

ENVIRONMENTAL IMPACT STATEMENT

RED HILL
MINING LEASE

Appendix S
BMA Commitments

Abbreviations and Units

Abbreviation	Definition
ACH Act	<i>Aboriginal Cultural Heritage Act 2003</i>
AEP	Annual Exceedence Probability
AS	Australian Standard
BMA	BHP Billiton Mitsubishi Alliance
BRM	Broadmeadow underground mine
CHMP	Cultural Heritage Management Plan
CHPP	coal handling and preparation plant
DAFF	Department of Agriculture, Fisheries and Forestry
DERM	Department of Environment and Resource Management
DNR	Department of Natural Resources
DSDIP	Department of State Development, Infrastructure and Planning
EA	Environmental Authority
EHP	Department of Environment and Heritage Protection
EIS	environmental impact statement
EP Act	<i>Environmental Protection Act 1994</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
GED	general environmental duty
GMS	Goonyella Middle Seam
GRB	Goonyella, Riverside and Broadmeadow
GRM	Goonyella Riverside Mine
IMG	incidental mine gas
MIA	mine industrial area
MSDS	Material Safety Data Sheets
NRM	Department of Natural Resources and Mines
NTC	National Transport Commission
NZS	New Zealand Standard
PPL	petroleum pipeline licence
RHHAS	Red Hill Heritage or Archaeological Site
RHHI	Red Hill Historical Interest
RHM	Red Hill Mine
ROM	run-of-mine
SIA	Social Impact Assessment
TDS	total dissolved solids
TEC	threatened ecological community
WEEE	waste electrical and electronic equipment

Units	Definition
L/m ² /hr	litres per square metre per hour
m	metre
mm	millimetre



BMA Commitments

This appendix provides a guide to commitments made by BMA in relation to the environmental and social impacts that may arise as a result of the Red Hill Mining Lease project. Cross references are provided to details throughout the EIS and Social Impact Assessment (SIA) (**Appendix P**).

The 'Project Component' column references the element of the project to which the commitment relates. The project elements are referenced in the commitments summary as follows:

BRM – Broadmeadow panel extensions 14, 15 and 16

GRM – GRM incremental expansion option

RHM – Red Hill underground expansion option

Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
1	Prior to the commencement of construction, develop and implement a water management plan that meets requirements of guidelines issued by Queensland Department of Environment and Heritage Protection (EHP).	Section 4 – Climate Section 7 – Surface Water	GRM RHM
2	Detailed design criteria for construction will include allowances for climate change effects including increased intensity of rainfall events and associated increases in flood levels and reduced overall rainfall. In particular, design of the bridge across the Isaac River will need to consider impacts on flows and flooding. Where impacts occur, the EIS flood modelling may need to be revised.	Section 4 – Climate Section 7 – Surface Water	GRM RHM
3	Incorporate flood forecasting and management of flood events into site emergency management plans and make allowance for possible effects of climate change.	Section 4 – Climate Section 20 – Health, Safety and Risk	GRM RHM
4	Prior to any effects of subsidence, if powerlines are to be impacted, consult with service provider regarding management, repair or realignment of affected powerlines.	Section 5.1 – Land Use	GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
5	If necessary to avoid impacts of subsidence, consult with the licence holder of petroleum pipeline licence (PPL) 83 in relation to the co-ordination and future management of the proposed pipeline alignment.	Section 5.1 – Land Use	RHM
6	Prior to the commencement of construction, consult with Isaac Regional Council regarding management of Red Hill Road.	Section 5.1 – Land Use	GRM RHM
7	Wherever practicable, maintain existing vegetation cover.	Section 5.2 – Scenic Amenity and Lighting	GRM RHM
8	<p>Design lighting to prevent bright lighting with direct impacts associated within line of sight of public roads (Red Hill Road), where possible.</p> <p>Design lighting at the Red Hill MIA and accommodation village to minimise light spill into adjacent habitat areas is minimised.</p> <p>Place infrastructure and facility footprints outside riparian zones, wherever possible.</p> <p>In order to maintain visual amenity:</p> <ul style="list-style-type: none"> Plant grass or other vegetation on the flood levee between Red Hill Road and the Red Hill mine industrial area (MIA) to minimise its visual prominence. Retain existing tree and shrub vegetation along Red Hill Road wherever safe and practicable to do so, to maximise screening of mining activities from views of passing motorists. Progressively rehabilitate areas disturbed by the incidental mine gas (IMG) management infrastructure. Revegetate buried infrastructure alignments and excess areas around drilling pads as soon as possible after initial disturbance and revegetate remaining areas as soon as infrastructure is decommissioned. 	Section 5.2 – Scenic Amenity and Lighting	BRM GRM RHM
9	Utilise thick seam mining methods to maximise resource recovery wherever safe, practical and commercially feasible.	Section 5.3 – Topography, Geology and Soils	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
10	Prior to any surface disturbance, develop and implement erosion and sediment control plans for all land disturbing activities that may cause mobilisation of topsoil to surface waters as well as for works in and adjacent to streams. Erosion and sediment control plans should be based on minimising exposed soils, managing overland and concentrated flows and using appropriate devices to capture sediment if required. Conduct regular inspections of disturbed areas, including subsided areas for erosion and undertake actions to stabilise eroded surfaces as soon as practicable.	Section 5.3 – Topography, Geology and Soils Section 7 – Surface Water Section 10 – Aquatic Ecology	BRM GRM RHM
11	Prior to the commencement of construction, design an accommodation village stormwater system to divert clean stormwater around the developed area where necessary to control stormwater and prevent flow concentration and erosion.	Section 5.3 – Topography, Geology and Soils	RHM
12	Prior to the commencement of construction, design stormwater systems at the Red Hill MIA, coal handling and preparation plant (CHPP), stockpiles and accommodation village to collect surface run-off from developed areas in sediment basins.	Section 5.3 – Topography, Geology and Soils	GRM RHM
13	Where practicable, develop IMG management infrastructure to avoid disturbance in areas of vertosol soils. These are particularly at the southern extent of panels 105 to 109.	Section 5.3 – Topography, Geology and Soils	RHM
14	<p>Management of topsoil should be undertaken as part of operations and account for the following:</p> <ul style="list-style-type: none"> • Prior to soil disturbance, confirm depth of topsoil and subsoil and identify stripping depths. • Wherever practicable, strip soils while in a slightly moist condition, not in either an excessively dry or wet condition. • If possible, place stripped material directly into the area to be rehabilitated and spread immediately to avoid the requirement for stockpiling. • If topsoil is to be stockpiled, grade or push soil into windrows with graders or dozers. • When developing stockpiles, avoid tracking over previously placed soil. Suitable methods include direct dumping from dump trucks, pushing soil into windrows using scrapers or use of light equipment to form windrows. • Leave surfaces of soil stockpiles in as coarsely structured a condition as possible in order 	Section 5.3 – Topography, Geology and Soils	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
	<p>to promote infiltration and minimise erosion until vegetation is established, and to prevent anaerobic zones forming.</p> <ul style="list-style-type: none"> • Maintain a maximum stockpile height of three metres (m). Store clayey soils in lower stockpiles for shorter periods of time compared to coarser textured sandy soils. • If long-term stockpiling is planned (i.e. more than 12 months), seed and fertilise stockpiles as soon as possible. Sow an annual cover crop species that produces sterile florets or seeds and establish rapid growing and healthy annual pasture sward to provide sufficient competition to minimise the emergence of undesirable weed species. • Assess levels of weed infestation prior to re-spreading stockpiled topsoil onto disturbed areas. Use herbicides to control weeds in stockpiles prior to reuse or, if weed infestation is particularly significant, “scalp” stockpiles to remove weed seed layers. Particular attention to weed levels in topsoil stockpiles is required where topsoil is to be reused in areas to be regenerated with native trees or shrubs. • Remove soil from windrow stockpiles using open bowl scrapers or front end loaders loading into dump trucks or other equipment as appropriate to avoid driving heavy equipment across topsoil stockpiles. • Maintain an inventory of available soil to ensure adequate topsoil materials are available for planned rehabilitation activities. • Spread topsoil to a minimum depth of 0.1 m except on steep slopes, where sloped exceeding 0.1 m can cause slippage of the topsoil from the slope. 		
15	<p>For all construction activities undertaken in the wet season, install diversion and sediment control measures prior to other surface disturbance taking place. During dry season, diversion and sediment control measures may be modified depending on assessment of erosion risk at each location.</p>	Section 5.3 – Topography, Geology and Soils	BRM GRM RHM
16	<p>If check dams or other structures are installed on streams or drainage lines, these will be in accordance with the <i>Guideline - activities in a watercourse, lake or spring associated with mining operations</i> (NRM 2012).</p>	Section 5.3 – Topography, Geology and Soils	GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
17	On completion of construction of surface infrastructure, backfill disturbed areas, restoring soil profile and then replace topsoil and sow with pasture species or mulch.	Section 5.3 – Topography, Geology and Soils	BRM GRM RHM
18	On completion of construction of wells, reinstate those areas of the drill pad not required for operations. Drains can be left in place in steeper areas or where significant overland flow occurs. If the area is assessed as being at high risk of erosion, the remaining area will be gravelled, mulched or otherwise stabilised to reduce exposure of soils to erosive forces.	Section 5.3 – Topography, Geology and Soils	BRM GRM RHM
19	In relation to spontaneous combustion risk: <ul style="list-style-type: none"> • Manage stockpile inventory so that coal does not remain in the stockpile for more than 60 days. • Monitor temperature within older stockpiles. • Maintain wetness in stockpile with water sprays. 	Section 5.3 – Topography, Geology and Soils	GRM
20	In the event that fossils are identified in coal extracted from the mine, the Queensland Museum will be consulted about steps that may be necessary to allow for collection of information contained in the fossil record and any need for preservation and removal of fossils.	Section 5.3 – Topography, Geology and Soils	BRM GRM RHM
21	Maintain an inventory of topsoil resources, including the following: <ul style="list-style-type: none"> • date stripped; • source; and • location of topsoil stockpile. 	Section 5.3 – Topography, Geology and Soils	BRM GRM RHM
22	Where erosion damage such as gullying has occurred, steps will be taken to repair damage and prevent recurrence. This may include diversion of flows around the affected area, earthworks to reduce slope angles, placement of topsoil and revegetation.	Section 5.3 – Topography, Geology and Soils	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
23	Conduct further investigations of potentially contaminated sites prior to disturbance and develop remediation and/or management plans to prevent inadvertent release of contaminants to the environment or exposure of workers to contaminants.	Section 5.4 – Land Contamination	GRM RHM
24	Notify EHP of the location and nature of notifiable activities including mining activities, sewage treatment and disposal and chemical and fuel storage.	Section 5.4 – Land Contamination	GRM RHM
25	Design and operate fuel storage facilities in accordance with AS 1940 <i>Storage and Handling of Flammable and Combustible Liquids</i> . This standard includes bunding of storage and refuelling areas.	Section 5.4 – Land Contamination Section 20 – Health, Safety and Risk	BRM GRM RHM
26	Design chemical storage and waste storage areas to relevant Australian Standards.	Section 5.4 – Land Contamination	BRM GRM RHM
27	Design stormwater systems for the MIA to allow isolation of the system in the event of a major fuel spill	Section 5.4 – Land Contamination	GRM
28	Include oil/water separators in areas of potential hydrocarbon contamination, including vehicle wash down, car parks and equipment park-up areas, refuelling areas, maintenance areas. Locate these areas away from drainage lines.	Section 5.4 – Land Contamination Section 7 – Surface Water	BRM GRM RHM
29	Stockpiles, workshop areas, minor chemical stores and other waste disposal/storage areas will be located on hardstand, compacted soils or concrete pads.	Section 5.4 – Land Contamination	GRM
30	Incorporate spill prevention and response procedures in site emergency management plan and consult with the Queensland Fire and Rescue Service in relation to spill response requirements and resources.	Section 5.4 – Land Contamination Section 20 – Health, Safety and Risk	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
31	Hazardous wastes will be stored in contained areas and removed from site regularly.	Section 5.4 – Land Contamination	BRM GRM RHM
32	Material safety data sheets (MSDS) for hydrocarbons and chemicals used or brought to the site are to be kept in a central register on site and also at the area of use. MSDS to be readily available to workers at all times.	Section 5.4 – Land Contamination	BRM GRM RHM
33	Where mobile refuelling is to be undertaken, a spill kit suitable for small and medium size spills will be available. Workers involved in mobile refuelling will be trained in spill containment and response, including the proper collection and disposal of contaminated material. Ensure suitably sized spill kits available at all storage and refuelling locations. Refuelling activities to be supervised at all times.	Section 5.4 – Land Contamination	BRM GRM RHM
34	Workers involved in handling and management of fuels and chemicals will be trained in spill response procedures in accordance with the site emergency management plan.	Section 5.4 – Land Contamination	BRM GRM RHM
35	In the event that minor spills are identified, local remediation will be implemented, through onsite treatment using natural biodegradation processes or, if this is not likely to be suitable, offsite disposal in accordance with requirements of the EP Act.	Section 5.4 – Land Contamination	BRM GRM RHM
36	If contaminated material is to be remediated on site, the material will be placed in a suitable location where run-off from the material cannot flow to waterways or cause additional soil contamination.	Section 5.4 – Land Contamination	BRM GRM RHM
37	An incident report form will be completed for every fuel and chemical spill outside a bunded area. The report form will contain details on the location of the spill, type and quantity of material spilt and steps taken in initial response and follow up. Spills over 20 litres will be investigated in accordance with site incident investigation procedures.	Section 5.4 – Land Contamination	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
38	A register will be maintained with the location of any areas of contamination, nature of the contaminant, and any measures taken to remediate or otherwise manage the contamination.	Section 5.4 – Land Contamination	BRM GRM RHM
39	Areas will be inspected for potential contamination prior to disturbance.	Section 5.4 – Land Contamination	BRM GRM RHM
40	In the event that workers identify potentially contaminated areas, work procedures will specify: <ul style="list-style-type: none">• Stopping work and isolating the potentially affected area. This may also require steps to prevent worker exposure or further release to the environment.• Contacting the site environmental advisor for assistance, who will then determine whether further investigation is needed and engage suitably qualified personnel to carry out investigations in accordance with the draft guidelines (Department of Environment 1998).	Section 5.4 – Land Contamination	BRM GRM RHM
41	If excess soil is to be removed from the originating land parcel, assessment of the soil may need to be undertaken in order to comply with soil disposal procedures within the <i>Environmental Protection Act 1994</i> (EP Act) and a permit may be required to move soils from one land parcel to another.	Section 5.4 – Land Contamination	GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
42	<p>Should contaminated soils need to be removed off site:</p> <ul style="list-style-type: none"> • Less contaminated or uncontaminated soils will be separated from contaminated soils on the basis of laboratory testing. If necessary, in situ testing will be undertaken to delineate the extent of contamination prior to commencing excavation. • Contaminated soils will be disposed of in an appropriately authorised waste management or disposal facilities in accordance with soil disposal procedures specified in section 424 of the EP Act and associated regulations. • The contaminated material will be stored in a secure contained area such that further contamination does not occur until it can be removed from the site. • A disposal permit will be obtained from EHP. 	Section 5.4 – Land Contamination	GRM RHM
43	<p>Further investigation of Site 1 (Riverside Homestead domestic waste, cattle dip and fuel storage) and site 10 (Riverside minor waste dump area) is required prior to disturbance in these areas to determine whether contaminants are present at levels exceeding Queensland draft contaminated land guidelines (Department of Environment 1998) and National Environmental Protection Measures (NEPC 2009).</p> <ul style="list-style-type: none"> • A protocol for investigation of these areas adhering to the draft guidelines (Department of Environment 1998) will be developed, prior to disturbance of potentially contaminated land. This will include, but is not limited to site inspections, and a comprehensive sampling program to identify potential impacts to soils and groundwater. • If soil contamination is identified, an appropriate remediation or site management strategy should be implemented (potentially on site containment or offsite disposal). 	Section 5.4 – Land Contamination	RHM
44	<p>Remove all wastes, fuel, oil and chemical storage containers and other debris associated with the cattle dip and waste disposal areas prior to disturbance in these areas. Place materials in secure containers for offsite disposal. Determine disposal requirements regulated or general waste) depending on nature and quantity of contaminants.</p>	Section 5.4 – Land Contamination	RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
45	<p>Visually check areas for potential contamination prior to surface disturbance. Signs of contamination may include:</p> <ul style="list-style-type: none"> • dead or dying vegetation; • discolouration of soil; • old containers such as drums; and • obvious surface disturbance (from burial of waste). <p>If required, testing for soil contamination will to be undertaken in accordance with Queensland Department of Environment Draft Guidelines for the assessment and management of Contaminated Land in Queensland (EPA 1998).</p> <p>In the event that soil contamination is identified, a remediation or management plan will be prepared in accordance with Section 424 of the EP Act.</p>	Section 5.4 – Land Contamination	GRM RHM
46	Fuels and chemicals will only to be stored in designated areas within the MIA that have suitable containment in place.	Section 5.4 – Land Contamination	GRM
47	In the event that new chemicals are to be introduced to mine operations, an assessment of environmental and safety risks associated with the chemical is to be undertaken and storage, handling and spill response procedures developed accordingly.	Section 5.4 – Land Contamination	BRM GRM RHM
48	Implement design, operation and management measures in relation to fuels and chemicals to minimise the likelihood of land contamination arising and to manage any occurrences of land contamination that occur during the mining activity. Similarly, store and handle wastes in accordance with legislative requirements.	Section 5.4 – Land Contamination Section 7 – Surface Water Section 8 – Groundwater Section 10 – Aquatic Ecology Section 15 – Waste Management Section 20 – Health, Safety and Risk	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
49	<p>Prior to commencement of mining, a mine rehabilitation management plan will be prepared consistent with BMA corporate standards and guidelines in place at the time, as well as relevant guidelines from administering agencies and will draw on lessons learned from the adjacent GRB mine complex Mine Rehabilitation Management Plan.</p> <p>The Rehabilitation Management Plan should be developed in order to achieve well maintained and rehabilitated disturbed land areas with success criteria aimed at achieving a safe, stable and sustainable land form capable of supporting a post mining land use of grazing land with minimal reduction in land suitability.</p> <p>The RHM Rehabilitation Management Plan should specifically address the following:</p> <ul style="list-style-type: none"> • an overall framework for mine closure, including re-use, rehabilitation and decommissioning strategies for all elements of the project including services (above and underground), all mining equipment and service supply lines, buildings, unwanted sumps, recoverable scrap steel, roadways and all hardstand areas, creek crossings and culverts, ventilation shafts and all other entrances to the underground workings, dams, flood levee, voids and top soil management. • clear criteria agreed with relevant stakeholders, that can be used as the standard for the final mine rehabilitation and post mining land use assessment. • Measures to reduce or eliminate adverse environmental effects once the mine ceases operation, including contamination sampling. • Measures to ensure closure is completed in accordance with good industry practice as well as meeting the statutory requirements that may be applicable at the time. • Measures to ensure the closed mine does not pose an unacceptable risk to public health and safety. • Following removal of any above ground infrastructure, disturbed areas will be dozer trimmed to facilitate the appropriate drainage of surface run-off, and ripped along the contour. Rocks greater than 500 mm will be removed. • Available topsoil will be spread and seed and fertiliser will then be applied to assist in the establishment of a grazing post-mine land use within a mosaic of bushland. 	Section 5.5 – Rehabilitation and Decommissioning	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
	<ul style="list-style-type: none"> A sustainable land use plan will be prepared and delivered to the landholder to assist with management of grazing activities on the rehabilitated surface. 		
50	<p>On completion of construction of each element of surface infrastructure and facilities, unused areas will be rehabilitated to a stable surface where it is practicable to do so. Rehabilitation methods will include:</p> <ul style="list-style-type: none"> ripping of compacted areas. In larger areas, ripping should will follow contours and tynes should be lifted approximately 2 m every 200 m to reduce the potential for channelised erosion; spreading of topsoil to a minimum depth of 100 millimetres (mm) on surfaces requiring rehabilitation unless direct planting is to be undertaken; preparation of seed beds to provide for optimum establishment and growth of vegetation; seeding with suitable pasture species or, in areas identified to be retained as native vegetation, with suitable native vegetation species; weed control as required; and ongoing maintenance of erosion and sediment control measures until adequate vegetation cover has been achieved. 	Section 5.5 – Rehabilitation and Decommissioning	BRM GRM RHM
51	<p>Interim rehabilitation will be undertaken as soon as practicable after construction of each section of IMG management infrastructure, and including:</p> <ul style="list-style-type: none"> Removal of temporary facilities associated with drilling. Rehabilitation of the drilling pad area, leaving only the required operational area immediately around the well. These areas will be ripped as necessary, and then topsoil will be replaced and the areas seeded with pasture species. Rehabilitation over redundant gas and water pipeline trenches, contouring of the surface to promote drainage and minimise concentration of drainage, ripping as required to address compaction and replacement of topsoil and seeding with pasture grass species. 	Section 5.5 – Rehabilitation and Decommissioning	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
52	Erosion and sediment control structures will be left in place until adequate vegetation cover has been achieved.	Section 5.5 – Rehabilitation and Decommissioning	BRM GRM RHM
53	<p>Final decommissioning of IMG pre-drainage infrastructure is expected to be undertaken progressively, in accordance with safe and efficient mining requirements, as follows:</p> <ul style="list-style-type: none"> • Wells that have no further IMG pre-drainage use will be grouted and capped in accordance with industry practice and any guidelines on de-commissioning of IMG wells current at the time. • Any wells grouted and capped in areas still prone to mining subsidence will be checked to see if any hazards or deficiencies have arisen from the mine subsidence and will be rectified accordingly if so. • Pads around each decommissioned well will be de-compacted as necessary, topsoil re-spread and the disturbed areas ripped and seeded. • IMG gathering and temporary surface facilities associated with the decommissioned wells will be removed or relocated to be reused at other operating parts of the site (if still in a safe and useable condition). • Unused or damaged water and gas pipelines will be decommissioned and removed if unsafe or exposed above ground. • Access tracks that are not required for future access for mining or mine de-gassing services will be ripped, re-graded and seeded. 	Section 5.5 – Rehabilitation and Decommissioning	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
54	<p>Goaf drainage infrastructure will be decommissioned as soon as practicable after monitoring indicates that the goaf wells have served their useful life. Decommissioning of goaf drainage infrastructure is expected to be undertaken as follows:</p> <ul style="list-style-type: none"> • Wells that have no further goaf drainage use will be grouted and capped in accordance with industry practice and any guidelines on de-commissioning goaf wells current at the time. • Any wells grouted and capped in areas still prone to mining subsidence will be checked to see if any hazards or deficiencies have arisen from the mine subsidence and will be rectified accordingly. • Pads around each decommissioned well will be de-compacted as necessary, topsoil re-spread and the disturbed areas ripped and seeded. • Goaf gas gathering and temporary surface facilities associated with the decommissioned wells will be removed or relocated to be reused at other operating parts of the site (if still in a safe and useable condition). • Unused or damaged water and gas pipelines will be decommissioned and removed if unsafe or exposed above ground. • Access tracks that are not required for future access for mining or mine de-gassing services will be ripped, re-graded and seeded. 	Section 5.5 – Rehabilitation and Decommissioning	BRM GRM RHM
55	<p>Underground facilities will be decommissioned as follows:</p> <ul style="list-style-type: none"> • Mining equipment or service supply lines and cables that are no longer required and are not readily recoverable for salvage or reuse will be left in the underground mine. • Fluids with the potential to cause contamination, such as hydraulic oils, will be drained from equipment left underground. • Brick rubble, concrete rubble or other inert waste from the decommissioning of the mine infrastructure area may be placed in the drift. This will only be undertaken where it is demonstrated that groundwater will not be impacted. • Entrances to the underground workings will be blocked off and sealed to prevent access. 	Section 5.5 – Rehabilitation and Decommissioning	BRM GRM RHM

Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
	<ul style="list-style-type: none"> • Ventilation shafts will also be decommissioned and sealed. • All entrances to underground workings will undergo a final safety inspection and certification. 		
56	<p>Wherever revegetation is required, the surface will be prepared as follows:</p> <ul style="list-style-type: none"> • Prior to re-spreading stockpiled topsoil, an assessment of weed infestation on stockpiles will be undertaken to determine if individual stockpiles require herbicide application and/or 'scalping'. • Areas where subsoils have become compacted will be ripped. • Where topsoil resources allow, topsoil will be spread to a minimum depth of 100 mm and preferably 200 mm where sufficient topsoil is available on surfaces requiring rehabilitation. Topsoil will be treated with fertiliser and other ameliorants as required to optimise soil properties for revegetation. • Delay between spreading of topsoil and seeding will be minimised as far as possible. • Prior to sowing, topsoiled areas will be contour ripped to create a 'key' between the soil and the underlying subsoil, thereby increasing infiltration. This will be undertaken using a fine-tyned plough, or disc harrow or other similar equipment. Ripping will be undertaken on the contour and the tynes lifted approximately 2 m every 200 m to reduce the potential for channelised erosion. Soil will be contour ripped when soil is moist but not under very wet conditions. 	Section 5.5 – Rehabilitation and Decommissioning	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
57	<p>Three types of revegetation are proposed:</p> <ul style="list-style-type: none"> • Pasture grassland suitable for grazing. As grazing is the selected post mining land use, this will be the predominant type of revegetation across the site. • Bushland maintenance and enhancement. Bushland maintenance and enhancement will aim to build on areas of native vegetation not affected by IMG management infrastructure and subsidence impacts such that these areas can continue to provide suitable habitat. • Riparian zone maintenance, restoration and enhancement. As the Isaac River has been identified as providing an important north-south movement corridor for native fauna, loss of riparian and flood plain vegetation will be restored through revegetation. 	Section 5.5 – Rehabilitation and Decommissioning	BRM GRM RHM
58	<p>Some initial and progressive revegetation (pasture grassland) will take place over areas disturbed by the IMG management infrastructure. Enhancement of riparian areas at high risk of avulsion or bank instability will also be undertaken in advance of planned subsidence. Otherwise, revegetation will occur progressively after subsidence and in response to changes induced by subsidence. Revegetation of areas such as the MIA, accommodation village and other non-gas related infrastructure will take place on removal of these facilities.</p>	Section 5.5 – Rehabilitation and Decommissioning	BRM GRM RHM
59	<p>Where possible, the timing of revegetation works will enable a preferred seasonal sowing of pasture and tree seed in autumn or spring.</p>	Section 5.5 – Rehabilitation and Decommissioning	BRM GRM RHM
60	<p>Access to revegetated areas by cattle and vehicles will be restricted until vegetation has reached pre-determined levels of establishment.</p>	Section 5.5 – Rehabilitation and Decommissioning	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
61	<p>Plant selection for areas to be maintained as bushland will be taken from species identified as preferred species selection based on:</p> <ul style="list-style-type: none"> • available growth medium; • slope; and • developing habitat that is structurally complex and will provide resources for native species potentially occurring in each zone. 	Section 5.5 – Rehabilitation and Decommissioning	BRM GRM RHM
62	<p>Native species will be established through direct seeding or planting of tube stock/nursery-raised stock from local propagules. Seed will be collected from the EIS study area where practicable to ensure it is adapted to environmental conditions in the area.</p>	Section 5.5 – Rehabilitation and Decommissioning	BRM GRM RHM
63	<p>Pasture seed will be sown using direct ground broadcasting methods and aerial seeding where required. Species to be sown will be nominated from the list with the total sowing rate being about 10 kilograms per hectare.</p>	Section 5.5 – Rehabilitation and Decommissioning	BRM GRM RHM
64	<p>Riverine areas requiring pre-subsidence enhancement or rehabilitation following subsidence will be seeded or planted with selected species identified as preferred and locally endemic. Lower seeding rates may be possible in optimal conditions.</p>	Section 5.5 – Rehabilitation and Decommissioning	GRM RHM
65	<p>The mine rehabilitation management plan will contain a monitoring program to measure progress against rehabilitation success criteria and identify the need for corrective action.</p>	Section 5.5 – Rehabilitation and Decommissioning Section 9 – Terrestrial Ecology	BRM GRM RHM
66	<p>Monitoring will include establishment of reference sites that can be used to indicate the condition of surrounding un-mined areas that the rehabilitated disturbance area should match, taking into account factors such as weather conditions that can affect rehabilitation success.</p>	Section 5.5 – Rehabilitation and Decommissioning Section 9 – Terrestrial Ecology	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
67	Results of progressive rehabilitation against the success criteria will be used to refine rehabilitation methods for future application, such as the selection of appropriate drainage and erosion control measures and the selection of plant species for re-establishment.	Section 5.5 – Rehabilitation and Decommissioning Section 9 – Terrestrial Ecology	BRM GRM RHM
68	<p>If monitoring indicates that rehabilitation success is poor, and particularly that success criteria in relation to revegetation will not be met by the time of mine closure, the following maintenance measures may be required:</p> <ul style="list-style-type: none"> • re-seeding or planting with vegetation species to infill areas where revegetation success is low; • seeding or planting with alternative species; • soil improvements; and • drainage works and erosion protection measures. 	Section 5.5 – Rehabilitation and Decommissioning Section 9 – Terrestrial Ecology	BRM GRM RHM
69	<p>In the event that monitoring indicates that rehabilitated areas are not likely to meet performance criteria, corrective actions will be undertaken. These may include:</p> <ul style="list-style-type: none"> • replanting or reseeded of vegetation; • use of hydromulch or similar techniques to enhance re-seeding success; • weed control programs – if chemical controls are used, herbicides will be selected based on low potential impact on waterways, native plants and native animals; • pest animal control programs; • drainage, erosion and sediment control; and • earthworks to restore contours and/or drainage lines. 	Section 5.5 – Rehabilitation and Decommissioning Section 9 – Terrestrial Ecology	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
70	Records will be kept for: <ul style="list-style-type: none"> rehabilitation activities including location, techniques, species utilised and rehabilitation date; monitoring activities; and corrective actions. 	Section 5.5 – Rehabilitation and Decommissioning Section 9 – Terrestrial Ecology	BRM GRM RHM
71	Measures will be implemented in relation to preventing introduction of new weed species and preventing proliferation of existing weed species	Section 5.5 – Rehabilitation and Decommissioning Section 9 – Terrestrial Ecology	BRM GRM RHM
72	When selecting location for roads, tracks and other infrastructure, maximise use of already disturbed areas, wherever practicable.	Section 9 – Terrestrial Ecology	BRM GRM RHM
73	The Isaac River bridge will be designed to minimise disruption to fauna passage along riparian zone.	Section 9 – Terrestrial Ecology	RHM
74	A biodiversity offset strategy and management plan will be developed for the project at least 6 months before disturbance.	Section 9 – Terrestrial Ecology	BRM GRM RHM
75	Include sites of terrestrial ecological significance on constraints maps for the project to minimise the opportunity for disturbance during detailed design and construction.	Section 9 – Terrestrial Ecology	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
76	<p>Finalise offset strategy and undertake ecological equivalence assessment for areas to be disturbed during construction and years one to five of mining.</p> <p>Finalise deed of agreement in relation to provisions of offsets for construction and years one to five of mining.</p> <p>Identify and secure offsets for areas to be disturbed by construction activities.</p>	Section 9 – Terrestrial Ecology	BRM GRM RHM
77	<p>Avoid and/or minimise earthworks to be undertaken within <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) threatened ecological community (TEC) <i>Natural grasslands of the Queensland Central Highlands and the northern Fitzroy Basin</i> (of concern RE 11.8.11).</p>	Section 9 – Terrestrial Ecology	BRM GRM RHM
78	<p>When clearing vegetation for any of the surface facilities:</p> <ul style="list-style-type: none"> Clearly delineate areas for clearing to avoid inadvertent clearing. Identify and clearly mark habitat trees that can be retained without compromising safety. Consider habitat features such as felled trees and logs for relocation to other areas where practical to provide microhabitat. 	Section 9 – Terrestrial Ecology	BRM GRM RHM
79	<p>Vehicles and equipment are to be cleaned before being brought to site and inspected on entry to site. Queensland Government Checklist for Cleandown Procedures (DNR 2000) to be followed for clean down and inspection.</p>	Section 9 – Terrestrial Ecology	BRM GRM RHM
80	<p>All soil and materials of plant origin to be certified as weed free by the supplier using the Queensland Government weed hygiene declaration form or similar (DAFF 2013e).</p>	Section 9 – Terrestrial Ecology	BRM GRM RHM
81	<p>Monitor disturbed areas for weed proliferation and undertake weed control as required and in accordance with relevant Queensland Government guidelines (DAFF 2013a).</p>	Section 9 – Terrestrial Ecology	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
82	<p>Disturbed areas not required will be stabilised and rehabilitated as soon as practical after construction consistent with the rehabilitation plan:</p> <ul style="list-style-type: none"> Rehabilitate riparian vegetation for the bridge across the Isaac River. Revegetate around surface infrastructure by establishing pasture grass as it will not generally be appropriate to establish native woodland or scrubland very close to surface facilities. 	Section 9 – Terrestrial Ecology	BRM GRM RHM
83	Ensure vehicles remain on established access tracks and do not traverse vegetated areas except in emergency circumstances.	Section 9 – Terrestrial Ecology	BRM GRM RHM
84	When clearing woodland vegetation with high likelihood of arboreal animals, utilise spotter/catchers to inspect area for presence of fauna immediately prior to clearing, and then remove any fauna in situ. Spotter/catchers will hold appropriate permits under the <i>Nature Conservation Act 1992</i> . If an animal is injured, contact local wildlife carers or veterinary clinics. Place animal in a secure container.	Section 9 – Terrestrial Ecology	BRM GRM RHM
85	Fauna killed on roads within the mining lease areas will be dragged to the side immediately, and then removed and disposed of on a regular basis to prevent carrion eaters from being exposed to vehicle strike.	Section 9 – Terrestrial Ecology	BRM GRM RHM
86	Seek to avoid and/or minimise placement of IMG extraction wells and infrastructure within RE11.8.11/TEC (Natural grasslands of the Queensland Central Highlands and the northern Fitzroy Basin) where practical. Where unavoidable, offsets will be required. If this community is to be traversed, the topsoil and roots will not be disturbed. This area may be slashed.	Section 9 – Terrestrial Ecology	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
87	<p>If clearing in the area of RE11.8.11/TEC (Natural grasslands of the Queensland Central Highlands and the northern Fitzroy Basin) is required, conduct pre-clearing surveys for <i>Dichanthium setosum</i>, <i>Dichanthium queenslandicum</i> and <i>Digitaria porrecta</i>.</p> <ul style="list-style-type: none"> • If these grasses are identified, clearing should be avoided in these areas wherever possible, with slashing preferred to gain access. • If clearing is required, individual plants may be collected and relocated, and topsoil removed and set aside to protect seed banks. Topsoil will be replaced over pipelines as quickly as possible. 	Section 9 – Terrestrial Ecology	BRM GRM RHM
88	<p>When selecting locations for wells, tracks and other infrastructure during the detailed design, already disturbed areas will be used wherever practicable, particularly in riparian and woodland vegetation.</p>	Section 9 – Terrestrial Ecology	BRM GRM RHM
89	<p>Placement of IMG extraction wells and other infrastructure will seek to avoid the following areas wherever practicable:</p> <ul style="list-style-type: none"> • endangered REs 11.4.7, 11.4.8 and 11.4.9; and • riparian zones along Isaac River and 12 Mile Gully, particularly native vegetation within 100 m of the bank. <p>Where these areas cannot be avoided, offsets will be required.</p>	Section 9 – Terrestrial Ecology	BRM GRM RHM
90	<p>River and creek crossings will be selected where natural or anthropogenic breaks in vegetation occur wherever possible, recognising that crossing locations must align with the pillars between each longwall panel.</p>	Section 9 – Terrestrial Ecology	GRM RHM
91	<p>If weed or pest animal proliferation occurs, implement weed and pest management procedures in accordance with relevant requirements of:</p> <ul style="list-style-type: none"> • Queensland Department of Agriculture, Fisheries and Forestry pest control prescriptions and pest fact sheets; and • Isaac Regional Council guidelines. 	Section 9 – Terrestrial Ecology	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
92	Rehabilitate buried pipeline alignments consistent with the rehabilitation plan. Rehabilitate excess areas of drill pads once wells are installed consistent with the rehabilitation plan.	Section 9 – Terrestrial Ecology	BRM GRM RHM
93	Retain tall trees on either side of creek crossings or install glider poles to enable arboreal mammals to move across the crossings.	Section 9 – Terrestrial Ecology	GRM RHM
94	Impose and enforce a speed limit on all roads and tracks associated with the IMG management network. Forty kilometres per hour is likely to be appropriate for most roads and tracks.	Section 9 – Terrestrial Ecology	BRM GRM RHM
95	Adaptive management will be incorporated into the subsidence management strategies based on lessons learned from the adjacent BRM subsidence monitoring results.	Section 9 – Terrestrial Ecology	GRM RHM
96	Repair cracks in areas of native vegetation as they occur. Where works are required to repair surface cracks from subsidence, this will be done with minimal clearing or damage to vegetation. Suitable machinery will be used to minimise disturbance. Grasses and other groundcover will be slashed rather than cleared to allow access.	Section 9 – Terrestrial Ecology	BRM GRM RHM
97	Ongoing monitoring of the effects of surface cracking and rapid ground movement will be required to identify the potentially affected vegetation and to allow management measures to be implemented.	Section 9 – Terrestrial Ecology	BRM GRM RHM
98	Determine need to include artificial roosts, roost boxes and glider poles for animals such as little pied bat and gliders and incorporate into rehabilitation requirements.	Section 9 – Terrestrial Ecology	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
99	<p>Weed and pest monitoring will be undertaken as follows:</p> <ul style="list-style-type: none"> • annual observations by site personnel for weeds and pests of management concern; • a post-construction weed audit of the surface facilities, well sites, pipeline routes and access tracks at the end of the first wet season after completion of construction activities in each area; • monitoring for pest plants and fauna within subsided areas where ponding occurs; and • maintenance of monitoring records for a period of at least five years to aid in the assessment of the long term success of the project's weed management program. 	Section 9 – Terrestrial Ecology	BRM GRM RHM
100	<p>Where monitoring indicates that treatment is required to address weed or pest infestation, a treatment plan will be developed drawing on state and local government guidelines in place at the time. Follow up monitoring will be undertaken within three months to determine the success of the weed or pest eradication program and additional treatment will be undertaken where eradication is unsuccessful.</p>	Section 9 – Terrestrial Ecology	BRM GRM RHM
101	<p>Prior to the commencement of construction, conduct additional surveys for the plant <i>Cerbera dumicola</i> around the accommodation village location and for the ornamental snake; and koala in suitable habitat.</p> <p>If these species are present, prepare a species management plan to address short and long term impacts and mitigation measures.</p>	Section 9 – Terrestrial Ecology	RHM
102	<p>During construction, monitoring of ornamental snake, koala or <i>Cerbera dumicola</i> and native grass species if species management plans indicate that monitoring is required.</p>	Section 9 – Terrestrial Ecology	GRM RHM
103	<p>Implement impact mitigation measures for design, construction, installation of IMG management infrastructure and operation phases to minimise disturbance to identified biodiversity values wherever practicable and safe. Biodiversity values include TECs listed under the EPBC Act, endangered and of concern regional ecosystems and riparian zones along the Isaac River, 12 Mile Gully and Goonyella Creek.</p>	Section 9 – Terrestrial Ecology	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
104	Implement measures in design, construction, installation of IMG management infrastructure and operation phases to minimise indirect impacts on fauna, including impacts from lighting and vehicle strike, where safe and practical	Section 9 – Terrestrial Ecology	BRM GRM RHM
105	Implement dust control measures on heavily trafficked access tracks and for activities occurring adjacent to remnant native vegetation.	Section 9 – Terrestrial Ecology Section 11 – Air Quality	BRM GRM RHM
106	Revisit ecology assessment if there is a significant delay in commencing the mining activity to confirm whether identified biodiversity values remain consistent with values identified and assessed in the EIS.	Section 9 – Terrestrial Ecology	RHM GRM BRM
107	Develop and implement a strategy to offset state significant biodiversity values where destruction cannot be avoided. Strategy is to comply with the Queensland Government <i>Biodiversity Offset Policy</i> (October 2011).	Section 9 – Terrestrial Ecology	BRM GRM RHM
108	Where works are required in the bed and banks of a watercourse, conduct works in accordance with <i>Guideline - activities in a watercourse, lake or spring associated with mining operations</i> (NRM 2012) or conditions of a valid riverine protection permit. This will include works in relation to in-stream sediment control structures.	Section 10 – Aquatic Ecology	GRM RHM
109	Where works occur in stream, minimise impacts on fish passage. Although waterway barrier works approval is not required for works on a mining lease, consideration will be given to the Queensland Government Code for Self Assessable Development, Minor Waterway Barrier Works Approvals – Part 3 (culverts) and Part 4 (bed level crossings) where relevant and practical.	Section 10 – Aquatic Ecology	GRM RHM
110	When selecting bridge location and locations for IMG drainage infrastructure stream crossings, consider maximising use of already disturbed areas and avoiding areas with intact remnant riparian vegetation.	Section 10 – Aquatic Ecology	GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
111	Design works to minimise disturbance within 100 m of the banks of the Isaac River, 12 Mile Gully and Goonyella Creek, wherever possible.	Section 10 – Aquatic Ecology	GRM RHM
112	Where possible schedule works in streams and immediately adjacent to streams in dry periods. Schedule works so that stormwater systems at MIA, CHPP and accommodation village are installed as early as possible in construction schedule.	Section 10 – Aquatic Ecology	GRM RHM
113	As far as practicable, design culvert crossings and bed level crossings in accordance with: <ul style="list-style-type: none"> • Code for self-assessable development – Minor waterway barrier works – Part 3: culvert crossings (WWBW01) (DAFF 2013c); and • Code for self-assessable development – Minor waterway barrier works – Part 4: bed level crossings (WWBW01) October (DAFF 2013d). Design all works to comply with NRM (2012) <i>Guideline - activities in a watercourse, lake or spring</i> or obtain a Riverine Protection Permit and complies with requirements.	Section 10 – Aquatic Ecology	GRM RHM
114	If check dams or other erosion and sediment control structures are required in streams or drainage lines, design and install in accordance with the NRM (2012) <i>Guideline - activities in a watercourse, lake or spring</i> associated with mining and the DAFF (2013b) Code for self-assessable development – Minor waterway barrier works – Part 1: Minor dams and weirs (WWBW01).	Section 10 – Aquatic Ecology	GRM RHM
115	Stabilise and revegetate any disturbance within the vicinity of the riparian zones promptly. Use temporary stabilisation if more permanent stabilisation cannot be achieved during wet periods.	Section 10 – Aquatic Ecology	GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
116	<p>Develop and implement an aquatic ecosystem monitoring program including:</p> <ul style="list-style-type: none"> • control sites consisting of: <ul style="list-style-type: none"> – upstream and downstream locations on Isaac River; and – upstream location on Goonyella Creek. • impact sites within the Isaac River, Goonyella Creek and 12 Mile Gully; • biannual monitoring of: <ul style="list-style-type: none"> – in situ water quality (at time and location of each aquatic ecology monitoring event); – fish species and abundance; and – macroinvertebrate taxa and abundance. • statistical analysis of results including SIGNAL, PET and multivariate analysis; and • monitoring events will take place towards the end of the wet season, depending on ability to safely access sampling locations. 	Section 10 – Aquatic Ecology	GRM RHM
117	<p>In the event that monitoring indicates statistically significant degradation of aquatic ecosystem values at impact sites compared to control sites, conduct a further investigation of potential causes of aquatic habitat degradation and determine corrective actions to address causes and, if necessary, rehabilitate habitat. Monitoring frequency may be reassessed after initial monitoring events.</p> <p>If monitoring indicates that sleepy cod is becoming dominant in ponds and is displacing other species, remove sleepy cod using humane means.</p>	Section 10 – Aquatic Ecology	GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
118	<p>Undertake operational geochemical characterisation of mineral waste materials in planned disturbance areas of the proposed RHM and Broadmeadow extension ahead of mining to confirm the expected geochemical characteristics of these materials.</p> <p>Characterisation of reject materials (coarse rejects and dewatered tailings) to be undertaken to verify their expected geochemical nature.</p> <p>Testing programs will be commensurate with the low risk of acidification. The objectives and outcomes from the characterisations are to assist in planning and implementation as follows:</p> <ul style="list-style-type: none"> • Further evaluation of geochemical characteristics of reject materials collected from in-fill drilling core samples ahead of mining to confirm the non-acid forming nature and, where possible, delineate any potentially acid forming materials prior to mining. • Evaluation of the geotechnical requirements of overburden from the drift to determine whether material can be reused on site. • Preparation of a cut/fill balance for construction earthworks that maximises reuse of overburden from drift construction. • Drift construction wastes with suitable geotechnical properties may be used for engineering and construction purposes such as bulk fill, road sub-base, construction material for laydown areas, foundations and/or levees. • Spoil that is unsuitable for engineering purposes or in excess of requirements will be placed in GRB mine complex existing spoil dumps according to the existing approved overburden management practices in use at GRB mine complex. • Finalisation of methods for collection and transfer of coarse and fine rejects and dewater tailings to GRB mine complex waste management areas. 	Section 6 – Mineral Waste	BRM GRM RHM
119	<p>All rejects (dense medium coarse rejects, fine rejects and dewatered tailings) will be placed within the existing GRB mine complex spoil dump in accordance with GRB mine complex EA EPML00853413 (previously MIN100921609).</p>	Section 6 – Mineral Waste	GRM

Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
120	<p>Interburden and potential reject (i.e. coal roof and coal floor materials), GMS coal samples collected from in-fill drill core samples and actual coarse rejects and tailings (dewatered) generated from the project will be assessed on an annual basis for the following geochemical parameters:</p> <ul style="list-style-type: none"> • pH (1:5) and electrical conductivity (EC) (1:5); • net acid producing potential (including acid neutralising capacity), Total sulphur and chromium-reducible sulfur; • net acid generation; • total aluminium, arsenic, cadmium, chromium, copper, cobalt, lead, molybdenum, nickel, selenium, antimony, uranium and zinc; • dissolved aluminium, arsenic, cadmium, chromium, copper, cobalt, lead, molybdenum, nickel, selenium, antimony, uranium and zinc in 1:5 (solid to liquid) extracts; and • cation exchange capacity, sodium absorption ratio and exchange sodium percentage. <p>Information gathered from this annual monitoring of coarse rejects and tailings will be used to determine management and placement of rejects and dewatered tailings at the GRB mine complex.</p>	Section 6 – Mineral Waste	GRM
121	Manage water from dewatering of excavations so that surface water environmental values are maintained.	Section 7 – Surface Water	GRM
122	<p>Conduct an assessment of all dams and levees against <i>Manual for Assessing Hazard Categories and Hydraulic Performance of Dams</i> (EHP 2012). If required, design, construction, operation and maintenance will comply with:</p> <ul style="list-style-type: none"> • <i>Guideline Structures which are dams or levees constructed as part of environmentally relevant activities</i> (EHP 2013). • <i>Code of Compliance Environmental authorities for high hazard dams containing hazardous waste</i> (EHP 2009). 	Section 7 – Surface Water Section 8 – Groundwater	GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
123	Design stormwater systems for mine industrial area (MIA), coal handling and preparation plant (CHPP) and accommodation village to provide containment of water that has come into contact with contaminants. Where practicable, install permanent systems as early as possible in the construction phase.	Section 7 – Surface Water	GRM RHM
124	If necessary, construct drainage channels to drain permanent ponds created by subsidence so that downstream flows are not significantly reduced. A future assessment to be undertaken based on the actual level of subsidence and an assessment of net benefit in relation to constructing the drains.	Section 7 – Surface Water	GRM RHM
125	Develop and implement a subsidence management plan covering: <ul style="list-style-type: none"> • a description of the pre-subsidence landscape, environmental, social and economic values and environmental quality objectives; • discussion of the impacts of subsidence; • management approach; • monitoring and corrective action; and • reporting. 	Section 7 – Surface Water Section 10 – Aquatic Ecology	BRM GRM RHM
126	Implement proactive measures, such as bank stabilisation works, in advance of subsidence.	Section 7 – Surface Water	GRM RHM
127	Where works are required to repair surface cracks from subsidence or erosion, techniques that minimise impacts on remnant native vegetation will be used.	Section 7 – Surface Water Section 9 – Terrestrial Ecology	BRM GRM RHM
128	Proposed water management infrastructure (including dams and levees) to be designed by suitably qualified persons, and where relevant, in accordance with statutory requirements and guidelines, such as the EHP (2012) <i>Manual for Assessing Hazard Categories and Hydraulic Performance of Dams</i> .	Section 7 – Surface Water	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
129	Pumps and pipelines used for transferring mine water to be designed by a suitably qualified person.	Section 7 – Surface Water	BRM GRM RHM
130	Design stormwater systems for the MIA, CHPP and accommodation village to allow for: <ul style="list-style-type: none"> • separation of clean and dirty water systems; • retention of stormwater flows; • sediment basins able to contain stormwater runoff from the Red Hill MIA, CHPP and accommodation village areas up to the 1:10 Annual Exceedence Probability (AEP) rainfall event; • treatment of water from areas of high risk of hydrocarbon contamination through a treatment system to remove hydrocarbons; • reuse of stormwater where possible; • discharge to suitable watercourses with protection to prevent erosion and scouring; and • effects of climate change including increased storm intensity. 	Section 7 – Surface Water	GRM RHM
131	Determine flood protection measure for MIA and mine access to achieve flood protection up to the 1:1000 AEP event. Design any levees in accordance with EHP (2012) <i>Manual for Assessing Hazard Categories and Hydraulic Performance of Dams</i> . Suitable qualified persons to undertake design of flood protection measures.	Section 7 – Surface Water	GRM
132	Schedule levee to be in place early in construction and during the dry season, if practicable.	Section 7 – Surface Water	GRM
133	Pump any water removed from excavations to the storage dams within GRM for reuse.	Section 7 – Surface Water	GRM RHM
134	Conduct regular maintenance and inspections of any levee and dam structures in accordance with the EHP (2012) <i>Manual for Assessing Hazard Categories and Hydraulic Performance of Dams</i> .	Section 7 – Surface Water	GRM RHM

Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
135	If a levee is constructed and subsidence of the levee occurs, repair subsidence damage. Repair measures and design and construction of repair works to be overseen by a suitable qualified person, and to be in accordance with the EHP (2012) <i>Manual for Assessing Hazard Categories and Hydraulic Performance of Dams</i> .	Section 7 – Surface Water	GRM
136	Review and update mine water management plan every five years, or more frequently if operational requirements change significantly.	Section 7 – Surface Water	BRM GRM RHM
137	Record the following in relation to mine water transferred to GRB mine complex: <ul style="list-style-type: none"> • daily volume; • pH using a continuous monitoring system; and • electrical conductivity, using a continuous monitoring system. 	Section 7 – Surface Water	BRM GRM RHM
138	Surface water quality monitoring will be undertaken at eight locations across the Upper and Lower Isaac River, Goonyella Creek and 12 Mile Gully. Baseline monitoring will be undertaken at seven locations along the same waterways. The Upper Isaac sites will be developed as subsidence affects existing Isaac River upstream monitoring points. Final locations will be determined based on access, suitability of the stream channel and operational requirements. Monitoring sites will be equipped with continuous water quality measurement for EC and pH. Monitoring parameters will include: <ul style="list-style-type: none"> • physico-chemical: electrical conductivity (field and lab), pH (field and lab), suspended solids, flow rate, dissolved oxygen (field), temperature (field), sulphate (lab), fluoride (lab), sodium (lab); • metals (total and dissolved): aluminium, arsenic, boron, cadmium, chromium, cobalt, copper, iron, lead, manganese, mercury, molybdenum, nickel, selenium, silver, uranium, vanadium, zinc; • total petroleum hydrocarbons: C8 to C9, C10 to C36; and 	Section 7 – Surface Water	GRM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
	<ul style="list-style-type: none"> nutrients: ammonia, nitrate. <p>Monitoring will be undertaken fortnightly during and after major rainfall events where flow is sufficient and access is available.</p> <p>Water quality monitoring will be undertaken in accordance with EHP's Monitoring and Sampling Manual (which provides guidance on techniques, methods and standards for sample collection; sample handling; quality assurance and control; and data management).</p>		
139	Design any subsurface components to allow for groundwater pressure relief where required.	Section 8 – Groundwater	BRM GRM RHM
140	Design and construct IMG drainage wells in accordance with industry standards, with the goal of maintaining hydraulic isolation between discrete water bearing formations, where safe and practical. Integrity of the wellhead and casing will be monitored as part of normal operations.	Section 8 – Groundwater	BRM GRM RHM
141	Augment the existing groundwater monitoring network within and adjacent to the proposed mine area. Conduct baseline (water level and quality) monitoring over a two year period prior to commencement of coal extraction. At least 12 samples to be collected over the two year period.	Section 8 – Groundwater	GRM RHM
142	Determine hydrochemical contaminant limits and trigger levels for comparison to the Environmental Protection (Water) Policy 2009 groundwater quality objectives for the Isaac River sub-catchment (zone 34).	Section 8 – Groundwater	GRM
143	Enter into make-good agreements with landholders with registered (at risk) bores within the predicted 1 and 5 m drawdown contour projected at the end of mining. These drawdown contours to be validated using the updated groundwater model.	Section 8 – Groundwater	BRM GRM RHM
144	Design stockpile areas with compacted or hardstand base, and diversion of run-off to mine water management system. Disturbed areas to be sloped to prevent ponding water.	Section 8 – Groundwater	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
145	Pre-mining dewatering will be required to ensure safe (dry) working areas during drift construction. All groundwater extracted will be utilised within the GRB mine water management system.	Section 8 – Groundwater	GRM
146	In the unlikely event of groundwater contamination, mitigation strategies may include some or all of the following measures (depending on the specific requirements): <ul style="list-style-type: none"> • investigation of water management system integrity; • removal of contaminant source and repair/ redesign of any water management structures as required; • installation of and pumping from, groundwater interception wells; and/or • installation of and pumping from groundwater interception trenches. 	Section 8 – Groundwater	BRM GRM RHM
147	If monitoring indicates that the drawdown area may be larger than predicted, update groundwater model and model predictions regularly (no longer than every three years).	Section 8 – Groundwater	BRM GRM RHM
148	At mine closure, shaping and rehabilitation of waste piles and infrastructure footprints will be required to limit infiltration and run-off of potentially poor quality water and to monitor the effectiveness of rehabilitation. In addition, continuous groundwater level monitoring will be conducted across at least two wet and dry seasons using vibrating wire piezometers automatically recording water levels at least every 12 hours.	Section 8 – Groundwater	BRM GRM RHM
149	On completion of monitoring, the following will be determined for inclusion in the mine EA in accordance with the groundwater quality objectives of the Isaac River catchment (zone 34): <ul style="list-style-type: none"> • groundwater trigger levels, based on the 85th percentile value of groundwater quality results; and • groundwater contaminant limits based on the 99th percentile of groundwater quality results. 	Section 8 – Groundwater	GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
150	<p>The following groundwater monitoring routine will be undertaken during operations:</p> <ul style="list-style-type: none"> • groundwater levels in standpipe monitoring bores and vibrating wire piezometers automatically with at least one reading every 48 hours; and • groundwater quality sampling will be undertaken at least once every wet season and once every dry season with analysis of the parameters: - pH, EC, TDS, major cations and anions, nutrients (total nitrogen, nitrous oxides, ammonia, phosphorous), selected dissolved metals (aluminium, arsenic, boron, chromium, cobalt, copper, iron, lead, manganese, mercury, nickel, selenium and zinc), and, if a significant fuel spill has occurred, total petroleum hydrocarbons (for bores monitoring potential fuel spill / seepage sources). 	Section 8 – Groundwater	BRM GRM RHM
151	<p>If groundwater quality results exceed trigger levels set out in the EA, monitoring will be repeated within 60 days. If concentrations exceed trigger levels in the second sampling event then an investigation into cause, optimum response, and the potential for environmental harm must be conducted and mitigation measures developed and implemented to address the outcome of the investigation.</p>	Section 8 – Groundwater	BRM GRM RHM
152	<p>Additional monitoring will be conducted in down-gradient bores in the event of a significant spill of fuels or other contaminants with potential to cause groundwater contamination.</p>	Section 8 – Groundwater	BRM GRM RHM
153	<p>Groundwater monitoring results will be reviewed annually to detect any changes in groundwater regimes that may indicate environmental harm or potential impacts on nearby groundwater users. The review will be conducted by a suitably qualified and experienced hydrogeologist and will include assessment of groundwater level and quality data, and the suitability of the monitoring network.</p>	Section 8 – Groundwater	BRM GRM RHM
154	<p>If groundwater monitoring indicates potential for groundwater impacts to extend further east, south or north of the proposed groundwater monitoring network, the groundwater monitoring network will be expanded as required.</p>	Section 8 – Groundwater	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
155	Dewatering volumes from mine dewatering and gas production will be recorded.	Section 8 – Groundwater	BRM GRM RHM
156	Post-closure groundwater monitoring requirements will be determined at least five years prior to mine closure.	Section 8 – Groundwater	GRM RHM
157	Groundwater monitoring and sampling will be conducted by a suitably qualified and experienced professional in accordance with recognised procedures, as detailed in the Murray Darling Basin Commission Groundwater Quality Sampling Guidelines, or the current edition of the Queensland Government <i>Monitoring and Sampling Manual</i> (DERM 2009) or subsequent updated versions; and the AS/NZS 5667.11:1998 <i>Guidance on sampling groundwater</i> .	Section 8 – Groundwater	BRM GRM RHM
158	Establish a meteorological monitoring station in the vicinity of the project ROM coal stockpiles, located to the east of the current open-cut mining operations to allow real time identification of potentially adverse meteorological conditions.	Section 11 – Air Quality	BRM GRM RHM
159	Based on detailed design and further dust emissions modelling, determine whether engineering controls are required to be incorporated into design to address localised impacts of dust emissions from RHM activities. Controls may include: <ul style="list-style-type: none"> • Conveyor options, depending on moisture content of underground ROM coal, include partial or full enclosure of conveyors, belt scrapers or water sprays/foggers. • Transfer point options include partial or full enclosure, belt scrapers or water sprays/foggers. • Bins: either enclose or limit drop height into surge bins. • Stacking and reclaiming mitigation options include water sprays or use of low dust-generating techniques such as telescopic stackers with chutes and scraper reclaimers. • Ventilation outlets can be fitted with a dust collection system depending on final location and design of these outlets. 	Section 11 – Air Quality	GRM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
160	If dust clouds are observed from exposed soils associated with project, unsealed roads, surfaces and stockpiles should be watered. Indicative rate should be a minimum of two litres per square metre per hour (L/m ² /hr).	Section 11 – Air Quality	GRM
161	Use water sprays on coal stockpiles as required, maintaining moisture content and minimising dust.	Section 11 – Air Quality	GRM
162	If dust emission issues arise, consider the following dust control methods: <ul style="list-style-type: none"> • manage breaking and crushing of coal at the sizing station to reduce visible dust; • limit the use of dozers at the Red Hill CHPP; and • consider retrofit of enclosures on conveyors, bins and transfer points and/or water sprays at key dust sources. 	Section 11 – Air Quality	
163	Implement greenhouse gas minimisation measures and site based programs particularly targeting: <ul style="list-style-type: none"> • electrical efficiency; • diesel efficiency; and • fugitive emissions. 	Section 12 – Greenhouse Gases	GRM RHM
164	Determine most appropriate means to safely manage and preferably beneficially use IMG in a manner compliant with the <i>Mineral Resources Act 1989</i> and <i>Petroleum and Gas (Production and Safety) Act 2004</i> .	Section 12 – Greenhouse Gases	BRM GRM RHM
165	Consider energy efficiency in selection and design of buildings, plant and equipment including: <ul style="list-style-type: none"> • high efficiency electrical motors; • variable speed pumps, possibly with high-efficiency linings; and • variable speed conveyors to match belt speeds to load. 	Section 12 – Greenhouse Gases	GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
166	Consider energy efficiency in personnel and material transportation methods and routes.	Section 12 – Greenhouse Gases	GRM RHM
167	Minimise diesel consumption in mobile plant and for the production of stationary energy.	Section 12 – Greenhouse Gases	GRM RHM
168	Participate corporate energy efficiency and greenhouse gas reduction corporate programs and government initiatives, including: <ul style="list-style-type: none"> • energy excellence program; and • mine methane management. 	Section 12 – Greenhouse Gases	GRM RHM
169	If safe and practicable, minimise venting of goaf gas through flaring or mixing with IMG for beneficial use options.	Section 12 – Greenhouse Gases	BRM GRM RHM
170	Record diesel, electricity and other energy consumption using National Greenhouse and Energy Reporting system requirements.	Section 12 – Greenhouse Gases	BRM GRM RHM
171	Regularly monitor the compressed air circuit so that leaks are repaired in a timely manner.	Section 12 – Greenhouse Gases	BRM GRM RHM
172	Maintain contact and provide information to local community networks in relation to noise generating activities.	Section 13 – Noise and Vibration	GRM
173	In the event of a complaint, implement complaint investigation and resolution as per BMA procedures.	Section 13 – Noise and Vibration	GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
174	<p>If a conveyor and train load-out is required in proximity to Eureka Village, consider potential options for addressing noise levels at Eureka Village, including:</p> <ul style="list-style-type: none"> • maximising separation distance between the conveyor and Eureka Village; or • increasing outside to inside noise reduction in accommodation units using acoustically upgraded constructions for the accommodation units (for example thicker glazing, acoustic door seals and upgraded wall constructions). • Erect temporary noise barriers. 	Section 13 – Noise and Vibration	GRM
175	<p>Consider noise impacts within Red Hill accommodation village when designing village layout and selecting plant and equipment. Considerations may include:</p> <ul style="list-style-type: none"> • selection of quieter mechanical plant; • increasing the building façade noise reduction above the nominal 20 dB, for example by double glazing or choice of wall materials; • locating the plant such that it is shielded (for example behind buildings or on roof tops) from sensitive areas; • increasing the distance between the plant and the nearest accommodation unit; and • placing of noise barriers or plant enclosures around noise items. 	Section 13 – Noise and Vibration	RHM
176	<p>Prior to commencement of construction, and at regular intervals during construction, notify local community of upcoming noisy activities through existing BMA community liaison networks.</p>	Section 13 – Noise and Vibration	GRM RHM
177	<p>Provide contact details for noise related complaints in project related literature and on the website.</p>	Section 13 – Noise and Vibration	GRM RHM

Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
178	<p>If valid noise complaints are received, noise levels will be addressed utilising noise control strategies set out in AS 2436-1981 <i>Guide to Noise Control on Construction, Maintenance and Demolition Sites</i> including:</p> <ul style="list-style-type: none"> • use of quieter plant and equipment if practical for undertaking the work efficiently; • increased maintenance of equipment in check noise attenuation features in good working order; • awareness raising among operators of construction equipment to identify potential noise problems and techniques to minimise noise emission such as turning equipment off when not in use; and • relocate noise sources away from sensitive receptors, if possible. 	Section 13 – Noise and Vibration	GRM RHM
179	Consider use of ‘self-adjusting volume’ or ‘broad-band buzzer’ type reversing alarms where these may assist in reducing annoyance to neighbours and those in accommodation villages.	Section 13 – Noise and Vibration	GRM
180	Plant and equipment will be regularly inspected and maintained to keep in good working order.	Section 13 – Noise and Vibration	GRM
181	Operators of equipment to be made aware of potential noise problems and of techniques to minimise noise emissions through a continuous process of operator education.	Section 13 – Noise and Vibration	GRM
182	<p>Implement long term noise monitoring (or supplement existing GRB monitoring if required). Monitoring events will consist of deployment of noise loggers at selected locations for a period of seven days with attended monitoring also undertaken during this period. Monitoring frequency will be as follows:</p> <ul style="list-style-type: none"> • collection of one set of baseline data prior to commencement of construction; • at least one monitoring event per year during construction; • quarterly monitoring collection of baseline data during the first year of operations; and • annual monitoring subsequently. 	Section 13 – Noise and Vibration	GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
183	Haulage will occur in accordance with the <i>Transport Operations (Road Use Management) Act 1995</i> . It is noted that approvals and transport of dangerous materials are the consignor and/or transporter's responsibility and will be made in accordance to the TMR (2008) Australian Dangerous Goods Code, Seventh Edition (ADG Code 2008) requirements. Waste materials will be transported by waste transport contractors authorised under the <i>Sustainable Planning Act 2009</i> and <i>Environmental Protection Act 1994</i> using the waste transport system established under the <i>Environmental Protection Act 1994</i> .	Section 14 – Transport Section 20 – Health, Safety and Risk	GRM RHM
184	If construction and operation traffic generation differs significantly from that estimated for the EIS (increase or decrease), re-run traffic modelling (road network performance, intersection performance and pavement assessment) using updated construction and operation traffic estimates.	Section 14 – Transport	GRM RHM
185	Prior to the commencement of construction, develop and implement a traffic management and road user management plan.	Section 14 – Transport Section 18 – Social Impact Assessment	GRM RHM
186	Prior to the commencement of construction, liaise with Isaac Regional Council in relation to required intersection upgrades and the extent to which project-related traffic (once determined prior to construction) might impact on these intersections. Where it is demonstrated that an impact will occur, proportionally contribute to upgrade requirements may be required.	Section 14 – Transport	GRM RHM
187	If additional pavement assessment indicates that pavement upgrades are necessary on the Peak Downs Highway, reach agreement with Department of Transport and Main Roads (Peak Downs Highway) regarding required contributions.	Section 14 – Transport	GRM RHM
188	If over-dimensional loads are required: <ul style="list-style-type: none"> consult with Queensland Police Service; obtain permits; and arrange for escorts and other traffic management requirements. 	Section 14 – Transport	GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
189	Compulsory induction training will be required for all workers and contractors, except where contractors are performing low risk activities. The induction will cover all relevant safety, environmental and cultural matters in accordance with any relevant legislation or as prescribed separately by BMA's policies and procedures.	Section 7 – Surface Water Section 9 – Terrestrial Ecology Section 10 – Aquatic Ecology Section 12 – Greenhouse Gases Section 14 – Transport Section 15 – Waste Section 16 – Cultural Heritage Section 20 – Health Safety and Risk	GRM RHM
190	Waste generated during site preparation and construction (including construction of IMG infrastructure) will be segregated for reuse onsite or subsequent collection by an authorised third party waste contractor for recycling or disposal at a registered landfill.	Section 15 – Waste Management	BRM GRM RHM
191	Store and handle wastes on-site in accordance with existing management measures within GRB. Regulated wastes will be handled in accordance with materials safety data sheets (MSDS) and product-specific practices with waste materials stored, handled and treated by a licensed operator for reprocessing, recycling or final disposal. All waste contractors will hold appropriate authorisations.	Section 15 – Waste Management	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
192	<p>Prior to the commencement of construction, select appropriate sewage treatment plants for the Red Hill MIA, CHPP and accommodation village, based on:</p> <ul style="list-style-type: none"> • anticipated waste quantities; • planned reuse or disposal of treated wastewater; and • MEDLI modelling outputs in terms of suitability of lands for irrigation of treated wastewater. <p>If MEDLI modelling indicates that land disposal is appropriate, prepare a treated effluent irrigation management plan for land disposal of treated sewage.</p>	Section 15 – Waste Management	GRM RHM
193	<p>Determine appropriate locations and layouts for permanent waste storage areas at the MIA, CHPP and the accommodation village. Consideration should be given to:</p> <ul style="list-style-type: none"> • ability to segregate recyclable components of the waste stream, and segregation of hazardous and incompatible wastes; • quantities of waste likely to be stored, including some contingency in the event that regular waste collection services are disrupted; • location away from areas where vehicle interactions may occur; • storage requirements for hazardous wastes to minimise risk of release to the environment; • health and safety requirements including exposure to hazardous materials, safe lifting and working from heights; and • ease of access and egress by waste collection vehicles. 	Section 15 – Waste Management	GRM RHM
194	<p>Major waste streams and regulated waste streams will be tracked in terms of quantities, opportunities for minimisation and reuse and appropriate disposal.</p> <p>Develop a waste register for construction for recording the types, quantities and management measures for wastes generated. Update waste register monthly and review to identify potential for waste minimisation.</p>	Section 15 – Waste Management	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
195	Place waste bins for paper, cardboard, plastic, metal and putrescibles wastes at appropriate locations throughout construction areas. Place and maintain signs on all waste storage containers and locations regarding type of waste to be placed in the container or storage area. Store wastes only in designated areas and storage containers.	Section 15 – Waste Management	GRM RHM
196	Manage wastes in accordance with management strategies outlined in the EIS and as identified through examination of the waste register or discussions with waste contractors and service providers.	Section 15 – Waste Management	GRM RHM
197	Reuse cleared vegetation on site for rehabilitation, landscaping and/or erosion control Green waste may only be burnt as a last resort, subject to obtaining necessary permits and approvals.	Section 15 – Waste Management	BRM GRM RHM
198	Drill cuttings and drilling mud are to be removed from the drill pad area and either used in reinstatement activities within the mine footprint, or disposed of in spoil disposal areas at the GRB mine complex (contaminated land disposal permits may be required if contaminated soil is moved across property boundaries).	Section 15 – Waste Management	BRM GRM RHM
199	Establish temporary waste storage areas at drilling pads. Waste storage areas must include secure storage of any oily wastes or other contaminated wastes.	Section 15 – Waste Management	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
200	<p>Develop and maintain a waste register (in association with existing site practices at GRB) for operations to record the types, quantities and management measures for wastes generated. Record actual quantities of each waste stream that is removed or reused and the waste management method (i.e. removed for landfill disposal reprocessing, reuse).</p> <p>Waste records will be retained as follows:</p> <ul style="list-style-type: none"> • Details of contractors, waste removal, treatment and final destination will be kept for seven years. • Records of regulated waste transport will be retained for seven years. • Waste register will be updated monthly. <p>The waste register will be reviewed monthly in the first year of operation and then quarterly to identify:</p> <ul style="list-style-type: none"> • New waste types. In the event that new waste types are identified, a review of waste minimisation opportunities and waste disposal requirements will be undertaken. • Trends in waste quantities, particularly increases in waste generation. If significant increases are identified, investigation will be undertaken into the source of the waste and opportunities to reduce, reuse or recycle the waste. • Whether reuse and recycling opportunities are being maximised. • Establish inventory system for chemicals, solvents and other hazardous materials to minimise over-ordering. 	Section 15 – Waste Management	BRM GRM RHM
201	<p>Conduct a waste audit every two years in association with existing GRB management practices:</p> <ul style="list-style-type: none"> • The audit will highlight potential improvements in waste management and minimisation, including trends in waste management and minimisation since the last audit. • Waste contract arrangements will be reviewed to check for opportunities to maximise reuse and recycling. • Waste contractors authorisations under the EP Act will be confirmed. 	Section 15 – Waste Management	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
202	BMA will comply with a the Aboriginal cultural heritage duty of care requirements under the <i>Aboriginal Cultural Heritage Act 2003</i> (ACH Act) to ensure that mechanisms are established and implemented to protect known Aboriginal cultural heritage, as well as cultural heritage items detected during project activities. This will occur in accordance with Cultural Heritage Management Plans (CHMP) developed with each registered Aboriginal party group and approved under the ACH Act.	Section 16.2 – Aboriginal Cultural Heritage	BRM GRM RHM
203	Develop a CHMP in relation to cultural heritage places and items in consultation with the registered Aboriginal parties and compliant with requirements of the ACH Act.	Section 16.2 – Aboriginal Cultural Heritage	BRM GRM RHM
204	Sites of Aboriginal cultural heritage significance, archaeological significance and historical interest will be marked on constraints maps for the project.	Section 16.2 – Aboriginal Cultural Heritage Section 16.3 – Non-Indigenous Cultural Heritage	BRM GRM RHM
205	As ground visibility and access has prevented adequate survey in some areas with high potential for cultural heritage material to occur, monitoring of these areas may also be required during surface disturbance works, with pre-agreed procedures to be followed as set out in the relevant CHMPs.	Section 16.2 – Aboriginal Cultural Heritage	BRM GRM RHM
206	IMG infrastructure will avoid sites of heritage and archaeological significance and historical interest wherever practicable. In the event that disturbance in these areas cannot be avoided: <ul style="list-style-type: none"> Further archaeological monitoring should be undertaken prior to disturbance in this area. This should be undertaken by an archaeologist and a report prepared for BMA. Photographic records should be taken of significant sites prior to disturbance. These records should be retained by BMA. 	Section 16.3 – Non-Indigenous Cultural Heritage	GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
207	Prior to works commencing in the area, a basic level of photographic recording should be conducted for relevant sites nominated in the EIS to capture the nature of any identified items and their context within the cultural environment.	Section 16.3 – Non-Indigenous Cultural Heritage	GRM RHM
208	In the event that items of possible cultural heritage significance are identified, work in the area should cease and mine environmental officers contacted. Mine environmental officers will determine whether archaeological assessment is required and make arrangements for this assessment as well as notification to EHP.	Section 16.3 – Non-Indigenous Cultural Heritage	BRM GRM RHM
209	<p>12 months prior to the commencement of construction, review the social baseline and impact assessment to ensure the assessment of impacts is accurate in the current context, and refine the social mitigation strategies proposed in association with BMA’s broader community development strategy. Actions to be undertaken include:</p> <ul style="list-style-type: none"> • identification of emerging stakeholder or community concerns in relation to the project; • assessing the capacity of local social infrastructure and services and identify implications for on-site service provision or collaborative strategies with local service providers; • reviewing skills availability for construction and operation, and developing appropriate training and recruitment strategies; • engagement with IRC and DSDIP in relation to Royalties for Regions and RARTP priority areas and opportunities for appropriate strategic investment; • developing an evidence base of housing availability and affordability trends; and • reviewing the status of key social indicators. 	<p>Section 13 – Noise and Vibration</p> <p>Section 14 – Transport</p> <p>Section 18 – Social Impact Assessment</p>	GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
210	<p>Within 6 months of practical completion of construction of the GRM incremental expansion and RHM underground expansion option, and during operations if requested by the Coordinator-General, provide a report describing:</p> <ul style="list-style-type: none"> the status of social conditions outlined in Section 18; actions and adaptable management strategies to avoid, manage or mitigate project-related impacts on social conditions and indicators; actions to enhance local employment, training and community and economic development opportunities; actions to avoid, manage or mitigate project-related impacts on local community services, social infrastructure and community safety and wellbeing; and actions to inform the community about project impacts and show that community concerns about project impacts have been taken into account when reaching decisions. 		
211	Accommodate up to 100 per cent of construction and operation workforces at an accommodation village within the proposed mining lease.	Section 15 – Waste Management Section 18 – Social Impact Assessment	RHM
212	Incorporate the project into BMA's Community Development Strategy.	Section 18 – Social Impact Assessment	GRM RHM
213	Incorporate project information into BMA wide community planning support activities.	Appendix P	GRM RHM
214	Prior to the commencement of construction, develop and implement an ongoing stakeholder engagement plan which identifies stakeholders to be consulted, information requirements and suitable consultation methods and communication activities and timing.	Section 18 – Social Impact Assessment Appendix P	GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
215	<p>Develop and implement the following management and monitoring strategies in relation to the accommodation village:</p> <ul style="list-style-type: none"> • workforce health and support services; • a Workforce Code of Conduct; and • an Accommodation Village Management Plan which addresses workforce well-being and facility provision, engagement with local services including Queensland Police Service, Fire and Rescue and Ambulance Services, engagement with community members to anticipate and avoid impacts on community values, management of behaviour in the accommodation villages, gender and cultural issues and the complaints management procedure. 	Section 18 – Social Impact Assessment Appendix P	GRM RHM
216	BMA will arrange air transport and/or bus transport for remote workers both during construction and operations, and all transport between site and the Red Hill accommodation village.	Section 18 – Social Impact Assessment Appendix P	
217	Include the GRM incremental expansion and RHM underground expansion option in BMA-wide programs in relation to medical, health and social services.	Appendix P	GRM RHM
218	Investigate options to enhance health information provision by members of the remote workforce.	Appendix P	GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
219	<p>Develop and implement a workforce management plan consistent with the <i>Work for Queensland: Resources Skills and Employment Plan</i> (Skills Queensland 2012) and Appendix P.</p> <p>For the construction phase, the contractor will coordinate across construction contractors to manage the demand for tradespeople over the course of construction. To facilitate opportunities for training and employment of local people, the contractor is likely to require liaison with Construction Skills Queensland and the Department of Education Employment and Training.</p> <p>For operations, BMA's existing Workforce Development Strategy will apply to the project. Prior to the commencement of construction, BMA will establish targets for female and Indigenous workforce participation. BMA would also commit to undertaking training and recruitment strategies to significantly increase the number of workers who are new entrants to coal mining.</p>	<p>Section 18 – Social Impact Assessment Appendix P</p>	<p>GRM RHM</p>
220	<p>Implement BMA's local buy program on all phases of the project. Prepare and implement a local industry participation plan consistent with <i>Local Industry Policy: A Fair Go for Local Industry, Guidelines</i> (DSDIP 2013) and Appendix P.</p>	<p>Section 18 – Social Impact Assessment Section 19 – Economics Appendix P</p>	<p>GRM RHM</p>
221	<p>Develop and implement a safety and health management system which meets requirements of the <i>Coal Mining Safety and Health Act 1999</i>, complies with BHP Billiton group level documents and includes matters set out in the Appendix P. The safety and health management system will include comprehensive identification of hazards and assessment of risks, development of appropriate controls to address risks and monitoring of the effectiveness of controls.</p>	<p>Section 18 – Social Impact Assessment Section 20 – Health, Safety and Risk Appendix P</p>	<p>BRM GRM RHM</p>
222	<p>Provide an appropriate level of security to control public access to areas affected by the mining activity.</p>	<p>Section 20 – Health, Safety and Risk</p>	<p>BRM GRM RHM</p>



