

1 SOIL AND LAND MANAGEMENT

Soil and Land Management	
Potential Issues or Impacts	Potential land and soil management issues include: • Re-establishment of a root zone suitable for plant growth for rehabilitation of the waste rock stockpile and other disturbed infrastructure areas. • Compaction of soil surfaces by vehicles and mining equipment. • Erosion of rehabilitated surfaces particularly slopes of the waste rock stockpile and the consequent impacts on revegetation success. • Possible contamination of soils by hydrocarbons and other substances.
Objectives	Arafura's objectives for soil and land management are to: • Minimise land disturbance including disturbance to soil, vegetation and watercourses. • Conserve soil to assist in the long-term rehabilitation of the site. • Minimise wind and water erosion on disturbed and constructed surfaces. • Prevent contamination of land surfaces as a result of mining activities. • Maximise use of contained seeds and microbes in topsoil. • Prevent or minimise introduction of soil borne diseases and weeds. • Minimise adverse impacts on adjacent pastoral activities.
Targets	Compliance with all management measures to achieve the objectives.
Management Strategies	• A clearing permit system will be implemented for all ground disturbance activities. • Unauthorised access to protected or sensitive areas (including rehabilitated areas) will be restricted. • Vehicles and mobile equipment will be parked only in designated parking areas. Vegetated areas will not be used for parking. • Topsoil will be stripped to a depth of approximately 100 millimetres, where practicable, from areas required to be disturbed and placed in stockpiles. Direct replacement will be undertaken wherever practicable. • Stockpiled topsoil will be placed in windrows less than two metres high to minimise loss of seed viability and soil biota. • Rehabilitation will be undertaken at the completion of mining. Stockpiling of topsoils will occur for a short duration due to the small scale nature of the project. • Topsoil stripping and stockpiling (where required) will be undertaken in dry and preferably still wind conditions to minimise dust generation and to assist in rapid revegetation. • Slope gradients will be controlled to minimise erosion and soil loss. • Diversion bunds and drains will be installed as necessary to control local surface water runoff to minimise overland flow and consequential erosion. • Rehabilitation areas will be ripped on the contour after placing of topsoil to remove compaction, improve soil structure and improve infiltration capacity.
Monitoring	The following monitoring requirements are applicable: • The area of land clearing will be accurately recorded. • The area of land rehabilitated will be accurately recorded. • Rehabilitated and disturbed surfaces will be inspected for erosion,

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	particularly after significant rainfall events. If soil erosion is observed during routine inspections, appropriate remediation measures will be implemented.
Reporting	Arafura shall conform with the following reporting requirements: • The area of land clearing will be accurately recorded and reported in the Project Completion Report. • The area of land rehabilitated will be accurately recorded and reported in the Project Completion Report.

2 SURFACE WATER MANAGEMENT

Surface Water Management	
Potential Issues or Impacts	No water for the project will be obtained from ephemeral creeks occurring within the project area. The proposed mining operation poses the following issues: • Lowering of localised groundwater levels as a result of mining. • Deterioration of local groundwater quality as a result of seepage of contaminants from mining activities into local aquifers. • Groundwater abstraction may reduce the volume of surface water flows due to the potential hydraulic connection between surface and ground waters. • Concentration of salts on road areas where groundwater is used as a dust suppressant. • Pipeline infrastructure impacting on pastoral activities. • Septic sewage treatment systems may pollute the groundwater if located in areas where the water table is high. • Possible acidification of groundwater due to aerial exposure in the pit void. • Subsequent death or damage to aquatic flora and fauna.
Objectives	Arafura's objective is to prevent or minimise any deterioration in surface water quality through changes in pH, sediment load, salinity, chemicals and hydrocarbons and to minimise potential adverse effects caused from mine dewatering and site infrastructure on natural drainage systems.
Targets	To implement the strategies below prior to operations commencing.
Management Strategies	• Any surface run-off requiring discharge to the environment will be directed to detention basins to remove sediment prior to discharge. • Culverts and/or floodways will be installed as required where roads cross watercourses and drains. Water diversion structures will be armoured, where necessary, to reduce the velocity and erosion potential, of surface flows. • Hydrocarbon storage will be in accordance with Australian Standard <i>AS1940 Storage and Handling of Flammable and Combustible Liquids</i>. • No water discharge to the environment will occur without an approved Waste Discharge Licence. Discharges will meet approved water quality criteria. • Any dewatering discharge will be monitored and treated if necessary to meet agreed release criteria as specified in the MMP and waste discharge licence before release to the environment. • Post-mining monitoring of surface water quality down stream from the project area will be undertaken for at least 12 months after mine closure. If deemed necessary, further monitoring of surface water will be conducted.
Monitoring	To ensure that negative impacts to groundwater quality and level are not occurring, a comprehensive program for monitoring surface water will be undertaken. The monitoring program will be designed to record water quality upstream and downstream of operations, and will include monitoring sites downstream of all operational activities. Data from DPIFM monitoring sites located in the wider

