	Cultural Heritage Risk Management Plan - Responsibilities	Chapter 13 - Section 13.7.2
The Site Manager will liaise with the Environmental Manager to ensure that correct protocols are adhered to in all disturbance activities.	Cultural Heritage Risk Management Plan - Responsibilities	Chapter 13 - Section 13.7.2
The Company will maintain a register of sites and these sites will be marked on maps, development plans and advertised at the site (unless the location of the site is deemed confidential by the CLC).	Cultural Heritage Risk Management Plan - Management and Mitigation	Chapter 13 - Section 13.7.4.1

Commitment	Issue	Section in EIS
All new sites aboriginal heritage sites will be reported to executive management who will report the findings to the CLC and other government organisations as appropriate.	Cultural Heritage Risk Management Plan - Management and Mitigation	Chapter 13 - Section 13.7.4.3
Should an employee identify a potential aboriginal heritage site they will mark it out with blue pegs and not disturb the site until an archaeological survey can be arranged by ABM.	Cultural Heritage Risk Management Plan - Management and Mitigation	Chapter 13 - Section 13.7.4.3
On a quarterly basis the Environmental Manager will monitor all aboriginal heritage sites for disturbance. A quarterly report will be presented to the Company's board of directors.	Cultural Heritage Risk Management Plan - Monitoring and review	Chapter 13 - Section 13.7.5
CHAPTER 14- Environmental Management System		
The commitments within this chapter have been covered previously in EIS Chapters and Appendices.	Environmental Management System	Chapter 14
All environmental management is subject to continual review and improvement as required.	Environmental Performance Reporting	Chapter 14 – Section 14.6
CHAPTER 15- Environmental Offsets		
ABM will endeavour to offset, where reasonably practicable, environmental impacts in the form of the following initiatives: •Bilby research with the involvement of recognised researchers in consultation with the Central Land Council which aims to: a. increase the knowledge of the bilby populations in the Tanami Desert and add to the peer reviewed conservation literature on bilbies b. simultaneously study the effect of mining on the bilbies and establish the relationship between mining and desensitisation of the populations. •Feral animal control aimed at preventing the expansion of predator numbers (including cat) and to reduce feral animal predation of native fauna, including bilby and brush tailed mulgara. •Prevent the potential spread of declared weeds and the further spread of buffel grass (Cenchrus ciliaris) across the site. •Provide funding and support to theTanami Desert Regional Biodiversity Monitoring Program that is a collaboration between mining companies, the Central Land Council (CLC), Warlpiri and Wulaign traditional rangers. The program intersects both the Northern and Southern Tanami Indigenous Protected Areas (IPA). •Social and economic contributions to the Indigenous and non-indigenous communities.	Environmental Offsets	Chapter 15 - Section 15.1
ABM is committed to rehabilitate the area to restore natural and ecological processes. This is reflected in our commitment to the Traditional Owners of the land and early mine planning to selective handle and stockpile topsoil, siltstone, sandstone and the gravels overlying the pits to provide suitable rehabilitation medium. It is acknowledged that the rehabilitated area will require time to reach ecological sustainability. The only item remaining un-rehabilitated is the mining void.	Residual impacts	Chapter 15 - Section 15.6
CHAPTER 16- Additional Environmental Impacts		
ABM Resources will adhere to all relevant legislation, particularly the Bushfire Act 2009. ABM will specifically undertake seasonal maintenance of firebreaks around accommodation camp buildings and infrastructure in line with legislative requirements, to reduce the risk of fire.	Additional Environmental Impacts - Bushfire and Fire Management	Chapter 16 - Section 16.2.1

Commitment	Issue	Section in EIS
The Site Induction, which covers Environmental and Safety aspects, will inform all personnel about fire awareness, the requirement to obtain a Hot Work Permit before undertaking welding, cutting or grinding activities, emergency contact numbers, and procedures in case of a fire.	Additional Environmental Impacts - Bushfire and Fire Management	Chapter 16 - Section 16.2.3
All employees and contractors will be required to attend a Site Induction, with attendance documented on the Induction/Training Record Form and Induction/Training Register.	Additional Environmental Impacts - Bushfire and Fire Management	Chapter 16 - Section 16.2.3
Strategic fire breaks will be constructed around all buildings and operating plant. The aim of the firebreaks will be to enable vehicle access to fight fires, will stop a fire under mild conditions, and are essential as control lines from which back burning may be undertaken to stop wildfires in extreme conditions. Back burning will only be undertaken with a consultation with an appointed Fire Warden or Fire Control Officer under the Bushfires Act.	Additional Environmental Impacts - Bushfire and Fire Management	Chapter 16 - Section 16.2.3.2
All operational areas, including accommodation and power generators will be placed in cleared areas and surrounded by a 6m fire break cleared completely of vegetation and debris.	Additional Environmental Impacts - Bushfire and Fire Management	Chapter 16 - Section 16.2.3.2
In Australia, a hot work permit is required for hot work that is not part of the day to day production processes. The hot work permit will specify fire control practices to ensure no fires are started from conducting these activities.	Additional Environmental Impacts - Bushfire and Fire Management	Chapter 16 - Section 16.2.3.3
ABM will incinerate material in a bunded pit or a turbo burner, only on days where wind is low and the fire risk is low to moderate. Fires must be supervised at all times and can only be lit by authorisation from the site manager. A fire break must be constructed around the perimeter of the bunded fire pit for at least 6m to prevent unintentional fire spread.	Additional Environmental Impacts - Bushfire and Fire Management	Chapter 16 - Section 16.2.3.4
Portable fire extinguishers are located in easily identifiable locations throughout the buildings. Their locations and suitability for use on various types of fires (e.g. electrical, flammable liquids, ordinary combustibles) will be instructed through the site induction. The operating instructions and designated use criteria are displayed on each extinguisher in word and pictogram format.	Additional Environmental Impacts - Bushfire and Fire Management	Chapter 16 - Section 16.2.3.5
During operations ABM Resources NL will consult with employees, contractors, and regulatory authorities when a decision is to be made that may affect noise management at the Twin Bonanza mine site and accommodation facilities.	Additional Environmental Impacts - Noise and Vibration	Chapter 16 - Section 16.3.1.1
ABM Resources Environmental Manager with a suitably qualified person will complete a noise risk assessment. This risk assessment will result in the establishment and implementation of both the management and operational controls to mitigate the effect of noise and vibration at the mine site, and the accommodation area.	Additional Environmental Impacts - Noise and Vibration	Chapter 16 - Section 16.3.3
During construction when employees and contractors are involved in tasks that exceed occupational health and safety limits for noise (above LAeq,8h of 85 dB(A)) they will be required to wear hearing protection that meet Australia Safety Standard in accordance with AS/NZS 1269.3 Occupational noise management – hearing protector program.	Additional Environmental Impacts - Noise and Vibration	Chapter 16 - Section 16.3.3.1
All equipment (both fixed and mobile) will comply with AS/NZS 1269.3:2005 - Occupational noise management, in regard to design and operating noise levels.	Additional Environmental Impacts - Noise and Vibration	Chapter 16 - Section 16.3.3.2

Commitment	Issue	Section in EIS
ABM will establish a maximum practicable distance between accommodation units and power generators.	Additional Environmental Impacts - Noise and Vibration	Chapter 16 - Section 16.3.3.2
Physical bunds will be placed around mining and camp infrastructure including power generators (e.g. gensets) that will generate significant noise disturbance during operation, with the aim to reduce excessive noise disturbance to receptors.	Additional Environmental Impacts - Noise and Vibration	Chapter 16 - Section 16.3.3.2
Where practicable ABM will also position infrastructure including waste dumps to form noise barriers around stationary plant and locate administration buildings away from noise sources.	Additional Environmental Impacts - Noise and Vibration	Chapter 16 - Section 16.3.3.2
A complaints registrar will be maintained for the site. All legitimate noise and vibration complaints will be investigated and appropriate actions taken.	Additional Environmental Impacts - Noise and Vibration	Chapter 16 - Section 16.3.3.2
Shots will not be fired in the middle of the day when Bilby and Mulgara are at their least active (asleep), scheduling of blasts will align with the change of shift which will be close to the evening or dawn, when both nocturnal and diurnal fauna will be active and less disrupted. The aim is to prevent disturbance to nocturnal and diurnal animals alike, particularly the Bilbys and Mulgaras which are situated locally. The aim is to reduce the impact on fauna activities and habitats.	Additional Environmental Impacts - Noise and Vibration	Chapter 16 - Section 16.3.3.3
Specifically monitoring and maintenance of onsite machinery will focus on checking for changes in noise levels – badly worn bearings and gears, poor lubrication, blunt blades, loose parts, unbalanced rotating parts and steam or air leaks all create noise that can be reduced with good maintenance. Engineering controls such as vibration mountings, impact absorbers, gaskets, seals, silencers, barriers and other equipment.	Additional Environmental Impacts - Noise and Vibration	Chapter 16 - Section 16.3.5
Regular inspection and maintenance will be conducted in accordance with the Code of Practice- Worksafe – Managing and preventing hearing loss at work.	Additional Environmental Impacts - Noise and Vibration	Chapter 16 - Section 16.3.5
To monitor the social impacts of the operations a record of both internal and external complaints will be entered in a register with an annual review of the complaints. This will assist in determining the environmental aspects of the complaint and requirement for additional controls or management strategies to limit the noise impacts.	Additional Environmental Impacts - Noise and Vibration	Chapter 16 - Section 16.3.5
Progressive rehabilitation will minimise the potential mosquito breeding sites remaining after the cessation of mining operations. All disturbed areas will be rehabilitated to be free draining where practicable.	Additional Environmental Impacts - Biting Insect Management	Chapter 16 - Section 16.4.1
Ponds, dams, drains, sediment traps, bunded areas and onsite excavations will be periodically inspected for the presence of mosquito larvae at a frequency based on discussions with the NT Department of Health. Detected populations will be managed under recommendations from the Medical Entomology Branch NT (refer to section 3.4 for contact details).	Additional Environmental Impacts - Biting Insect Management	Chapter 16 - Section 16.4.2.1
Any ponds and on-site excavations filled with water will be inspected for the presence of mosquito larvae during the wet season. If larvae are detected, the Medical Entomology Branch of NT Health will be contacted for assistance in choosing a suitable method of control (Appendix A – Signs of Mosquito Larvae).	Additional Environmental Impacts - Biting Insect Management	Chapter 16 - Section 16.4.2.1
Any depressions created in the ground surface where possible will be filled or drained to prevent the ponding of water and all drainage channels/spoon drains will be kept as shallow as possible to prevent ponding	Additional Environmental Impacts - Biting Insect Management	Chapter 16 - Section 16.4.2.1