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
223	<p>Prepare and implement an emergency management plan for the construction and operation phases (or update existing plans where appropriate). Consult with relevant emergency service providers including the Queensland Fire and Rescue Service, Queensland Police and Queensland Ambulance Service during preparation of the plan and throughout the implementation phase. In relation to environmental incidents, the emergency management plan will include:</p> <ul style="list-style-type: none"> • spill response and management, both on and off the mining lease; • bushfire; and • flood. 	<p>Section 18 – Social Impact Assessment Section 20 – Health, Safety and Risk</p>	<p>BRM GRM RHM</p>
224	<p>Implement BMA's incident reporting and investigation procedure.</p>	<p>Section 20 – Health, Safety and Risk</p>	<p>BRM GRM RHM</p>
225	<p>Subsidence management and monitoring for the Broadmeadow extensions will be integrated with existing BRM subsidence management plan for operations.</p> <p>Prior to the commencement of operations for GRM and RHM, a subsidence management plan will be prepared. The plan will be consistent with the BRM subsidence management plan and adopt measures that have been successful for BRM operations, covering:</p> <ul style="list-style-type: none"> • a description of the pre-subsidence landscape including: <ul style="list-style-type: none"> – ecological values; – land use and agricultural land suitability; – topography; – geology; – soil types and constraints; – watercourses, including cross sectional and longitudinal profiles; – surface water quality; – groundwater resources; 	<p>Section 7 – Surface Water Appendix I6 – Geomorphology Appendix I7 – Subsidence Hydrology Assessment</p>	<p>BRM GRM RHM</p>



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
	<ul style="list-style-type: none"> – infrastructure; and – cultural heritage. • environmental, social and economic values and environmental quality objectives; • impacts of subsidence: <ul style="list-style-type: none"> – predicted subsidence effects (first order effects) including: <ul style="list-style-type: none"> ○ likely depth of subsidence; ○ post subsidence topography and formation of subsidence ponds; and ○ timing of subsidence. – geomorphic response (second order effects): <ul style="list-style-type: none"> ○ areas of increase channel erosion risk; ○ areas of avulsion risk; ○ hydraulic impacts; and ○ sediment transport impacts. – water quality and quantity (third order effects): <ul style="list-style-type: none"> ○ in-channel ponding; ○ overland flow capture and storage; ○ surface water quality; and ○ groundwater. – vegetation and habitat (fourth order effects): <ul style="list-style-type: none"> ○ trees and shrubs; and ○ grasses and pasture. – effects on infrastructure. • management approach: <ul style="list-style-type: none"> – proactive and preventative works; – responsive works and adaptive management based on observed outcomes; 		



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
	<ul style="list-style-type: none"> - rehabilitation; and - monitoring and corrective action. • reporting. <p>Proactive measures, such as bank stabilisation works, will be undertaken. These works will be conducted within areas to be subsided in early years of mining.</p>		
226	<p>An adaptive management approach is proposed to subsidence management, consistent with approaches currently in place for BRM and other mines in the Isaac River sub-basin. Basic principles of adaptive management rely on:</p> <ul style="list-style-type: none"> • assessment of environmental and social risk associated with changes observed; • design of operational treatments appropriate to significance of risk associated with observed changes - operational treatments may include both proactive and reactive measures; • implementation of treatments; • monitoring against key response indicators to test effectiveness of the treatment; • re-evaluation of effectiveness of the implemented mitigation measures; and • adjustment of policies and practices. 	<p>Section 7 – Surface Water Appendix 16 – Geomorphology Appendix 17 – Subsidence Hydrology Assessment</p>	<p>BRM GRM RHM</p>
227	<p>Based on experience managing subsidence at the BRM, the following controls are expected to be implemented:</p> <ul style="list-style-type: none"> • Proactive works as required to stabilise streams prior to subsidence, potentially including: <ul style="list-style-type: none"> - installing timber groynes/pile field retards or other toe of bank protection measures at the base of the channel banks (extending into the channel) to mitigate erosion undercutting the channel banks and to facilitate creation of in-channel benches; - implementing toe of bank protection measures near upstream limit of subsidence on the Isaac River - these measures will most likely also be in the form of timber groynes or pile fields; and - maintaining and enhancing high density vegetation cover on the Isaac River and 	<p>Section 7 – Surface Water Appendix 16 – Geomorphology Appendix 17 – Subsidence Hydrology Assessment</p>	<p>BRM GRM RHM</p>



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
	<p>other tributaries where potential for avulsion or cut-off is identified.</p> <ul style="list-style-type: none"> Where surface cracks do not self-seal, or are large enough and located such as to pose a safety risk, repair of surface cracking. This may include ripping the surface surrounding the cracks, regrading to a smooth surface profile, and revegetating the cracked areas. Techniques will minimise disturbance to healthy vegetation. Grasses and other groundcover will be slashed rather than cleared to allow access and if vegetation is to be cleared, it will be cleared to ground level only. Repair of erosion wherever this may result in loss of topsoil resources or degradation of downstream water quality. Management of stock access prior to and during subsidence and until a stable landform is achieved. Signage and fencing to restrict human and vehicle access to subsided areas where a hazard exists, or where this is necessary to allow vegetation to re-establish. <p>For more substantial cracks (predicted up to 0.5 m wide):</p> <ul style="list-style-type: none"> topsoil will be stripped and stockpiled; clay material will be imported to fill and seal cracks; topsoil will be respread once cracks have sealed; and the area will be seeded with appropriate plant species. 		
228	<p>After subsidence has occurred in the 12 Mile Gully catchment:</p> <ul style="list-style-type: none"> assess the depth and volume of subsidence troughs created; monitor sediment deposition; determine whether partial drainage of selected ponds is required to maintain overall flows from the 12 Mile Gully catchment; and if partial drainage is required, design and construct channels to mimic natural channels as closely as possible, in particular creating a stable flow path. 	<p>Section 7 – Surface Water Appendix I6 – Geomorphology Appendix I7 – Subsidence Hydrology Assessment</p>	<p>GRM RHM</p>



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
229	The Subsidence Management Plan will be revised annually.	Section 7 – Surface Water Appendix I6 – Geomorphology Appendix I7 – Subsidence Hydrology Assessment	BRM GRM RHM
230	Subsidence management will be closely integrated with management of soils, terrestrial ecology and rehabilitation.	Section 7 – Surface Water Appendix I6 – Geomorphology Appendix I7 – Subsidence Hydrology Assessment	BRM GRM RHM
231	<p>Prior to commencement of mining under the Isaac River, Goonyella Creek and 12 Mile Gully, a baseline data set of existing stream conditions and influences will be collected. This will include:</p> <ul style="list-style-type: none"> • establishment of monitoring points, typically across pillars which are the main focus for erosion and bank/channel instability; • collection of information based on the Index of Diversion Condition; • photographic transects; • aerial photography; • cross section and long section survey; • riparian vegetation assessment; • flow event information; and • qualitative geomorphological description. <p>Consideration will be given to monitoring requirements in any guidelines that may be issued by EHP, to provide for consistency in monitoring across the sub-basin.</p>	Section 7 – Surface Water Appendix I6 – Geomorphology Appendix I7 – Subsidence Hydrology Assessment	GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
232	<p>During the mining activity, monitoring will include:</p> <ul style="list-style-type: none"> Repeat monitoring of stream transects established in baseline monitoring. Monitoring of effectiveness of proactive measures such as pile fields and other bank stabilisation measures. Locating and recording cracks and areas of erosion. Periodic checks of these areas will then be carried out and if not resolving naturally, intervention will be initiated. Monitoring of vegetation health as subsidence occurs. Monitoring will utilise pre-subsidence ecological equivalence monitoring undertaken as part of the terrestrial ecology management (see also Section 14) as a baseline for comparison. 	<p>Section 7 – Surface Water Appendix 16 – Geomorphology Appendix 17 – Subsidence Hydrology Assessment</p>	<p>GRM RHM</p>
233	<p>Where monitoring indicates that performance outcomes are not being achieved in relation to subsidence or related areas of terrestrial ecology, aquatic ecology, soil management and rehabilitation, corrective actions will be undertaken and incorporated into the adaptive management approach to subsidence.</p>	<p>Section 7 – Surface Water Appendix 16 – Geomorphology Appendix 17 – Subsidence Hydrology Assessment</p>	<p>BRM GRM RHM</p>
234	<p>During design and pre-construction phases, monthly checks will be carried out against controls identified.</p>	<p>General – Checks and Inspections</p>	<p>BRM GRM RHM</p>
235	<p>During construction and operations, checks and inspections will be carried out at least weekly, covering the following items:</p> <ul style="list-style-type: none"> Visually check for dust clouds at stockpiles, at locations along coal handling and transfer system and on unsealed roads and tracks where excessive dust emissions may be occurring. Inspect all active stream crossing locations after any flow event. Repair erosion, scouring and other damage promptly. Regular inspection of waste storage and management areas to check for proper storage. Inspections of erosion and sediment control measures will take place weekly throughout 	<p>General – Checks and Inspections</p>	<p>BRM GRM RHM</p>