Surface Water Management	
	Mary River catchment will also be reviewed as part of operational impact assessment. The water monitoring program will include regular sampling of water upstream and downstream of mining activities within the Mining Lease. Monitoring results will be reviewed regularly against past monitoring and ANZECC guidelines to detect any deterioration in water quality and allow action to be taken. Monitoring results will be reported to NRETA in the Project Completion Report.
Reporting	Arafura shall conform with the following reporting requirements: • Inclusion of monitoring results in the Project Completion Report.

3 GROUNDWATER MANAGEMENT

Groundwater Management	
Potential Issues or Impacts	Potential groundwater issues include: • Lowering of localised groundwater levels as a result of mine dewatering. • Deterioration of local groundwater quality as a result of seepage of contaminants from mining activities into local aquifers. • Groundwater abstraction may reduce the volume of surface water flows due to the potential hydraulic connection between surface and ground waters. • Concentration of salts on road areas where groundwater is used as a dust suppressant. • Pipeline infrastructure impacting on potential pastoral activities. • Septic sewage treatment systems may pollute the groundwater if located in areas where the water table is high. • Possible acidification of groundwater due to aerial exposure in the pit void. • Subsequent death or damage to aquatic flora and fauna.
Objectives	Arafura's objective is to minimise the project's potential impacts on the local groundwater resources.
Targets	To implement the measures outlined below prior to operations commencing.
Management Strategies	• Abstraction volumes and depth to water in monitoring bores will be monitored regularly during the life of the operation to enable Arafura to gain a better understanding of the behaviour of the underlying aquifer systems. • Water quality monitoring will be undertaken of water collected in pit sumps prior to re-use for ancillary uses. Water will not be re-used if analytical results indicate it is of low pH. • Water quality monitoring will be undertaken on a quarterly basis in monitoring bores during the life of the operation to enable Arafura to determine effects of mining. • Post-mining monitoring of groundwater levels and quality will be undertaken twelve months after mine closure.
Monitoring	To ensure that negative impacts to groundwater quality and level are not occurring, a comprehensive program for monitoring groundwater will be undertaken. Key features of the groundwater water monitoring program will include: • Designation of fixed water level and water quality sampling locations, including locations monitored for internal control purposes. The purpose, monitoring frequency, analytical parameters, trigger levels and compliance standards will be documented for each location. • Use of standardised water level monitoring and water sample collection, storage and dispatch procedures to minimise risk of sample contamination. • Implementation of quality assurance protocols such as collection of duplicate samples, inclusion of field and trip blanks and use of chain of custody forms. • Use of a NATA or similar accredited laboratory for sample analysis. • Regular review of data generated by the ground water monitoring program. • In the event that review of monitoring data indicates that trigger levels are exceeded, abnormal results are received or compliance standards could be exceeded, additional samples will be collected to confirm the data and action plans developed to address the issue.

Groundwater Management***Reporting***

Arafura shall conform with the following reporting requirements:

- Inclusion of monitoring results in the Project Completion Report.

4 VEGETATION MANAGEMENT

Vegetation Management	
Potential Issues or Impacts	The proposed mining operation poses the following issues: • Clearing of approximately 24 hectares of native vegetation. • Introduction/spread of weed species. • Changes in creek line vegetation due to construction of a waste rock stockpile.
Objectives	Minimise loss of habitat, species diversity and abundance, and re-establish appropriate habitat through rehabilitation. Arafura will also endeavour to manage and control the spread of weed and pest species as a result of their operations.
Targets	Compliance with all management measures to achieve the objectives.
Management Strategies	• A Vegetation Clearing Management Procedure will be developed as part of the EMP. • Necessary licenses and permits will be obtained for the clearing of land associated with the Mt Porter project area. • The impact of clearing will be minimised by restricting clearing of vegetation to the minimum area necessary for operation. • The perimeter boundary of all areas approved to be cleared will be clearly delineated before clearing works commence. • The riparian rainforest area will remain undisturbed by the operation and associated infrastructure. • A Weed Management Plan will be prepared as part of the EMP. The Plan will include, but will not be limited to issues of vehicle and personal hygiene in regards to weeds, identification of weed species (including noxious weeds) and control and eradication measures. • Company vehicles will be confined to travelling on purpose built roads to minimise potential vehicle borne spread of weed species.
Monitoring	Arafura shall conform with the following monitoring requirements: • The area of vegetation clearance will be recorded and tracked through implementation of a Vegetation Clearing Management Procedure. • The effectiveness of rehabilitation programs will be assessed through monitoring at the completion of rehabilitation works and following the subsequent wet season.
Reporting	Arafura shall conform with the following reporting requirements: • Areas of disturbance shall be reported in the Project Completion Report. • Results of the vegetation assessment at water discharge points shall be reported in the Project Completion Report. • The effectiveness of rehabilitation programs will be assessed and reported.