Commitment	Issue	Section in EIS
Stockpiles will be placed in areas that do not impede drainage and will be shaped to prevent ponding.	Additional Environmental Impacts - Biting Insect Management	Chapter 16 - Section 16.4.2.1
Sedimentation ponds will be emptied promptly after storm events to prevent long-term ponding.	Additional Environmental Impacts - Biting Insect Management	Chapter 16 - Section 16.4.2.1
Erosion and washdown practices will be controlled to prevent sediment and debris forming standing water pools around the site.	Additional Environmental Impacts - Biting Insect Management	Chapter 16 - Section 16.4.2.1
All accommodation facilities and offices will be screened and air conditioned to discourage mosquitos.	Additional Environmental Impacts - Biting Insect Management	Chapter 16 - Section 16.4.2.1
All staff will be educated to be especially vigilant during the high mosquito borne disease risk periods (late dry to post wet) through the use of long sleeved shirts and trousers and the regular use of insect repellent. Insect repellent will be provided at work sites.	Additional Environmental Impacts - Biting Insect Management	Chapter 16 - Section 16.4.2.1
ABM staff will periodically check mosquito activity within the accommodation and work areas, including the water storage dams, to identify the success of mitigation measures and to determine whether larval and adult eradication programs should be implemented.	Additional Environmental Impacts - Biting Insect Management	Chapter 16 - Section 16.4.3
Ground Disturbance Management Plan (GDMP) for the purposes of managing land clearing and disturbance that will occur as part of mining and construction activities	Additional Environmental Impacts - Vegetation Clearing and Land Disturbance	Chapter 16 - Section 16.5
All ground disturbances on site will not be commenced until the Land Clearing Procedure Checklist has been completed. A copy of the Land Clearing Procedure Checklist is contained in Appendix X. Once the checklist is completed a copy will be stored in the records system. The person responsible for supervising the clearing will also be responsible for ensuring that: • a minimum area is disturbed for establishment of the required infrastructure or landform, • all required approvals are in place and clearing complies with the approved areas, • the area to be disturbed in clearly marked in the field and machine operators are informed that only the demarcated area is cleared, • disturbance is progressive so that areas to be cleared for future use are left vegetated until such time as they are required,	Additional Environmental Impacts - Vegetation Clearing and Land Disturbance	Chapter 16 - Section 16.5
Before the removal of topsoil and subsoil by mechanised equipment vegetation will be pushed into windrows and located on the perimeter of the proposed footprint to avoid loss due to over-tipping with other excavated material. The stored vegetation is to be retained for fauna habitat and later rehabilitation.	Additional Environmental Impacts - Vegetation Clearing and Land Disturbance	Chapter 16 - Section 16.5.1
The topsoil will be salvaged prior to the construction of all mining landforms and infrastructure. Topsoil stripping will involve the top 10cm of material.	Additional Environmental Impacts - Vegetation Clearing and Land Disturbance	Chapter 16 - Section 16.5.2
ABM is committed to retaining the topsoil as a viable resource to use for rehabilitation purposes at a later date. Within the footprint of the pit an additional 80cm of gravelly material below the topsoil will be recovered, this material will be stored to provide further growth medium for soil profile reconstruction over rehabilitated landforms.	Additional Environmental Impacts - Vegetation Clearing and Land Disturbance	Chapter 16 - Section 16.5.2

Commitment	Issue	Section in EIS
The topsoil will be stored in stockpiles less than 2m high proximal to the cleared areas for future use in rehabilitation and closure.	Additional Environmental Impacts - Vegetation Clearing and Land Disturbance	Chapter 16 - Section 16.5.2
Designated topsoil stockpiling areas will be located to minimise topsoil losses via wind and water erosion. Furthermore, topsoil stockpile areas will be signposted to prevent inadvertent use. Topsoil stockpiling heights and storage time will be minimised as deterioration of soil chemical, physical and biological properties can occur during storage.	Additional Environmental Impacts - Vegetation Clearing and Land Disturbance	Chapter 16 - Section 16.5.2
Soil degradation and erosion will be minimised by conducting the clearing in dry conditions.	Additional Environmental Impacts - Vegetation Clearing and Land Disturbance	Chapter 16 - Section 16.5.2
Progressive rehabilitation will be undertaken during the life of the mine, to optimise topsoil properties.	Additional Environmental Impacts - Vegetation Clearing and Land Disturbance	Chapter 16 - Section 16.5.2
Stockpiles that are retained for longer periods of time will be encouraged to re-vegetate naturally.	Additional Environmental Impacts - Vegetation Clearing and Land Disturbance	Chapter 16 - Section 16.5.2
APPENDICES		
Appendix D - Biodiversity Management Plan		
The BMP will be reviewed and amended to incorporate any recommendations resulting from the EIS. The BMP will be reviewed annually to maintain relevance to all aspects of the project. Any updates to the BMP will also be included in the Mining Management Plan annual review.	Biodiversity Management Plan	Appendix D - Section 1
All staff, contractors, and consultants will complete a comprehensive site induction. The induction will include safety requirements, site behaviour rules, access protocols and restrictions, cultural requirements and commitments, and a comprehensive review of environmental risks, responsibilities and standards.	Induction	Appendix D - Section 2.2.1
The field supervisor will hold regular toolbox talks with staff and crews to discuss issues associated with the scheduled work. The toolbox meetings will involve highlighting and discussing relevant environmental and safety issues and monitoring results.	Toolbox meetings	Appendix D - Section 2.2.2
The environmental and site general manager or delegate will be required, during audits and inspections, to record current performance against relevant BMP requirements.	Reporting requirements	Appendix D - Section 2.3
Any reasonable environmental practices, procedures or standards recommended after an environmental audit or assessment will be implemented at the first available opportunity. ABM understands the importance of high environmental standards and is committed to achieving these.	Audits	Appendix D - Section 2.3.2
Monitoring will be undertaken to verify compliance with environmental conditions and commitments, satisfy regulatory and reporting requirements, track environmental performance and measure the effectiveness of environmental management measures. Results from any monitoring undertaken will be presented within the MMP, with an assessment of compliance against commitments made in the BMP.	Monitoring	Appendix D - Section 2.4
If additional biodiversity values are identified (such as additional threatened species) ABM will develop management plans for those values to mitigate potential impacts.	Biodiversity values at risk	Appendix D - Section 3

Commitment	Issue	Section in EIS
ABM has committed to managing their operations in a way that either avoids or minimises impact to the species.	Greater bilby management plan	Appendix D - Section 4.1
Burrow and activity avoidance when locating mining infrastructure	Greater bilby management plan	Appendix D - Section 4.1.8
The burnt site will be inspected for bilby presence by an experienced ecologist, and if deemed clear (i.e. no evidence of bilby), the topsoil will be immediately removed and stockpiled. It is important to remove the topsoil component as soon as possible as vegetation clearing often promotes fresh growth, attracts insects and softens soils which could attract bilbies to the site (i.e. foraging for food), thereby increasing risk of impact to individuals. If evidence is detected within the proposed clearing area, this will trigger further investigation and a case by case plan as required to minimise potential harm to individuals.	Greater bilby management plan	Appendix D - Section 4.1.8
Disturbed areas will be rehabilitated as soon as practical to prevent weeds from colonising the area, thus maintaining the integrity of bilby habitat.	Greater bilby management plan	Appendix D - Section 4.1.8
Furthermore, vegetation clearing will only occur when required (i.e. no wide scale clearing prior to building waste rock dumps) as clearing prior to immediate development exposes soils to wind and water erosion.	Greater bilby management plan	Appendix D - Section 4.1.8
Site inductions are compulsory for all staff and contractors. The inductions detail the presence of bilbies and mulgara and employees are instructed of their duty to comply with ABM's environmental requirements.	Greater bilby management plan	Appendix D - Section 4.1.8
Night driving outside the mining area is to be avoided where possible, and should occur only when determined to be absolutely necessary. The implementation of night time speed restrictions can significantly lower the risk of road-killed bilbies.	Greater bilby management plan	Appendix D - Section 4.1.8
A night speed limit of 60 km/hour will be adopted and posted within areas of known bilby activity on haul roads and roads within the project area; this allows individual bilbies to avoid vehicles and vehicle drivers to make safe adjustments to avoid a collision should a bilby be sighted. Night driving will be limited to essential activities.	Greater bilby management plan	Appendix D - Section 4.1.8
Potential exists for greater bilby burrows to be damaged by vehicles undertaking off-road driving, especially considering the majority of the project area constitutes potential habitat for the species (i.e. sand plain). Identified areas of bilby activity will be demarcated on maps, with access restricted at these areas.	Greater bilby management plan	Appendix D - Section 4.1.8
Prior to land clearing in an area not already surveyed, an on ground pre-clearance survey will be conducted in order to determine if greater bilby is present.	Greater bilby management plan	Appendix D - Section 4.1.8
Sand plot monitoring will be used to estimate activity and population of greater bilby within the Twin Bonanza project area. This monitoring program will be based on methods developed by Colleen O'Malley and Rachel Paltridge (Pavey 2006a).	Greater bilby management plan	Appendix D - Section 4.1.8
If pre clearance surveys provide conclusive evidence that areas to be cleared are home to populations of the greater bilby, ABM will determine whether mining infrastructure can be relocated to areas which do not support populations of the greater bilby.	Greater bilby management plan	Appendix D - Section 4.1.10
If mining infrastructure cannot be relocated, ABM will liaise with both the DLRM and DOE, towards best practice management of this species.	Greater bilby management plan	Appendix D - Section 4.1.10
If monitoring provides conclusive evidence that greater bilby habitat is in decline because of ABM's activities, ABM will investigate and liaise with experts in the field to determine the best management measures to resolve the issue. ABM will take preventative measures if the cause of decline can be determined.	Greater bilby management plan	Appendix D - Section 4.1.10
An injury or death of a greater bilby as a result of mining activities (i.e. vegetation clearing, haul trucks traffic, and light vehicle traffic) would be immediately reported to DME and DOE. This would trigger a response that reviews reasons why the incident occurred and how the risk of re-occurrence could be minimised. If repeated incidents occur to greater bilby, this will trigger a further review in liaison with relevant experts in the field in conjunction with LRM, DME and DOE.	Greater bilby management plan	Appendix D - Section 4.1.10

Commitment	Issue	Section in EIS
If cats are detected during weekly site inspections of camp area and landfill site, this will trigger a control program using baits within the landfill compound that does not provide access to native species (Section 4.5).	Greater bilby management plan	Appendix D - Section 4.1.10
The pre-clearance inspections will provide a summary report on the presence of greater bilby in the habitat to be cleared. These records will be reviewed prior to clearing by the environment manager.	Greater bilby management plan	Appendix D - Section 4.1.11
Disturbed areas will be rehabilitated as soon as practical to prevent weeds from colonising the area.	Brush-tailed Mulgara Management Plan	Appendix D - Section 4.2.8
Furthermore, vegetation clearing will only occur when required (i.e. no wide scale clearing prior to building waste rock dumps) as clearing prior to immediate development exposes soils to wind and water erosion.	Brush-tailed Mulgara Management Plan	Appendix D - Section 4.2.8
Night driving outside the mining area is to be avoided where possible, and occur only when determined to be absolutely necessary. A night speed limit of 60 km/hour will be adopted and posted within areas of known brush-trailed mulgara activity on haul roads within the project area; this allows individual brush-trailed mulgara to avoid vehicles and vehicle drivers to make safe adjustments to avoid a collision should a brush-tailed mulgara be sighted.	Brush-tailed Mulgara Management Plan	Appendix D - Section 4.2.8
Brush-tailed mulgara burrows may be damaged by vehicles when off-road driving. Identified areas of brush-tailed mulgara activity will be demarcated on maps, with access restricted from these areas.	Brush-tailed Mulgara Management Plan	Appendix D - Section 4.2.8
Prior to any land clearing in an area not already surveyed, an on ground pre-clearance survey will be conducted in order to determine if brush-tailed mulgara are present.	Brush-tailed Mulgara Management Plan	Appendix D - Section 4.2.9
Sand plot monitoring will be used to estimate activity and population of brush-tailed mulgara within the Twin Bonanza project area. This monitoring program will be based on methods developed by Colleen O'Malley and Rachel Paltridge (Pavey 2006a).	Brush-tailed Mulgara Management Plan	Appendix D - Section 4.2.9
Additional to data collected as part of the sand plot monitoring program, there will be weekly site inspections of land fill and camp area for pest fauna (such as feral cats and dingoes). If cats are detected during these inspections, this will trigger a control program using baits within the landfill compound that does not provide access to native species (Section 4.5). Data collected will be reported to the environmental manager for collation into a pest species and management database.	Brush-tailed Mulgara Management Plan	Appendix D - Section 4.2.9
If pre clearance surveys provide conclusive evidence that areas to be cleared are home to populations of the brush-tailed mulgara, ABM will determine whether mining infrastructure can be relocated to areas which do not support populations of the brush-tailed mulgara.	Brush-tailed Mulgara Management Plan	Appendix D - Section 4.2.10
If mining infrastructure cannot be relocated, ABM will liaise with the DLRM towards best practice management of this species.	Brush-tailed Mulgara Management Plan	Appendix D - Section 4.2.10
If monitoring provides conclusive evidence that brush-tailed mulgara populations are being detrimentally impacted because of ABM's activities, ABM will investigate and liaise with experts in the field to determine the best management measures to resolve the issue. ABM will take preventative measures if the cause of decline can be determined.	Brush-tailed Mulgara Management Plan	Appendix D - Section 4.2.10
An injury or death of a brush-tailed mulgara as a result of mining activities (i.e. vegetation clearing, haul trucks traffic, and light vehicle traffic) would be immediately reported to DME and DLRM. This would trigger a response that reviews reasons why the incident occurred and how the risk of re-occurrence could be minimised. If repeated incidents occur to brush-tailed mulgara, this will trigger an additional review in liaison with relevant experts in the field in conjunction with DME and DLRM.	Brush-tailed Mulgara Management Plan	Appendix D - Section 4.2.10
If cats are detected during weekly site inspections of camp area and landfill site, this will trigger a control program using baits within the landfill compound that does not provide access to native species.	Brush-tailed Mulgara Management Plan	Appendix D - Section 4.2.10

