Middlemount Coal Project, Stage 2
Initial Advice Statement

May, 2010

Middlemount Coal Pty Ltd

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Acronyms

ANFO	Ammonium Nitrate/Fuel Oil
BBKY	Barada Barna Kabalbara Yetimarla
CHPP	coal handling and preparation plant
DBCT	Dalrymple Bay Coal Terminal
DERM	Department of Environment and Resource Management (formerly EPA and NRW)
EIS	Environmental Impact Statement
EM Plan	Environmental Management Plan
EPA	Environmental Protection Agency
Mt/y	million tonnes per year
ML	Mining Lease
NRW	Department of Natural Resources and Water
PB	Parsons Brinckerhoff
RE	Regional Ecosystem
ROM	Run of Mine
the Project	Middlemount Coal Project, Stage 2
t/h	tonnes per hour

1. Introduction

1.1 Background

Stage 1 of Middlemount Mine is an open cut coal mine located in the central Bowen Basin, approximately 270 km north-west of Rockhampton and approximately 6 km south-west of the township of Middlemount. The product coal is marketed as semi-hard coking coal and pulverised coal injection (PCI) for export. Product coal will be railed for export initially to Dalrymple Bay Coal Terminal (DBCT) then, on completion of the Northern Missing Link Rail Project, to Abbot Point. The mine is situated within the Isaac Regional Council (formerly Broadsound Shire) which is a well established grazing, farming and coal mining region within the Bowen Basin. Figure 1 in a Locality Plan for Middlemount Mine.

Stage 1 of the mine is approved for production of 1.8 million tonnes per year (Mt/y) of run of mine (ROM) coal, designated under Mining Lease ML70379, and an amended Environmental Authority (Mining Activities) Non Code Compliant Level 1 MIN100646307 – Middlemount Coal Mine effective from 24 November 2009. Stage 1 of the mine is currently under construction, with a further amendment to the Environmental Authority applied for to include mining lease application area (MLA) 70417 to allow for placement of overburden spoil from the 1.8 Mt/y operations. An Environmental Management Plan, dated 11 February 2009, and Plan of Operations exist for the Stage 1 development, with an amended Environmental Management Plan (EM Plan) required by 11 December 2010.

Stage 2 proposes to expand the mine to produce up to 5.4 million tonnes per year of Run of Mine (ROM) coal. Stage 2 forms the basis of this Middlemount Coal Project, Stage 2 Initial Advice Statement, described further in the following sections.

1.2 The proponent

The proponent for the Middlemount Coal Project is Middlemount Coal Pty Ltd (Middlemount Coal), an incorporated joint venture between Macarthur Coal (70%) and the Noble Group (30%).

Macarthur Coal Limited is a leading independent coal producer based in Brisbane, Queensland and listed on the Australian Securities Exchange. The company is the major partner in Coppabella and Moorvale Coal Projects and has a range of active exploration projects located throughout Queensland that it is currently seeking to develop.

Noble Group Limited is a global supply chain manager listed on the Singapore Stock Exchange. Noble's coal and coke division is a world-class supplier of thermal coal, coking coal and coke products to the global marketplace. The company owns coal production assets in Australia and Indonesia, and supplies a wide range of coal products from China, Russia and South Africa.

1.3 Project need

Middlemount Coal is proposing to increase its approved production rate of coking coal and PCI coal for export, due to strong interest being expressed by offshore steel mills. Middlemount Coal is positioned in the metallurgical coal market to take advantage of current and future market conditions, with expected increases in global demand for metallurgical coal.

1.4 The environmental impact assessment process

This IAS has been prepared to aid understanding of the Project by affected and interested persons, government agencies, and other interested parties. The IAS addresses the expansion of the mine from the currently approved 1.8 Mt/a ROM coal to up to 5.4 million tonnes per year of ROM coal.

Stage 2 will require amendment to the existing Environmental Authority for Middlemount Mine. Following application by MCPL to amend the existing Environmental Authority, on 29 March 2010 DERM provided the Notice of EIS decision for application to amend an Environmental Authority (Mining Activities) Non Code Compliant Level 1 Mining Project.

Stage 2 has been determined by the Commonwealth Department of Environment, Water, Heritage and the Arts on 16 April 2010 as a controlled action, with controlling provisions for Listed threatened species and communities under sections 18 and 18A of the *Environmental Protection and Biodiversity Act 1999*. The reference number for the Project is EPBC 2010/5394.

A draft Terms of Reference for preparation of an Environmental Impact Statement (EIS) has been prepared for consultation.

2. Middlemount Mine – Stage 1 approved

Stage 1 of Middlemount Mine is an open cut coal mine located in the central Bowen Basin, approximately 270 km north-west of Rockhampton and approximately 6 km south-west of the township of Middlemount. The product coal is marketed as semi-hard coking coal and pulverised coal injection (PCI) for export. Product coal will be railed for export, initially to Dalrymple Bay Coal Terminal (DBCT) then, on completion of the Northern Missing Link Rail Project, to Abbot Point. The mine is situated within the Isaac Regional Council (formerly Broadsound Shire) which is a well established grazing, farming and coal mining region within the Bowen Basin. Figure 1 in a Locality Plan for Middlemount Mine.

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The Stage 1 coal resource is estimated at approximately 40 million tonnes from the Middlemount and Pisces seams. These seams form part of the Rangal coal measures. The Jellinbah Fault runs along the eastern boundary of ML70379. The approved rate of mining is for 1.8 Mt/y of ROM coal which shall yield approximately 1.4 Mt/y of total product coal. Product coal streams are estimated at approximately 60 % coking coal, and 40 % PCI coal.

Bulk sample mining of 200,000 tonnes of ROM coal was conducted in mid 2009, with 150,000 tonnes of ROM coal trucked to Coppabella mine from August 2009 to October 2009 for processing. The first sale of product coal from the bulk sample was sold in October 2009, with further sales completed in early 2010. The product coal has shown to be good quality semi-hard coking and PCI coals with low ash content, low phosphorus and low sulphur concentrations. Export of this coal was via DBCT.

The coal handling and processing plant (CHPP) for Stage 1 commenced construction in October 2009. The CHPP is comprised of one module and will operate with single stage washing with a floatation circuit, and is rated to process 400 tonnes of ROM coal per hour. For Stage 1, the CHPP will operate for 4 days (8 shifts) per week.

The tailings storage facility (TSF) will receive the fine rejects from the CHPP. The TSF commenced construction in October 2009 and is a turkey's nest design. Water will be decanted from the TSF for reuse in the CHPP.