5 FAUNA MANAGEMENT

Fauna Management	
Potential Issues or Impacts	The proposed mining operation poses the following issues: • Removing about 24 hectares of habitat during the life of the mine. • Adversely impacting species of conservation significance such as the Orange Horseshoe Bat, Arnhem Sheathail Bat, Partridge Pigeon and Short-eared Rock Wallaby. • Accidentally killing animals on mine roads and the haul road to Union Reefs Plant. • Controlling feral animals such as donkeys, horses, cats and pigs.
Objectives	Arafura's objective is to minimise loss of species diversity and abundance, and re-establish appropriate habitat through rehabilitation. Arafura will also endeavour to manage and control the spread of pest species as a result of their operations.
Targets	Compliance with all management measures to achieve the objectives.
Management Strategies	• Requiring employees and contractors to attend an induction program that will include a component on environmental management. In particular, the induction will clearly explain employee and contractors' roles and responsibilities to restrict impacts on fauna and habitat. • Educating all employees and contractors to recognise species of conservation significance, particularly the Gouldian Finch, and requiring them to report any sightings to the Environmental Manager. • Reporting sightings of species of conservation significance to the Northern Territory Parks and Wildlife Commission. • A monitoring program and Management Plan will be developed specifically for the Gouldian Finch. As part of the site induction all staff will be educated in identifying Gouldian Finches and procedures to be followed if Gouldian Finches are observed. • Restricting speeds on haulage routes and mine roads to minimise fauna death on roads. • Cleared vegetation will be stockpiled and respread in the rehabilitation program to provide fauna habitats. • Developing a Wildlife Rescue Procedure to operate in conjunction with land-clearing operations and where vehicle movements occur. • Participating in feral animal control programs on Mary River West stations, if requested by owners. • Arafura will undertake Cane Toad trapping programs during the life of the Mt Porter Project. • Banning domestic animals and firearms on site. • Waste management procedures will be implemented to minimise attraction of feral animals to the project area. • Drill holes will be capped and appropriately rehabilitated to remove potential hazard to the local wildlife
Monitoring	Arafura shall conform with the following monitoring requirements: • Should any water storage dams be constructed, they will be observed on a

Fauna Management	
	regular basis for fauna mortalities. If an unacceptable number of fauna mortalities are observed, consideration will be given to methods to reduce the number. • The duration of standing water in operational areas will be recorded. Where standing water is present in any location for more than five days, measures will be implemented to prevent this occurring in the future.
<i>Reporting</i>	Arafura shall conform with the following reporting requirements: • Sightings of species of conservation significance will be reported to the Parks and Wildlife Commission and documented in the Project Completion Report. • All employees will notify the Environmental Coordinator of potential or actual impacts upon native fauna and habitat areas. They will also be encouraged to report animal observations. • Known animal mortalities attributed to the project shall be documented in the Project Completion Report.

6 AIR QUALITY MANAGEMENT

Air Quality Management	
Potential Issues or Impacts	Potential impacts from air emissions associated with the project are expected to be minimal. The remote location of the project and the absence of nearby residential facilities also limits any adverse impact that air emissions are expected to have on the local or regional environment or human health. Potential air quality issues include: • Mobile equipment emissions from engine exhausts, including carbon monoxide, carbon dioxide and nitrous oxides. • Generation of dust from mining operations and vehicle movement on unsealed roads. • Generating dust during material transfer operations. • A negative impact on climate change associated with increased greenhouse gas emissions
Objectives	Arafura's objectives for air quality are to minimise point and fugitive emissions and, thereby, ensure optimal onsite and offsite air quality.
Targets	Compliance with all management measures to achieve the objectives.
Management Strategies	• Emission control equipment will be installed on all combustion engines. • Diesel combustion engines in stationary and mobile equipment and diesel-powered electric generators will be operated and maintained to minimise emissions of combustion gases. • Water trucks will be used to control fugitive dust within the pit and on internal roads to minimise dust emissions. • Movement of mobile equipment and vehicles will be limited to formalised tracks and roads where dust control methods can be used. • Equipment operators will remain in enclosed, air-conditioned cabins to minimise exposure to dust emissions. • Areas will be rehabilitated at the conclusion of operations to prevent dust generation. • Joining the Federal Government's Greenhouse Challenge Plus program and monitoring greenhouse emissions and efficiency. • Energy efficiency will be a major consideration in the selection and design of equipment and plant. • Encouraging all employees to be energy efficient in their day to day activities and educating them on this.
Monitoring	The nature of the operation, its emissions and location do not warrant a formal air quality monitoring program. If observations during operations consistently indicate that this is not the case, then Arafura will review its management strategies and implement a particulate monitoring program to ensure the effectiveness of the strategies.
Reporting	• Emissions will be reported as part of the National Pollutant Inventory.

