NEWLANDS
OPEN CUT

GLENCORE

Newlands EA Amendment

– Supporting Information

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Acronyms and Abbreviations

Acronym	Meaning
ACARP	Australian Coal Industry's Research Program
AHD	Australian Height Datum
DES	Queensland Department of Environment and Science
EA	Environmental Authority
EIS	Environmental Impact Statement
EM Plan	Environmental Management Plan
EP Act	Environmental Protection Act 1994
ERM	Environnemental Ressources Management Australia Pty Ltd
LOM	Life of Mine
MERFP Act	Mineral and Energy Resources (Financial Provisioning) Act 2018
MIA	Mine Industrial Area
ML	Mining Lease
NOC	Newlands Open Cut
NCM	Newlands Coal Mine
NUMA	Non-Use Management Area
PMLU	Post-Mining Land Use
PRCP	Progressive Rehabilitation and Closure Plan
SKM	Sinclair Knight Merz
t	Tonnes

1. Introduction

This document has been prepared by Environmental Resources Management Australia Pty Ltd (ERM) on behalf of NC Coal Company Pty Ltd. It is intended to be read in support of an Environmental Authority (EA) Amendment in relation to the existing EA (EPML00817713), which covers various mining leases (MLs) (refer Section 1.2 for specific details) that form the Newlands Open Cut (NOC).

A minor EA amendment is sought to address the constraint on the maximum slope angle of 15% for rehabilitated land disturbed by mining.

A Progressive Rehabilitation and Closure Plan (PRCP) is currently being prepared for NOC. This document will outline the final site design and the post-mining land uses (PMLUs). The PRCP proposes land uses at NOC that include native ecosystem, riparian zones and grazing land. There is also a NUMA in the Wollombi area.

The current EA imposes a limit on grazing slopes of 15%, which is an arbitrary constraint that unnecessarily constrains the productive use of the land. This minor EA amendment proposed, will replace the maximum 15% slope angle requirement with more outcome focused criteria.

It is intended that the amendment outlined above will:

1. avoid potential inconsistencies that may arise between the EA and the PRCP,
2. ensure land is utilised to the highest potential, and,
3. avoid unnecessary rework as the site transitions from operation into closure.

Furthermore, the proposed amendment is supported by evidence gathered by third party specialists in their fields.

This document is to be read in conjunction with the attached documentation:

- EA Amendment Application Form – Appendix A
- The current EA (EPML00817713) – Appendix B
- Grazing slope stability report – Appendix C

1.1 Site Location

The Newlands Coal Mine is an open cut coal mining operation, located within the Bowen Basin, approximately 130 km west of Mackay and 30 km north-west of Glenden. There are multiple different operational areas, including satellite deposits which make up the overall Newlands Coal Mine site (refer to Figure 1-1).

The operations of the Newlands Coal Mine are in following areas:

- Newlands Main Deposit Operational Area
- Eastern Creek Operational Area; and
- Suttor Creek Operational Area (which includes the Wollombi Pit).

The MLs that form the Newlands Coal Mine are listed in Table 1-1 below.

Mining Operational Areas	Mining Lease
Newlands Operational Area	ML4748 ML4771 ML4774 ML10176 ML10316 ML10317 ML10322 ML10348 ML10352 ML10361 ML10362
Eastern Creek Operational Area	ML4754 ML4755 ML10322 ML10352
Suttor Creek Operational Area	ML70460 ML4761

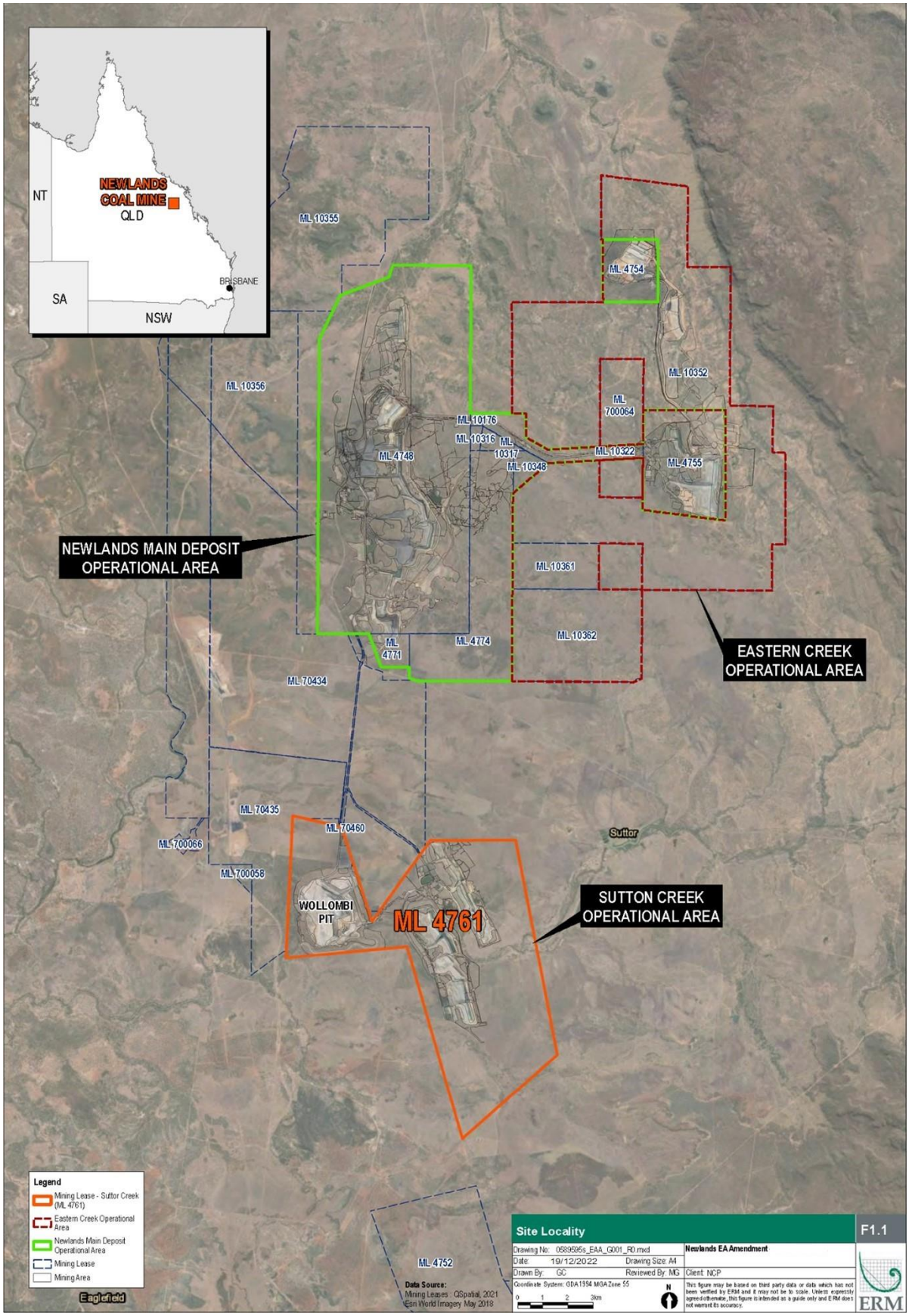


Figure 1-1 Newlands Coal Mine

1.1 Approvals History

The Newlands Coal Mine has a long history of operations and has been subject to several expansions, modifications and updates to mining methods and areas over time. There has naturally been a resultant change to the key approval documentation for each part of the site. A number of key operational expansions have been progressed for the site to result in the current site operational arrangement and footprint, as briefly summarised below.

- In 1981, an approval was obtained for the 'Newlands Steaming Coal Project', with mining commencing at the Newlands site in 1983. This saw the development of surface operations within the Newlands Main Deposit Operational Area.
- In 2000, an EIS for open cut mining in Suttor Creek was approved, with mining commencing at Suttor Creek in February 2004, developing the Suttor Creek Operational Area.
- An EIS was approved in August 2006 for the extension of the Suttor Creek Operational Area into the western portion known as the Wollombi No. 2 Area. This included development of the Wollombi Pit. An EIS document was prepared and approved for this assessment, as titled "Newlands Coal Mine Extension into the Wollombi No.2 Surface Area".
- An EA (MIM800257704) was subsequently approved, on 22 March 2007 to authorise the activities relating to the Wollombi No. 2 Area (within ML 4761), including the Wollombi Pit. At this time, NOC operated under three separate environmental authorities –
    - MIM800098402 (for all of the surface activities); and
    - both MIM800257704 (ML10316 and ML10317) and MIM80029404 (ML10322) for the Northern Underground operations.
- As noted above, MIM800257704 was modified to provide authorisation for the activities relating to the Wollombi Area (including the Wollombi pit).
- An EIS was approved in May 2013 for the Newlands Coal Extension Project. The extension involved extending the Newlands Coal Mine to new mining leases over the Eastern Creek operations of Newlands Coal Mine.
- The current / latest version of the EA (EPML00817713) in place was approved by the Department of Environment and Science (DES) on 2 February 2023.

NOC has a history of expansion and modification as new information became available for the site at a variety of project stages. There have been numerous studies and impact assessment completed at the site to inform and support relevant changes to the site's environmental approvals.

1.2 NOC closure stage update

NOC has transitioned from operations to closure in early 2023.

The movement from the mine from operational to closure phase has substantial implications for the management of the site. The site team are currently preparing a PRCP for the site, including rationalising the groundwater monitoring network, updating models for closure and refining rehabilitation schedules.

In moving from operational to closure phases, the site team have identified a number of potential inconsistencies between the current description of objectives in the conditions of the EA, and the milestones being developed as part of the PRCP. The inconsistency around the grazing slope requirements are the subject of this minor EA amendment request.

2. Supporting Evidence of Proposed EA Amendment

The following section presents the information Glencore and NOC have gathered to support their position on the proposed changes to the prescriptive elements of the EA conditions which we are seeking to amend, as outlined in Section 1.

2.1 Grazing on slopes

Rehabilitation has been completed across approximately 20% of the Newlands site, on a range of landforms. As the site approaches closure, a number of elements of the site's rehabilitation are being refined. This includes the final landform for the former open pits which are proposed to have post mining land uses (PMLU) which includes some of the rehabilitated land being used for grazing.

As more detail becomes available closer to the site's closure, the final landform can be designed with a higher degree of accuracy. Schedule H in the current EA outlines the conditions relevant to land rehabilitation. Outlined in this table is the requirement for a slope angle of <15% for grazing areas, as well as requirements for diversity and abundance of groundcover.

As the final landform design is being refined, the maximum 15% final slope requirement is proving to be particularly restrictive, and placing an unnecessary constraint on the productive use of the land greater than 15%. The slope angle requirements are resulting in a significant amount of rework and ground disturbance in order to accommodate grazing.

The intention of the rehabilitation requirements outlined in Table H1 of Schedule H is to ensure the final landform is safe, stable and non-polluting and suitable for its intended PMLU. The maximum slope angle of 15% is understood to be a conservative historical protection against potential stability issues which may be aggravated by grazing. The factors influencing the stability of the land are multi-faceted, including elements such as the soil type, ground cover, compaction, and disturbance rate.

As part of the closure planning process for NOC (as well as other sites within the Bowen Basin), Glencore anticipates entering into a 3 year research program with Central Queensland University (CQU) and the Australian Coal Industry's Research Program (ACARP). The aim of the research is to understand how grazing on overburden slopes will affect the stability of the land. The results of this study will not be available until 2026, however the ongoing research is planned to support current and future closure outcomes.