Commitment	Issue	Section in EIS
The pre-clearance Inspections will provide a summary report on the presence of brush tailed mulgara in habitat to be cleared. These records will be reviewed prior to clearing by the environment manager.	Brush-tailed Mulgara Management Plan	Appendix D - Section 4.2.11
During operations, active recovery of supernatant water will occur from the tailings dam and high levels of evaporation from the concentrate residual dam will minimise available water on the dam surfaces and reduce water extraction from the bores. On a daily basis around two tonnes of material will be deposited in the concentrate residual dam; as such limited water will be available to form a pond.	Water Birds / Migratory Birds Management Plan	Appendix D - Section 4.3.8
Tailings cells will be designed to be as small as practicably possible. Large tailing cells are likely to attract large aggregations of birds and allow birds to find safe roosting spots on large expanses of supernatant. In designing the tailings dam, the size of the tailings surface was minimised as far as practicable to reduce the volume of rehabilitation capping material required but also to control tailings spigotting to better manage the water supernatant pond.	Water Birds / Migratory Birds Management Plan	Appendix D - Section 4.3.8
Based on the operation requirements, the design of tailings dam and concentrate residual dam has included the following measures (as detailed in DME 1998) to manage water birds: •Construction of the tailings dam will not create an uneven floor thus forming islands for migratory and water bird roosting. •During operations supernatant water resting against dam walls will be minimised to prevent additional habitat for waders and drinking access for granivorous birds. •Where practical, removal of nearby vegetation will occur to restrict roosting options for birds. •The concentrate residual dam has been located close to mining infrastructure to discourage bird presence.	Water Birds / Migratory Birds Management Plan	Appendix D - Section 4.3.8
Only a small volume of tailings material will be processed using cyanide. The Acacia Reactor used to process these tailings will have a cyanide removal and neutralisation module that ensures no cyanide is discharged.	Water Birds / Migratory Birds Management Plan	Appendix D - Section 4.3.8
Discharge and supernatant water will be monitored monthly to detect the potential loading of arsenic and other elements.	Water Birds / Migratory Birds Management Plan	Appendix D - Section 4.3.8
If significant mortalities are being experienced, the use of gas cannons or other alternatives will be investigated. If mortalities do occur carcasses will be removed as soon as possible so as not to attract raptors or other carnivores (DME 1998).	Water Birds / Migratory Birds Management Plan	Appendix D - Section 4.3.8
An identification guide will be made available that describes common susceptible species of birds likely to occur at the tailings dam and sewerage treatment facilities. Personnel, who patrol the facilities as part of their normal duties, ideally first thing in the morning, will be made aware of the identification guide. Personnel will report mortalities and visitations during their regular patrols. All mine staff will be encouraged to report incidental sightings of water birds and migratory birds.	Water Birds / Migratory Birds Management Plan	Appendix D - Section 4.3.9
If bird mortality/sickness is more than one a day, the incidents will be investigated and suitable measures implemented based on consultation with experts in the field and relevant regulators.	Water Birds / Migratory Birds Management Plan	Appendix D - Section 4.3.10
If a number of bird mortalities occur at the dams an incident report under section 29 of the *Mining Management Act* may require submission based on a review of the reporting criteria. All other bird sightings and recordings will be submitted within the MMP. An annual review of the impacts to migratory and water birds and the relative success of management strategies will be undertaken. This will help to improve avian management around site.	Water Birds / Migratory Birds Management Plan	Appendix D - Section 4.3.11
Construct and decommission all production and monitoring bores in accordance to the document titled “Minimum Construction Requirements for Water Bores in Australia, Edition 3”. If deeper aquifers are targeted then management measures will ensure cross aquifer contamination does not occur (i.e. sealing of the aquifer by concreting).	Palaeochannel Management Plan	Appendix D - Section 4.4.8

Commitment	Issue	Section in EIS
Comply with all requirements of the DLRM and Department of Health (DOH).	Palaeochannel Management Plan	Appendix D - Section 4.4.8
Hazardous materials and wastes will be stored within appropriately labelled containers within bunded dangerous goods storage areas. The areas will be self-bunded, ventilated and compliant with *AS1940:2004 Storage and Handling of Flammable and Combustible Liquids*. Fuel sources for diesel gensets and any small quantities of hydrocarbons will be stored in bunded areas onsite. Spill trays will be used when re-fueling.	Palaeochannel Management Plan	Appendix D - Section 4.4.8
The palaeochannel monitoring program is to provide possible warning signs that water extraction operations are having an adverse impact on deep rooted trees within the palaeochannel environment. A management response will be triggered if an impact is detected.	Palaeochannel Management Plan	Appendix D - Section 4.4.9
Sampling of ground water for typical suite of parameters (including EC, salinity, TDS etc) will be undertaken every six months.	Palaeochannel Management Plan	Appendix D - Section 4.4.9
Fuel and chemical storage locations will be inspected every 3 months to check spill containment structures are in working condition and compliant with Australian Standards.	Palaeochannel Management Plan	Appendix D - Section 4.4.9
If monitoring provides conclusive evidence that ground water extraction is impacting tree health, water extraction activities will be moved to alternative groundwater sources to allow water levels to recharge.	Palaeochannel Management Plan	Appendix D - Section 4.4.10
Additional to the general pest management listed above, the follow management actions will be implemented for feral cat occurrences at Twin Bonanza: •Localised trapping and shooting program will be conducted around potential attraction sources. •Professional hunters or Traditional Owners will undertake periodic culling. •The landfill will be fenced to exclude native species including dingoes, •If feral cats are seen to be accessing the landfill, baiting and trapping within the landfill compound will be undertaken.	Pest Management Plan	Appendix D - Section 4.5.8
Sand plot monitoring will be used to estimate activity and population of pest fauna within the Twin Bonanza project area.	Pest Management Plan	Appendix D - Section 4.5.9
The land fill site and camp area will be inspected each week as part of regular site inspections for several parameters, and attraction of pest fauna is one of those parameters. If cats are detected during these inspections, this will trigger a control program using baits within the landfill compound that does not provide access to native species.	Pest Management Plan	Appendix D - Section 4.5.9
Any recording of a new pest species will be reported to the DLRM.	Pest Management Plan	Appendix D - Section 4.5.11
Weed hygiene •Equipment/vehicles are to be washed down prior to entering and moving between sites and if moving from an area of known weed infestation to a weed free area. •Equipment entering site are inspected and a Weed and Pest Hygiene sheet is completed and filed. •Equipment/vehicles that are identified as requiring a clean will be cleaned in the designated wash down area and inspected. •If equipment moves from an area of known weed infestation to another area it is required to be inspected and undergo thorough cleaning if required. If insufficient water is available for of washing equipment, mud and vegetation should be removed by hand using brushe sticks and/or air hoses. •Check clothing, hats, socks, cuffs and shoes for seeds and burrs after working in a weed infested area. If required remove seeds and burrs. •Ensure construction material (including sand and gravel) is sourced from a supplier that is weed free or treat material to prevent seed germination. Avoid existing infestations	Weed Management Plan	Appendix D - Section 4.6.8

Commitment	Issue	Section in EIS
•Where possible, machinery and personnel will avoid areas that have existing weed infestations. This will limit the spread of weeds. Minimise site disturbance •Soil disturbance must be minimised by only clearing the area required and progressively clearing footprints ahead of operations/activities. By minimising disturbance the opportunity for weed establishment is reduced.		
All road sides and disturbed areas will be inspected for weeds on an approximately 6-monthly basis.	Weed Management Plan	Appendix D - Section 4.6.9
Any recording of a Declared Weed, Class A, B, C within EL28322 will be reported to the DLRM – Weeds Branch as soon as practicable following recording.	Weed Management Plan	Appendix D - Section 4.6.11
Appendix E - Erosion and Sediment Control Plan		
ESC diversion drains will be designed to withstand a 1:100-yr peak flow event.	Level of protection	Appendix E - Section 3.2
All permanent ESC structures (i.e. the main site diversion banks) will also be designed to withstand a 1:1,000-yr peak flow event.	Level of protection	Appendix E - Section 3.2
All sediment traps will be designed as “Type 1” basins. These are flow-through type basins, designed to remove 90 % of material > 0.045 mm in diameter (silts), and sized to hold at least one month’s worth of trapped sediment under average site conditions. Sediment traps have been designed in accordance to the ESCP Guidelines (IECA, 2008).	Level of protection	Appendix E - Section 3.2
Control measures will be put in place prior to soil disturbance (wherever practicable), and will remain in place for the duration of the expected disturbance. Land clearing will be scheduled for the dry season to minimise exposure to rainfall, wherever practicable.	Staging of work	Appendix E - Section 3.3
The main site diversion banks in particular have been designed to be installed in stages. The main diversion banks will be installed progressively as the pits are developed.	Staging of work	Appendix E - Section 3.3
The smaller diversion drains associated with each of the infrastructure areas will be installed shortly after the areas are cleared and reshaped for construction.	Staging of work	Appendix E - Section 3.3
Flow diversion banks and drains will be constructed to divert all “clean water” surface flows around the main work areas in order to minimise the potential volume of water that will need to be managed within the site.	Design of diversion banks and drains	Appendix E - Section 3.4
All diversion banks have been designed assuming a 10:1 gradient (0.10 m/m slope) on the upslope side, and a 3:1 gradient (0.33 m/m slope) for the constructed bank. All diversion drains have been designed assuming an 8:1 gradient (0.13 mm/m slope) on both sides of the drain. Gentler construction angles will increase the design capacity of these features so long as the design flow depth is maintained	Design of diversion banks and drains	Appendix E - Section 3.4
All diversion structures can be constructed with a standard grader, and graded surfaces will ideally be compacted to increase erosion resistance. Re-vegetation of diversion banks with ground cover vegetation or grasses will add further stability. Where appropriate materials are available to construct the abandonment bund from sufficiently stable materials (i.e. competent rock), diversion banks may be integrated with the abandonment bunds.	Design of diversion banks and drains	Appendix E - Section 3.4
Discharge from each diversion structure will be via a level spreader or rock chute, to ensure that the concentrated surface flow is transitioned back to sheet flow in a way that minimises erosion downslope of the outlet.	Design of diversion banks and drains	Appendix E - Section 3.4
Any access or haul roads crossing the surface water diversion structures (e.g. the explosive magazine access road, and haul roads between the northern pit and WRD 1) will be constructed in such a way that they do not interfere with the functioning of the diversions (e.g. use of whoa-boys, bridges, or culverts).	Design of diversion banks and drains	Appendix E - Section 3.4
During the active mining phase, the majority of the WRD upper surface and outer embankments will be constructed of sandstone material.	Minimising erosion on disturbed land surfaces - Constructed landforms	Appendix E - Section 3.5.1
Topsoil stockpiles will be constructed no higher than 2 m and subsoil stockpiles no higher than 10 m with a slope of ≤ 15°This will help to minimise erosion from the stockpiles by limiting the length and steepness of the outer stockpile slopes.	Minimising erosion on disturbed land surfaces - Stockpiles	Appendix E - Section 3.5.3
Haul roads will be built up in most areas, so that they are above the natural land surface. They will be designed to be water shedding to avoid flow accumulation which can lead to scouring, and erosion of the road surface and embankments.	Minimising erosion on disturbed land surfaces - Roads	Appendix E - Section 3.5.4
Any access or haul roads crossing the surface water diversion structures (e.g. the explosive magazine access road, and haul roads between the northern pit and WRD 1) will be constructed in such a way that they do not interfere with the functioning of the diversions (e.g. use of whoa-boys, bridges, or culverts).	Minimising erosion on disturbed land surfaces	Appendix E - Section 3.5.4