7 NOISE AND VIBRATION MANAGEMENT

Noise and Vibration Management	
Potential Issues or Impacts	Potential noise issues include: • Mobile equipment noise and vibration emissions from engines. • Generator noise and vibration emissions from exhausts and plant operations. • Blasting in open pit. • Transport of ore to the Union Reefs Processing Plant. Potential impacts on the local or regional environment or human health from noise and vibration are expected to be minimal due to the remote location of the project and the absence of nearby community residential facilities.
Objectives	Arafura's objectives for noise and vibration are to minimise sources resulting in onsite and offsite impacts.
Targets	Compliance with all management measures to achieve the objectives.
Management Strategies	• Reducing the noise from equipment by installing soundproofing and/or noise abatement devices, where practicable, around/on primary sources of noise such as power generators and water pumps. • Maintaining, to the extent practicable, the natural acoustic barriers (for example trees and ridges) between noise sources and neighbouring communities. • Hearing protection equipment will be made available and utilised in onsite areas where engineering controls are deemed inappropriate or ineffective.
Monitoring	The nature of the operation and location do not warrant a formal noise and vibration monitoring program. If complaints or observations during operations consistently observe that this is not the case, then Arafura will review its management strategies and consider undertaking a monitoring program to ensure the effectiveness of the strategies.
Reporting	• Details of noise or vibration related complaints will be detailed in the Project Completion Report.

8 WASTE AND HAZARDOUS MATERIALS MANAGEMENT

Waste and Hazardous Materials Management	
Potential Issues or Impacts	Given the relatively low volume, type and nature of hazardous materials required for the project, the proposed operations pose the following issues: • Spillage to the environment of hydrocarbons and hazardous materials used in mining or associated activities. • Incorrect storage of hazardous materials leading to contamination of soil, surface water and ground water. • Disposal of hazardous wastes generated during construction and operations including tyres, waste oil, grease and industrial waste. • Disposal of putrescible wastes in an onsite landfill. • Storage of explosives. • Acid development of soils, lack of acid neutralising capacity of waste rock. • Contamination of surface water or groundwater leading to toxic environmental effects. • Erosion of external surfaces over time. This may lead to loss of sediments to surface water drainages or in extreme cases instability of structures.
Objectives	Arafura's waste and hazardous materials objective is to ensure: • The safe transport, storage and use of all potentially hazardous materials. • The potential for accidental releases is minimised. • Accidental releases that do occur are mitigated as soon as practicable. • Waste generation is minimised and the recycling of materials and wastes is maximised to the extent that commercial prudence allows. • The long-term physical and geo-chemical stability of its onsite wastes.
Targets	Compliance with all management measures to achieve the objectives.
Management Strategies	• Management of hazardous and non-hazardous material will be in accordance with statutory regulations, standard industry structures and procedures. Strict procedures will be adopted to ensure adequate records are maintained of delivery and use to ensure earliest possible detection of losses and to avoid site contamination. • A register of all hazardous materials imported to the site or generated as a result of activities undertaken at the site will be developed and maintained. This will document the hazardous material name, location, approximate volume, storage method and where applicable, disposal method for the substance and containers. • An inventory of hydrocarbon use will be maintained to allow determination of whether storage containers are leaking. • Hazardous materials will be brought to the site in bulk packaging wherever possible. This practice will minimise the number of containers and reduce the risk of spillage. • All mobile equipment and light vehicle servicing activities including wash down will be conducted on impermeable surfaces. • Refuelling of mobile equipment will be conducted on a sealed surface at the main fuelling facility. • The mobile refuelling truck will carry spill containment and cleanup material at all times and the driver will be trained in the use of these materials.