Construction of the Mine Infrastructure Area (MIA) shall commence in May 2010 including administration offices and personnel facilities, access roads and parking, bunded fuel and oil storage, laydown area, vehicle workshops, power facilities, emergency services area, vehicle wash bays, store, sewerage collection and holding facilities, and tyre storage.

The operational workforce is anticipated to be approximately 110 personnel. Workforce accommodation is provided at the MAC Middlemount Village, approximately 8 km east of the mine, with this village used during the mine construction and operations.

For those personnel wishing to permanently reside in Middlemount township, Middlemount Coal Pty Ltd will look to provide housing supplied through local developers or houses which may be surplus to the needs of other local mine operators.

3. Proposed development

The scope of the Environmental Impact Statement (EIS) will address the potential impacts and mitigation measures associated with the Stage 2 development of the Middlemount Coal Project (the Project). The following sections describe the various components of the Project.

3.1 Project location

The Project is located approximately 270 km north west of Rockhampton and approximately 6 km south-west of the township of Middlemount, Central Queensland. Product coal will be railed initially to Dalrymple Bay Coal Terminal (DBCT) then to Abbot Point for export.

The Project is situated within the Isaac Regional Council (formerly Broadsound Shire) which is a well established grazing, farming and coal mining region within the Bowen Basin.

German Creek mining leases held by the Capcoal Joint Venture, adjoin the Middlemount Coal Mine mining lease (ML70379) to the west and south of the current Project area.

Figure 1 shows a locality plan which indicates the Project location at a regional level. Figure 2 shows the Project area in the context of the local area.