Commitment	Issue	Section in EIS
	- Roads	
Compacted low pass floodways will be installed along the main access road in the lowest-lying areas to maintain the integrity of the road surface.	Minimising erosion on disturbed land surfaces - Roads	Appendix E - Section 3.5.4
Wind erosion will be controlled through a combination of rock cover and water spraying.	Minimising erosion on disturbed land surfaces - Dust control	Appendix E - Section 3.5.5
All infrastructure items, including the Plant, ROM pad, Workshop / Offices, Camp, and Burn area will be removed, and the areas rehabilitated. This means that all sedimentation traps and temporary diversion drains will also be removed from these areas.	Overview of ESC Strategy	Appendix E - Section 4.1
The main site diversion banks will remain in place after closure to further protect the WRDs and pit abandonment bunds from erosion during extreme rainfall-runoff events.	Overview of ESC Strategy	Appendix E - Section 4.1
Surface water quality in the sediment traps will be tested in accordance with the Water Management Plan.	Water quality monitoring	Appendix E - Section 5.3
Appendix F - Water Management Plan		
Some discharge of water will occur from the sediment traps, primarily during the wet season, when the basins will remain full for the majority of the time and will act as flow-through basins.	Surface water sources and destinations	Appendix F - Section 2.3.1
Sheet flow occurring during large storm events has the potential to collect into concentrated flow streams wherever it comes into contact with mine site infrastructure or constructed landforms, potentially causing flooding or erosion of these features. To mitigate this, all 'clean runoff' will be diverted around the planned disturbance areas using diversion banks and drains.	Diversion of 'clean water'	Appendix F – Section 2.3.2.2
Discharge from each diversion structure will be via a level spreader or rock chute, to ensure that the concentrated surface flow is transitioned back to sheet flow in a way that minimises erosion downslope of the outlet.	Diversion of 'clean water'	Appendix F – Section 2.3.2.2
Water that falls directly within each of the infrastructure areas (i.e. Plant, workshops / offices, Camp, and ROM pad) has the potential to pond and / or runoff and cause erosion of the land surface and sedimentation of the surrounding environment. All surface flow within these areas will therefore be directed into a sediment trap.	Internal site drainage	Appendix F – Section 2.3.2.3
Water inflows and outflows from each of the surface water storage facilities (i.e. the TD cells, Water Storage Dam, CRD, and sewage pond) will be monitored carefully to minimise the potential for overtopping of these facilities.	Surface water storage facilities	Appendix F – Section 2.3.2.4
Surface water monitoring activities will take place monthly and be recorded automatically and on an ongoing basis. The frequency of inspection and monitoring of surface water diversions and outlet structures is governed by the *Infrastructure Test Plan* (ITP) (Soil Water Consultants - SWC, 2013e).	Management of potential contamination	Appendix F – Section 4.3.3
In general, all surface water storage facilities will be designed, constructed, and managed to prevent any release of water into the surrounding environment, regardless of the actual level of contamination present. In order to achieve this, the following steps will be taken: • The Water Storage Dam has been constructed using an HDPE liner. This will prevent all seepage from these facilities. Water will primarily be removed by pumping and recycling water into to the processing circuit and by evaporation (up to approximately 3,000 mm/yr) • The TD cells and CRD will likely utilise a conditioned earth or clay-lined layer to achieve a permeability of 1 x 10-8 m/s to prevent seepage into groundwater. However, the design work (including assessment of *in situ* material suitability) for these structures is still ongoing. If the local materials are not deemed suitable, then other options to prevent or minimise seepage will be explored. • All surface water storage facilities will be designed, constructed, and monitored to maintain a minimum freeboard sufficient to hold a 1:100-yr, 72-hr rainfall event of approximately 150 cm. The water level in each of these facilities will be monitored, to ensure compliance with freeboard requirements. • Where the freeboard requirement is discovered to be insufficient, all water additions to the surface water storage will be halted. Water will need to be evaporated or pumped out to another safely contained location prior to resuming the addition of any more water. All of the water being pumped out of these facilities will either be (1) reused within the processing circuit (the preferred choice), or (2) or treated for disposal. No surface water will be released into the surrounding environment from any of the surface water storage facilities.	Management of potential contamination	Appendix F – Section 2.3.3.1

Commitment	Issue	Section in EIS
Hydrocarbons and other chemicals (e.g. ammonium nitrate) will be stored onsite, primarily in the workshop, processing plant, and explosive magazines. All tanks, fuel drums, and chemical products will be stored within self-bunded tanks, bunded/lined areas, or within portable self-bunded pallets.	Management of potential contamination - Spills and other potential surface water contamination	Appendix F – Section 2.3.3.3
The only planned discharge of surface water will occur from the diversion structures and sediment traps.	Planned discharges of surface water	Appendix F – Section 2.3.4
Groundwater extraction rates will be managed so that a sustainable yield is maintained, and so that the extraction will not negatively affect other groundwater users.	Management of groundwater flows	Appendix F – Section 3.3.2
During the active mine phase, groundwater extraction rates will be managed primarily by measuring flow rates (and volumes) from the production bores and monitoring drawdown within the pumped aquifer(s)..	Management of groundwater flows	Appendix F – Section 3.3.2
In general, all surface water storage facilities will be designed, constructed, and managed to prevent any release of water into the groundwater system, regardless of the actual level of contaminants within these facilities.	Management of potential contamination	Appendix F- Section 3.3.3
In general, most monitoring activities will be conducted monthly.	Monitoring Programmes	Appendix F- Section 4.1
In addition to the chemical analysis, groundwater elevations and extraction rates will also be monitored..	Groundwater – Parameters to be measured	Appendix F- Section 4.4.2
In general, groundwater monitoring activities will take place monthly. As previously discussed, groundwater extraction rates and volumes will be recorded automatically and on an ongoing basis; however, this information will be summarised monthly along with the rest of the monitoring data.	Groundwater – Sampling frequency	Appendix F- Section 4.4.3
Water Quality will be reported annually in the MMP in accordance with the *Mining Management Act 2001*.	Water quality reporting – reporting requirements	Appendix F – Section 5.1
Appendix K - Air Quality Management Plan		
ABM will consult with employees, contractors, and regulatory authorities when a decision is to be made that may affect air quality management at the Twin Bonanza mine site and accommodation facilities	Consultation	Appendix K - Section 2.2
ABM will communicate on relevant air quality management aspects of the mine's operation within the Mining Management Plan pursuant under section 40 of the *Mining Management Act* 2001 and if required under the EIS assessment.	Regulatory Authorities	Appendix K - Section 2.4
During the 2014 dry season, a baseline dust study will be completed details of which will in reported in the Mine Management Plan.	Existing Air Quality	Appendix K - Section 3.1
Potential sources of nuisance odours at the project are the refuelling areas, landfill, sewage system and the concentrated leach. As the facilities that have the potential to produce nuisance odours will be located away from accommodation areas and the concentrated leach area will be fully enclosed the potential nuisance odour.	Existing Air Quality	Appendix K - Section 3.1
ABM's environmental manager will conduct a baseline dust study during the 2014 dry season and implement ongoing monitoring of air quality in respect to dust.	Risk Management - Operational Management and Mitigation	Appendix K - Section 4

Commitment	Issue	Section in EIS
The dust collected in the gauges will in accordance to standard AS/NZS 3580 tested for insoluble solids and ash content. The results of the monitoring program will be used to provide an indication of the effectiveness of the dust control measures being implemented at the mine site. Where the dust limit is exceeded; dust management actions are to be implemented.	Monitoring - Dust	Appendix K - Section 6.1
ABM will also monitor its operations by recording and trending complaints over time by entering these in the complaints register and reviewing the nature of complaints on an annual basis. This will assist in determining the environmental aspects of the complaint and requirement for additional controls or management strategies to limit the air quality impacts.	Monitoring - Community / Social	Appendix K - Section 6.2.2
In the event monitoring detects deterioration in air quality conditions or an air quality complaint, ABM personnel including contractors are to attempt to stop the source, or control the source of the dust. If they can't control the incident then they are to report the incident to their supervisor and / or the environmental manager or delegated representative.	Accident / incident report	Appendix K - Section 7.1.1
ABM will report the monitoring results in the within the Mining Management Plan pursuant under section 40 of the *Mining Management Act* 2001. If the project exceeds substance emission limits as defined by categories 1, 1a, 1b, 2a, 2b or 3 of the National Pollutant Inventory as administered by the Commonwealth Department of Environment, then ABM will report as required. NT WorkSafe (if health and safety related) and the NT EPA will be notified if air quality results in an onsite incident. Reporting will be as soon as practicable after the incident. Workplace Health and Safety NT require an incident notification form to be emailed or faxed as soon as possible.	External information and communication	Appendix K - Section 7.2.1
ABM will respond to any community inquiries or complaints received as described in the ABM Incident Report and further management actions will be taken if required.	Community complaints and enquires	Appendix K - Section 7.2.2
The AQMP will be implemented by the ABM environmental manager with the assistance of ABM staff and qualified contractors. It is the responsibility of the ABM environmental manager to maintain, audit and review the monitoring program.	Responsibilities	Appendix K - Section 7.2.3
Appendix O - Conceptual Mine Closure Plan		
Over the life of the project it is intended to undertake further geochemical testing to refine the current geochemical understanding	Closure Plan	Appendix O – Section 7
Formation of a low permeability layer in the tailings dam to limit seepage	Closure Plan	Appendix O – Section 4.4.1
The outer tailings dam and concentrate residual embankments designed with 14 degree (1(V):4(V)) walls to limit erosion.	Closure Plan	Appendix O – Section 4.4.1, 5.10
At closure the capping of the tailings dam and concentrate residual dam with a 1.6m store and release cover to limit water egress into the tailings.	Closure Plan	Appendix O – Section 4.4.1, 5.10, 5.11
Encapsulating physical and geochemically adverse material within the waste dump to limit erosion and potential for chemical reactions	Closure Plan	Appendix O – Section 4.4.1, 5.12
Design of the outer batters to 15 degrees as determined by modelling and testing of the competent and inert sandstone to be used on the external of the waste dump.	Closure Plan	Appendix O – Section 4.4.1, 5.12
Designing the top of the waste rock dump to be water harvesting to prevent water cascading from the top surface down the outer slopes and outer batters to prevent water shedding.	Closure Plan	Appendix O – Section 4.4.1, 5.12
Top 800 to 1000mm of the transported pisolite/gravelly profile across the pits will be selectively handled and used as part of the tailings dam and top surface of the waste rock dump capping layer to create a soil profile similar to the surrounding environs.	Closure Plan	Appendix O – Section 4.4.2
Rehabilitation materials (pisolite/gravel, siltstone and sandstone) to be stockpiled in close proximity to their intended end use.	Closure Plan	Appendix O – Section 4.4.2
Where practicable rehabilitation will be implemented progressively.	Closure Plan	Appendix O – Section 4.4.2