Waste and Hazardous Materials Management	
	• An explosives magazine will be constructed and operated in accordance with regulatory requirements. • A licence to Store Dangerous Goods will be obtained for the storage of diesel fuel on site. • The landfill onsite will only receive solid wastes classified as non-hazardous (inert and putrescible). • Design, construction, operation and closure of the onsite landfill will conform to all applicable regulations. • Domestic waste from the workshop and offices will be properly handled, transported to and disposed of in the onsite landfill (which will be part of the waste rock stockpile). • Reusable pressurised containers and vessels will be returned to suppliers. Pressurised containers and vessels that are not reusable will be punctured using suitable equipment and disposed of in the onsite landfill. • Arafura staff and contractors will be trained in proper handling and disposal of waste material. • Hazardous materials and wastes will be stored in appropriately labelled containers within bunded areas. • Containment areas will be constructed in accordance with the requirements of AS1940 Storage and Handling of Flammable and Combustible Liquids and AS 1692 Tanks for Flammable and Combustible Liquids. • An Emergency Response Plan will be developed for the project. This plan will contain information regarding appropriate response to chemical spillages, leaks, fires or explosions. • A representative of Arafura will be assigned to liaise with Pine Creek emergency services regarding hazards on site and response procedures. • Septic systems will be located in suitable areas where there is sufficient depth to groundwater to allow the system to operate effectively. • Prior to their installation, plans for the septic systems will be approved by the relevant government agency.
Monitoring s	Arafura shall conform with the following monitoring requirements: • A surface water and groundwater monitoring program will be implemented to monitor the effectiveness of management measures in preventing contamination of surface and ground waters. • Hydrocarbon inventories will be maintained at a sufficient level to ascertain losses to the system. • A register of all hazardous materials imported to the site or generated as a result of activities undertaken at the site will be developed and maintained. This will document the hazardous material name, location, approximate volume, storage method and where applicable, disposal method for the substance and containers.
Reporting	Arafura shall conform with the following reporting requirements: • Inclusion of monitoring results in the Project Completion Report.

9 WASTE ROCK MANAGEMENT

Waste and Hazardous Materials Management	
<i>Potential Issues or Impacts</i>	Potential issues and impacts include: • Acid development of soils. • Lack of acid neutralising capacity. • Contamination of surface water or groundwater leading to toxic environmental effects. • Erosion of external surfaces over time. This may lead to loss of sediments to surface water drainages or in extreme cases instability of structures
<i>Objectives</i>	Arafura's objectives in managing waste rock include: • Creating an out of pit waste rock stockpile. • Ensuring the waste rock stockpile is stabilised and effectively rehabilitated. • Ensuring the waste rock stockpile blends with the natural surrounds. • Ensure that all PAF material is encapsulated in oxidised waste to prevent acid rock drainage.
<i>Targets</i>	Compliance with all management measures to achieve the objectives.
<i>Management Strategies</i>	• Ensuring all PAF material is encapsulated in the waste landform. If required, neutralising agents will be applied during placement of PAF material. • Arafura will conduct further testing of PAF material as it is encountered during mining to ensure its geochemical properties are understood and management measures described in this PER will be effective in preventing acid generation over time. • Contouring the waste rock stockpile so that it blends with the surrounding topography so that the final design is aesthetically pleasing. • Contouring the waste rock stockpile top surface at gentle gradients to direct drainage off the dump and discourage infiltration over the PAF cell. • Building diversion drains wherever stockpile construction obstructs significant water courses. • Deep ripping the waste rock stockpile slopes on the contour to assist water absorption and minimise erosion. • Spreading topsoil on the waste rock stockpile once shaping is complete to facilitate revegetation. Local provenance species will be used if supplementary seeding is required. Arafura shall liaise with the pastoral station owner in relation to the suite of species to be used.
<i>Monitoring s</i>	Arafura shall conform with the following monitoring requirements: • Inspecting the rehabilitated waste rock stockpile for erosion, particularly after significant rainfall. Implementing appropriate remediation measures if soil erosion is observed during inspections. • Monitoring of rehabilitation of the waste rock stockpile will follow an accredited method such as Landform Function Analysis. • Monitoring surface and groundwater to ensure PAF material is being effectively encapsulated.
<i>Reporting</i>	• Rehabilitation of the waste rock stockpile will be reported in the Project Completion Report.

10 CULTURAL HERITAGE MANAGEMENT

Cultural Heritage Management	
<i>Potential Issues or Impacts</i>	Potential cultural impacts include: • Un-authorised destruction or damage to identified sites. • Identification of additional Aboriginal sites or artefacts during the mining process. • Increased levels of employment among the local indigenous population.
<i>Objectives</i>	Arafura's objective is to avoid unnecessary disturbance to any identified ethnographical or archaeological sites.
<i>Targets</i>	Compliance with all management measures to achieve the objectives.
<i>Management Strategies</i>	• All employees and contractors will be required to participate in a general site induction before starting work. The induction will include: • Information on the importance of the cultural environment and protecting artefacts and archaeological sites. • Information on the correct procedure if items of potential Aboriginal or heritage significance (including bones) are discovered during construction or mining activities. • The coordinates of artefact and archaeological site locations shall be stored in a suitable database by Arafura and be made assessable to project design, construction and operations personnel. • The Northern Land Council and owners of the pastoral stations will be kept informed of planned operations. • A 50 metre exclusion zone shall be provided around sites of high archaeological significance (sites MP03, MP07, MP34, MP48 and MP49 (excluding the area currently disturbed by the access track). • The access track from Frances Creek Road to the mine site will be relocated to avoid generation of dust from the road impacting MP49. • Arafura will operate with a preference to employ people from the local community where suitable.
<i>Monitoring</i>	Arafura shall conform with the following monitoring requirements: • The Environmental Coordinator shall ensure that ground disturbance activities do not disturbed ethnographical and Archaeological sites of high significance.
<i>Reporting</i>	Arafura shall conform with the following reporting requirements: • All employees and contractors will stop work immediately and advise the Environmental Coordinator upon identifying any items of potential Aboriginal or heritage significance. The Aboriginal Areas Protection Authority and Northern Land Council will be contacted immediately in the advent of items of potential Aboriginal significance being discovered during mining.