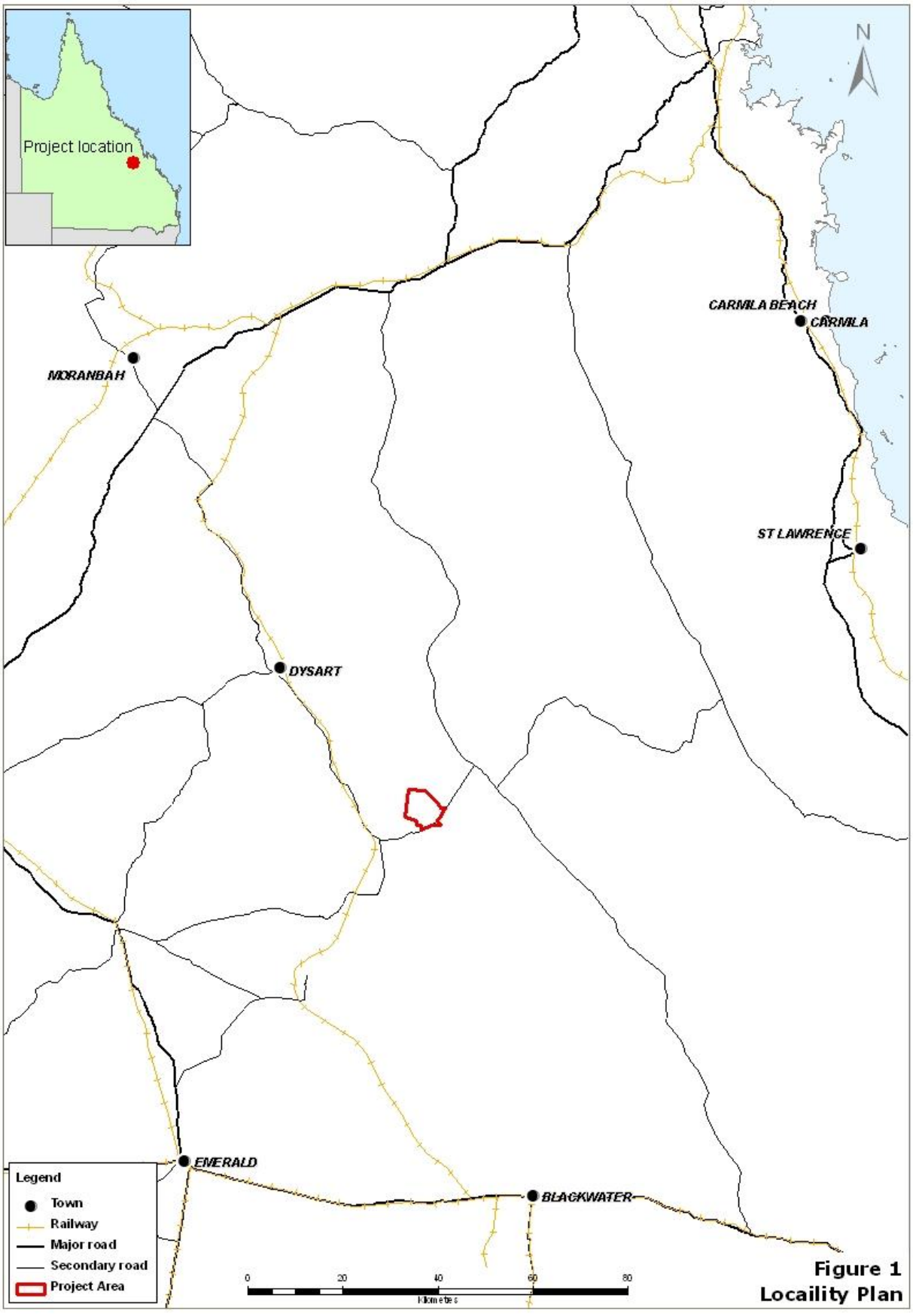

Figure 1
Locaility Plan

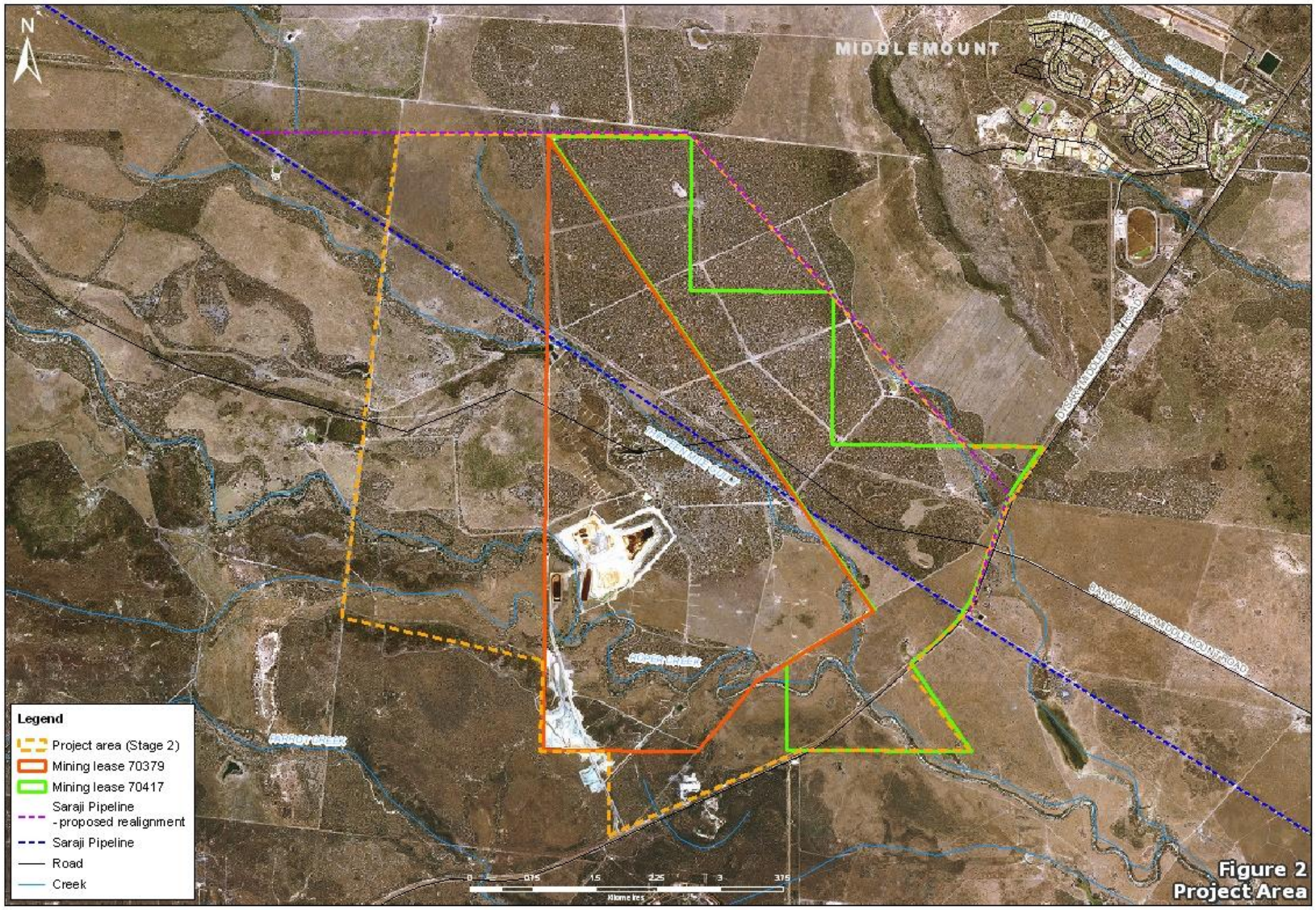

Figure 2
Project Area

3.2 Proposed operations

The Project that forms the basis of this Environmental Impact Statement Terms of Reference is defined as Stage 2 of Middlemount Mine. The Project is based on an estimated coal resource of approximately 100 million tonnes, which would expand mine production up to 5.4 million tonnes per year of Run of Mine (ROM) coal. As for Stage 1, the product coal will be semi-hard coking coal and PCI coal for export, producing a total of approximately 4 Mt/y product coal, with approximately 60% coking coal and 40% PCI coal.

Stage 2 is expected to have first coal mined in June 2011, with total ROM coal output being approximately 3.6 Mt over the first year, then increasing to up to 5.4 Mt/y for the remaining 19 years of the mining lease life.

The mine will operate 24 hours per day, seven days per week. Removal of overburden and coal would use conventional methods, with two options under consideration by MCPL. The first option considers overburden removal by shovels, excavators and trucks, while the second option considers overburden removal by dragline, shovels, excavators and trucks. Both options will be assessed in the EIS. Compared to Stage 1, the vehicle fleet would be increased to match the increased excavated waste removal and coal mining. Blasting of overburden would be during daylight hours, predominately Monday to Friday.

Surface area disturbance for the Stage 2 production level will be generated mostly by additional out-of-pit spoil dumps, with some additional haul roads, access roads and mine water management facilities. Disturbed areas will be progressively rehabilitated, which is a requirement under the current environmental authority. One void is anticipated to remain following completion of mining. The mine plan will be described in the EIS.

Stage 2 proposes to mine coal along Roper Creek and Thirteen Mile Gully. These existing watercourses will require diversion to undertake the proposed mining activities. Diversions would be conducted in accordance with the *Water Act 2000*, and applicable guidelines. The EIS would provide conceptual watercourse diversion designs. Water licence applications for each watercourse would be undertaken subsequent to the EIS, providing detailed design and mitigation measures for each watercourse diversion.

The CHPP approved in Stage 1 will be augmented in capacity to a 700 t/h ROM coal feed level. Operation of the CHPP will be for 24 hours a day, seven days a week.

The tailings storage facility (TSF) constructed for Stage 1 will be sufficient to handle Stage 2 production tailings. Tailings will be dried in sub-cells, with dried tailings progressively removed and disposed with overburden spoil.

Minor expansion of the mine infrastructure area (MIA) will be required for Stage 2. The overall MIA personnel facilities for Stage 1 will be sufficient to cater for the Stage 2 operational personnel numbers. If the second option for overburden removal is selected involving use of a dragline, a temporary dragline erection pad will be constructed.

Potable water will continue to be trucked to site as per Stage 1, with the potential for on-site treatment of raw water. Feasibility assessment of on-site treatment is yet to be conducted, and will be addressed in the EIS.

Sewage for Stage 1 is currently collected for off-site disposal. For Stage 2, investigation of sewage disposal on-site will be undertaken as part of pre-feasibility studies for the Project, and will be addressed in the EIS.

The Stage 2 construction workforce is anticipated to be 45 people, mainly for the augmentation of the CHPP. Personnel would be required to drive in drive out to the site, sourced from the major centres in Queensland.

The Stage 2 operational workforce is anticipated to total approximately 500 people. Mine personnel would work a seven (7) days on, seven (7) days off roster cycle, while general personnel would work a typical business week of five (5) days on, two (2) days off. A bus service to Mackay and/or Rockhampton will be provided, anticipated to cater for approximately 75 % of the workforce. A small percentage of personnel are anticipated to reside in Middlemount township, with all remaining personnel expected to drive in drive out using their own private transport or the bus transport offered by MCPL.

German Creek mining leases and exploration tenements held by the Capcoal Joint Venture (Anglo Coal (German Creek) Pty Ltd) overlap the Stage 2 Project area to the north, west and south. Norton Gold Mine Pty Ltd also holds exploration tenements in the north-east of the Project area. Negotiations between the Project Proponent and these tenement holders are ongoing to establish long-term interest, access and use for mining related purposes.