The requirement for a 15% maximum slope angle (as outlined in Table H1) is considered overly restrictive. Without consideration of other land stability factors, the slope angle itself will not necessarily lead to a stable landform for grazing.

3. Proposed Amendment to EPML00817713

The proposed EA Amendment relates to Table H1 which specifies the Rehabilitation Requirements for land disturbed by mining. The proposed changes affect the rehabilitation objectives, indicators and completion criteria in Table H1 where the current rehabilitation objective is tied to a maximum slope of 15%. Importantly, the changes will not affect the rehabilitation goals for each domain/mine feature.

The revised wording proposed in 'Table H1 – Rehabilitation Requirements' are intended to be less prescriptive and instead focus on achieving the rehabilitation goal. The wording is consistent with the wording in Table H1 of other nearby mine operations.

Note that the wording currently in Table H1 is not a standard condition.

The proposed changes to the wording in Table H1 are shown in red in Table 3-1. The proposed amendment is as follows:

Table 3-1: Table H1 – Rehabilitation Requirements, from Schedule H of the EA

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Overburden	In and out of pit dumps, roads, open pit and ramps, stripped topsoil, cleared area	Long-Term Safety	Rehabilitated and in-situ landforms are acceptable safety risk for humans and animals now and in the foreseeable future	Exposure to hazardous materials in spoil Exposure to spontaneous combustion materials near surface Tunnelling of waste rock dumps with spoil Compliance with rehabilitation procedures Landforms hazards to people and animals	i. Evidence of spoil which demonstrates acid rock drainage (ARD) and/or spontaneous combustion risks have been managed appropriately. ii. Evidence of spoil sodicity assessment and management of problem spoils with spoil remediation method. iii. Evidence that rehabilitated land has a rate or erosion similar or below that in the relevant reference sites. The applicable relevant reference sites must have similar chemical and physical characteristics including slope length as that of the rehabilitated area. iv. Record of compliance with procedures and management plan v. Evidence that risk assessment has been carried out on long term safety aspects and control measures are in place to meet agreed requirements. vi. Evidence that safety issues have been addressed from physical risks eg. Falls from height, fall on risk minimised.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		Non-polluting	Water quality solute concentrations met	Table F3 receiving water contaminant limits at downstream monitoring points	Water quality within the receiving water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void.
		Stable	Slopes and surfaces are geotechnically stable. Landform with very low probability of slope slippage or failure with serious environmental consequences. Landform designs achieve soil loss rates similar to or lower than on relevant reference sites. Landform design allows final land use vegetation establishment. Vegetation cover established to minimise soil loss rates.	Engineering design Erosion rates Downstream impact and sustaining final land use Slope and drainage systems that optimise erosion resistance, functionality and structural integrity Record of slope failure Vegetation type and density Foliage cover	Evidence that stability has improved over time as rehabilitation has been established. Dimensions and frequency of occurrences of erosion are similar to corresponding relevant reference sites. Evidence that landform design considers final land use. Evidence that foliage cover, vegetation types and densities in rehabilitated areas are comparable with relevant reference sites. Leaf litter, humus, depth of growing medium comparable with relevant reference sites.
		Able to sustain final land use	Soil biological, chemical and physical properties provide support to preferred land use	Growth media biological, chemical and physical components and ameliorants are present to allow vegetative cover establishment.	Evidence that physical, chemical and biological properties of the growing media are similar to reference sites

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				The following indicators are comparable with relevant reference sites: organic matter, soil nutrients, invertebrate activity, soil texture, topsoils and growth media depth, physical and chemical property limits.	Evidence of nutrient cycling/accumulation occurs at a rate comparable with relevant reference sites (and based on monitoring/research)
			Native ecosystem and/or established grazing land is productive and sustainable	Grass species are desirable – Perennial, Palatable and Productive Pasture health Land condition Pasture condition Forage condition	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. >70% overall ground cover. Evidence collected during established rehabilitation monitoring program.
Rejects	In and out of pit reject storage areas / dumps	Safe and stable	Safe for humans and animals	Structural and geotechnical adequacy. Minimal erosion.	Up to 10% slopes for external batters. Fully capped with no spontaneous combustion. Minimal slumping or gullying after 5 years (<2% planimetric surface).
		Non-polluting	Water quality solute concentrations met	Table F3 receiving water contaminant limits at downstream monitoring points	Water quality within the receiving water contaminant limits during runoff events.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
					Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void.
		Self-sustaining	Natural communities or grazing area	a. Species diversity and multiple canopy layers – ground, middle and upper	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. >70% overall ground cover. Evidence collected during established rehab monitoring program.
Diversion	Licensed diversion channel – including subsided areas of the Cerito Creek South Diversion	Safe and stable	Safe for humans and animals	a. Structural, geotechnical and hydraulic adequacy. b. Minimal erosion.	Meet engineering design criteria – consideration for natural, ephemeral geomorphic processes. Drainage lines and drop structures functioning.
		Non-polluting	Water quality solute concentrations within 80%ile	Table F3 receiving water contaminant limits at downstream monitoring points	Water quality within the receiving water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void.
		Self-sustaining	Native *Eucalyptus tereticornis / Corymbia tessellaris* community	Species diversity and multiple canopy layers – ground, middle and upper.	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. >80% overall ground cover (embankments only).

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
					Evidence collected during established rehab monitoring program.
Drain	Unlicensed diversion drain	Safe and stable	Safe for humans and animals	Structural, geotechnical and hydraulic adequacy	Resembles regional ephemeral, gully lines (analogue site) – show natural geomorphic processes. Drainage lines and drop structures functioning.
		Non-polluting	Water quality solutes within the 80%ile	Table F3 water contaminant limits at downstream monitoring points	Water quality within the receiving water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void.
		Self-sustaining	Native *Eucalyptus tereticornis / Corymbia tessellaris* community	Species diversity and multiple canopy layers – ground, middle and upper.	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. Evidence collected during established rehab monitoring program.
Levee	Constructed embankment – Including subsided areas	Safe and stable	Protects infrastructure, humans and animals	Structural, geotechnical and hydraulic adequacy. Minimal erosion	Align with design criteria: 1:100 ARI plus 1 metre freeboard. Rock armour intact. Drop structures functioning.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
	of Levee 5 and Levee 7	Non-polluting	Water quality solute concentrations within 80%ile	Table F3 receiving water contaminant limits at downstream monitoring points	Water quality within the receiving water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void.
		Able to sustain final land use.	Soil biological, chemical and physical properties provide support to preferred land use	Growth media biological, chemical and physical components and ameliorants are present to allow vegetative cover establishment. The following indicators are comparable with relevant reference sites: organic matter, soil nutrients, invertebrate activity, soil texture, topsoil and grown media depth, physical and chemical property limits.	i. Evidence that physical, chemical and biological properties of the growing media are similar to relevant reference sites. ii. Evidence of nutrient cycling/accumulation occurs at a rate comparable with relevant reference sites (and based on monitoring/research)
			Native ecosystem and/or Established grazing land is productive and sustainable	Grass species are desirable - Perennial, Palatable and Productive. Pasture health Land condition Pasture condition Forage condition	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. >70% overall ground cover. Evidence collected during established rehab monitoring program.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Dams	Tailings and sediment dams – Including subsided areas of Highwall Dam	Safe and stable	Protects infrastructure, humans and animals	Structural, geotechnical and hydraulic adequacy. Minimal erosion.	Final structure is stable with no subsidence. Gully and rill erosion <0.3metres. Bywash / spillway must have adequate capacity. Sign off by post mining landholder (for retained structures only) – asset transfer agreement.
		Non-polluting	Water quality solute concentrations within 80%ile	Table F3 receiving water contaminant limits at downstream monitoring points	Water quality within the receiving water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void. No acid mine drainage or discharges. No contamination to groundwater.
		Self-sustaining	Soil biological, chemical and physical properties provide support to preferred land use	Growth media biological, chemical and physical components and ameliorants are present to allow vegetative cover establishment. The following indicators are comparable with relevant reference sites: organic matter, soil nutrients, invertebrate activity, soil texture, topsoil	i. Evidence that physical, chemical and biological properties of the growing media are similar to relevant reference sites. ii. Evidence of nutrient cycling/accumulation occurs at a rate comparable with relevant reference sites (and based on monitoring/research).

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				and grown media depth, physical and chemical property limits.	
			Native ecosystem and/or Established grazing land is productive and sustainable	Grass species are desirable - Perennial, Palatable and Productive. Pasture health Land condition Pasture condition Forage condition	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. >70% overall ground cover. Evidence collected during established rehab monitoring program.
Residual Voids	Mining pits, borrow pits and quarries – Excluding Wollombi Pit NUMA and Wollombi Pit Low Wall	Long term safety	Final void areas are safe for humans and animals now and in the foreseeable future	a. Fall hazards b. Drowning hazards	Preventative measures in place for long term prevention of falls. Safe access for people and animals.
		Non-polluting	Water quality solute concentrations met	Table F5 onsite water storage contaminant limits	Water quality within the receiving water contaminant limits in **Table F5 – Onsite water storage contaminant limits.** In the event that the water quality within the residual voids exceeds the contaminant limits defined in **Table F5 – Onsite water storage contaminant limits**, the environmental authority holder must implement measures to prevent access to waters by all livestock.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		Stable	Slopes and surfaces are geo-technically stable. Landform with very low probability of slope slippage or failure with serious environmental consequences. Landform designs achieve soil loss rates similar to or lower than those on relevant reference sites. Landform design allows final land use vegetation establishment.	Engineering design Erosion Downstream impact and sustaining final land use. Slope and drainage systems that optimise erosion resistance, functionality and structural integrity. Record of slope failure	Evidence that slope angle and length between graded banks adopted in rehabilitated land is geo-technically stable and allows sustaining preferred land use. Evidence that stability of the landform has improved over time as rehabilitation established. Dimensions and frequency of occurrences of erosion similar to corresponding relevant reference sites. Evidence that landform design considers preferred final land use.
		Self - sustaining	Native ecosystem and/or Established grazing land is productive and sustainable	Grass species are desirable - Perennial, Palatable and Productive. Pasture health Land condition Pasture condition Forage condition	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. >70% overall ground cover. Evidence collected during established rehab monitoring program.
	Wollombi Pit non-use	Safe and stable*	Safe for humans and animals	Geotechnical and erosional stability	The following matters are certified by an appropriately qualified person accredited by a credible external body:

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
	management area (NUMA) – Including: • High wall; • End wall; • Pit Lake to an elevation 20 m above the maximum water level; and • Locations above the High wall and end wall with a factor of safety less than 1.5. See Figures 6a and 6b for				a) Maximum NUMA extent no greater than 2 km length, 1 km width and 300 m in depth; b) Coal seams with an ISCP Classification of greater than I are to be fully capped and there is no spontaneous combustion observed; c) Residual void is safe to humans and animals; d) High and end wall weathered zone treatment – i Maximum slope of 22%; ii >50% overall vegetative ground cover. e) Achievement of surface requirements – i Fencing and abandonment bunds are erected above the high and end walls; ii Warning signage posted at 50 m intervals above high and end walls;
		Non-polluting	Water quality solute concentrations met	Void water contaminant levels and depth of water	The following matters are certified by an appropriately qualified person accredited by a credible external body: a) Achievement of sufficient improvement:

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
	indicative extent.				i Residual void will not cause environmental harm outside of the relevant tenure boundary; ii Residual void water quality and quantity will not cause harm to the surrounding environment. b) Water levels within the residual void do not reach the maximum operational WSL (water surface level) of 2,195m RL.
		Self-sustaining	Not Applicable	Not Applicable	No self-sustaining requirements
	Wollombi Pit Low Wall See **Figures 6a** and **6b** for indicative extent.	Long term safety	Final void areas are safe for humans and animals now and in the foreseeable future	Fall hazards Drowning hazards	Preventative measures in place for long term prevention of falls. Safe access for people and animals.
		Stable	Slopes and surfaces are geo-technically stable. Landform with very low probability of slope slippage or failure with serious environmental consequences. Landform designs achieve soil loss rates similar to or	Engineering design Erosion Downstream impact and sustaining final land use. Slope and drainage systems that optimise erosion resistance, functionality, and structural integrity.	Evidence that slope angle and length between graded banks adopted in rehabilitated land is geo-technically stable and allows sustaining preferred land use. Evidence that stability of the landform has improved over time as rehabilitation established. Dimensions and frequency of occurrences of erosion similar to corresponding relevant reference sites.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
			lower than those on relevant reference sites. Landform design allows final land use vegetation establishment.	Record of slope failure	Evidence that landform design considers preferred final land use.
		Non-polluting	Water quality solute concentrations within 80%ile	Table F3 receiving water contaminant limits at downstream monitoring points	Water quality within the receiving water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void.
		Self-sustaining	Native ecosystem and/or Established grazing land is productive and sustainable	Grass species are desirable - Perennial, Palatable and Productive. Pasture health Land condition Pasture condition Forage condition	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. >70% overall ground cover. Evidence collected during established rehab monitoring program.
Infrastructure	Haul roads, hard stands, sediment dams,	Safe and stable	Protects retained infrastructure, humans and animals	Geotechnical adequacy Minimal erosion	Final landform is stable. Sign off by post mining landholder (for retained structures only) – asset transfer agreement.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
	easement, transmission lines, airstrip and car parks	Non-polluting	Water quality solute concentrations within 80%ile	Table F3 receiving water contaminant limits at downstream monitoring points.	Water quality within the receiving water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void. No contaminated mine drainage or discharges.
		Self-sustaining	Soil biological, chemical and physical properties provide support to preferred land use	Growth media biological, chemical and physical components and ameliorants are present to allow vegetative cover establishment. The following indicators are comparable with relevant reference sites: organic matter, soil nutrients, invertebrate activity, soil texture, topsoil and grown media depth, physical and chemical property limits.	i. Evidence that physical, chemical and biological properties of the growing media are similar to relevant reference sites ii. Evidence of nutrient cycling/accumulation occurs at a rate comparable with relevant reference sites (and based on monitoring/research)
			Native ecosystem and/or Established grazing land is productive and sustainable	Grass species are desirable - Perennial, Palatable and Productive. Pasture health Land condition	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. Evidence collected during established rehab monitoring program.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
				Pasture condition Forage condition	
	Buildings, conveyors, rail line	Safe and stable	Protects retained infrastructure, humans and animals	Geotechnical adequacy. Minimal erosion. Product stewardship performance Condition of retained equipment	Final landform is stable. Manage waste to meet the waste management hierarchy of control. Sign off by post mining landholder (for retained structures only) – asset transfer agreement.
		Non-polluting	Water quality solute concentrations within 80%ile	Table F3 receiving water contaminant limits at downstream monitoring points.	Water quality within the receiving water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void. No contaminated mine drainage or discharges. Contaminated soil to be remediated (to meet the criteria stipulated in the Newlands Waste Management Procedure) or placed within the Ramp 7 Landfill.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		Self-sustaining	Soil biological, chemical and physical properties provide support to preferred land use	Growth media biological, chemical and physical components and ameliorants are present to allow vegetative cover establishment. The following indicators are comparable with relevant reference sites: organic matter, soil nutrients, invertebrate activity, soil texture, topsoil and grown media depth, physical and chemical property limits.	i. Evidence that physical, chemical and biological properties of the growing media are similar to relevant reference sites ii. Evidence of nutrient cycling/accumulation occurs at a rate comparable with relevant reference sites (and based on monitoring/research)
			Native ecosystem and/or established grazing land is productive and sustainable	Grass species are desirable - Perennial, Palatable and Productive. Pasture health Land condition Pasture condition Forage condition	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. Evidence collected during established rehab monitoring program.
Contaminated Land	Landfill, protective bunds and	Safe and stable	Protects retained infrastructure, humans and animals	Geotechnical adequacy. Minimal erosion.	Final landform is stable. Must be a non-combustible environment.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
	around other infrastructure	Non-polluting	Water quality solute concentrations within 80%ile	Table F3 receiving water contaminant limits at downstream monitoring points. Table F2 release contaminant limits.	Water quality within the EA Groundwater, the receiving water and the release water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void. No contaminated mine drainage or discharges. Contaminated soil to be remediated (to meet the criteria stipulated in the Newlands Waste Management Plan) or placed within the Ramp 7 Landfill. Other chemical contamination is to meet the EP Regs (Waste Management) 2000.
		Self-sustaining	Soil biological, chemical and physical properties provide support to preferred land use	Growth media biological, chemical and physical components and ameliorants are present to allow vegetative cover establishment. The following indicators are comparable with relevant reference sites: organic matter, soil nutrients, invertebrate activity, soil texture, topsoil and grown media depth, physical and chemical property limits.	i.Evidence that physical, chemical and biological properties of the growing media are similar to relevant reference sites. i.Evidence of nutrient cycling/accumulation occurs at a rate comparable with relevant reference sites (and based on monitoring/research)

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
			Native ecosystem and/or established grazing land is productive and sustainable	Grass species are desirable - Perennial, Palatable and Productive. Pasture health Land condition Pasture condition Forage condition	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. Evidence collected during established rehab monitoring program.
Exploration	Tracks, drilling sumps and bore holes on MLs (not including EPCs)	Safe and stable	Protects humans and animals	Minimal erosion	Gully and rill erosion <0.3metres. Holes grouted and cut off below ground surface. Sumps filled in.
		Non-polluting	Water quality solute concentrations within 80%ile	Table F3 receiving water contaminant limits at downstream monitoring points.	Water quality within the receiving water and release water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void.
		Self-sustaining	Established grazing land is productive and sustainable	Grass species are desirable - Perennial, Palatable and Productive. Pasture health Land condition Pasture condition Forage condition	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. Evidence collected during established rehab monitoring program.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Subsidence	Subsidence within General Areas	Safe and stable	Safe for humans and animals	Structural and geotechnical adequacy. Minimal subsidence induced cracking and erosion	No tension cracks greater than 20 mm wide and 10 m long. Drainage features within subsided areas resemble drainage lines outside of subsidence areas.
		Non-polluting	Surface water quality suitable for environmental values	Water quality at downstream receiving water monitoring point WQS5 (Kangaroo Creek Downstream)	Surface water quality at downstream monitoring point WQS5 less than or equal to receiving water contaminant trigger levels in Table F3 of the EA or water quality at upstream monitoring point WQS7
		Self-sustaining	Natural communities or grazing area	Species diversity and multiple canopy layers – ground, middle and upper	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. >70% overall ground cover. Soil disturbance within 50 m of Threatened Ecological Communities (TECs) are rehabilitated with native vegetation.
	Subsidence within Newlands Nature Refuge and Wollombi Offset Area	Safe and stable	Safe for humans and animals	Structural and geotechnical adequacy. Minimal subsidence induced cracking and erosion.	Impacts upon TECs will be avoided when undertaking any surface stabilisation and soil remediation and rehabilitation works. Surface cracks in subsided areas will only be remediated where they are assessed as a high erosion risk where cracks >0.3m wide pose a safety concern to personnel or may endanger native fauna or livestock. This risk is

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
					assessed on the basis of post-subsidence visual inspections.
		Non-polluting	Surface water quality suitable for environmental values	Water quality at downstream receiving water monitoring point WQS5 (Kangaroo Creek Downstream)	Surface water quality at downstream monitoring point WQS5 less than receiving water contaminant trigger levels in Table F3 of the EA or water quality at upstream monitoring point WQS7
		Self-sustaining	Natural communities	Species diversity and multiple canopy layers – ground, middle and upper	Minimum of 10 species present and evidence of recruitment (regrowth) during past 5 years. >70% overall ground cover. Soil disturbance within TECs are rehabilitated with native vegetation

4. Likely Impact of Proposed Amendment on Environmental Values

In accordance with Section 226A(1)(f) of the EP Act, the impact of the proposed amendment on relevant environmental values is required to be assessed, through the provision of:

- a description of the environmental values likely to be affected by the proposed amendment;
- details of emissions or releases likely to be generated by the proposed amendment;
- a description of the risk and likely magnitude of impacts on the environmental values; and
- details of the management practices proposed to be implemented to prevent or minimise adverse impacts.

Given the nature of the proposed amendments, it is not anticipated that there will be any change or impacts on environmental values, nor the currently adopted management practices. This section details how the proposed changes would not result in a significant negative affect on the environmental values at the site.

4.1 Grazing on slopes

Proposed changes to the wording in table H1 regarding the 15% maximum slope angle is considered in the following sections.

4.1.1 Description of Environmental Values

The relevant environmental values described in the EIS (SKM, 2005) include geotechnical stability, land use, water use and biodiversity. The pre mining land is described as gently undulating with steep slopes separating the individual catchments.

Pre mining land use in the area included grazing in native and improved pastures and some cropping land (limited areas were deemed suitable for permanent cropping). The post mining land use proposed in the EIS reflects an intention to return most of the land back to grazing land.

The EIS states the site soils in the area predominantly consist of tertiary basalt and colluvium. The overburden tends to be sodic, and the soils generally have a moderate erosion and dispersion risk as a result of low levels of organic matter. None of the soils in the area however were deemed to preclude their use for revegetation.

There are a range of vegetation communities and fauna present within the footprint of the project as outlined in the EIS (SKM, 2005). There have been detailed studies undertaken through the life of the project to accurately describe these environmental values. Where areas of endangered, vulnerable, rare or near threatened flora and fauna species and habitats have been encountered, these have been monitored and managed or offset in line with the requisite guidelines. The proposed changes relate specifically to land which has been disturbed by mining and is being rehabilitated to a grazing land PMLU, therefore vegetation communities are limited to those associated with rehabilitation works completed by NOC.

The proposed wording changes in table H1 will affect the proposed usage of some rehabilitation areas. The change in slope angle criteria would apply to the final landform for former overburden areas,

rejects, residual voids and some of the infrastructure areas, the changes are unlikely to impact any of the other environmental values identified at the site such as noise, visual amenity and air quality.

The proposed changes would not have any affect on land within the NUMA or, land that is designated as having a native ecosystem PMLU, any non- grazing PMLU, or land outside of the disturbance footprint.

4.1.2 Details of Emissions or Releases Likely to be Generated

The proposed changes to the EA will not result in any increase in emissions or releases. On the contrary, remobilising equipment to reshape some of these areas to achieve the 15% maximum slope gradient would require emissions from mine equipment. Therefore the proposed changes to the wording in schedule H will result in a decrease of emissions from mine equipment.