11 SOCIO-ECONOMIC MANAGEMENT

Socio-Economic Management	
Potential Issues or Impacts	Potential social and economic impacts include: • Increased local employment in the Pine Creek area. • Utilisation of local processing plant (Unions Reef). • Increased use and maintenance of local roads, namely Frances Creek Road. • Increased traffic movements as material is imported and exported from the project area. • Increased contribution to the Northern Territory and Federal economies as a result of royalties and payroll taxes. • Increased pressure on Pine Creek accommodation and medical services. • Increased business opportunities for local business. • Temporary change of land use from pastoral to mining. • Potentially negative impact on tourism within the area.
Objectives	Arafura's socio-economic objective is to minimise negative socio-economic impacts and enhance positive ones.
Targets	Compliance with all management measures to achieve the objectives.
Management Strategies	• On final decommissioning plant and infrastructure will be dismantled, made safe and unless requested otherwise by project stakeholders, removed from the site. • Compensation agreements will be reached with landowners for loss of use of land used by Arafura for mining or associated infrastructure. • Employment opportunities will be advertised locally and preference will be given to local candidates. • Provision of goods and services will be advertised locally and preference will be given to local businesses. • First aid facilities will be established onsite for the duration of the project. These facilities will be manned by appropriately qualified employees. • A liaison will be established between onsite Emergency Response and First Aid personnel and providers of equivalent services in Pine Creek, Katherine and Darwin. • Arafura will establish a complaints procedure by which the public can lodge complaints about the operation or impact of the mine.
Reporting	Socio economic issues, including any complaints, will be reported in the Project Completion Report.

12 AESTHETIC AND VISUAL MANAGEMENT

Aesthetic and Visual Management	
<i>Potential Issues or Impacts</i>	Potential aesthetic and visual impacts include: • Visibility of operations from Stuart and Kakadu Highways, Mt Wells Road, and Alice Springs to Darwin Railway. • Increased use of Mt Wells public road. • Visibility of permanent features after closure of operations. • Distraction of highway users by lights.
<i>Objectives</i>	Arafura's aesthetic and visual management objective is to minimise the impact of the project site on the visual amenity.
<i>Targets</i>	Compliance with all management measures to achieve the objectives.
<i>Management Strategies</i>	• The impact of clearing will be minimised by restricting clearing of vegetation to the minimum necessary for operations. • Access to the project site will be limited to employees and authorised visitors. All project access will be well signposted to control traffic movement in and out of the project area. • The waste rock stockpile will be contoured so it ties in with the surrounding topography.
<i>Reporting</i>	Aesthetic or visual issues, including any complaints, will be reported in the Project Completion Report.

13 EMERGENCY PREPAREDNESS AND RESPONSE

Emergency Preparedness and Response	
Potential Issues or Impacts	Natural disasters and operational emergencies beyond routine operational control that threaten life, property and/or the environment.
Objectives	Arafura's objectives for Emergency Preparedness and Response are to ensure: • A safe environment for all employees, contractors and visitors. • The identification and management of all significant environmental risks. • The existence of a system for managing emergencies and an appropriate degree of emergency preparedness. • That the response to emergencies is based primarily on the preservation of human life and the safety of emergency response personnel. • The containment of emergencies and their effects within the project boundaries. • Cooperation with external emergency response organisations. • A safe return to normal operations.
Targets	To develop and implement an Emergency Preparedness and Response Plan (EPRP) incorporating measures satisfactory to DPIFM prior to operations commencing.
Management Strategies	• Arafura will maintain suitably qualified and trained staff on site and will liaise with emergency response organisations in Pine Creek to deal with site emergencies. • Specific procedures will be developed to ensure appropriate and effective response will be provided for a range of potential emergency situations. This will include response to: – Fire – bush, equipment or plant. – Floods. – Explosions. – Medical emergencies. – Chemical spillages. – Pit wall failure. – Vehicle accidents. • Procedures will detail the roles and responsibilities of personnel at each stage of the response plan. Training will be provided to all personnel identified within the Emergency Response Plan to ensure they understand their individual responsibilities with regard to implementation of the plan. • Arafura will establish a relationship with emergency response organisations and operators of medical facilities within Pine Creek, Katherine and Darwin. • Arafura will ensure that people with appropriate First Aid and medical training are employed at all times. A dedicated First Aid facility will be constructed and maintained for the duration of the project. First Aid kits will be maintained in all office buildings and light vehicles • Fire extinguishers will be maintained in operational areas in accordance with regulatory requirements. Extinguishers will also be fitted in all light