3.3 Mining method

As outlined above, two options of overburden removal are under consideration by MCPL, being with and without involvement of a dragline. Table 3.1 below provides a description of proposed mining activities.

Table 3.1 Description of mining activities

Activity	Description
Drilling	Drilling will be carried out to enable the overburden to be blasted. Approximately 70 % of the overburden material to be stripped requires blasting. Drilling will be carried out utilising conventional rotary blasthole drills.
Blasting	Overburden material will typically be blasted using Ammonium Nitrate/Fuel Oil (ANFO) and water resistant emulsion where required. Powder factors will vary depending on the specific rock type, mining method and the equipment planned to excavate the blasted material.
Overburden and interburden removal	Overburden mining activities will be carried out on a 24 hour per day, 7 day per week basis. Overburden removal will be via either: ■ shovels, excavators and dump trucks, or ■ dragline, shovels, excavators and dump trucks
Coal Mining	Coal mining activities will be carried out on a 24 hour a day, 7 days a week basis. The coal seams will be mined utilising excavators supported by a fleet of rear dump trucks.

In general the mining sequence will involve:

- progressive vegetation clearing on the selected mining operation areas
- topsoil stripping, appropriate stockpiling and storage to enable reuse in mine site rehabilitation
- blasting of overburden and interburden
- removal of overburden and interburden utilising loading equipment and trucks
- ROM coal mining using bulldozers, mechanical shovels, loaders and trucks
- ROM coal will be transported either directly to the CHPP facility, or dumped at ROM stockpiles prior to rehandling to the CHPP facility
- site rehabilitation of overburden and waste rock spoil areas, topsoiling using stockpiled topsoil, and area revegetation.

3.4 Diversion of Saraji Pipeline

As part of the mine expansion, relocation of a portion of the Saraji water pipeline is required. BMA own the Saraji pipeline and supply water to BMA's Norwich Park, Saraji, and Peak Downs coal mines, Anglo Coal's German Creek and German Creek East mines, towns including, Dysart, and Middlemount, and some stock and domestic consumption.

The diversion route of the portion of the Saraji water pipeline will be defined as part of the pre-feasibility studies for the Project. Where possible, co-location with existing infrastructure will be considered. An agreement exists between BMA and MCPL which considers relocation of the pipeline.

3.5 Related Infrastructure

Development of some infrastructure associated with the Project will be undertaken either as part of Stage 1 of the mine, or by other proponents. The following outlines the related infrastructure, and will be described further in the EIS.

3.5.1 Water supply

For Stage 1, Middlemount Coal has an approved annual water allocation of 1,800 ML/y of medium priority water from the Mackenzie River Bingegang Weir, which is also available for Stage 2. However to ensure security of raw water supply for the life of the Project, four potential raw water sources are being investigated. The proponent for each of the potential raw water supplies varies, with ownership, planning, design and approvals to be undertaken by the preferred raw water supplier. The four potential sources include:

- as part of Stage 1 of the mine, MCPL will apply to convert the existing 1,800 ML/y medium priority water allocation to a high priority water allocation, thereby increasing the security of raw water supply from the Mackenzie River via the Saraji pipeline. An application to DERM will be made in accordance with the *Water Act 2000*.

- as part of Stage 1 of the mine to supply water to the CHPP, water held in German Creek East Pit will be pumped to the CHPP, under the relevant Environmental Authority condition/s and written agreement between the persons subject to the Environmental Authority for German Creek East Pit (Anglo Coal (Capcoal Management) Pty Ltd) and MCPL. The mining tenure for German Creek East Pit adjoins the Middlemount Mine.

- a new multi-user pipeline from Bingegang Weir to the broader region which encompasses Middlemount Mine. It is understood that SunWater will be the proponent for the new pipeline, with the pipeline subject to route selection assessment and a separate environmental impact assessment. MCPL's allocation from Bingegang Weir will be designated to the new pipeline, if and when the pipeline comes into operation.

- a new multi-user pipeline from the Eungella water pipeline southern extension near Lake Vermont to meet the demands in the Bowen Basin, including Middlemount Mine. It is understood that SunWater will be the proponent for the new pipeline, with the pipeline subject to route selection assessment and a separate environmental impact assessment.

3.5.2 Power supply

Stages 1 and 2 will require an additional five megawatts (5 MW) of power, with a total demand of 8 MW for Middlemount Mine. Additional power is proposed to be supplied from Lilyvale substation via a new or upgraded multi-user transmission line, as there is increased power demand in the region from a number of proponents.

It is understood that Ergon will be the proponent for the power supply as the licensed power distributor in the region, with approvals likely to be sort under the *Electricity Act 1994* (Qld). The new transmission line would likely be proposed within existing transmission line easements in the area.

3.5.3 Product Transport

3.5.3.1 Rail

As part of Stage 1 of Middlemount Mine, product coal transport will be railed to the existing Blackwater and Goonyella Queensland Rail (QR) train network via a new 15 km rail loop from the south-west corner of ML70379. Sizing of the rail loop will accommodate life of the mine requirements. The rail loop is subject to approvals under the *Sustainable Planning Act 2009*, MCPL has submitted the application to Isaac Regional Council, with thirty business days public consultation during May and June 2010. MCPL will excise any portion of the rail loop from the mining lease prior to transfer of the rail loop to QR, with QR to own the rail infrastructure upon practical completion and commissioning.

3.5.3.2 Ports

Product coal will be railed to the multi-user facilities of Dalrymple Bay Coal Terminal (DBCT), Abbot Point or Wiggins Island for export.

Initially MCPL will export product coal from DBCT, with export through DBCT required for Stage 1 and initial expansion production levels. MCPL will use existing assigned capacity at DBCT.

Once construction of the Newlands/Goonyella coal rail systems the "northern missing link" is completed (by others), MCPL will transport product coal to Abbot Point. MCPL has up to 3 Mt/y capacity assigned with Abbot Point, with approximately 1 Mt/y additional assigned capacity requirements to be organised and provided by the North Queensland Bulk Port Corporation Limited (NQBP).

MCPL is a participant in the concept level design works being completed for Wiggins Island Coal Terminal Project, with MCPL's future product coal export projections considered as part of the overall demand for facility use at the proposed new terminal.