4.1.3 Description of Risk and Likely Magnitude of Impacts

The site is currently in the rehabilitation phase, this includes decommissioning and demolition of existing infrastructure areas, and significant reshaping of the land to its final landform. The rehabilitation work is detailed in the rehabilitation plans and the PRCP (currently being finalised).

The proposed change applies to the wording of the rehabilitation objectives, indicators and completion criteria. The changes are not likely to have any significant environmental impacts as the rehabilitation goals for the Site have not been changed. The goals are still to deliver a safe, stable, non-polluting landform that is acceptable for its intended PMLU. The proposed conditions are more outcome focused, rather than based on a specific slope angle. The specified indicators and completion criteria will be informed by the capacity of the land to support the planned rehabilitation and PMLU.

The proposed changes will apply specifically to areas of the site identified as having a grazing post mining land use. The proposed changes will not substantively affect the areas of the site which have been marked for other post mining land uses.

In terms of the magnitude of impact, there is a substantial amount of earthworks and land reshaping being undertaken across the site. However, the areas of the site which are intended to remain at 15% or above are not contiguous, and are generally near former pits and overburden dumps. Remobilising earthwork equipment to these areas is likely to cause substantial impact to surrounding land.

Figures 1 - 4 provided as Appendix C, present the areas of the site which would be affected by the proposed changes. The total area of grazing land that is expected to remain above a 15% slope is approximately 1,685ha. Further detail is provided in Table 4-1 below.

The magnitude of the impact of the proposed change on land use (as an environmental value) would affect the 1,685ha of land within the disturbance footprint. Considering the entire grazing land PMLU across the ML (~20,385ha) the proposed change would affect less than 10% of the sites grazing land.

Table 4-1 Amount of grazing land by slope percentage

Slope Angle	Area of grazing land within the mining disturbance footprint (ha)	Area of grazing land across the entire ML (ha)
0 – 10%	2,250	13,166
10 – 15%	800	2,595
15 – 20%	735	1,385
>20%	950	3,239
Total	4,735	20,385

The review of spatial data provided in Figures 1-4 (Appendix C) and in Table 4-1 above are based on the latest lidar survey of the site (for already rehabilitated areas) and the final landform designs (for areas yet to be rehabilitated). The spatial analysis takes an average slope angle for land within a 1m x 1m area, while this provides an accurate view of the slope of the land, it is very difficult to account for average slopes over a larger area (i.e. from the toe to the crest of a bank). Close inspection of the spatial data shows that across the site, many of the areas with slopes >15%, are interspersed with flatter areas. The slope angles presented above are therefore conservative and likely overestimate the amount of land at a given angle.

Contour banks are used in some areas across the site as part of water/erosion management. The presence of contour banks can affect the average slope angle of a given area. These areas are still considered to be structurally and erosionally stable.

As visible in the figures provided, these areas with slopes above 15% tend to be located near former pits. These areas tend to be well away from established watercourses and tributaries. Therefore, the impact of the proposed change on surface water (as an environmental value) will be minimal (even if erosion does occur).

Given the small magnitude of the proposed change (less than 10% of the grazing PMLU across the site), the proposed changes are considered unlikely to result in any significant impacts on the environmental values identified at the site.

4.1.4 Management Practices

As mentioned in Section 2.1, factors affecting ground stability are multi-faceted. The revised wording proposed in Table H1 of the rehabilitation criteria will allow for consideration of factors other than slope which may affect erodibility including soil type, ground cover, and disturbance rate.

Rehabilitation of the site, including grazing land, will be managed in line with the current GCAA rehabilitation monitoring process at NOC, and land will be managed in accordance with the Biodiversity Management Plan. For areas where grazing is active, this includes a variety of monitoring techniques including remote sensing, ground based transects and grazing trials. Inspections of each paddock are undertaken fortnightly during strategic grazing periods, with notes of any evidence of overgrazing and resulting erosion being marked with GPS waypoints.

The ongoing monitoring of grazing land through the rehabilitation process allows for the implementation of adaptive grazing techniques. Adaptive grazing is a holistic approach to carefully control livestock density in a particular area based on the condition of the land to meet the required objectives. Where the need is identified, stock rates and grazing time to minimise the impact of hooves on land can be reduced promptly.

Furthermore, areas where adaptive grazing has been implemented are subject to more extensive monitoring. Where appropriate, biomass monitoring can be undertaken to track the performance of adaptive grazing and identify evidence of overgrazing. Where overgrazing is identified, stock can be excluded from the area for further investigation and ongoing monitoring.

Should individual areas demonstrate they are not achieving the desired outcomes (ie. the landform is not stable), corrective actions can be taken to address the specific issues identified in line with the sites current Biodiversity Management Plan (PLN Biodiversity Management NEWCX-1552257159-4413). In some cases temporary measures can be installed as a detailed schedule of maintenance is developed. In response to overgrazing the temporary control would be revising the stocking rate per ha and/or reducing the duration of grazing. Long term maintenance actions may vary depending on the root cause of the issue, but can include reshaping/reworking the profile of the land, rehabilitation maintenance, soil amelioration, and/or reseeding.

In addition to the management measures outlined above, GCAA anticipate being involved in a 3 year research program, partnering with CQU (through the Australian Coal Industry's Research Program). The research program will assess the effectiveness adaptive grazing management practices to disrupt geomorphic patterns and damage associated with overgrazing. The study will focus on livestock impacts under continuous and adaptive grazing management systems on stability indicators on steep gradients.

The study includes allowing the intermittent grazing of paddocks for ≈7 day intervals, followed by a recovery period which will be dependent on regrowth of dry matter. Livestock will not be allowed to return to a paddock until key regrowth milestones have been achieved. The study also aims to remove livestock from steep grazing areas prior to significant rainfall events, only allowing return to these areas once appropriate soil draining has occurred.

5. Review of EA Amendment Requirements

5.1 Content requirements for application

This document has been developed to address the content requirements for an EA amendment application, as outlined in Section 226A and Section 227 (including Section 227AA) of the EP Act.

Table 5-1 outlines how this application meets the requirements, so as to establish a 'properly made application' under Section 22AAA of the EP Act.

Table 5-1 Assessment of Content Requirements for Amendment

Content Requirement	NOC Response
Section 226A: Requirements for amendment applications for environmental authorities	
(1) If the amendment application is for the amendment of an environmental authority, the application must also—	-
(a) describe any development permits in effect under the Planning Act for carrying out the relevant activity for the authority; and	**Not Applicable** This is an existing site specific EA for a resource activity, therefore the provisions of the Planning Act do not apply.
(b) state whether each relevant activity will, if the amendment is made, comply with the eligibility criteria for the activity; and	**Not Applicable** There will be no change to the relevant activity, though there will be a change in the ERA threshold. The EA Holder will continue to comply with existing eligibility criteria for the activity.
(c) if the application states that each relevant activity will, if the amendment is made, comply with the eligibility criteria for the activity—include a declaration that the statement is correct; and	**Not Applicable** There will be no change to the relevant activity. The EA Holder will continue to comply with existing eligibility criteria for the activity. A declaration is also provided as part of the amendment application form.
(d) state whether the application seeks to change a condition identified in the authority as a standard condition; and	**Not Applicable** This is a site specific EA for a resource activity on a mining lease, and does not seek to change a standard condition.

Content Requirement	NOC Response
(e) if the application relates to a new relevant resource tenure for the authority that is an exploration permit or GHG permit—state whether the applicant seeks an amended environmental authority that is subject to the standard conditions for the relevant activity or authority, to the extent it relates to the permit; and	**Not Applicable** The application does not relate to a new resource tenure that is an exploration or GHG permit.
(f) include an assessment of the likely impact of the proposed amendment on the environmental values, including— **(i) a description of the environmental values likely to be affected by the proposed amendment; and** **(ii) details of emissions or releases likely to be generated by the proposed amendment; and** **(iii) a description of the risk and likely magnitude of impacts on the environmental values; and** **(iv) details of the management practices proposed to be implemented to prevent or minimise adverse impacts; and** **(v) if a PRCP schedule does not apply for each relevant activity—details of how the land the subject of the application will be rehabilitated after each relevant activity ends; and**	**Complies** The proposed amendment to EA EPML00817713 does not change any activities on site, and all activities are consistent with the impact assessment(s) initially completed in the EIS. Detail is provided in Section 2 and Section 4 of this document, reference the requirements herein. In summary, the proposed changes are not considered likely to result in any significant adverse impacts on Environmental Values. Third party specialist reports have been provided which support our position.
(g) include a description of the proposed measures for minimising and managing waste generated by amendments to the relevant activity; and	**Not Applicable** The amendment does not anticipate any impact to, or change from, the generation of waste.
(h) include details of any site management plan or environmental protection order that relates to the land the subject of the application.	**Not Applicable** The amendment does not anticipate any likely changes to site management plans or environmental protection orders. Existing biodiversity management plans currently present adaptive measures to be implemented based on observed conditions.
(2) Subsection (1)(f) does not apply for an amendment application for an environmental authority if—	-
(a) either— **(i) the process under chapter 3 for an EIS for the proposed amendment has been completed; or**	**Applicable, and provides exemption to meeting Section 226A(1)(f)**

Content Requirement	NOC Response
(ii) the Coordinator-General has evaluated an EIS for the proposed amendment and there are Coordinator-General's conditions that relate to the proposed amendment; and	The amendment is consistent with the previously assessed and approved EIS for the Wollombi Area (SKM, 2005). The amendment is also consistent with the EIS Assessment Report providing an evaluation of the activities by the Co-ordinator General (EPA, 2006). The initial EA approved in 2007 contained the conditions relating to the activity, however over time this has been omitted from the EA in error.
(b) an assessment of the environmental risk of the proposed amendment would be the same as the assessment in the EIS mentioned in paragraph (a)(i) or the evaluation mentioned in paragraph (a)(ii).	**Applicable, and provides exemption to meeting Section 226A(1)(f)** There is no change to the activities authorised as a result of this amendment, therefore the environment risk would be the same as that assessed during the EIS process.
(3) Also, subsection (1)(a), (d), (e), (f), (g) and (h) does not apply to an application for a condition conversion.	**Not Applicable** The application does not relate to a condition conversion.
(4) Despite subsection (1)(f), (g) and (h), if the amendment application is for an environmental authority for the prescribed ERA mentioned in the Environmental Protection Regulation 2019, schedule 2, section 13A—	-
(a) it need only include the matters mentioned in subsection (1)(f)(i) to (iv), (g) and (h) to the extent the matters relate to fine sediment, or dissolved inorganic nitrogen, entering the water of the Great Barrier Reef or Great Barrier Reef catchment waters; and	**Not Applicable** The application does not relate to the prescribed ERA as mentioned. The amendment also has no potential to result in sediments or materials entering the Great Barrier Reef catchment or waters.
(b) subsection (1)(f)(v) does not apply for the amendment application.	
Section 227: Requirements for amendment applications—CSG activities	
(1) This section applies for an amendment application if—	**Not Applicable**

Content Requirement	NOC Response
(a) the application relates to an environmental authority for a CSG activity; and	This application does not relate to an environmental authority for a CSG activity.
(b) the proposed amendment would result in changes to the management of CSG water; and	
(c) the CSG activity is an ineligible ERA.	
(2) The application must also—	
(a) state the matters mentioned in section 126(1); and	
(b) comply with section 126(2).	
Section 227AA: Requirements for amendment applications— underground water rights	
(1) This section applies for an amendment application if— **(a) the application relates to a site-specific environmental authority for—** **(i) a resource project that includes a resource tenure that is a mineral development licence, mining lease or petroleum lease; or** **(ii) a resource activity for which the relevant tenure is a mineral development licence, mining lease or petroleum lease; and**	**Not Applicable** This is a site specific EA for a resource activity on a mining lease. However, the amendment does not involve changes to the exercise of underground water rights.
(b) the proposed amendment involves changes to the exercise of underground water rights.	
(2) The application must also state the matters mentioned in section 126A(2).	
(3) In this section— site-specific environmental authority means an environmental authority that includes 1 or more ineligible ERAs.	