Commitment	Issue	Section in EIS
Prior to topsoil recovery, if present vegetation will be cleared and stored in windrows	Closure Plan	Appendix O – Section 5.1
Top soil stripping will involve the top 100mm of material.	Closure Plan	Appendix O – Section 5.1
The topsoil will be stored in stockpiles no greater than 2m high proximal to disturbance areas for future use in rehabilitation and decommissioning	Closure Plan	Appendix O – Section 5.1
All dams will be filled in order to prevent feral animals from using these areas as water sources	Closure Plan	Appendix O – Section 5.1
Closure of tailings dam will adhere to the closure principles outlined in the ANCOLD Guidelines on Tailings Dams 2012.	Closure Plan	Appendix O – Section 5.1
Water diversion structures left at closure will be designed in consideration of a 1:1000yr peak flow event	Closure Plan	Appendix O – Section 5.1
At closure the project area will be surveyed by an accredited auditor to ascertain the presence and extent of any contamination. If any areas are identify a plan will be put in place to remove this material and if possible treat on site or dispose of appropriately in accordance to the current legislative requirements and in agreement with the relevant regulators.	Closure Plan	Appendix O – Section 5.1
Where practicable steel will be recycled and removed from site	Closure Plan	Appendix O – Section 5.2
Once the plant has been removed any residual ore or spilt tailings material will be graded into windrows and placed in the tailings dam.	Closure Plan	Appendix O – Section 5.2
Flat areas will be re-contoured into the surrounding landscape, ripped and covered with topsoil to ensure water infiltration, establish a soil profile and vegetation	Closure Plan	Appendix O – Section 5.2
Once the camp has been removed any below ground services (i.e. electrical cabling) within 0.5 metre of the surface are to be removed, other deeper services will be cut 0.5 metre below the ground surface and backfilled.	Closure Plan	Appendix O – Section 5.3
Any ponds, landfills and below ground septic systems will be decommissioned and backfilled	Closure Plan	Appendix O – Section 5.3
Once ripping has been completed any cabling, pipework of other camp items that have been bought to the surface will be collected for disposal.	Closure Plan	Appendix O – Section 5.3
If not transferred to Traditional Owners both groundwater and monitoring bores will be decommissioned in accordance to the Departments of Mines and Energy advisory note titled “Construction and Rehabilitation of Exploration Drill Sites” and the document titled “Minimum Construction Requirements for Water Bores in Australian, Edition 3”.	Closure Plan	Appendix O – Section 5.7
If Traditional Owners request that a track or road remain open then ABM will ensure that the road or track is left in a suitable condition with the width of the road reduced where practicable to reflect the ongoing purpose of the road.	Closure Plan	Appendix O – Section 5.7
An abandonment bund will be constructed around the perimeter of the pit void (In accordance to the current Western Australia guideline titled Safety Bund Walls Around Abandoned Open Pit Mines (DOIR 1997)).	Closure Plan	Appendix O – Section 5.8
Potential backfilling of the pits will be evaluated by ABM to reduce the operations footprint and manage waste rock and/or tailings.	Closure Plan	Appendix O – Section 5.8
Dense tailings concentrate that has undergone cyanide leaching will report to the concentrate residual dam. Leached tailings will have the cyanide removed prior to deposition. As a conservative measure the material will not be deposited in the larger tails dam rather it will be managed in the concentrate residual dam that will be lined.	Closure Plan	Appendix O – Section 5.11
If practicable, low grade stockpiles will be processed with the majority of the material reporting to the tailings dam. However, if this is not possible the southern end of the northern waste dump will be used to encapsulate the material.	Closure Plan	Appendix O – Section 5.13
Establish onsite rehabilitation trials	Closure Plan	Appendix O – Section 7
Stakeholder engagement will be an ongoing process during the life of the operation.	Closure Plan	Appendix O – Section 8

Commitment	Issue	Section in EIS
•Achieve compatibility with agreed post-mining land use. •Ensure the health and well-being of people and fauna. •Remove all infrastructure and any removable non mining wastes from the site. •Create safe, stable, non-polluting and sustainable landforms. •Achieve successful rehabilitation and demonstrate a return of ecosystem functions. •Ensure establishment of vegetation that is self-sustaining, including integration into the predicted fire regime. •Undertake progressive rehabilitation of available disturbed areas. •Maintain water quality and flows. •Minimise long-term visual impact by creating acceptable landforms, compatible with the adjacent landscape.	Closure Plan	Appendix O – Section 9
Ensure resourcing and the provision of adequate funds for closure	Closure Plan	Appendix O - Section 12
Continual development and review of Mine Closure Plan	Closure Plan	Appendix O - Section 13
Where practical undertake progressive rehabilitation of the Twin Bonanza Mine site.	Closure Plan	Appendix O – Section 13.2
Care and Maintenance Plan that will be updated as the project develops.	Closure Plan	Appendix O – Section 13.3
Following all the rehabilitation work a rehabilitation/compliance audit will be conducted. The audit will focus on identifying any areas where rehabilitation requirements have not been met.	Closure Plan	Appendix O – Section 14.4
Appendix P - Conceptual Care and Maintenance Plan (CC & MP)		
Resource scheduling will ensure that adequate resourcing is available to manage the site and prevent the potential for environmental accidents (including machinery and appropriately trained personnel).	Care and Maintenance	Appendix P - Section 1.1
If the project was ever to go into care and maintenance (C &M) the CC & MP would be updated to reflect the current status of the project and subsequently submitted. As soon as practicable the DME and CLC will be informed of the suspension of operations.	Care and Maintenance	Appendix P - Section 1.1
The CC & MP will be subject to ongoing review and change to ensure that it remains relevant and effective throughout the life of the operation. This CC & MP is integrated with other site documents.	Care and Maintenance	Appendix P - Section 1.2
If the operation is to go into C & M continuing consultation will occur with the DME and the CLC to ensure expectations are meet during the C&M period. In addition, during the implementation of a C&M period employees will be kept fully informed.	Stakeholder consultation	Appendix P - Section 2.2
Prior to the C&M period an internal audit will be completed on the current status of the site in relation to relevant commitments given in the EIS, CC & MP (i.e. legal obligations register), CLC documents and MMPs. This will form the framework to ensure ongoing compliance, monitoring and reporting obligations are met.	Legal Obligations	Appendix P - Section 2.3
Responsibility for ensuring the site environmental requirements are met, including the CC & MP, will lie with the chief operating officer (COO), mine manager or delegate, environmental manager and health and safety manager or their delegates.	Responsibilities	Appendix P - Section 4.2
The COO and environmental manager will be responsible for ensuring employees are appropriately trained who will then be responsible for carrying out a range of activities to minimize environmental risk during this period.	Responsibilities	Appendix P - Section 4.2
The following environmental items will be monitored and managed whilst under C&M: •waste dumps •tailings dams, and water storage dams •processing plant •chemical and hydrocarbon storage	Management	Appendix P - Section 6

Commitment	Issue	Section in EIS
•open pit/s •surface drainage •waste water facilities		
As part of the audit an assessment of the erosion, stability, present freeboard and potential for release of leachates from the dams will be completed. Audit findings will determine the course of action to be taken.	Management - Tailings dam and water storage dam	Appendix P - Section 6.2.1
During care and maintenance in the unlikely event that the freeboard capacity has the potential to be exceeded an agreement with the DME and other relevant regulators' (including the CLC) is to be sought to allow the transfer of water from the tailings dam to restore freeboard capacity. If water was to be transferred from the tailings dam it would be discharged to another dam if freeboard was available or transferred to an approved excavation. Relevant approval will be sought.	Management - Tailings dam and water storage dam	Appendix P - Section 6.2.1
ABM Resources will ensure that there is appropriate bunding or other surface drainage structures at the time of placing the open pit operation on C&M to reduce the possibility of significant surface water flows making their way into the open pit. The bunds or structure will also serve the purpose of preventing inadvertent access by the public thus reducing potential safety issues.	Management - Open pits	Appendix P - Section 6.5
If the abandonment bund is not in position prior to the shutdown financial provision and the workforce will be provided for the construction of the required bunds and other surface drainage structures. If a shutdown is imminent the mine manager will be informed by the COO and environmental manager, the managers will then be responsible for ensuring that the pits are safe and will not be subject to significant water flows during C&M.	Management - Open pits	Appendix P - Section 6.5
ABM will ensure that onsite monitoring will take place for the natural and engineered drainage structures around the mine site whilst in C&M. The frequency of monitoring will be stated in the CC&MP submitted to the DME on announcement of the temporary closure of the mine.	Management - Surface drainage	Appendix P - Section 6.6
ABM are committed to undertaking a cost estimate for the variety of activities related to the temporary closure of the Twin Bonanza Mine including potential remediation, monitoring and management over the period.	Financial Provisioning	Appendix P - Section 7
Financial provisioning of mine site C&M will be reviewed at the time of the impending temporary closure to provide for any additional work required after the environmental audit.	Financial Provisioning	Appendix P - Section 7
All of the regular environmental monitoring commitments will continue to be carried out during temporary closure. ABM will ensure that a regular inspection routine is established and inspections will be carried out by competent persons.	Monitoring	Appendix P - Section 8
Prior to the announcement of the project under going C&M, ABM will assess if there are any further monitoring requirements above and beyond the existing requirements	Monitoring	Appendix P - Section 8
ABM will ensure that they have appropriate personnel for daily management on site, however for the purposes of monitoring or certain tasks a specialist person/consultant may be required to be on site for a short period of time.	Monitoring	Appendix P - Section 8
Appendix Q - Hazardous Substance Management Plan		
A documented risk assessment shall be conducted prior to working with hazardous substances and repeated any time the scope of work changes or any surrounding conditions change.	Risk assessment	Appendix Q - Section 3.1

Commitment	Issue	Section in EIS
The completed risk assessment shall be provided to the site general manager for approval prior to any work with hazardous substances commencing.	Risk assessment	Appendix Q - Section 3.1
The area supervisor shall maintain an inventory for each separate hazardous substance storage area on site. The inventory and accompanying SDS's shall be available for viewing by all personnel.	Hazardous substances inventory and SDS	Appendix Q - Section 3.5
The safety coordinator shall maintain a separate master inventory of hazardous substances stored on site.	Hazardous substances inventory and SDS	Appendix Q - Section 3.5
No radioactive substances or equipment containing or requiring radioactive sources for operation shall be brought onto site without approval from the site general manager.	Radioactive substances	Appendix Q - Section 3.7
Storage facilities for all Hazardous Substances and Dangerous Goods shall comply with the *Dangerous Goods Act 2012 (NT)* and *Dangerous Goods Regulations 2012* (NT), prior to storing hazardous substances on site to ensure that the necessary licenses or exemptions are clarified.	Storage of hazardous substances	Appendix Q - Section 3.8.1
Where required by the *Dangerous Goods Act 2012* (NT) storage areas shall be contained within bunds. Bund construction shall comply with *AS1940:2004 The Storage and Handling of Flammable and Combustible Liquids and regulatory requirements*. In the event of inconsistency, regulatory requirements shall be followed.	Storage of hazardous substances	Appendix Q - Section 3.8.1
Separation distances for dangerous goods shall comply with the *Dangerous Goods Regulations 2012* (NT).	Storage of hazardous substances	Appendix Q - Section 3.8.2
Placegarding of storage areas shall comply with the *Dangerous Goods Act 2012* (NT).	Storage of hazardous substances	Appendix Q - Section 3.8.3
All personnel required to work with hazardous substances shall, prior to commencing any work, have completed suitable training and have been assessed as competent by the area manager.	Training and competency assessment	Appendix Q - Section 3.10
Relevant national standards and regulations relating to fire safety shall be complied with at all times including *AS/NZS 1940:2004 The Storage and Handling of Flammable and Combustible Liquids*.	Fire protection	Appendix Q - Section 3.11
Appendix S - Vehicle Management Plan (VMP)		
All light vehicles must be registered, insured and roadworthy in any state or territory of Australia.	Light Vehicle standards	Appendix S - Section 2
Defects must be recorded on the pre start checklist. Vehicles identified as not in operational condition shall have an "Out of Service" tag attached to the ignition. The driver of a vehicle shall report all defects immediately.	Light Vehicle standards	Appendix S - Section 2.1
All vehicles entering or travelling to the ABM mining lease must be fitted with functional UHF radio communications. The radio channel used at the ABM operations is UHF Channel 40. All radio communication is to be conducted in a clear and professional manner	Communication	Appendix S - Section 4.1
Appendix T - Social Impact Management Plan (SIMP)		
All senior personnel and board of ABM are to receive a copy of this plan and to implement the content. From time to time this plan will be reviewed, updated and distributed.	Social Impact	Appendix T - Section 1
The Mining Agreement with the Traditional Owners outlines set protocols for formal engagement. ABM will: •host an on-country meeting with the Traditional Owners and the CLC at least once a year for which the expenses will be covered by ABM •not block access at any-time (other than for reasons of immediate safety) for Traditional Owners who wish to visit the land and the Project •accept all requests for meetings •hold regular liaison committee meetings •ensure one company director, along with representation from senior management, is present at all pre-arranged meetings and are the representatives of	Stakeholder engagement	Appendix T - Section 2.1