3.5.4 Accommodation Facilities

MCPL has an existing agreement to supply accommodation for construction and operational personnel with the MAC Middlemount Village. The MAC Middlemount Village is a multi-user accommodation facility, servicing a number of mines in the area. For Stage 2, an additional 150 to 200 rooms will be required, with this information supplied to the MAC Services Group as the proponent of the MAC Middlemount Village. Any required development approvals would be assessed by Isaac Regional Council.

Additional workforce accommodation will be provided for some key operational personnel in Middlemount township, being five to ten houses. Either existing houses will be leased under long term agreements, or leased from a local developer who will construct new houses.

3.6 Mine infrastructure

Mine infrastructure for the Project, in addition to that approved for Stage 1, will consist of:

- light vehicle access roads
- heavy vehicle haul roads
- an extended water management system
- high voltage transmission line/poles and reticulation facilities
- mine infrastructure area (MIA) upgrade to support the increased production level.

3.7 Roads

No public roads will require relocation for Stage 2. Access to the proposed Stage 2 area will come through the Stage 1 area. There will be no additional external roads required for Stage 2.

3.8 Stock routes

The existing stock route which currently crosses the mining lease ML70379 is subject to an executed compensation agreement between Isaac Regional Council and Middlemount Coal Pty Ltd.

3.9 Water management

The Project Stage 2 expansion has the potential to impact on downstream water quality as well as the groundwater resource. Accordingly, the existing Stage 1 Water Management System (WMS) will need to be extended to incorporate Stage 2 as required.

The extended WMS will comprise a network of water management infrastructure that will allow for flexibility in transport of water around site. The water management goal for the Project will be to minimise downstream impacts from the proposed mining operation.

Water sources and their corresponding control strategies include:

- runoff from undisturbed upstream catchments will be passed through the proposed mining areas in defined drainage corridors
- overland flow and runoff from catchments disturbed by mining activities will be directed through sediment basins where necessary, to reduce sediment load, and allowed to flow off-site
- runoff from mining pits and coal stockpiles, and industrial areas such as workshops, will be directed to environmental dam/s for storage to be used as a source of water for dust suppression as required, with no planned discharge from environmental dams
- mine process water from the CHPP will be managed in dedicated tailings storage facilities.

Creek diversions will also be required as part of the Project. Assessment of groundwater and surface water hydrology, riparian vegetation and aquatic ecology will be undertaken as part of the development of the WMS within the Stage 2 area and the creek diversions.

3.10 Waste

Waste materials, excluding tailings from the CHPP and excavated waste rock spoil, generated on-site will require disposal.

The anticipated waste streams and their sources that are likely to be produced by the Project include:

- general waste, typically consisting of putrescible wastes and other general wastes. These wastes will primarily be generated at warehousing, workshop, office and crib hut facilities
- general recyclable wastes, consisting of paper, cardboard, recyclable plastics, glass, aluminium, and steel cans. These wastes will primarily be generated at warehousing, workshop, office and crib hut facilities
- scrap steel, primarily generated during workshop activities
- waste hydrocarbons, including oils, greases, oily water, oil and fuel filters, and oily rags, generated primarily from workshop and field service activities
- waste chemicals, other than waste hydrocarbon fluids, generated primarily from the workshop and field service activities

- waste tyres, generated primarily from workshop and field service activities
- waste batteries, generated primarily from workshop and field service activities
- sewage generated at workshop, office and crib hut facilities.

Stage 2 will continue to use licensed waste contractors assigned in Stage 1 for the transport and processing of the wastes to facilities in the region. Sewage treatment on-site may be considered in Stage 2 based on feasibility assessment.

3.11 Project tenure

There is an approved mining lease (ML70379) over part of the Project area for a term of 22 years. However, other sections of the proposed Project area are subject to other mining tenures including MLA 70417 Middlemount – Eastern Extension a mining lease application submitted by MCPL, as well as tenures held by other parties. Discussions are currently underway with the holders of these tenures to secure these additional land areas.

3.12 Native title

The Project area is part of the Barada Barna Native Title Claimant area, and the Barada Barna Kabalbara Yetimarla (BBKY) #4 Native Title Claimants area. Native title assessment was conducted as part of the Stage 1 development, however did not cover all potential areas required to incorporate Stage 2 of the Project. The issue of Native Title on the additional land proposed for the Project will be confirmed as part of the EIS process.

4. Community and statutory consultation

The purpose of community and stakeholder consultation during the environmental impact assessment phase is to ensure that all relevant stakeholders are aware of the Project and have the opportunity to comment on issues of relevance to them. The community and stakeholder consultation proposed to be undertaken during the EIS process would aim to build on the community consultation undertaken during Stage 1 of the Project.

4.1 Previous consultation for Stage 1

Consultation was undertaken for Stage 1 where Middlemount Coal undertook consultation with affected and interested stakeholders, including two community meetings. The consultation with affected and interested stakeholders included the following stakeholder groups:

- local residents and landowners
- local Government Councillors and officers (both Isaac Regional Council and its predecessor, the Broadshound Shire Council)
- traditional owners
- state and federal regulatory authorities
- government departments
- emergency service agencies
- infrastructure providers.

4.2 Consultation program for the Project

A consultation program for the Project will be developed, building on the previous consultation program undertaken during Stage 1 as discussed above. The aim of this program will be to:

- establish a transparent and open communication with all stakeholders
- provide stakeholders with information regarding the Project
- to facilitate understanding of the Project by stakeholders
- provide a mechanism for stakeholder contact with the Project team
- identify any issues and concerns that stakeholders may have with the Project
- ensure issues raised by stakeholders are available for relevant studies being undertaken during the EIS

- address relevant stakeholder issues during the environmental impact assessment process
- provide feedback to stakeholders regarding their issues raised, identifying actions taken to address their issues
- enable consultee involvement in the development of mitigation measures for the Project.

The following subsections outline the various strategies proposed to be implemented as part of the consultation program.

4.2.1 Establishment of a Community Consultation Team for the Project

A Community Consultation Team for the Project will be established. The team will comprise Middlemount Coal corporate and site management personnel, and specialist community consultation consultants that will assist in developing and implementing the consultation program.

4.2.2 Consultation with local residents and landowners

Consultation with local residents and landowners will use various methods including:

- one-on-one communication
- group presentations and workshops, including establishment of a Community Reference Group.

Consultation may be formal and informal, with issues of a commercial or contractual nature potentially also being confidential.

4.2.3 Consultation with the local community and stakeholders

General community consultation will involve:

- face to face meetings throughout the impact assessment process, including:
  - formal presentations, such as slide presentations, workshops, and facilitated feedback sessions
  - informal briefings or discussions to enable direct two way communication and feedback between Middlemount Coal, and local community members and stakeholders.