Emergency Preparedness and Response	
	vehicles and mobile equipment • Mobile equipment such as water carts, graders and bulldozers will be used for fire suppression activities where necessary. • In common with all mining and processing operations, the mine will present hazards and risks. A Safety Management System will be developed for the project. Details of the system will be included in the Mining Management Plan provided to DPIFM.
Monitoring	Details of EPRP training and equipment maintenance shall be recorded.
Reporting	Arafura shall conform with the following reporting requirements: • The status and effectiveness of the EPRP shall be recorded within the Project Completion Report. Details on training shall also be included. • Environmental incidents shall be recorded and a summary reported within the Project Completion Report.

14 ENVIRONMENTAL TRAINING

Environmental Training	
Potential Issues or Impacts	Increased risk of environmental impacts from the project as a result of lack of environmental awareness or understanding of appropriate management practices to reduce or remove an impact on the environment.
Objectives	Arafura's objectives for environmental training are to raise employee and contractor awareness of relevant project environmental issues and their environmental responsibilities.
Targets	To develop and implement an Environmental Training Program suitable for the construction and operation phase to ensure an appropriate level of environmental awareness amongst the workforce.
Management Strategies	- On commencement of employment, all personnel will be required to participate in a site specific induction. The occupational hazards, environmental requirements and social/community issues associated with the project will be addressed within the induction. - Ongoing training and meetings for review of work practices and safety issues will be conducted on a regular basis under the auspices of the Mine Manager. Regular operational meetings will be held to cover immediate requirements.
Monitoring	Review the environmental training program and materials to ensure that it remains effective and operational or other changes have not occurred that necessitate their revision.
Reporting	Arafura shall conform with the following reporting requirements: Prepare an environmental training summary incorporating training hours conducted, percentage of work force trained and compliance with training program for incorporation into the Project Completion Report.

15 REHABILITATION

Rehabilitation	
Potential Issues or Impacts	Arafura will prepare a Rehabilitation Plan as part of the Mining Management Plan. Failure to appropriately identify rehabilitation strategies may result in costly implementation of perpetual care and maintenance strategies to prevent long term impacts to environment. The Rehabilitation Plan will be a dynamic document that will be reviewed at the conclusion of mining to ensure the Plan remains relevant to the activities undertaken. Implementation of the Plan will be based on best practice methodologies used for rehabilitating disturbed areas and landforms. This will involve the identification of post-closure impacts, the development and implementation of inspection and monitoring programs to verify acceptable performance, and the development and implementation of corrective actions plans, as appropriate.
Objectives	The primary objectives of Arafura Rehabilitation Plan will be: • Ensure the physical and geochemical stabilisation of all project components in the short and long-term. • Undertake progressive rehabilitation of Mt Porter disturbed areas and habitat using local, native species. • Protect the public, domestic animals and wildlife from injuries. • Allow the pre-mining land use (pastoral) to be restored once full decommissioning of operations has been completed
Targets	Compliance with all management measures to achieve the objectives.
Management Strategies	• Rehabilitation will be undertaken at the conclusion of mining due to the short duration of the project (8 months). All rehabilitation will be performed in accordance with contemporary accepted industry best practice and conducted in accordance with an approved MMP. • As part of obtaining all permissions necessary to commence mining, Arafura will submit to DPIFM a security bond in case of any unplanned failure of the project. The size of this security bond will be regularly reviewed in conjunction with DPIFM to ensure it remains consistent with the level of disturbance caused by the Mt Porter project at any specific time. • The waste rock stockpile will be contoured so that they tie in with the surrounding topography. • The waste rock stockpile will be constructed with gentle slopes (between 10 and 18 degrees) to facilitate controlled water shedding. • Diversion drains will be constructed wherever significant water courses are obstructed by stockpile construction. • The waste rock stockpile will be deep ripped on the contour to assist with water absorption and minimisation of erosion. • The waste rock stockpile will be spread with local topsoil once shaping is complete to facilitate revegetation. Land surfaces disturbed by burying of water pipelines will be rehabilitated as part of the construction process. Rehabilitation will involve: • Placement of subsoil over the pipe to completely fill the trench. • Compaction of sub soil material to prevent future subsidence along the trench area.