5.2 Level of Amendment

Under the EP Act, an amendment application for an EA may be:

- A minor amendment (condition conversion) to convert all the EA conditions to standard conditions;
- A minor amendment (threshold); or
- A major amendment, which is an amendment that is not a minor amendment.

Under Section 228 of the EP Act, the Administering Authority will decide whether the proposed amendment is a minor amendment or a major amendment.

We have reviewed the criteria stated in section 3.1.1 and 3.1.2 of the *major and minor amendments guideline.* Based on our review, we consider the proposed amendments meet all the requirements to be assessed as a minor amendment (threshold).

In our pre-lodgement discussions with DES, it was indicated the proposed amendment is likely to be considered a minor amendment.

Table 5-2: Minor amendment (threshold) criteria

Criteria	Does amened comply with criteria
(a) is not a change to a standard condition identified in the EA as a standard condition, other than a condition conversion or replacing a standard condition with a standard condition for the ERA; and	True
(b) does not significantly increase the level of environmental harm caused by the relevant activity; and	True, See Section 4.
(c) does not change any rehabilitation objectives in the EA in a way likely to result in significantly different impacts on environmental values than the impacts previously permitted under the EA; and	True, See Section 4.
(d) does not significantly increase the scale or intensity of the relevant activity; and	True, See Section 4.
(e) does not relate to a new relevant resource tenure for the EA that is— **(i) a new mining lease; or** **(ii) a new petroleum lease; or** **(iii) a new geothermal lease under the Geothermal Energy Act 2010; or** **(iv) a new greenhouse gas injection and storage lease under the Greenhouse Gas Storage Act 2009;** **and**	True
(f) increases the existing surface area for the relevant activity by 10% or less; and	True
(g) for an EA for a petroleum activity: **(i) involves constructing a new pipeline that does not exceed 150km in length; and** **(ii) involves extending an existing pipeline by no more than 10% of the existing length of the pipeline; and**	N/A
(h) if the amendment relates to a new relevant resource tenure for the authority that is an exploration permit or greenhouse gas permit— the amendment application seeks an EA that is subject to the standard conditions for the relevant activity, to the extent it relates to the permit.	N/A

6. Conclusion

The purpose of this report is to support an EA Amendment for EA EPML00817713 over ML 4761 at Newlands Coal Mine in the Bowen Basin.

The proposed amendment seeks to remove the constraining maximum 15% slope angle for grazing areas across the site. The change will apply to Table H1 of the EMPL which outlines rehabilitation requirements for areas disturbed by mining. The amendment proposes revised wording which focus on achieving the relevant rehabilitation goals and outcomes – safe, stable, non-polluting and self-sustaining landforms.

The PRCP proposes post mining land uses that include native ecosystem, riparian and water management and grazing land. The proposed approach is more outcome focused, ensuring the PMLU can be measured and achieved.

It is intended that the amendment outlined above will:

1. avoid potential inconsistencies that may arise between the EA and the PRCP,
2. ensure land is utilised to the highest potential, and,
3. avoid unnecessary rework as the site transitions from operation into closure.

The proposed amendments are supported by evidence gathered by third party specialists in their fields.

The magnitude of the impact of the proposed change on land use (as an environmental value) would affect 1,685ha of land within the disturbance footprint which has a slope angle >15%. This represents less than 10% of the grazing land across the ML.

This supporting information provides evidence by way of additional assessments carried out by third party specialists. The supporting information outlines how the proposed changes will not result in any negative impacts for the identified environmental values. We have also provided justification the proposed amendments constitute a minor amendment under section 228 of the EP Act.

7. References

Landline Consulting, December 2022. *Grazing Steep Slopes at Newlands.*

Queensland Department of Environment and Science (DES), 2021. *Guideline – Progressive rehabilitation and Closure Plans (PRC Plans). Document ID. ESR/2019/4964, Version 2.00, Last reviewed 17 March 2021.*

Queensland Department of Environment and Science (DES), 2020. *Guideline – Major and minor amendments. Document ID. ESR/2015/1684, Version 10.00, Effective 29 Sept 2020.*

Appendix A - Environmental Authority Amendment Form

Application form

Environmental Protection Act 1994

Application to amend an environmental authority

This approved form is to be used when applying to amend an environmental authority under sections 222 to 227A of the Environmental Protection Act 1994 *(EP Act) for an environmentally relevant activity (ERA).*

For applications to the Department of Environment and Science, you can apply through Online Services at: https://business.qld.gov.au/running-business/environment/online-services**.**

Note: For applications to the Department of Environment and Science, the only way to pay fees by credit card is by completing the application online using Online Services. For other fee payment options see Question 31.

It is recommended that prior to making an amendment application, you read the information on what to provide with an application. This information is located on the Business Queensland website at www.business.qld.gov.au (use the search term "Environmental licence"). This website includes a diagnostic tool called a "Forms and fees finder" which will help identify fees and supporting information you need to make an application.

You are encouraged to have a pre-lodgement meeting before applying to amend your environmental authority. If you would like to have a pre-lodgement meeting:

- for prescribed ERAs 2, 3 and 4—contact the Department of Agriculture and Fisheries by email at livestockregulator@daf.qld.gov.au or by phone on 13 25 23.
- for any other ERAs —please fill out and lodge the form *Application for pre-lodgement services* (ESR/2015/1664[1]), prior to lodging this application form.

If you require assistance in answering any part of this form, or have any questions about your application please contact the relevant department. Contact details are at the end of this form (Section 33).

Privacy statement
The Department of Environment and Science (the Department) is collecting the information on this form in accordance with and as authorised by Chapter 5 of the Environmental Protection Act 1994 *(EP Act). Some of the information may be disclosed to the Department of Resources and Queensland Treasury for the purpose of processing this application.*

Pursuant to section 540 of the EP Act, the Department is required to maintain a register of certain documents and information authorised under the EP Act. A copy of this document will be kept on the public register. The register is available for inspection by members of the public who are able take extracts, or copies of the documents from the register. Documents that are required to be kept on the register are published in their entirety, unless alteration is required by the EP Act. There is no general discretion allowing the Department to withhold documents or information required to be kept on the public register. For more information on the Department's public register, search 'public register' at www.qld.gov.au. For queries about privacy matters please email privacy@des.qld.gov.au or telephone 13 74 68.

[1] This is the publication number. The publication number can be used as a search term to find the latest version of a publication at **www.qld.gov.au**.

Section 1 – Environmental authority number	
Environmental authority number for this application	EPML00817713

Section 2 – Applicant details	
Details of the applicant are to be provided in this section. If there is an agent acting on behalf of the environmental authority holder, details of the agent are to be provided. An agent could be a consultant or contactor for the environmental authority holder.	
NAME / COMPANY NAME NC Coal Company	TRADING NAME NC Coal Company Pty Limited
REGISTERED / RESIDENTIAL ADDRESS Level 44 Gateway Building 1 Macquarie Place, Sydney NSW 2000	POSTAL ADDRESS (WHERE DIFFERENT) PO Box 21 Glenden QLD 4743
ABN / ACN 71 079 862 936 / 079 862 936	CONTACT NAME Craig Bushell
EMAIL Craig.Bushell@glencore.com.au	TELEPHONE 07 4940 5263 / 0438 637 645
☒ INDICATE IF YOU WANT TO RECEIVE CORRESPONDENCE VIA EMAIL ☐ INDICATE IF THIS FORM IS BEING COMPLETED BY AN AGENT FOR THE ENVIRONMENTAL AUTHORITY HOLDER	

Section 3 – Checklist questions An application to amend an environmental authority is not appropriate in all circumstances. If you answer **Yes** to any of the preliminary questions below, you cannot use this application form. If you answer **No** to all of the preliminary questions, you may continue to use this application form.	
Is the amendment to correct a clerical or formal error?	☐ Yes ☒ No
If yes, you cannot use this form. This request should be made in writing directly to the administering authority (no fees apply).	
Is the amendment to add an ERA to an amalgamated project authority and the proposed activity does not form part of the single integrated operation conducted under the authority?	☐ Yes ☒ No
If yes, you cannot use this form. You will need to apply for a new environmental authority.	
Is the amendment to add an ERA to the authority and the addition of the activity would result in the environmental authority applying to activities that were not being carried out as an ERA project?	☐ Yes ☒ No
If yes, you cannot use this form. You will need to apply for a new environmental authority.	
Is the amendment to amalgamate two or more environmental authorities?	☐ Yes ☒ No
If yes, you cannot use this form. Please use either the form *Application to amalgamate two or more environmental authorities into an amalgamated corporate authority* (ESR/2015/1734), or *Application to amalgamate two or more environmental authorities into an amalgamated project or local government authority* (ESR/2015/1735).	
Is the amendment to add an ERA to an amalgamated local government authority and there is not an appropriate degree of integration between the proposed activity and the existing activities on the authority?	☐ Yes ☒ No
If yes, you cannot use this form. You will need to apply for a new environmental authority.	

Is the amendment to amend the financial assurance or estimated rehabilitation cost only?	☐ Yes ☒ No
If yes, you cannot use this form. Please use the form *Application to amend or discharge financial assurance held for an environmental authority* (ESR/2015/1752) or *Application for a decision on the estimated rehabilitation cost* (ESR/2018/4426).	
Is the proposed amendment to add a resource activity to an environmental authority for a prescribed ERA project?	☐ Yes ☒ No
If yes, you cannot add the resource activity to the environmental authority. You will need to apply for a new environmental authority.	
Is the proposed amendment to add a prescribed ERA, other than an ancillary activity, to an environmental authority for a resource project?	☐ Yes ☒ No
If yes, you cannot use this form. You can apply using the standard, variation or site-specific application forms.	

Section 4 – Checklist questions for prescribed ERAs Is the application to amend an EA for a prescribed ERA?	☒ No – Go to next section
Does the proposed amendment involve changes to the relevant activity that require a new development application to be lodged under the *Planning Act 2016* and the application for the development application has not been lodged.	☐ Yes ☐ No
If yes, the development application must be lodged before an environmental authority amendment application can be made. Under EP Act, a development application for a material change of use of premises for an environmentally relevant activity is deemed to be also an application for an environmental authority. In this case, an environmental authority amendment application should not be lodged.	
Is the proposed amendment solely to add or remove vehicles for ERA 57 (Regulated waste transport)?	☐ Yes ☐ No
If yes, you do not need to submit this application form. You can update vehicle details online through Online Services or use the form *Details of regulated waste vehicles* (ESR/2015/1851).	
Is the amendment for the holder of the environmental authority to transfer all or part of the environmental authority to a person?	☐ Yes ☐ No
If yes, you cannot use this form. Please use the form *Request to transfer all or part of an environmental authority (prescribed environmentally relevant activities)* (ESR/2015/1718).	
Is the amendment for the surrender of an environmental authority?	☐ Yes ☐ No
If yes, you cannot use this form. Please use the form *Application to surrender an environmental authority for a prescribed ERA* (ESR/2015/1719).	