Commitment	Issue	Section in EIS
the Company •ensure all company representatives adhere to the structure, customs and values of the meetings.		
Furthermore, ABM senior management will maintain regular contact with the CLC mining and legal teams. This includes prompt response to any queries whether formal or informal.	Stakeholder engagement	Appendix T - Section 2.1
ABM Resources commits to a close working relationship with Traditional Owners and the CLC. This relationship will be one of honesty and integrity, mutual understanding, and recognition of the culture and values of the Traditional Owners.	Stakeholder engagement	Appendix T - Section 2.1
All permanent personnel who work on the project must attend cultural awareness training as organised by ABM. All contractors and non-personnel are to be made aware of the ABM's policies. Management provides regular updates to existing personnel and new employees are advised of ABM's position on Traditional Owners when completing their induction.	Stakeholder engagement	Appendix T - Section 2.1
There are no formal rules relating to dealing with the general public. All employees are to be made aware that while working for ABM they must acknowledge and respect members of the public and act in professional and courteous manner.	Stakeholder engagement	Appendix T - Section 2.1
The Company will appoint aTraditional Owner liaison officer (who may be an Indigenous employee) who will report directly to the managing director and company secretary and while on site will report to the site manager.	Management of social and economic impacts - Traditional Owners	Appendix T - Section 3.1
ABM will adhere to agreements with the Traditional Owners and the Central Land Council.	Management of social and economic impacts - Traditional Owners	Appendix T - Section 3.1
The Company will establish a committee to respond to individual or group requests for financial support. Subject to available funds, the Company proposes $100,000 per annum be made available. This may be used for a request from a local school, health clinic, sporting group, or cultural group.	Management of social and economic impacts - Traditional Owners	Appendix T - Section 3.1
ABM will not block access at any-time (other than for reasons of immediate safety) for Traditional Owners who wish to visit the land and the Project	Management of social and economic impacts - Traditional Owners	Appendix T - Section 3.1
Skills based training is to be offered to Indigenous employees. In particular, there will be an emphasis on vocational training that is considered useful to the worker back in their own community.	Management of social and economic impacts - Traditional Owners	Appendix T - Section 3.1
Monitoring of socio-economic and cultural impacts will be coordinated by the Traditional Owner liaison officer. The officer will report regularly to the ABM board. Monitoring is to include: 1. maintaining dialogue with the CLC and developing a register of concerns 2. reporting on any direct approaches or comments from Traditional Owners 3. performing analysis of retention rates and skills training register of Indigenous employees.	Monitoring of socio-economic impacts	Appendix T - Section 4.1
Complaints and enquiries for the calendar year will also be reported in the Mining Management Plan under the *Mining Management Act 2001* and reported to/discussed with the CLC and Traditional Owners through on ground meetings, which will also include the projects scope and direction, and through technical reporting under the Mining Agreement with the CLC.	Reporting	Appendix T - Section 5
A register of all external communications in regards to community inquires/complaints relevant to mine's operations will be maintained in ABM'S Incident and Complaints Register. Community complaints and inquiries will be registered recording details such as the date, time, complainant/inquirer name and address, information about the complaint/inquiry, response and corrective actions.	Reporting	Appendix T - Section 5.1.1

Commitment	Issue	Section in EIS
Internal audits of the ABM SIMP will be conducted annually or as new circumstances arise with potential to impact stakeholders and the community.	Audit	Appendix T - Section 6.2
Independent audits of the SIMP shall be conducted as requested by Government regulators or CLC.	Audit	Appendix T - Section 6.2
Appendix U - Cultural Heritage Management Plan (CHMP)		
All employees, contactors and visitors to site will be inducted on the ABM's CHMP.	Responsibilities	Appendix U - Section 2
The environmental manager will be responsible for the plan and for updating and maintaining sites.	Responsibilities	Appendix U - Section 2
The site manager will liaise with the environmental manager to ensure that correct protocols are adhered to in all disturbance activities.	Responsibilities	Appendix U - Section 2
The indigenous liaison officer will also be notified of all cultural heritage sites and will communicate regularly on the plan with the environmental manager.	Responsibilities	Appendix U - Section 2
All employees and contractors will be advised of cultural and heritage sites, as well as exclusion zones, in the site induction. •The sites will be marked with a 20 metre buffer with blue permanent pickets. •Blue permanent pickets will be spaced at 20 metre intervals along the boundary to prevent inadvertent entry. •A check-list covering sites is to be added to all disturbance work. •Travel Management as per the SIMP will be adhered to.	Management and mitigation	Appendix U - Section 4.2
ABM will conduct surveys of any sites that are subject to development or disturbance. These surveys will be conducted by professional practitioners and where applicable will be carried out in conjunction with the CLC.	Management and mitigation	Appendix U - Section 4.3
In addition, members of ABM staff will be trained on how to identify new areas. Posters will be put up in common areas informing staff ofhow to recognise new sites and what protocol to follow if they find one.	Management and mitigation	Appendix U - Section 4.3
ABM employeesand contractors will adhere to a "IF IN DOUBT – MARK IT OUT" policy forareas of potential new cultural/heritage sites. Should an employee/contractor identify a potential site they will mark it out (with blue pegs), not disturb the site and report it to the Environmental Manager or the On Site Manager so that an archaeological survey can be arranged by ABM.	Management and mitigation	Appendix U - Section 4.3
The marker pegs are not to be removed until it is established that the area is, in fact, not a site of significance.	Management and mitigation	Appendix U - Section 4.3
On a quarterly basis the environmental manager will monitor all sites for disturbance. A quarterly report will be presented to ABM's board of directors.	Monitoring and review	Appendix U - Section 5
A register of all external communications in regards to community inquires/complaints relevant to mine's operations will be maintained in ABM'S Incident and Complaints Register. Community complaints and inquiries will be registered recording details such as the date, time, complainant/inquirer name and address, information about the complaint/inquiry, response and corrective actions.	Reporting	Appendix U - Section 6
Internal audits of the ABM CHMP will be conducted annually or as new circumstances arise with potential to impact cultural and heritage sites, including mine development.	Audit	Appendix U - Section 7.2.1
Independent audits of the CHMPshall be conducted as requested by government regulators and/or the CLC.	Audit	Appendix U - Section 7.2.2
Appendix Y - Noise Management Plan (NMP)		
ABM will provide hearing protection for all staff asrequired.	Scope and legislation	Appendix Y - Section 2.2

Commitment	Issue	Section in EIS
ABM if required will consult with employees, contractors, and regulatory authorities (assessed on a case by case basis), when a decision is to be made that may affect noise management at the Twin Bonanza mine site and accommodation facilities.	Consultation	Appendix Y - Section 3
During project implementation a noise risk assessment considering the sources and levels of noise will be conducted. This risk assessment will identify the risks associated with the different aspects of the mine with regards to noise impacting on the workforce and native fauna.	Risk assessment	Appendix Y - Section 4
Where a risk exists to personnel and fauna a hierarchy for noise control will be adopted that will attempt to avoid, minimise, or manage noise.	Risk assessment	Appendix Y - Section 4
ABM's health and safety staff and section managers (i.e processing, environmental) will be responsible for compliance with the *AS/NZS 1269.3:2005Occupational noise management – hearing protector program* guidelines.	Risk Management - General Operations	Appendix Y - Section 5.2
ABM will establish a maximum practicable distance between accommodation units and power generators. Physical bunds will be placed around mining and camp infrastructure including power generators (e.g. gensets) that will generate significant noise disturbance during operation, with the aim to reduce excessive noise disturbance to receptors.	Risk Management - General Operations	Appendix Y - Section 5.2
Where practicable, equipment (both fixed and mobile) will comply with *AS/NZS 1269.3:2005 - Occupational noise management* in regard to design and operating noise levels. It is the duty of the supplier to ensure equipment is compliant with safe levels of noise and vibration and must provide documented proof of compliance, such as test results.	Risk Management - General Operations	Appendix Y - Section 5.2
ABM will maintain a complaints registrar. All legitimate noise and vibration complaints will be investigated and appropriate actions taken	Risk Management - General Operations	Appendix Y - Section 5.2
Qualified blasting personal will be responsible for blasting safety,noise and vibration effects from the blasting. ABM will monitor and comply as practicable.	Risk Management - Shot firing and blasting	Appendix Y - Section 5.3
Shots will not be fired during the middle of the day when bilby are at their least active (asleep, unless in the event of re-blasting / clearing of existing holes, scheduling of blasts will align with the change of shift which will be close to the evening or dawn (6pm), when both nocturnal and diurnal fauna will be active and less disrupted. The aim is to prevent disturbance to nocturnal and diurnal animals alike, in particularthe bilbies and mulgaras which are situated locally, thereby reducing the impact on faunal habitats and activities.	Risk Management - Shot firing and blasting	Appendix Y - Section 5.3
In the event of a noise complaint, ABM personnel including contractors are to attempt to stop the source of the noise, or control the source of the noise. If they can't control the incident then they are to report the incident to their supervisor.	Information and communication	Appendix Y - Section 7.1
ABM will respond to any community inquiries or complaints received as described in the ABM Incident Report and these will be recorded on the appropriate register. All external complaints will be investigated by the environmental manager or health and safety manager and when required actions taken to resolve the matter. Upon finalisation of the investigation and implementation of any required management measures a response will be provided to the party that has lodged the compliant. The response will detail the findings and course of action taken.	Information and communication	Appendix Y - Section 7.2.1
If a reportable incident occurs ABM will notify Work Safe (if health and safety related) and the NT EPA of the incident as soon as practicable after the incident. Workplace Health and Safety NT require an incident notification form to be emailed or faxed as soon as possible.	Information and communication	Appendix Y - Section 7.2.2

Commitment	Issue	Section in EIS
As part of ongoing consultation and engagement with the Central Land Council information will be provided on any issues or incidents that have been the result of excessive site noise and vibrations.	Information and communication	Appendix Y - Section 7.2.3
Specifically, monitoring and maintenance of onsite machinery will focus on checking for changes in noise levels – badly worn bearings and gears, poor lubrication, blunt blades, loose parts, unbalanced rotating parts and steam or air leaks all create noise that can be reduced with good maintenance. Engineering controls such as vibration mountings, impact absorbers, gaskets, seals, silencers, barriers and other equipment. Regular inspection and maintenance will be conducted in accordance with theWorkSafe-Code of Practice – *Managing and preventing hearing loss at work.*	Monitoring	Appendix Y - Section 8.1.1
ABM Resources will monitor social impacts of its operations by recording and trending complaints over time by entering these in the complaints register and reviewing the nature of complaints on an annual basis.	Monitoring	Appendix Y - Section 8.1.2
Complaints and enquiries for the calendar year will also be reported in the Mining Management Plan under the *Mining Management Act 2001* and if required under the *Waste Management and Pollution Control Act.*	Reporting	Appendix Y - Section 8.2.1
Internal audits of the ABM NMP will be conducted annually or as new machinery with potential to exceed allowed noise levels are introduced to the mine site or accommodation area.	Audit	Appendix Y - Section 9.1
Independent audits of the NMP shall be conducted as requested by government regulators and/or the CLC.	Audit	Appendix Y - Section 9.2
Appendix Z - Fire Management Plan (FMP)		
All works are to be undertaken in a safe manner incorporating the use of Personal Protective Equipment (PPE) and Job Safety Analysis (JSA) prior to the commencement of each task.	Safety	Appendix Z - Section 1.3
To ensure traditional and landscape-scale burning activity is not hindered by the existence of the mine site and personnel. ABM will adhere to keeping vegetation loads below the thresholds, by way of localized prescribed burning efforts and regular maintenance of all firebreaks.	Legal requirements	Appendix Z - Section 2.1
Back burning and/or controlled burning will only be undertaken with a permit under the Bushfire Act that is currently administered by Bushfires NT (where applicable) and in consultation with the Traditional Owners.	Fire breaks	Appendix Z - Section 6.3
ABM will adhere to all relevant legislation. ABM will specifically undertake seasonal maintenance of firebreaks around accommodation camp buildings and infrastructure in line with legislative requirements, and as part of an integrated fire management approach, to reduce the risk of fire.	Legal requirements	Appendix Z - Section 2.1
The site will operate under the general principal of fire avoidance.	Management	Appendix Z - Section 5
All mining equipment and gensets will be equipped with appropriate fire extinguishers.	Management	Appendix Z - Section 5
ABM personnel are strictly banned from lighting fires except under controlled conditions. Fires are banned during the course of normal field work activities but camp fires and barbecues are permitted in designated areas under controlled conditions.	Management	Appendix Z - Section 5
All staff will comply with fire ban days declared by BushFires NT, a delegated staff member will monitor the Bureau of Metrology website (BOM).	Management	Appendix Z - Section 5
Prescribed burning has been recommended by the CLC (Central Land Council) to maintain a reduced-fuel buffer for standard fire protection. This will be adopted for future MMP's and will be utilised where practicable, especially in between fire breaks and infrastructure.	Management	Appendix Z - Section 5