The local community and stakeholders are typically identified as, but not limited to:

- local residents and landowners
- local community groups
- native title claimants
- adjacent mine tenure holders
- infrastructure providers.

Consultation with the local community and stakeholders will either be initiated by the Proponent or at the request of the local community members and stakeholders, and will assist in achieving the aims of the consultation program, as outlined above.

4.2.4 Consultation with State and Commonwealth regulatory authorities and government departments

Consultation with regulatory authorities, referral agencies, emergency service agencies, and other government departments will involve:

- initial briefing on the Project
- technical briefings, meetings or workshops with the EIS study team to discuss specific technical matters, where required
- ongoing updates on the Project via formal presentations
- formal meetings at specific stages of the approvals process under the *Environmental Protection Act 1994 and the Mineral Resources Act 1989*.

4.2.5 Advertisements and newsletters

Advertisements may be placed in local, State and National newspapers, where appropriate to provide information and updates regarding the Project, and consultation activities.

Newsletters may be distributed from time to time to provide local residents, landowners, local community and stakeholders with an overview of the Project, upcoming consultation activities, and progress against legislative processes. Feedback forms will be included in the newsletters to encourage feedback from newsletter recipients.

4.2.6 Electronic based consultation

Anyone will be able to provide feedback or comments to the Proponent and EIS study team via:

- the Project website
- a Project email address.

4.2.7 EIS consultation

Consultation as part of the EIS, environmental authority and mining lease processes will occur in three main phases, being preparation of the Terms of Reference, public display of the EIS, and post-EIS for the environmental authority and mining lease approvals process.

4.2.7.1 Terms of Reference

The scope of the EIS will be defined initially in the draft Terms of Reference and will involve:

- newspaper advertisement
- community newsletter to stakeholders
- submissions from the community and statutory stakeholders.

The advertising of the draft Terms of Reference will be undertaken by the Department of Environment and Resources Management (DERM), with submissions to be provided to DERM. The Terms of Reference for the Project will be finalised by DERM following submissions.

4.2.7.2 EIS public display and feedback

Once the EIS has been submitted to DERM and allowed to proceed to publication, Middlemount Coal will publish an EIS Notice, advising stakeholders that submissions on the EIS can be made during the submission period. The EIS will be publicly notified and displayed via:

- newspaper advertisement
- community newsletter to stakeholders
- EIS provided to stakeholders, upon request
- meeting with statutory stakeholders
- public displays
- community meetings.

4.2.7.3 Post-EIS consultation

Assuming that DERM approves the Project, further post-EIS consultation of the Project will be undertaken as part of obtaining public comment on the draft environmental authority. These documents will be made available for comment via:

- newspaper advertisement
- community newsletter to stakeholders
- meeting with statutory stakeholders
- public displays
- ongoing community meetings.

5. Existing environment

5.1 Land systems

5.1.1 Land use

The predominant land use in the wider region is low intensity cattle grazing on native and improved pasture, including areas of thinned vegetation.

The township of Middlemount is located approximately 6 km northeast of ML70379. The nearest state forest or national park is Junee State Forest, located approximately 20 km east of the Project area.

5.1.2 Soils and land capability

An assessment of soils and land capability adjacent the Stage 2 expansion area was conducted as a component of the Middlemount ML70379 Environmental Management Plan (GSS Environmental 2007). This assessment found the site comprised mostly of yellow duplex soils and grey-brown duplex soils, with alluvial soils, brown uniform soils and red lithosols also occurring on the site. A review of topography and aerial photography suggests the Stage 2 area will contain similar soil types to Stage 1.

The majority of the Stage 1 site is classed as Land Suitability Class 3 for cattle grazing (GSS Environmental 2007). Land Suitability Class 3 means land that is moderately suited to a proposed use, but requires significant inputs to ensure sustainable use. It is expected that the Stage 2 area will have similar land suitability classification.

Field investigations will be conducted during the EIS to confirm the soil types and distribution and land suitability classification of the Stage 2 area.

5.1.3 Topography

The expansion area comprises low gently sloping to flat plains of generally less than 2 % gradient, sloping to two major watercourses traversing the southern portion of the expansion area. Elevations range from approximately 180 m to 195 m above sea level (Australian Height Datum).

5.1.4 Geology

Coal located within ML70379 occurs within the Rangal Coal Measures and Burngrove Formation of the Permian Bowen Basin. The Roper, Middlemount and Pisces upper seams (in descending order) belong to the Rangal Coal Measures, while the Pisces lower and Girrah seams belong to the Burngrove Formation.

The major regional geological structure is the north-northwest oriented Jellinbah Fault, a thrust fault with a throw of over 300 m. This fault cuts the ML70379 into two sections. Seams of the Rangal Coal Measures crop out to the west of this fault, where the majority of the coal exploration has been undertaken.

Seams strike north-northwest and dip to the east at between 3 and 7 degrees. The potential open cut coal area within ML70379 is limited to the east by the Jellinbah Fault.

Of the seams explored in ML70379, the Middlemount and Pisces seams have been subjected to the most exploration. The Middlemount, Pisces and Girrah seams all occur in splits within ML70379, although it is likely that a number of the coal intersections, particularly in older drill hole data, may be thrust fault repeats similar to those found in the Jellinbah deposit to the south-east. A stratigraphic column typical of that encountered in ML70379 has been generated.

Depth of weathering averages 45 m, ranging from 20 m in the southeast to over 60 m in the central and northern areas of ML70379.

5.2 Climate

The Project area lies in the vicinity of the tropic of Capricorn and experiences predominantly warm weather. The monthly averages show December to be the hottest month and July to be the coldest.

On average the relative humidity is highest in February. The average annual rainfall is 639.5 mm, mostly occurring in summer (McCollum Environmental Management Services, 2009).

5.3 Hydrological characteristics

5.3.1 Surface water

The Project is located in the McKenzie River catchment, a major river within the Fitzroy River Basin.

Roper Creek and Thirteen Mile Gully, tributaries of the McKenzie River, are located within the Project area and flow in a south/south-easterly direction, with the confluence of both watercourses occurring approximately 1 km south of ML70379. Due to their ephemeral nature, the flows of Roper Creek and Thirteen Mile Gully are restricted to high rainfall events, which typically occur between the months of November to March. The watercourses only flow for brief periods during and following rainfall. The watercourses are lined with remnant riparian vegetation impacted primarily by grazing cattle.

The DERM monitoring station is located approximately 36 k m downstream of ML70379 within Roper Creek. Data indicates the surface water quality is highly variable due to the infrequency of flows (McCollum Environmental Management Services, 2009).