Rehabilitation	
	• Re-spreading of stockpiled topsoil (if available) over disturbed areas. • Ripping of disturbed area across the contour. This will promote water infiltration into the soil and provide microhabitats for seed germination. • Installation of cross drains where required to direct surface runoff into adjacent areas. Disturbed surfaces will be rehabilitated after removal of infrastructure. This will involve: • Treating any localised contamination (i.e. hydrocarbon spillages). Depending on the contaminant type and concentration, contaminated material may be removed or treated onsite. • Spreading topsoil on deep ripped and reshaped surfaces. • Contour ripping to help water infiltration and surface water control if required. • Seed will be applied to ripped surfaces if natural revegetation has not established satisfactorily within two years of rehabilitation
Monitoring	Arafura shall conform with the following monitoring requirements: • The rehabilitated waste rock stockpile will be inspected for erosion, particularly after significant rainfall events. If soil erosion is observed during routine inspections, appropriate remediation measures will be implemented. • Post-mining monitoring will be conducted to establish the effectiveness of rehabilitation. Monitoring will include consideration of physical stability, erosion, minimisation, vegetation establishment (species diversity, density, cover) and weed presence
Reporting	Arafura shall conform with the following reporting requirements: • The area of land rehabilitated will be accurately recorded and reported in project reports. • Report on any rehabilitation research and field-testing within the Project Completion Report.

16 CLOSURE

Closure	
Potential Issues or Impacts	Arafura will develop and implement a Closure Plan. Failure to appropriately identify closure strategies may result in costly implementation of perpetual care and maintenance strategies to prevent long-term impacts to environment. The Closure Plan will be a dynamic document that is reviewed regularly to ensure the Plan remains relevant to the activities undertaken. Implementation of the Plan will be based on results derived from progressive rehabilitation activities; and will involve the identification of post-closure impacts, the development and implementation of inspection and monitoring programs to verify acceptable performance, and the development and implementation of corrective actions plans, as appropriate.
Objectives	The primary objectives of Arafura's Closure Plan will be: • To ensure the physical and geochemical stabilisation of all project components in the short and long term. • The protection of the public, domestic animals and wildlife from injuries. • To allow the pre mining land use (pastoral) to be restored once full decommissioning has been completed.
Targets	Compliance with all management measures to achieve the objectives.
Management Strategies	Arafura will address closure planning as part of the Mining Management Plan. Implementation of the closure plan will be based identifying post-closure impacts, developing and implementing inspections and monitoring programs to verify acceptable performance, and developing and implementing corrective action plans, as appropriate. Infrastructure will be removed from the site at the completion of mining or as it becomes redundant. This will include administrative offices, workshops, fuel storage tanks, generators, water diversion structures and water pipes. Infrastructure such as bores and roads will not be decommissioned if post-mining land users request their retention.
Monitoring	Short, medium and long term monitoring requirements will be detailed within the Closure Planning in the MMP. As a minimum, the following monitoring measures will be implemented where appropriate. <i>Groundwater:</i> Post closure groundwater monitoring will be conducted in accordance with the requirements of the regulatory Authority until it can be shown by Arafura that there will be no long-term impacts from the operation. <i>Surface Water:</i> Post closure surface water monitoring will be conducted in accordance with the requirements of the regulatory Authority until it can be shown by Arafura that there will be no long-term impacts from the operation. <i>Vegetation:</i> Inspect revegetated areas until the regulatory authority agrees that they are self-

Closure	
	sustaining and that habitat restoration objectives have been achieved. Inspections will determine additional actions necessary to achieve the objectives such as providing water, fertiliser, reseedling, replanting and/or protecting (e.g. by fencing) areas that have been damaged by drought, fire or over-grazing by wildlife. <i>Physical Stability:</i> Annually assess the following and, as appropriate and necessary, take corrective action: • The integrity of waste rock stockpile rehabilitation, particularly the slopes. • The stability of rehabilitated surfaces where infrastructure was located. <i>Relinquishment, and Long Term Care and Maintenance:</i> Once it is established that revegetated areas are self-sustaining, habitat restoration objectives have been achieved, and there is no risk of: • Groundwater contamination due to the waste rock stockpile or open pit. • The accumulation of water of unacceptable quality in the open pit. • The drainage of water of unacceptable quality from the waste rock stockpile. Arafura will negotiate the complete relinquishment of the lease to DPIFM. Prior to any negotiation to relinquish the lease and obtain bond money, Arafura shall consult with and obtain approval from the Northern Land Council. As appropriate, the relinquishment will occur either in stages for portions of the lease or at one time for the entire property.
Reporting	Arafura shall conform with the following reporting requirements: • Report on any closure activities within the Project Completion Report.