Commitment	Issue	Section in EIS
The site induction, which covers environmental and safety aspects, will inform all personnel about fire awareness and the requirement to obtain a Hot Work Permit before undertaking welding, cutting or grinding activities, it will also covwer emergency contact numbers, and procedures in case of a fire.	Fire mitigation strategies / hazard management	Appendix Z - Section 6
All employees and contractors will be required to attend a site induction, with attendance documented on the Induction/Training Record Form and Induction/Training Register.	Fire mitigation strategies / hazard management	Appendix Z - Section 6
If a bushfire is approaching the project, this information will be reported to senior management, who have the responsibility to preserve site infrastructure and ensure safety of all personnel in such an event.	Monitoring wildfires	Appendix Z - Section 6.2
All operational areas, including accommodation and power generators will be placed in cleared areas and surrounded by a 6m fire break cleared completely of vegetation and debris. Firebreaks will aim to enable vehicle access to fight fires , will stop a fire under mild conditions, and are essential as control lines from which back burning may be undertaken to stop wildfires in extreme conditions.	Fire breaks	Appendix Z - Section 6.3
Hydrocarbons and hazardous materials are to be stored in accordance with *AS1940-2004 - The storage and handling of flammable and combustible liquids*; appropriate hazard separation zones of fire risk areas from fuel storage and hazardous chemical storage facilities will be enforced.	Fire breaks	Appendix Z - Section 6.3
Appendix AA - Biting Insect Management Plan (BIMP)		
• Any ponds, dams, drains, sediment traps, bunded areas and on-site excavations filled with water will be inspected for the presence of mosquito larvae during the wet season. If larvae are detected, the Medical Entomology Branch of NT Health will be contacted for assistance in choosing a suitable method of control. • Any depressions created in the ground surface where possible will be filled or drained to prevent the ponding of water and all drainage channels / spoon drains will be kept as shallow as possible to prevent ponding. • Stockpiles will be placed in areas that do not impede drainage and will be shaped to prevent ponding. • Sedimentation ponds will be emptied promptly after storm events to prevent long-term ponding. • Ponds, dams and other water holding structures will be designed appropriately and maintained to minimise the potential for mosquito breeding • Care will be taken that ponding does not occur in rubbish storage areas. • Erosion and wash-down practices will be controlled to prevent sediment and debris forming standing water pools around the site. • All accommodation facilities and offices will be screened and air conditioned to discourage mosquitos. • All staff will be educated to be especially vigilant during the high mosquito borne disease risk periods (late dry to post wet) through the use of long sleeved shirts and trousers and the regular use of insect repellent. Insect repellent will be provided at work sites. • Staff will be educated about the early symptoms associated with exposure to mosquito borne diseases and will be instructed on the need to report any symptoms to a medical officer.	Management Measures - prevention	Appendix AA - Section 3.1
Areas referred to above will be constructed and maintained in accordance with the *Guidelines for Preventing Mosquito Breeding Sites Associated with Mining Sites 2005* by the Northern Territory Government – Department of Health and Families.	Management Measures - prevention	Appendix AA - Section 3.1.1
In line with the Water Management Plan the haul roads and main access road will be constructed to minimise any potential for constricting flow to mitigate flooding potential; avoiding pooling of water for mosquito breeding sites.	Management Measures - prevention	Appendix AA - Section 3.1.1
The Mine Closure Plan and progressive rehabilitation will minimise the potential mosquito breeding sites that will remain after the cessation of mining operations. All disturbed areas will be rehabilitated to be free draining where practicable.	Management Measures - prevention	Appendix AA - Section 3.1.1
ABM staff will periodically check mosquito activity within the accommodation and work areas, including the water storage dams, to identify the success of mitigation measures and to determine whether larval and adult eradication programs should be implemented.	Management Measures - Monitoring	Appendix AA - Section 3.2
Any significant mosquito activity will be reported to ABM's site manager and / or the Northern Territory Medical Entomology Branch.	Management Measures -	Appendix AA - Section 3.3

Commitment	Issue	Section in EIS
	Control	
If necessary, areas that cannot be managed with other management controls will be treated as required with a control agent. The advantage of chemical control methods is that pesticides can be quickly applied with rapid results at relatively low cost. However, chemical usage will not be viewed as a long term control strategy as prolonged use can result in the development of resistance in mosquito populations and be detrimental to the environment.	Management Measures - Control	Appendix AA - Section 3.3.2
Any significant infestations of biting insects and/or sickness due to biting insects are to be reported to the Northern Territory Medical Entomology Branch. All infestations will be reported to the environmental manager and/or delegate to record in the biting insect register.	Reporting	Appendix AA - Section 3.4

Supplement EIS –Commitments Summary

Commitment	Issue	Comment in SEIS- Section EIS
Camp and accommodation areas (provide food and shelter), man-made surface water supplies (fresh water source), and soil stock piles (suitable for making dens); these areas will be inspected regularly for feral cats, dog and dingo intrusion/presence and will also now be inspected for foxes. Additionally, if fox tracks or scats are recorded during fauna monitoring, this evidence will trigger ABM to implement a control program to eliminate individual foxes from the project area. Management response for foxes will be taken very seriously, and would be similar to that described for feral cats as referenced in Section 4.5 of the Biodiversity Management Plan. Measures would include: • Localised trapping and shooting program will be conducted around potential attraction sources. • Professional hunters or trained Traditional Owners will undertake periodic culling. • The landfill will be fenced to exclude native species including dingoes, • If foxes are seen to be accessing the landfill, baiting and trapping within the landfill compound will be undertaken. • Den fumigation, (only to be used on a localised basis around the site if dens are located and confirmed to be utilised by foxes).	Biodiversity Management Control	Comment 2, Chapter 6 & Appendix D
Controlled burning will only be undertaken with a permit under the Bushfire Act and working with the CLC and/or relevant CLC Rangers to ensure: • The positioning of firebreaks either by mechanical clearing to create a 4 metre wide fire break or removing fuel load via slashing to effectively contain the controlled burn. • The timing of the prescribed burn and positioning of the ignition line takes into consideration the prevailing wind conditions and temperature. • Clearances from CLC are in place covering the intended controlled burn.	Fire Management Plan	Comment 3, Chapter 15
To minimise the local risk of wildlife being injured or killed during controlled burns the following measures will be put in place: • The timing of control burns will be coincided to periods of low fauna activity (for example not occurring when nocturnal species are active). • When small areas are being burnt, the area will first be traverse to move highly mobile fauna on. • If practical, burn progressively to limit the area burnt at any one time. • Light the fire along designated margins allowing fauna time to exit (for example not lighting the fire on all sides at once). • Undertake control burning when temperatures are cooler as hot/dry fuel can result in a hotter burn. • Only burn when prevailing wind conditions are suitable.	Biodiversity	Comment 3, Chapter 15
ABM will consult with the Department of Land and Resource Management on the potential to implement a catch and release program that will be conducted under a Parks and Wildlife Commission NT permit. All release points will be close to capture point (i.e. within 1 km) to ensure that are still within their home range. This will involve engagement of an appropriately experienced ecologist. In addition, ABM is in the process of developing a procedure for the immediate management and transfer of sick and injured animals.	Biodiversity	Comment 5, Appendix D
In respect to blasting vibration, Australia Standard AS2187.2-2006 suggests a peak particle velocity of 25mm/s for occupied non-sensitive sites at all frequencies. Measurements will be undertaken for both representative and significant blasts at known bilby habitat most proximal to blasting locations to control blasting vibration below the Australian Standard for occupied non sensitive sites.	Noise Management Plan	Comment 11, Appendix Y
During rainfall events that result in flowing storm water around the waste rock dumps samples will be collected for analysis of a suite of elements to determine if the activities are affecting water quality. Sampling will be completed as detailed in the Standard Operating Procedure for Surface Water Monitoring contained in Appendix F – Water Management Plan, Draft EIS. The operating procedure will be updated to include sampling around the waste rock dump.	Water Management Plan	Comment 13, Chapter 10
If any areas of seepage develop along the waste rock dump batters, a sample either of the water or the dehydrated salts will be taken for analysis to investigate the chemistry of the sample.	Water Management Plan	Comment 13, Chapter 10

To manage these community impacts the following measures will be adopted: • Open communication with all stakeholders. • Continual engagement with the local communities, with open and responsive dialogue. • Identify issues early and consult with the affected groups. • Providing employment and training opportunities for local communities. • Establishing a working relationship with other operations in the area. • Comply with regulatory requirements and stakeholder commitments.	Socio-Economic Impacts	Comment 14, Section 1.3.2, Chapter 1
If water discharge is required that may result in discharge outside of mining tenure, a Waste Discharge licence will be sought.	Waste Water Discharge	Comment 15, Section 3.4.10, Chapter 3
It is proposed as part of the airstrip upgrade to complete an investigation of the topography in relation to the detailed plans thus ensuring the drains and sediment traps are appropriately sized and positioned.	Discharge Control	Comment 16, Chapter 5
With the sediment traps being flow through systems the discharge point will be designed to minimise erosion. As part of the maintenance of the erosion control measures the sediment trap will be cleared regularly to maintain capacity.	Discharge Control	Comment 16, Chapter 5
Legislation Matrix will be regularly reviewed to maintain up to date details on the relevant compliance, incident reporting and regulatory requirements.	Legislation Matrix	Comment 17, Section 5.5.2, Chapter 5
This matrix will be regularly reviewed to maintain up to date details on the relevant compliance, incident reporting and regulatory requirements. This comment will be incorporated in the first review which will be undertaken on completion of the EIS process:	Legislation Matrix	Comment 17, Section 5.5.2, Chapter 5
ABM will operate as per the Mining Management Act	Operational Issues	Comment 19
Environmental controls put into place to minimise erosion and ensure discharged water quality is suitable can be detailed as follows: • The discharge structures will be constructed with a zone of keyed in rip rap (rock armouring) to reduce water velocity and disperse the water over a wider area. • Discharge areas will be regularly inspected during rainfall events for erosion. If the area is eroding remediation work will be undertaken to minimise the potential for ongoing erosion. • If monitoring of the discharge highlights the presence of sediment discharge measures will be taken to improve the water resonance time in the sediment trap to improve sediment settling volumes. • If the presence of oil/grease or petroleum hydrocarbons are detected visually or a water analysis details a value of TPH > 15mg/L highly absorbent pads (known as a Global Hisorb Filter) suspended from a boom would be used to recover the oil for disposal in designated hydrocarbon bins with any hydrocarbon affected soils placed in a designated bioremediation area. • If water quality at the discharge point exceeds the set triggers based on ANZECC guidelines modified for background levels. Investigations will be implemented to establish the source of the elevated elements and action taken to remediate the issue.	Water Quality	Comment 20, Section 3.4.10, Chapter 3
ABM proposes to undertake testing of Timmy's (once re-established), Corsair, and Wilson's bores to determine the potential of the groundwater resource The proposed investigations will include: • Establishment of a monitoring bore network to assess both water quality and extraction across the operation (including the production bores). • Pumping testing of the established and re-established bores (Corsair, Wilson's and Timmy's) • Collection of baseline water data for the purpose of ongoing monitoring. • Determination of the aquifer properties and associated ground water resource. Once completed, the findings and recommendations will be in-corporated into the site water account and management plan for inclusion in the Mining Management Plan.	Water Management	Comment 21, Chapter 7 and Appendix J
ABM will investigate alternative methods of dust suppression. The main focus of the investigation will look at changing the fundamental properties of the dusty material by increasing the size or density of the particles; agglomerating the smaller particles; and forming a protective layer or crust on the surface of the materials. Potential alternatives to be investigated will include: • The use of dust suppressant products over disturbed areas. • Design roads to take the most direct route and enforce speed limits. • Orientate stockpiles to offer minimum cross sectional area to prevailing winds. • Re-sheet high traffic areas to reduce build-up of fines material and dust. • Where practical install artificial wind breaks e.g. bunds and windrows to reduce surface wind velocity.	Dust Suppression	Comment 23, Section 7.1, Chapter 7
Tree health and groundwater levels will be monitored to assess if the ecosystem are being affected by water extraction activities	Water Management	Comment 24, Section 7.2.4, Chapter 7