5.3.2 Groundwater

No registered groundwater bores are located on or within a 5 km radius of the Project. '*However, in a regional context, groundwater associated with coal seams is generally of poor quality, being moderately to highly saline. Groundwater associated with the alluvial sands of the watercourses is generally less saline. Typical of the region, groundwater within the Middlemount Mine area is generally associated with coal seams*' (McCollum Environmental Management Services, 2009).

Previous groundwater investigations have been undertaken over the Lake Lindsay Project area (located approximately 15 km south of the Middlemount Mine). The depth to groundwater was found to be at approximately 120 mAHD to 116 mAHD. This is typically in the order of 10 to 20 m below ground level. The direction of groundwater flow was generally found to be in a north or north easterly direction. Groundwater was found to be primarily associated with the coal seams, particularly the Tralee-Pisces Seam and the Middlemount Seam. '*Groundwater quality was typically found to be low and unsuitable for human consumption, irrigation or livestock watering*' (McCollum Environmental Management Services, 2009).

5.4 Biological characteristics

5.4.1 Existing vegetation

The vegetation in ML70379 has been diminished due to historical clearing of the area. However, remnants of vegetation communities, habitat and faunal species of significance are present within and surrounding ML70379 (McCollum Environmental Management Services, 2009).

Based on desktop assessment, regional ecosystems (REs) present in the Project area including ML70379, are listed in Table 5.1. Regional ecosystems potentially comprise of remnant and non-remnant vegetation, including dominant and sub-dominant ecosystem types.

Table 5.1 Regional Ecosystems (REs) in the Project area, including ML70379

RE Code	RE short name	VM Status	Biodiversity Status	EPBC Status
11.3.1	*Acacia harpophylla* and/or *Casuarina cristata* open forest on alluvial plains	Endangered	Endangered	Endangered
11.3.2	*Eucalyptus populnea* woodland on alluvial plains	Of Concern	Of Concern	not listed
11.3.27	Freshwater wetlands	not of concern	Of Concern	not listed
11.3.7	*Corymbia* spp. woodland on alluvial plains.	not of concern	Of Concern	not listed
11.4.9	*Acacia harpophylla* shrubby open forest to woodland with *Terminalia oblongata* on Cainozoic clay plains	Endangered	Endangered	Endangered
11.5.2	*Eucalyptus crebra*, *Corymbia* spp., with *E. moluccana* on lower slopes of Cainozoic sand plains/remnant surfaces	Of Concern	No concern at present	not listed
11.5.3	*Eucalyptus populnea* ± *E. melanophloia* ± *Corymbia clarksoniana* on Cainozoic sand plains/remnant surfaces	not of concern	No concern at present	not listed
11.5.9b	*Eucalyptus crebra* and other *Eucalyptus* spp. and *Corymbia* spp. woodland on Cainozoic sand plains/remnant surfaces.	not of concern	No concern at present	not listed
11.7.2	*Acacia* spp. woodland on Cainozoic lateritic duricrust. Scarp retreat zone	not of concern	No concern at present	not listed
11.7.4	*Eucalyptus decorticans* and/or *Eucalyptus* spp., *Corymbia* spp., *Acacia* spp., *Lysicarpus angustifolius* on Cainozoic lateritic duricrust	not of concern	No concern at present	not listed

Additional studies of the existing flora in the Stage 2 area will be undertaken as part of the EIS, including field surveys to confirm the presence and nature of the biodiversity values within the Project site.

Four weed species listed under the *Land Protection (Pest and Stock Route Management) Act 2002* have been identified in ML70379:

- *Acacia farnesiana* (Class 1)
- *Opuntia stricta* (Class 1)
- *Acacia nilotica* (Class 1)
- *Lantana camara* (Class 3) (McCollum Environmental Management Services, 2009).

5.4.2 Existing fauna

Fauna assessment previously conducted in ML70379, found 75 vertebrate fauna species, including two fish, three amphibians, six reptiles, 17 mammals and 47 birds (McCollum Environmental Management Services, 2009).

- Five introduced species were identified in ML70379, including:
- House mouse (Class 1)

- Cane toad (Class 1)
- European rabbit (Class 2)
- Dingo (Class 2)
- Feral cat (Class 2).

Additional studies of the existing fauna in the Stage 2 area will be undertaken as part of the EIS, including field surveys to confirm the presence and nature of the biodiversity values on the Project site.

5.4.3 EPBC Act Referral

Stage 2 has been determined by the Commonwealth Department of Environment, Water, Heritage and the Arts on 16 April 2010 as a controlled action, with controlling provisions for Listed threatened species and communities under sections 18 and 18A of the *Environmental Protection and Biodiversity Act 1999*. The reference number for the Project is EPBC 2010/5394.

5.5 Noise and vibration

A number of potential sensitive receptors are adjacent to the Project, as listed in Table 5.2. Further potential sensitive receptors may be identified during the EIS assessment process.

Table 5.2 Nearest potentially affected sensitive receptors[1]

Sensitive receptor	Distance to nearest ML70379 boundary (km)
Warwick Homestead	11 km North
Middlemount Township	6 km East
Kockane Homestead	10 km North-west
Booroondara Homestead	14 km West
Foxleigh Homestead	9 km East
Old Barwon Homestead	13 km South-east
Essex	16 km North-east

1 McCollum Environmental Management Services 1999

There is limited noise data currently available for the local area. Background noise levels in the existing environment would be typical of most rural areas. Additional studies will be undertaken as part of the EIS to establish potential changes to background noise levels, as a result of incremental increases in noise levels from the Stage 2 development.

Background vibration levels are expected to be negligible except from intermittent blasting from mining activities in the broader area.

5.6 Air quality

Additional studies will be undertaken as part of the EIS to establish potential changes to air quality as a result of incremental increases in dust levels from the proposed Stage 2 expansion.

5.7 Socio-economic conditions

Social and economic assessments will be undertaken as part of the EIS to establish potential impacts associated with the proposed Stage 2 expansion.

5.8 Cultural heritage values

The proposed Stage 2 expansion falls within native title claims by Barada Barna, and Barada Barna Kabalbara Yetimarla (BBKY) peoples. Discussions have been held between Middlemount Coal and representatives of the Barada Barna, and BBKY #4 Native Title Claimants, with a Cultural Heritage Management Agreement (CHMA) for Stage 1 established between the BBKY and Middlemount Coal Pty Ltd. Discussions are on going for Stage 2.