Section 5 – Checklist for resource activities Is the application to amend an EA for a resource activity?	☐ No – Go to next section
Is the amendment for a partial surrender of an environmental authority for a mining, geothermal or petroleum resource activity?	☐ Yes ☒ No
If yes, you cannot use this form. Please use the form *Application for surrender or partial surrender of an environmental authority (resource activity)* (ESR/2015/1751).	
Is the amendment for an EA that has a PRCP Schedule and approval of the amendment application would result in the EA to which the application relates being inconsistent with the relevant PRCP schedule?	☐ Yes ☒ No
If yes, you cannot use this form. The amendment to the EA must not be inconsistent with the PRCP Schedule otherwise you must apply to amend your PRCP Schedule. Please use the form *Application to amend a progressive rehabilitation and closure plan schedule (PRCP schedule) or joint PRCP schedule and environmental authority* (ESR/2019/4956).	

Section 6 – Major or minor amendment

Is the application for a major or minor amendment?

Your application is a minor amendment (condition conversion) if you want to convert all conditions of your environmental authority to the standard conditions for the environmentally relevant activities to which the environmental authority relates. By selecting this amendment type you are certifying that you have a complete and thorough understanding of, and can comply with, the ERA Standard (eligibility criteria and standard conditions).

For applications other than a minor amendment (condition conversion), the administering authority decides if an application is a minor amendment (threshold) or a major amendment and will send you a notice of the decision.

If the application is a major amendment, an assessment fee of 30% of the annual fee for your environmental authority is required to be paid. The assessment of your amendment application will not proceed until the assessment fee is paid.

No additional assessment fees apply if your application is determined to be a minor amendment.

By considering what type of amendment your application is likely to be, you will have a better idea of whether the assessment fee will be payable.

For further information see the guideline *Major and minor amendments* (ESR/2015/1684) and s223 of the EP Act. If you have questions regarding whether your amendment will be a minor or major amendment you are encouraged to arrange a pre-lodgement meeting with the administering authority. Only an indication can be given as to whether the proposed changes are likely to be a minor or major amendment, at a pre-lodgement meeting as this decision can only be made when the actual application is submitted.

☐ Major amendment

☒ Minor amendment (threshold)

☐ Minor amendment (condition conversion)
For minor amendment (condition conversion) go to Section 31 (Payment of fees).

For further information see the guideline on *Major and minor amendments* (ESR/2015/1684) and s223 of the EP Act. If you have questions regarding whether your amendment will be a minor or major amendment you are encouraged to arrange a pre-lodgement meeting with the administering authority. Only an indication can be given as to whether the proposed changes are likely to be a minor or major amendment, at a pre-lodgement meeting as this decision can only be made when the actual application is submitted.

Section 7 – Amendment options Complete this section for all applications, tick all that apply	
I would like to amend environmental authority:	☐ Activities – includes changes to threshold ☒ Conditions – includes conversion to standard conditions and variations ☐ Locations – removal/addition or activity locations

Section 8 – Development permits	
Is the activity a prescribed ERA?	☐ No – Go to next section ☒ Yes – Provide details below
Are there any development permits in effect or have any development applications been made under the *Planning Act 2016* to carry out the proposed amendment?	☒ No – Go to next section ☐ Yes – Provide details below

Provide a list of applicable development permits or applications below.

Development permit / application number	Development permit / application name	Assessment manager	Date of application or approval	Expiry date

☐ I HAVE ATTACHED ADDITIONAL DETAILS FOR THIS SECTION.

Section 9 – Amend activities

Do you wish to amend activities under the EA, including changes to threshold(s)?	☒ No – Go to next section ☐ Yes – Provide details below

Section 9.1 - Details of the ERA(s) to be removed.
Provide a list of all the ERAs that are to be removed from the EA and identify whether the ERA has commenced.

ERA number	Threshold	Name of ERA	Has the ERA commenced?
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No

☐ I HAVE ATTACHED DETAILS OF ADDITIONAL ERA(s) TO BE REMOVED.

Section 9.1.1 - Rehabilitation conditions Does the proposed amendment remove a prescribed ERA from the EA?	☐ No – Continue on below ☐ Yes – Continue on below
Does your EA contain any rehabilitation conditions that are applicable to the ERA(s) that are requested be removed from the EA?	☐ No – Go to section 9.2 ☐ Yes – Provide details below

A statement addressing compliance with environmental authority conditions is to be completed by, or on behalf of, the environmental authority holder. Attach a separate document to this application form which states the extent to which:

1. The ERAs being removed from the environmental authority have complied with each relevant condition of approval; and
2. The final rehabilitation report is accurate (include the date of the final rehabilitation report).

PROVIDE DETAILS OF THE DATE, METHOD AND EVIDENCE USED TO VERIFY COMPLIANCE:

PROVIDE DETAILS OF THE NAME, POSITION AND CONTACT NUMBER OF THE PERSON SIGNING THE STATEMENT:

DESCRIBE THE QUALIFICATIONS AND EXPERIENCE OF THE PERSON SIGNING THE STATEMENT:

☐ I HAVE ATTACHED THE REQUIRED STATEMENT ADDRESSING COMPLIANCE WITH CONDITIONS.

For guidance on what a rehabilitation report should contain you may use the final rehabilitation report template available at www.qld.gov.au using the publication number ESR/2015/1616 as a search term. Methods to verify compliance may include a desktop assessment of documentation, an interview with the landowner/holder or a field operator or a site inspection. Evidence used may include photographs, statements and other documents such as maps, plans, approvals, monitoring results etc.

Section 9.2 - Details of the ERA(s) to be added.
Provide details of which ERA(s) you wish to add. If the ERA has eligibility criteria and standard conditions[2], identify whether you can comply with them. Select "N/A" where there are no eligibility criteria and standard conditions for that ERA. If you cannot comply with all of the applicable standard conditions, select "no" and attach details of the standard conditions you cannot comply with.

ERA number	Threshold	Name of ERA	I can comply with the eligibility criteria	I can comply with all the standard conditions
			☐ Yes ☐ N/A ☐ No	☐ Yes ☐ No
			☐ Yes ☐ N/A ☐ No	☐ Yes ☐ No
			☐ Yes ☐ N/A ☐ No	☐ Yes ☐ No
			☐ Yes ☐ N/A ☐ No	☐ Yes ☐ No
			☐ Yes ☐ N/A ☐ No	☐ Yes ☐ No
			☐ Yes ☐ N/A ☐ No	☐ Yes ☐ No
			☐ Yes ☐ N/A ☐ No	☐ Yes ☐ No

☐ I HAVE ATTACHED DETAILS OF ADDITIONAL ERA(s) TO BE ADDED.
☐ I HAVE ATTACHED DETAILS OF THE STANDARD CONDITIONS THAT I CANNOT COMPLY WITH.

If you cannot comply with the eligibility criteria as a result of the proposed amendment, then an amendment to the relevant eligibility criteria condition will also be required. The department will only approve an amendment of the eligibility criteria condition if it is a result of factors beyond your control such as residential encroachment, rather than a change to the activity.

[2] ERAs with eligibility criteria and standard conditions are listed at: www.business.qld.gov.au (use the search term "eligibility criteria").

Section 10– Amend location(s)		
Will the area where the activity is conducted differ from the area currently designated in the existing environmental authority? (I.e.will the area where the activity is conducted increase or decrease?)		☒ No – Go to next section ☐ Yes – Provide details below
ERA number and threshold	Location (lot on plan(s), tenure(s) or mobile and temporary)	Add or remove

☐ I HAVE ATTACHED DETAILS OF ADDITIONAL LOCATIONS FOR THIS SECTION.

Section 10.1 - Rehabilitation conditions Does your EA contain any rehabilitation conditions that are applicable to the locations that are requested be removed from the EA?	☐ No – Go to next section ☐ Yes – Continue on below
Has a statement addressing compliance with EA rehabilitation conditions been attached as per section 9.1.1?	☐ No – Provide details below ☐ Yes – Go to next section

PROVIDE DETAILS OF THE DATE, METHOD AND EVIDENCE USED TO VERIFY COMPLIANCE:

PROVIDE DETAILS OF THE NAME, POSITION AND CONTACT NUMBER OF THE PERSON SIGNING THE STATEMENT:

DESCRIBE THE QUALIFICATIONS AND EXPERIENCE OF THE PERSON SIGNING THE STATEMENT:

☐ I HAVE ATTACHED THE REQUIRED STATEMENT ADDRESSING COMPLIANCE WITH CONDITIONS.

For guidance on what a rehabilitation report should contain you may use the final rehabilitation report template available at www.qld.gov.au using the publication number ESR/2015/1616 as a search term. Methods to verify compliance may include a desktop assessment of documentation, an interview with the landowner/holder or a field operator or a site inspection. Evidence used may include photographs, statements and other documents such as maps, plans, approvals, monitoring results etc.

Section 11 – Single integrated operation confirmation

Will the activities be undertaken as a single integrated operation?	☐ No – Go to next section ☒ Yes – Provide details below

PROVIDE DETAILS OF THE ERAS THAT WILL BE OPERATED AS A SINGLE INTEGRATED OPERATION AND SUPPORTING INFORMATION SHOWING THEY ARE A SINGLE INTEGRATED OPERATION:

Newladns Coal Mine currently operates as a single operation carrying out multiple environmentally relevant activities. No change proposed.

Single integrated operation occurs when all of the below criteria are met:

(a) the activities are carried out under the day-to-day management of a single responsible individual, for example, a site or operations manager;
(b) the activities are operationally interrelated;
(c) the activities are, or will be, carried out at one or more places; and
(d) the places where the activities are carried out are separated by distances short enough to make feasible the integrated day-to-day management of the activities.

Section 12 – Amend conditions

Do you wish to amend the condition(s) of the environmental authority?	☐ No – Go to next section ☒ Yes – Provide details below

Provide details of: (a) condition number(s); (b) proposed change; and (c) justification for the change.

Please refer to the EA Amendment - Supporting information report:

a) Change relates to Table H1.

b) Proposed change to 15% maximum slope angle rehabilitation requirement for grazing land

c) Justification provided in the attached document - predominantly to avoid inconsistencies between the current EA conditions and the PRCP documentation currently being prepared for the site.

☒ I HAVE ATTACHED ADDITIONAL DETAILS FOR THIS SECTION.

If the activities were assessed as part of a coordinated project declared under the *State Development and Public Works Organisation Act 1971*, you are only able to amend Coordinator General conditions if the Coordinator General's evaluation report for the project has lapsed. If you are unsure if the Coordinator General's evaluation report has lapsed, contact the Department of State Development, Infrastructure, Local Government and Planning for more information.

Section 13 – Describe the proposed amendment

Provide a detailed description of your proposed amendment. Include justification of how your proposed amendment meets the criteria for a major or minor amendment and attach any supporting information to this application. If the amendment is to add or delete a location, tenure or activity, or to change the threshold of an activity, provide details below.

Removal the maximum 15% slope angle for landforms described in Schedule H (Table H1). Replace with outcome focused conditions, provided the risks posed have been appropriatley assessed and the landform still complies with the rehabilitaiton principles of stable, safe, non-polluting, and self sustaining.

Please refer to the EA Amendment - Supporting Information report

☒ I HAVE ATTACHED ADDITIONAL DETAILS FOR THIS SECTION.