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
	<p>the wet season and as soon as practicable after any rain event exceeding 25 mm in 24 hours.</p> <ul style="list-style-type: none"> • Stormwater management systems will be inspected weekly during the wet season and as soon as practical after any rain event exceeding 25 mm in 24 hours. • Check topsoil stockpiles for signs of disturbance. • Regular inspections of all hydrocarbon and chemical storage areas will be undertaken by site environmental officers. This will include inspection of containers, bund integrity, valves, and storage and handling areas. • Inspect MIA for inappropriate placement or storage of chemicals or hydrocarbons. • Inspect areas for visual signs of soil contamination prior to surface disturbance. • The following checks and inspections will be carried out on a regular basis by environmental officers: <ul style="list-style-type: none"> – road kill and injured animals along roadways and construction areas; – pests and weeds in disturbed areas; – clearing is not occurring in unauthorised areas; and – vehicles are remaining on access tracks and not traversing unauthorised areas. • Visually check for dust clouds at stockpiles, at locations along coal handling and transfer system and on unsealed roads and tracks, where excessive dust emissions may be occurring. <p>Stormwater, erosion and sediment control systems will also be checked prior to forecast heavy rain, and as soon as safe and practicable after rain events involving more than 25 mm in 24 hours.</p>		



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
236	<p>During construction, it is expected that contractor(s) will have an environmental management system in place, and will conduct internal and external audits in accordance with this system. In addition, BMA will conduct audits of the contractors environmental performance covering:</p> <ul style="list-style-type: none"> • compliance with legislative obligations and conditions of approval; • whether management and control strategies in place are appropriate to environmental impacts and risks; • whether management and control strategies are being properly implemented; and • monitoring requirements and identification and implementation of corrective actions in response to adverse monitoring results. <p>Frequency of these audits will be determined once the construction schedule is finalised and will align with key stages of construction. At least four such audits will be conducted during the construction period.</p>	General – Auditing	GRM RHM
237	<p>Regular reporting commitments under the EA and other legislation are expected to include:</p> <ul style="list-style-type: none"> • annual returns to EHP in accordance with EA conditions; • emissions as required to meet Federal National Pollutant Inventory requirements; • greenhouse gas emissions as required to meet National Greenhouse Emissions Reporting requirements; and • report non-compliances with the EA and any incidents with potential to cause environmental harm to EHP as soon as practicable. <p>Reporting will consist of:</p> <ul style="list-style-type: none"> • initial notification to the relevant EHP office and/or EHP pollutant hotline; and • follow up reporting on the incident or non-compliance. <p>In the event that an incident may pose risk to the community, BMA will also notify relevant emergency services. Further details of interactions with emergency services are set out in the SIA.</p> <p>BHP Billiton prepares regular annual reports and sustainability reports which include details</p>	General – reporting and notification - External	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
	<p>of environmental performance of operations including BMA operations.</p> <p>BMA is also involved in a range of community networks and other stakeholder engagement activities and will report environmental performance issues as requested and agreed with these stakeholder groups. More information on likely reporting to stakeholder groups is provided in the SIA.</p>		
238	<p>In accordance with BHP Billiton procedures, the following will be reported to the general manager on a monthly basis:</p> <ul style="list-style-type: none"> • incidents; • greenhouse gas emissions, including fugitive emissions; • energy consumption; • water consumption; • water discharges and releases; • waste generation and management; • mineral processing and mining waste; and • domestic and commercial wastewater. <p>In accordance with BHP Billiton procedures, the following will be reported on a quarterly basis:</p> <ul style="list-style-type: none"> • land disturbed and rehabilitated; and • non-mineral hazardous waste. <p>Incident notifications and reporting, including any non-compliance incident, will occur in accordance with BMA's incident notification, reporting and investigation procedure.</p>	General – reporting and notification - Internal	BRM GRM RHM



Commitment Number	Overview of Commitment	Relevant EIS Sections	Project Component
239	<p>Management review of environmental performance will take place as follows:</p> <ul style="list-style-type: none">• Environmental performance will be an item on standing agendas for recurring site management meetings. Discussion will include reporting on environmental incidents, non-compliances and investigations.• Annual audit results will be reported to the site general manager.	General review – Management	BRM GRM RHM

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Attachment A

Table A Preferred Native Plant Species for Revegetation

Species Genus	Common Name	Seeding Rate (kg/ha)	Comment
<i>Acacia harpophylla</i>	Brigalow	Tube stock densities based on current trial methods	Supplementary tube stock plantings in targeted areas to reintroduce biodiversity and add conservation value
<i>Acacia holosericea</i>	Soapy wattle	0.5	Colonising midstorey species
<i>Acacia leiocalyx</i>	Black wattle	0.3	Colonising midstorey species
<i>Acacia salicina</i>	Sally wattle	0.7	Common midstorey species
<i>Alectryon diversifolius</i>	Scrub boonaree	0.2	Shrub layer/ midstorey species
<i>Archidendropsis basaltica</i>	Dead finish	0.3	Common shrub layer species
<i>Atalaya hemiglauca</i>	White wood	0.3	Common midstorey species
<i>Brachychiton australis</i>	Broadleaved bottle tree	0.1	Midstorey species
<i>Brachychiton rupestris</i>	Bottle tree	0.1	Midstorey species
<i>Cassia brewsteri</i>	Leichhardt tean	0.2	Midstorey species
<i>Corymbia erythrophloia</i>	Gum-topped bloodwood	0.3	Common canopy species
<i>Corymbia intermedia</i>	Pink bloodwood	0.2	Canopy species
<i>Corymbia polycarpa</i>	Long-fruited bloodwood	0.3	Common canopy species
<i>Corymbia tessellaris</i>	Moreton Bay ash/ carbeen	0.2	Canopy species
<i>Eremophila mitchellii</i>	False sandalwood	0.8	Dominant shrub layer/ midstorey species
<i>Eucalyptus cambageana</i>	Dawson gum	0.5	Co-dominant canopy species
<i>Eucalyptus crebra</i>	Narrow leaved ironbark	0.5	Co-dominant canopy species
<i>Eucalyptus drepanophylla</i>	Grey iron bark	0.2	Canopy species
<i>Eucalyptus populnea</i>	Poplar box	0.8	Dominant canopy species
<i>Eucalyptus thozetiana</i>	Thozet's box	0.1	Canopy species found on weathered lateritic soils
<i>Flindersia dissosperma</i>	Scrub leopardwood	0.4	Common shrub layer/ midstorey species
<i>Geijera parviflora</i>	Wilga	0.5	Dominant shrub layer/ midstorey species

Attachment B

Table B Waste Management Strategies – Construction Waste

Waste	Source	Management Strategy
Cleared vegetation	Vegetation cleared during construction of mine and associated industrial facilities and amenities.	Green waste stockpiled and mulched for reuse on site for rehabilitation, landscaping and erosion control. Burning of green wastes will only occur as a last resort, subject to obtaining necessary permits and approvals.
General waste	General waste, including food waste and packaging materials, from workshops, site offices, crib rooms or accommodation.	General refuse is to be collected in green bins and removed regularly (at least weekly) for transport off site for disposal at Moranbah Landfill.
Co-mingled recycling (e.g. paper, card, plastics, aluminium, glass)	Workshops, offices, crib rooms or accommodation.	Recycling will be collected in lilac waste containers for transport to the JJ Richards MRF in Clermont for processing (i.e. sort, crush and bale for transport to Brisbane).
Waste electrical and electronic equipment (WEEE)	Administration buildings or maintenance activities.	Set up WEEE collection service with licensed WEEE recycling operator.
Printer cartridges	Administration buildings.	Used or empty laser and inkjet printer cartridges can be recycled if quantities justify.
Excavated material	Material excavated during bulk earthworks, access roads and site establishment.	Reuse all suitable material to meet fill requirements. Dispose of unsuitable or excess material in GRB mine complex spoil dump areas.
Concrete and bricks	Waste concrete and bricks from new construction activities, access and circulating roadways and car parking areas.	Concrete and brick will be stockpiled in designated storage areas for reuse (e.g. fill material) or recycling (e.g. crushed for road base) or alternatively disposed onsite. Contaminated material will be disposed to Moranbah Landfill.
Waste timber	Waste timber (e.g. pallets and off cuts) from new construction activities or temporary structures.	Stockpiled in designated storage area for reuse on site or alternatively removed by licensed contractor for reuse, reprocessing or final disposal.
Electrical wastes	Waste from new construction activities or temporary structures.	Stockpiled in designated storage area to be removed by licensed contractor for reuse, reprocessing or final disposal.
Metals	Steel/metal off cuts from new construction activities or temporary structures.	Scrap metals will be sourced, separated and collected in blue skip for recycling by scrap metal merchants.
Sealers, resins, solvents and paints	Waste from new construction activities.	Purchase only amount required on an as needs basis. Collected at a waste management pad for intermediate storage prior to removal by a licensed contractor to NQRR for processing. Waste tracking applies.

Waste	Source	Management Strategy
Sewage effluent	Sewage effluent from offices, crib rooms, accommodation, kitchen and amenities.	Effluent treated in existing STP to Class A+ quality for reuse as dust suppression or disposal by land irrigation. If treated sewage is to be disposed to land, follow requirements of treated effluent irrigation management plan.
Sewage sludge	Solids removed from STP.	Sludge will be dewatered, transported and disposed of by a licensed contractor to a licensed facility offsite (SKM 2011). Waste tracking applies.
Waste oils	Workshop generated waste oil and drums (small, bulk and other containers that typically contained oils and greases) through routine servicing of plant, equipment and vehicles.	Waste oil to be collected and stored in tan-coloured bins for bulk transport to NQRR for either recycling or for further re-use as oil or utilisation as a fuel at Collinsville Power Station. Waste tracking applies.
Hydrocarbon-contaminated waste	Drums, containers, filters and rags sourced from routine servicing of plant, equipment and vehicles in workshop.	Empty drums, used oil and fuel filters to be collected in containers at a waste management pad for bulk transport to NQRR for processing. Filters are crushed, residual oil and fuel recycled and the metal carcass put into scrap metal. Waste tracking applies.
Tyres	Tyre failure and routine servicing of plant, equipment and vehicles in workshop.	If waste tyres cannot be reused onsite (e.g. barriers), then tyres will be stockpiled for removal offsite for reprocessing. Waste tracking applies.
Grease trap waste	Workshop and accommodation village kitchen.	Grease trap waste is stored in drums at a waste management pad for transport to a regulated waste facility for disposal by high temperature incineration or treated for disposal to landfill. Waste tracking applies.
Explosives (blasting residue and packaging from use of explosive, boosters and detonators)	Defective explosives and packaging.	Explosive materials are to be treated in accordance with AS2187.2-2006 <i>Explosives Storage, Transport and Use</i> , Part 2, Use of Explosives. Disposal to landfill is not suitable method of disposal. Cardboard packaging cannot be recycled due to potential explosive residues. Any out of date or faulty explosives will be returned to the manufacturer.
Batteries	Wet cell batteries from vehicles and dry cell batteries from phones, radios and other equipment.	Stored on a banded pallet at a waste management pad for removal from site by a licensed contractor for recycling. Waste tracking applies.