6. Potential impacts and management requirements

6.1 Land systems

The Project expansion area is currently being used for low density grazing. The proposed mining of ROM coal using truck and shovel operations will result in a number of out–of–pit spoil dumps. Spoil dumps will be reshaped, topsoiled using previously dumped material and seeded. Factors which can impact on the long term stability of these spoil dumps, reducing their ability to meet or maintain the proposed land use capability include climatic factors, geotechnical factors, chemical factors, and geomorphological factors such as erosion rates. These factors will be investigated to assist in determining the associated rehabilitation design parameters and the most appropriate post-mine land use. Much of this information will be determined during the EIS process while the remainder will be obtained from studies undertaken during the rehabilitation program. Proposed monitoring of rehabilitated areas will also be outlined in the EIS and Environmental Management Plan (EM Plan).

As the mine develops, progressive rehabilitation of spoil dumps, voids and other mining areas will occur in order to minimise the total land area disturbed by mining at any one time.

Land use capability impacts will be limited to areas directly affected by mining activities. The degree to which the land use capability is impacted upon by the Project will be documented in the EIS. This will include plans for Project rehabilitation and decommissioning.

6.2 Water management and hydrological impacts

6.2.1 Surface waters

The Stage 2 water management system (WMS) will build on the approved Stage 1 WMS. Drainage will be established adjacent to disturbed areas such as roads to intercept sediment laden run-off into sediment dams to minimise the movement of sediment into the adjacent waterways. Water from active mining areas and coal stockpiles will be contained in environmental management dams and reused to manage the risk of off-site discharge, with no planned discharges from environmental dams.

Mine process water from the CHPP will be directed into tailings storage facilities.

The potential impacts and mitigation strategies associated with the WMS, including flood impact assessment, surface water quality assessment, and water balance, will be undertaken as part of the EIS.

6.2.2 Groundwater

The magnitude of groundwater inflows to mine pits, the extent of any resultant drawdown of the groundwater table and the consequent potential impact on surrounding groundwater users are unknown at this stage. These issues will be assessed during the EIS process.

6.2.3 Creek diversions

In order to mine the coal along Roper Creek and Thirteen Mile Gully, both watercourses are proposed to be diverted as previously discussed.

The EIS will include assessment of the existing watercourses and the areas proposed to encompass the diverted watercourses, to establish the existing geomorphological conditions, flow regimes, and other key characteristics to enable these creek diversions, in accordance with the requirements of the *Water Act 2000* and other relevant guidelines.

6.3 Biological impacts

Clearing of remnant and non-remnant vegetation will be necessary for Stage 2 of the mine. Specifically there will be biological values associated with the two waterways.

A detailed flora and fauna assessment will be undertaken as part of the EIS process.

6.4 Noise and vibration impacts

The proposed operation will be required to meet noise and vibration standards for occupational health and safety, and the *Environmental Protection Act 1994*, including the Environmental Protection (Noise) Policy 2008. The latter two will ensure that sensitive receptors are not adversely affected by any noise or vibration generated by the Project.

Detailed noise and vibration studies will be undertaken as part of the EIS process to assess potential noise and vibration issues and to develop appropriate mitigation strategies as required.

6.5 Air quality impacts

The proposed operation will be required to meet air quality standards for occupational health and safety, and the *Environmental Protection Act 1994*, including the Environmental Protection (Air) Policy 2008.

Detailed air quality studies will be completed as part of the EIS process to assess potential air quality issues and to develop appropriate mitigation strategies.

6.6 Visual amenity impacts

The EIS will investigate impacts to visual amenity generated by the Project. Visual impacts produced by the mine's operations will be minimised by progressive rehabilitation of areas affected by mining activities.

6.7 Socio-economic impacts

Some of the construction workforce is anticipated to be sourced from Middlemount and the surrounding local area, with the remainder being brought in from elsewhere. Local and other appropriately experienced mine workers will be sought to service the increased capacity of the mine.

The MAC Middlemount Village will continue to be used to house the construction and operational workforces. There are other personnel accommodation strategies being investigated, such as entering into agreements for the occupation of houses in Middlemount township. These alternative accommodation options will be evaluated as part of the pre-feasibility studies and in the EIS.

Given the expansion of the mine, socio-economic issues will be reassessed as part of the EIS.

Feedback from the consultation process will also be used to assess the socio-economic impacts from the Stage 2 development.

6.8 Cultural heritage impacts

Assessments of the Stage 2 area will be undertaken during the EIS process for the Project to assess potential issues covering both Indigenous and non-Indigenous cultural heritage and to develop appropriate mitigation strategies as required.

A Cultural Heritage Management Plan (CHMP) will be executed over the Project area which will conform to the requirements of the *Aboriginal Cultural Heritage Act 2003* (ACHA). MPCL will negotiate a Part 7 CHMP with each of Barada Barna and BBKY #4, as they are the 'Aboriginal Parties' for the Project area.

Management strategies for cultural heritage will include, but not be limited to:

- site inductions with information on the CHMP and what actions are to be followed if a previously unidentified cultural heritage site or artefact is discovered
- identifying cultural areas of significance via demarcating them in such a way as not to be ambiguous to mine site personnel
- maintaining a register of cultural areas of significance that contains information relating to artefacts, their date discovered and their location
- a plan identifying areas of cultural significance.

6.9 Mine infrastructure impacts

6.9.1 Waste generation

Waste management strategies will expand upon the existing strategies used for Stage 1. Likely wastes to be generated during the construction stage include general wastes, green waste, concrete materials, metals, waste hydrocarbons, timber, tyres, sealant/resin and paint materials, sewage effluent, vehicle washdown, and exhaust emissions. Wastes that are anticipated to be produced during the operations phase include green waste, batteries, general waste (e.g. paper, cans cardboard), scrap metal, tyres, sewage and tailings and reject waste.

Reject and tailings management will be generated from the washing of ROM coal. The tailings dam in Stage 1 will accommodate Stage 2 requirements within the foreseeable future.

6.9.2 Storage of materials

Additional fuels, oils, and detergents will be stored on site during the construction and operational phases of the Project. Hazardous materials such as batteries and hydrocarbon materials will be stored in accordance with the relevant Australian Standards to ensure that any spillages are contained. Standard operating procedures including an emergency response process will continue to be implemented for the Project.

6.10 Transport impacts

A transport impact assessment will be undertaken to address any potential increases in road traffic during the construction and operations phases of the Project.

7. References

GSS Environmental, 2007, *Draft Middlemount Project Soil Survey and Land Resource Assessment*. Prepared for McCollum Environmental Management Services.

McCollum Environmental Management Services, 2009, *Middlemount Mine ML70379 Environmental Management Plan*.