If areas become salinity affected adjacent to haul roads and operational areas, the issue will be investigated to establish the cause and measures implemented to prevent a re-occurrence. Remediation of the area may involve removal of the affected sediment and placement of that material in the waste rock dump in a location that does not affect the proposed rehabilitation of the land form. Inspections for potential salinity affected areas will be undertaken as part of the regular site audits.	Dust Suppression	Comment 25, Section 7.3.1, Chapter 7
The site layout has been revised to allow for the unimpeded discharge of water to undisturbed areas and to avoid flowing against stockpile areas. In addition, along the margins of the topsoil and rehabilitation stockpiles either bunds or whoa boys will be developed of competent material. Each of the spill ways from the sediment ponds will be broad rock armoured chutes to dissipate water velocities to thus limit erosion at discharge points. These measures can be detailed as follows: • The diversion drain will be designed to convey 1:100 yr 72hr peak flow event. • When constructed the CRD embankment will attain a final height of five metres this will prevent larger peak flood events which overflow the diversion drain from entering the CRD. • The external facing batters of the CRD embankment will be designed with a 1 in 4 gradient (14 degrees). This, in combination with the increased CRD and diversion drain separation, will limit the amount of bottle necking of water flow if the 1:100 yr 72hr peak flow event is exceeded.	Site Layout	Comment 27, Section 7.3.1, Chapter 7
Operators of the water carts will be trained on the appropriate use of spray and dripple bars to avoid overspraying. If areas become salinity affected adjacent to haul roads and operational areas, the issue will be investigated to establish the cause and measures implemented to prevent a re-occurrence. Remediation of the area may involve removal of the affected sediment and placement of that material in the waste rock dump in a location that does not affect the proposed rehabilitation of the land form. Inspections for potential salinity affected areas will be undertaken as part of the regular site audits.	Water Management	Comment 28, Section 7.5.1, Chapter 7
As part of the works associated with the aquifer and hydrological assessment (as detailed in Comment 20) the location of these bores will be further refined based on hydrological grounds. The bores, once confirmed, would provide permanent monitoring points around the site for collection of baseline data prior to the planned development and for ongoing site monitoring.	Water Management	Comment 29, Section 7.6.2, Chapter 7
For the planning of the ESCP either a Certified Professional in Erosion Control will be engaged to finalise the work or the work will be peer reviewed by one. All hydrological design calculations will be reviewed by a suitability qualified engineer.	Erosion Control	Comment 30, Appendix E
ABM can confirm that the erosion control and sediments works will be timed between 1 May and 30 September. Prior to the disturbance activities occurring, the areas will be demarcated as per Appendix X –Ground Disturbance Management Plan. Within this plan there are the following requirements: • Confirm clearing areas are delineated based on clearly marked out scale maps and/or set of coordinates consistent with approvals • Land to be cleared is demarcated by cones/flagging/pegs (note if large area no more than 50m between markers. If markers not visible from one to the next then markers need to be closer). • Clearing is to be supervised	Erosion Control	Comment 31, Appendix E
Areas outside of active mining areas that have been disturbed during construction of site infrastructure will be rehabilitated as soon as practicable to reinstate the natural erosion resistance.	Dust Suppression	Comment 32, Appendix E
Small drains will be installed along the north-eastern edge of the Topsoil Area 2 and along the southern edge of the pisolite stockpile area to further facilitate proper drainage and help ensure the integrity of the stockpiles.	Diversion Drainage	Comment 33, Appendix E
Further separation between the diversion drain and stockpile area will be provided by a perimeter bund to be installed around the stockpile area. Additional bunding will be installed all the way around the Waste Rock Dumps (NWRD and SWRD) and the topsoil stockpile areas as a precautionary measure against direct sediment loss from these areas.	Diversion Drainage	Comment 33, Appendix E
Once the additional erosion and sediment control measures and infrastructure have been finalised under the EIS process they will be incorporated into the Twin Bonanza Erosion and Sediment Control Plan.	Sediment Control	Comment 33, Appendix E
Clearing will be completed in accordance to Appendix X –Ground Disturbance Management Plan. This plan requires clearing boundaries to be demarcated and adhered to (i.e. areas not within the proposed footprint are designated as “No Go” where vegetation is to be maintained).	Clearing	Comment 34, Appendix E
The roads will be well maintained and compacted to prevent erosion during and after inundation.	Erosion Control	Comment 34, Appendix E

When an area is no longer required ABM is committed to progressively rehabilitate with native flora species to minimise future wind or water erosion of these areas. The following general erosion sediment control measures will be applied in any additional miscellaneous disturbance areas (e.g. pipelines, tracks, firebreaks or other service corridors): • All clearing will be conducted in a manner that minimises the amount of disturbance as much as practicable. • The native gravelly surface soil will be left in place in any cleared area if the area will be required to remain cleared throughout mining. The native gravelly surface soils have been shown to be naturally erosion resistant, and readily self-armouring. If suitable gravelly material is not found to be present within a particular area, the native material's suitability will be assessed, and suitable soil or stockpiled waste rock material will imported from another area of the site. • All disturbed areas will be reshaped to ensure that they are 'keyed-in' with the surrounding landscape as much as practicable. This will reduce the potential for erosion in these areas by ensuring that any disturbed soil is already at ground level, and any surface water flows are allowed to pass over the area without altering the surface flow regime (i.e. avoids concentration of flow in sheet flow areas). • 'Whoa-boys' will be deployed, as required, to maintain the integrity of diversion banks and drains where they are intersected by pipelines, tracks, firebreaks, or other service corridors. • Any cleared areas that are not required to remain cleared throughout mining will be rehabilitated as soon as practicable to reinstate the natural erosion resistance in these areas.	Erosion Control	Comment 35, Appendix E
The weed management plan (Section 4.6, Appendix D – Biodiversity Management Plan, Draft EIS) is to be implemented during development to ensure vehicles, import materials and equipment do not introduce or spread declared or potential weeds across the site.	Weed Management	Comment 36, Appendix E
It needs to be noted a number of the standards in Table 2.1, Chapter 2 of the Draft EIS do not have a certification process, rather they provide a generic framework to ensure consistency of approach. ABM commits to discussing further with the CLC.	Certifications	Comment 46, Section 3.4.4, Chapter 3
In the event rainfall captured in the pit would be discharged to the environment all required approvals will be sought and appropriate discharge management developed in consultation with the CLC.	Mine Water Discharge	Comment 49, Section 3.4.10, Chapter 3
ABM will regularly undertake a risk assessment process for the operation and work with regulators to continually assessment and adaptively manage these risks via: • The adoption of leading practice methodologies. • The use of data generated throughout the life of the Project to refine management and mitigation measures.	Risk assessment	Comment 55, Chapter 5
The risk matrix will be updated to reflect changes once the EIS process is complete. These changes are in regards to 'Net Risk'.	Net Risk	Comment 57, Section 6.7.2.3, Chapter 6
Inspections of the waste dumps and other infrastructure that have the potential to attract bilby and mulgara will be incorporated into regular site inspections and if species are present incorporate the area into future fauna monitoring.	Biodiversity	Comment 58, Section 6.7.3, Chapter 6
Pump testing of the water bores will occur during the 2014 field season. To investigate the potential for GSE (Ground Water Sensitive Ecosystem).	Groundwater	Comment 61, Section 7.4.2
If target area number 3 is required to supplement the water supply at the Twin Bonanza project, investigations will involve testing the aquifer for the sustainable yield and the potential to meet the water requirements. As part of this process an assessment of the effect on other groundwater users will be undertaken to ensure Tanami Downs cattle operation is not impacted.	Groundwater	Comment 62, Section 7.5.2
Conceptual design of the tailings dam based on ANCOLD guidelines is considered to be a "No-Spill Allowance" structure as such discharge of water from the spillway would be a last resort and as detailed in Appendix G. The quality of the water would be assessed and the transfer of water from the tailings dam would be in consultation with the relevant regulators to ensure requirements are met. It is proposed that any discharge would be directed to an existing pit or purpose built excavation.	Tailings Dam Water Discharge	Comment 64, Section 10.6.4, Chapter 10
The lining of the tailings dam once finalised, the detailed design will be lodged under the Mining Management Plan process for assessment of the design parameters.	Tailings Dam	Comment 65, Section 10.6.7
Should ABM wish to expand or add conventional cyanide processing to Twin Bonanza, the Company will seek additional approvals and provide further environmental management measures to ensure the surrounding environment is protected.	Processing Flow Chart	Comment 66, Section 10.6.7, Chapter 10
It is proposed that the tailings dam site investigations will be part of the preliminary site works to ensure the ground conditions are fully assessed and the tailings dam design reflects these conditions and any variations. In addition, initial hydrological baseline testing will be conducted to investigate the characteristics of the groundwater in the vicinity of the tailings dam. This data will be used to assess the potential for cumulative impacts.	Tailings Dam	Comment 67, Section 10.6.11, Chapter 10
To manage low grade ore stockpiles; they will either be stored on the ROM pad or in the footprint of the waste rock dump. If stored in the waste rock dump footprint the stockpiles will be encircled by a bund with surface water being diverted around the waste rock dump footprint as detailed in the Appendix F – Water Management Plan.	Low Grade Ore stockpile Management	Comment 69, Section 10.7.5, Chapter 10
The waste rock dump would be monitored for seepage, with seepage being analysed for water quality.	Waste Rock Dump	Comment 71, Section 10.7.6, Chapter 10
Decisions will be made on economic grounds and if two products are of equal quality and price then the Company will endeavour to select the Australian made product as a priority.	Australian Suppliers & Contractors	Comment 75, Section 13.3.1, Chapter 13
Regular inspection for the presence of bilby and mulgara within infrastructure will be incorporated into the Flora and Fauna – Biodiversity section of the EMP. Inclusion of this element will occur as part of the first review and updating of the EMP to reflect the input from the EIS process.	Biodiversity	Comment 79, Section 14.4, Chapter 14

ABM is committed to minimising the operations potential effect on local fire regimes. As requested, part of onsite staff training will include a basic Wildfire Awareness Courses for selected staff. In addition, key personnel supervising the controlled burn will have completed a Fire Fighter NT course. Each burn is to occur in consultation with the CLC and Bushfires NT. The fire management plan will be updated to reflect the proposed training.	Fire Management Plan	Comment 80, Section 14.4.4, Chapter 14
As part of ABM's commitment to having open dialogue with the Traditional Owners via the CLC, discussions on the nature and implementation of the environmental offsets will be ongoing.	Offsets	Comment 82, Chapter 15
During current exploration and bulk sampling activities ABM has complied with all road restrictions due to seasonal weather conditions to prevent road surface damage. This will continue to be the situation in the future. During current exploration and bulk sampling activities ABM has complied with all road restrictions due to seasonal weather conditions to prevent road surface damage. This will continue to be the situation in the future. , ABM intends to have further dialogue with the Central Desert Regional Council on how best road maintenance can be implemented to minimise vehicle and machinery damage.	Road Conditions	Comment 85, Section 12.2.1, Chapter 12
ABM is committed to the preservation of biodiversity.	Biodiversity	Comment 87, Appendix C
The gross risk ranking of 12 highlighted that the interaction of vehicles and fauna had the potential to result in fauna fatalities or injury. Further work to reduce the likelihood of this occurrence has involved a precautionary approach with the following measures to be adopted: • Imposing an onsite speed limit of 60km/hr (details on the speed limit are presented in comment 6). • All site staff are to be inducted on speed limit restrictions and the presence of threatened species. • Impose restrictions on off road driving that includes no off road driving at night when most threatened species are active and restrict access to areas of known bilby and brush-tailed mulgara burrows. • Redesign of the minesite layout with the majority of roads surrounded by pits, waste rock dumps and stockpiles to reduce fauna and vehicle interaction. During the operation, the performance of the above measures will be monitored to ensure all measures are being consistently applied.	Biodiversity	Comment 89, Section 6.7.3.4