Section 14 – Describe the land that will be affected by the proposed amendment

Describe if the activity will be carried out within the existing designated areas of the environmental authority, a new area, or if the activity is mobile or temporary.

The proposed amendment is located at Newlands Coal Mine, more specifically on ML4761. Please refer to the EA Amendment - Supporting Information report

☒ I HAVE ATTACHED ADDITIONAL DETAILS FOR THIS SECTION.

Section 15 – Compliance with any eligibility criteria	
Are there any eligibility criteria for the activity(s)?	☒ No - Go to next section ☐ Yes - Provide details below

State whether each relevant activity will, if the amendment is made, comply with any eligibility criteria for the activity.

Include a declaration (below) that the above statement is correct

I Craig Bushell, Environment & Community Manager, NC Coal Pty Ltd

(INSERT NAME, POSITON AND COMPANY NAME OF PERSON MAKING THE STATEMENT)

- make the statement by or for the holder of the environmental authority;
- confirm that, to the best of my knowledge, all information provided as part of this statement, including attachments, is true, correct and complete. I am aware that it is an offence under section 480 and 480A of the *Environmental Protection Act 1994*, to give the administering authority information that I know is false, misleading or incomplete;
- confirm that, to the best of my knowledge, this statement, including attachments, does not include false, misleading or incomplete information;
- confirm that, to the best of my knowledge, I have not knowingly failed to reveal any relevant information or document to the administering authority;
- confirm that, to the best of my knowledge, all information provided in this statement, including attachments, address the relevant matters and are factually correct;
- confirm that the opinions expressed in this statement, including attachments, are honestly and reasonably held; and
- understand that all information supplied as part of this statement, including attachments, can be disclosed publicly in accordance with the *Right to Information Act 2009* and the *Evidence Act 1977*.

SIGNATURE	DATE
	15/09/2023

Only a person with appropriate environmental expertise and/or experience in planning and executing site operations should sign this statement. This person may be the environmental authority holder, a full time employee of the environmental authority holder or a consultant to the environmental authority holder.

Section 16 – Environmental offsets

Will the ERA(s) being applied for cause, or be likely to cause, a significant residual impact to a prescribed environmental matter (other than a matter of local environmental significance)?	☒ No - Go to next section ☐ Yes - Provide details below

☐ Yes - Attach supporting information that:

- details the magnitude and duration of the likely significant residual impact on each prescribed environmental matter (other than matters of local environmental significance) for the entire activity;
- demonstrates that all reasonable measures to avoid and minimise impacts on each of those matters will be undertaken;
- includes a notice of election, if it has not already been submitted; and
- if the activity is to be staged, details of how the activity is proposed to be staged.

An environmental offset may be required for an ERA where despite all reasonable measures to avoid and minimise impacts on certain environmental matters, there is still likely to be a significant residual impact on one or more of those matters. You must verify the presence, whether temporary or permanent, of those environmental matters. For more information refer to the State Significant Impact Guideline at the Queensland Government website, at: www.qld.gov.au/environment/pollution/management/offsets/index.html.

Section 17 – Regional interest areas

Is the activity a resource activity located anywhere within an area of regional interest?	☒ No - Go to next section ☐ Yes - Provide details below

If yes - Which area of regional interest, has or will require a regional interest development approval (RIDA)?

- ☐ Priority agricultural areas (PAAs)
- ☐ Priority living areas (PLAs)
- ☐ Strategic environmental areas (SEAs)
- ☐ Strategic cropping area (SCA)
- ☐ No RIDA required, I am an exempt activity.

If you have applied or been approved for a RIDA, provide the application reference:	

A regional interests development approval (RIDA) is required when a resource activity is proposed in an area of regional interest under the *Regional Planning Interests Act 2014*. Further information, including application forms, can be found on the Department of State Development, Infrastructure, Local Government and Planning website at www.statedevelopment.qld.gov.au.

Section 18 – Matters of national environmental significance	
Would the carrying out of the proposed ERA, or where relevant the ERA project, be likely to have a significant impact on any matters of national environmental significance?	☒ No - Go to next section ☐ Yes - Provide details below
Has the proposal been referred to the Federal Government Environment Minister or a delegate for formal assessment and approval?	☐ No - Go to next section ☐ Yes - Provide details below
If Yes - Has an approval issued under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) required an environmental offset for the same, or substantially the same, impact and the same, or substantially the same, matters of national environmental significance?	☐ No - Go to next section ☐ Yes - Provide details below
If Yes - Are there any matters of national environmental significance which are assessed under the EPBC Act which are the same, or substantially the same as any matters of national environmental significance, but that were not conditioned in the approval?	☐ No - Go to next section ☐ Yes - Provide details below

☐ I HAVE ATTACHED DETAILS OF MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE.
☐ I HAVE ATTACHED A COPY OF THE EPBC ACT APPROVAL.

There are currently nine matters of national environmental significance (MNES) which have been defined in the *Environmental Protection and Biodiversity Conservation Act 1999 (Cth)*. To determine whether the proposed ERA(s) will have a significant impact on MNES and for referral requirements, please refer to the guidance provided by the Federal Government's Department of Environment on www.australia.gov.au and www.environment.gov.au.

Section 19 – ANZSIC code	
Is the activity a resource activity?	☐ No - Go to next section ☒ Yes - Provide details below

Provide the ANZSIC code for the resource activity.

- ☒ 1101 Black coal mining
- ☒ 1102 Brown Coal Mining
- ☐ 1311 Iron ore mining
- ☐ 1312 Bauxite mining
- ☐ 1317 Silver-lead-zinc ore mining
- ☐ 1200 Oil and gas extraction
- ☐ 1313 Copper ore mining
- ☐ 1314 Gold ore mining
- ☐ 1315 Mineral sand mining
- ☐ 1316 Nickel ore mining
- ☐ 1319 Metal ore mining (other metallic mineral ores)
- ☐ Other (provide details): _____

The Australian and New Zealand Industrial Classification (ANZSIC) is used by the Australian Bureau of Statistics. It is required to be displayed in the public register.

Section 20 – Environmental impact statement (EIS)*	
Is the activity a resource activity?	☐ No - Go to next section ☒ Yes - Provide details below
Has an application been made for a decision on whether an EIS would be required for the proposed amendment activity?	☒ No ☐ Yes
Has a decision been made on the application on whether an EIS would be required for the proposed amendment activity?	☐ Yes, a decision was made that an EIS is required – Attach decision. ☐ Yes, a decision was made that an EIS is **not** required – Attach decision. ☐ No, a decision has not yet been made. ☒ NA – No application has been made.
☐ I HAVE ATTACHED THE DECISION.	
Has an environmental impact statement (EIS) process that includes the proposed amendment been completed?	☐ No - Go to next section ☒ Yes - Provide details below
If yes – I have assessed the environmental risks of the proposed amendment and consider them to be: ☒ The same as was assessed in the EIS ☐ Different to what was assessed in the EIS	
☒ I HAVE ATTACHED THE ASSESSMENT OF THE ENVIRONMENTAL RISKS OF THE PROPOSED AMENDMENT.	
* EIS in section 20 question refers to both the EIS process under the *Evironmental Protection Act 1994* and the EIS process under the *State Development and Public Works Organisation Act 1971*. * For further information about the EIS process is available at www.qld.gov.au, using the search term 'environmental impact statements'.	

Section 21 – Environmental impact statement triggers*	
Is the activity a resource activity?	☐ No - Go to next section ☒ Yes - Provide details below
Is the proposed ERA amendment for an increase in the annual extraction of more than 100% or 5 million tonnes per year (whichever is the lesser)? *NOTE: Only answer this question if the current ERA project is for an existing mine extracting between 2–10 million tonnes per year of run of mine (ROM) ore or coal; otherwise select N/A.*	☐ Yes ☒ No ☐ N/A
Is the proposed ERA amendment for an increase in annual extraction of more than 10% or 10 million tonnes per year (whichever is the lesser)? *NOTE: Only answer this question if the current ERA project is for an existing mine extracting over 10 million tonnes per year of ROM ore or coal; otherwise select N/A.*	☐ Yes ☒ No ☐ N/A
Is the proposed ERA amendment for an increase in annual extraction of greater than 25%? *NOTE: Only answer this question if the current ERA project is for an existing mine extracting over 20 million tonnes per year of ROM ore or coal extraction; otherwise select N/A.*	☐ Yes ☒ No ☐ N/A
Is the proposed ERA amendment for a mining activity that will extend into a Category A or B environmentally sensitive area, unless previously authorised by the state? *NOTE: Only answer this question if the activity is a mining activity; otherwise select N/A.*	☐ Yes ☒ No ☐ N/A

Is the proposed ERA amendment for a mining activity that would involve a substantial change in mining operations? For example: from underground to open cut, or (for underground mining) a change in operations that currently causes little subsidence but with the proposed ERA amendment, is likely to cause substantial subsidence?	☐ Yes ☒ No ☐ N/A
Is the proposed ERA amendment for a mining activity and a novel or unproven resource extraction process, technology or activity, is being proposed? *NOTE: Only answer this question if the activity is a mining activity; otherwise select N/A.*	☐ Yes ☒ No ☐ N/A
Is the proposed ERA amendment for a petroleum and gas activity that is likely to have a total disturbance area of greater than 2,000 hectares at any one time during the life of the proposed project? This includes areas occupied by well pads (single or multi-directional), access tracks and roads, water storages, and process plants? *NOTE: Only answer this question if the activity is a petroleum and gas activity; otherwise select N/A.*	☐ Yes ☒ No ☐ N/A
Is the proposed ERA amendment for a petroleum and gas activity that is likely to involve the construction of a high pressure pipeline over a distance of 300 kilometres or greater? *NOTE: Only answer this question if the activity is a petroleum and gas activity; otherwise select N/A.*	☐ Yes ☒ No ☐ N/A
Is the proposed ERA amendment for a petroleum and gas activity that is likely to involve the construction of a liquefied natural gas plant? *NOTE: Only answer this question if the activity is a petroleum and gas activity; otherwise select N/A.*	☐ Yes ☒ No ☐ N/A
☐ I HAVE ATTACHED DETAILS OF HOW THE CRITERION IS TRIGGERED INCLUDING DETAILS OF THE IMPACT.	
* EIS in section 21 question refers to both the EIS process under the *Evironmental Protection Act 1994* and the EIS process under the *State Development and Public Works Organisation Act 1971*. * There are numerous criteria used to make the EIS decision, for further information about the EIS process is available at www.qld.gov.au, using the search term 'environmental impact statements'.	

Section 22 – Environmental values

Attach a document that provides an assessment of the likely impact of the proposed amendment on environmental values (EVs). Note: All fields below are mandatory, therefore a statement is required where there are no likely impacts to an EV.

Environmental Values

☐ Water	☐ Wetlands	☒ Land use	☐ Acoustic
☐ Groundwater	☒ Land	☐ Air	☐ Waste

☒ I HAVE ATTACHED A DOCUMENT THAT PROVIDES AN ASSESSMENT OF LIKELY IMPACTS ON EVs.

Note that the EP Act, s226A(1)(f) states the information required relating to impacts on EVs which include:

(i) a description of the environmental values likely to be affected by the proposed amendment; and
(ii) details of any emissions or releases likely to be generated by the proposed amendment; and
(iii) a description of the risk and likely magnitude of impacts on the environmental values; and
(iv) details of the management practices proposed to be implemented to prevent or minimise adverse impacts; and
(v) if a PRCP schedule does not apply for each relevant activity - details of how the land the subject of the application will be rehabilitated after each relevant activity ceases.

Section 23 – Waste
Attach a document that provides details of the proposed measures for minimising and managing waste generated by any amendment(s) to the relevant activity.
☐ I have attached a document that provides the required information; or ☒ If waste is to be managed according to an existing waste management plan, provide the name of the plan and the relevant page or section numbers below: PNL Waste Management.docx

Section 24 – Coal seam gas (CSG) activities	
Does the application relate to an environmental authority for a CSG activity that is an ineligible ERA?	☒ No - Go to next section ☐ Yes - Provide details below
Does the amendment change the way that CSG water is managed?	☐ No - Go to next section ☐ Yes - Provide details below
If the amendment will change the way that CSG water is managed the following information must be provided with this application.	
☐	The quantity of CSG water the applicant reasonably expects will be generated in connection with carrying out each relevant CSG activity.
☐	The flow rate at which the applicant reasonably expects the water will be generated.
☐	The quality of the water, including changes in the water quality the applicant reasonably expects will happen while each relevant CSG activity is carried out.
☐	The proposed management of water including, for example, the use, treatment, storage and disposal of the water.
☐	The measurable criteria ('management criteria') against which the applicant will monitor and assess the effectiveness of the management of the water, including, for example, criteria for each of the following: (i) the quantity and quality of the water used, treated, stored or disposed of; (ii) protection of the environmental values affected by each relevant CSG activity; and (iii) the disposal of waste, including, for example, salt, generated for the management of the water.
☐	The action proposed to be taken if any of the management criteria are not complied with, to ensure that the criteria will be able to be complied with in the future.
☐	If the application includes a CSG evaporation dam, an evaluation of the following must be provided: (i) best practice environmental management for managing CSG water; (ii) alternative ways for managing CSG water; and (iii) whether there is a feasible alternative to a CSG evaporation dam for managing the water. Note if the evaluation shows that there is a feasible alternative option, the CSG evaporation dam cannot form part of the water management for this amendment application.
☐	I HAVE ATTACHED A DOCUMENT THAT PROVIDES THE REQUIRED INFORMATION FOR THIS SECTION.

Section 25 – Underground water rights	
Is the activity a resource activity?	☐ No - Go to next section ☒ Yes - Provide details below
Is the activity proposed to be undertaken on a mineral development licence (MDL), mining lease (ML) or petroleum lease (PL)?	☐ No - Go to next section ☒ Yes - Provide details below
Does the proposed amendment involve changes to the exercise of underground water rights?	☒ No - Go to next section ☐ Yes - Provide details below

☐ I have attached a document that details:

a) The areas in which underground water rights are proposed to be exercised;

b) For each aquifer affected, or likely to be affected, by the exercise of underground water rights:

   a. a description of the aquifer;

   b. an analysis of the movement of underground water to and from the aquifer, including how the aquifer interacts with other aquifers and surface water and

   c. a description of the area of the aquifer where the water level is predicted to decline because of the exercise of underground water rights; and.

   d. the predicted quantities of water to be taken or interfered with because of the exercise of underground water rights during the period in which resource activities are carried out.

c) The environmental values that will, or may, be affected by the exercise of underground water rights and the nature and extent of the impacts on the environmental values;

d) Any impacts on the quality of groundwater that will, or may happen because of the exercise of underground water rights during or after the period in which resource activities are carried out; and

e) Strategies for avoiding, mitigating or managing the predicted impacts on the environmental values of the impacts on the quality of groundwater.

For more information about exercising underground water rights or the associated requirements refer to the guideline *Requirements for site-specific and amendment applications - underground water rights* (ESR/2016/3275)

Section 26 – Financial assurance / estimated rehabilitation cost	
Do you currently have financial assurance or scheme assurance held for the approved environmental authority?	☐ No – Go to next section ☒ Yes – Provide details below

☒ I will not need to change the financial assurance or scheme assurance in relation to this amendment.

☐ I will be changing the financial assurance and have attached the form *Application to amend or discharge financial assurance held for an environmental authority* (ESR/2015/1752).

☐ I will be applying for a new estimated rehabilitation cost decision if this amendment application is approved.

Section 27 – Environmental protection orders or site management plan	
Is this land currently subject to an environmental protection order (EPO) or a site management plan (SMP)?	☒ No – Go to next section ☐ Yes (EPO) - provide details below ☐ Yes (SMP) - provide details below
PROVIDE THE REFERENCE NUMBER AND BRIEF DETAILS INCLUDING: DESCRIPTION OF LAND; LOT AND PLAN NUMBERS; AND LOCAL GOVERNMENT AREA.	

Section 28 – Environmental management register	
Is any part of the land currently recorded in, or has previously been removed from, the environmental management register?	☒ No – Go to next section ☐ Yes – Provide details below
☐ The land is currently in the environmental management register. ☐ The land has been removed from the environmental management register. You must attach evidence (e.g. Notice) advising that the details have been removed.	

Section 29 - Website address		
Is the application for a mining activity on a mining lease, or a geothermal, petroleum, or greenhouse gas storage activity?	☐ No – Go to next section ☒ Yes – Provide details below	
Provide the website address for the application notice and application documents.		
Provide details of the contact person if technical assistance is required.	NAME Craig Bushell	TELEPHONE (07) 4940 5623 / 0438 637 645
	EMAIL Craig.Bushell@glencore.com.au	

Section 30 – Site contact	
Would you like to nominate a site contact?	☐ No – Go to next section ☒ Yes – Provide details below
SITE CONTACT NAME Craig Bushell	POSITION Environment & Communities Manager
EMAIL Craig.Bushell@glencore.com	TELEPHONE 07 4940 5263
☒ INDICATE IF YOU WANT THE SITE CONTACT TO RECEIVE CORRESPONDENCE VIA EMAIL	
A site contact is an alternative contact nominated by the legal entity which holds, or will in future hold, a relevant authority issued by the department. The department may direct correspondence relating to actual or potential compliance matters to the site contact.	

Section 31 – Payment of fees	
Application fee:	$ 355.30
Cheque or money order payments	
☐ Payment by cheque or money order made payable to the Department of Environment and Science (attached).	
☐ Payment by cheque or money order made payable to the Department of Agriculture and Fisheries (attached).	
Credit card payments	
☒ For credit card payments for applications to the Department of Environment and Science please lodge the application using Online Services at https://business.qld.gov.au/running-business/environment/online-services.	
☐ For credit card payments for applications relating to the Department of Agriculture and Fisheries please contact me (the applicant) for secure payment; Phone number: Insert phone no.	
An application fee is payable at the time the application is made. Information on the fee can be located in the information sheet *Fees for permits for environmentally relevant activities (ERAs)* (ESR/2015/1721). Where the proposed amendment is determined by the administering authority to be a major amendment, an assessment fee of 30% of the annual fee for the authority at the time of application, is also payable. The assessment fee is payable once notification of the assessment level decision is issued. The assessment fee must be paid before the assessment of the amendment application can proceed. The supplementary annual fee is payable where the amendment is approved and results in the aggregate environmental score (and hence the annual fee) for the EA increasing. The supplementary annual fee is a pro-rata adjustment to the annual fee for the period from when the amended EA takes effect to the next anniversary day for the EA. This is payable within 20 business days after the approval date. The supplementary annual fee can be calculated using the *Fee calculator* (ESR/2015/1731).	

Section 32 – Declaration

Note: If you have not told the truth in this application you may be prosecuted.

I declare that:

- I am the holder of the environmental authority, or authorised signatory for the holder of the environmental authority.
- If the proposed amendment is made, the relevant activities will continue to comply with the ERA Standard (eligibility criteria and standard conditions) for all eligible ERAs, or where they cannot comply, I have indicated otherwise in my application and provided the required supporting information.
- If the proposed amendment is a minor amendment (condition conversion), I can comply with the ERA Standard (eligibility criteria and standard conditions) for each of the ERAs authorised by the environmental authority.
- The information provided is true and correct to the best of my knowledge. I understand that it is an offence under section 480 and 480A of *the Environmental Protection Act 1994* to give the administering authority or an authorised person a document containing information that I know is false, misleading or incomplete in a material particular.

I understand that I am responsible for managing the environmental impacts of these activities, and that approval of this application is not an endorsement by the administering authority of the effectiveness of management practices proposed or implemented.

Where an agreement is in place between all holders of the environmental authority, one holder can sign on behalf of the other joint holders. Please tick the checkbox below.

☐ I HAVE AUTHORITY TO SIGN THIS FORM ON BEHALF OF ALL THE JOINT HOLDERS OF THE ENVIRONMENTAL AUTHORITY.

Applicant's signature

APPLICANT'S NAME	POSITION	COMPANY / ORGANISATION
Craig Bushell	Environment & Community Manager	NC Coal Pty Ltd
APPLICANT'S SIGNATURE 		DATE 15/09/2023

Joint holder(s) signature if applicable

NAME, POSITION AND COMPANY NAME	SIGNATURE	DATE
NAME, POSITION AND COMPANY NAME	SIGNATURE	DATE
NAME, POSITION AND COMPANY NAME	SIGNATURE	DATE

OR ☐ I HAVE ATTACHED A DOCUMENT THAT PROVIDES THE REQUIRED INFORMATION FOR ALL JOINT HOLDERS.

Where the environmental authority holder is a company, this form must be signed by an authorised person for that company. Where there is more than one holder of the environmental authority, this declaration is to be signed by all holders, unless there is an agreement between all holders that one can sign on behalf of the other(s).

Section 33 - Submission

Please submit your completed application to:

For ERA 2, ERA 3 or ERA 4:

Post:
Senior Environmental Scientist
Animal Industries
Department of Agriculture and Fisheries
PO Box 102
TOOWOOMBA QLD 4350

Enquiries
Phone: (07) 4688 1374
Fax: (07) 4529 4192
Email: livestockregulator@daf.qld.gov.au

For a mining ERA where the proposed amendment impacts upon the resource tenure:

Enquiries
Mining Registrar
Department of Resources
The Department of Resources has a list of office locations for mining registrars on its website www.resources.qld.gov.au/.

For all other ERAs:

Post:
Permit and Licence Management
Department of Environment and Science
GPO Box 2454
BRISBANE QLD 4001

Enquiries
Website: www.business.qld.gov.au
Email: palm@des.qld.gov.au
Phone: 13 QGOV (13 74 68)

The latest version of this publication and other publications referenced in this document can be found at **www.qld.gov.au** using the relevant publication number (ESR/2015/1733 for this form) or title as a search term.

Section 34 - Definitions to terms used in this form	
(Where there is inconsistency between the definition of terms used here and the terms used in the EP Act, the terms in the EP Act apply)	
Condition conversion	For an environmental authority, means an amendment replacing all the conditions of the authority with the standard conditions for the environmentally relevant activity which the authority relates. The relevant eligibility criteria and standard conditions must be able to be met.
Eligibility criteria	For an environmentally relevant activity, means eligibility criteria that are in effect for the activity under – (a) An ERA standard; or (b) A code of environmental compliance; or (c) A regulation in respect of a mining activity.
Environmentally relevant activity (ERA)	A resource activity or a prescribed ERA.
ERA project	A prescribed ERA project or a resource project.
ERA standard	For an environmentally relevant activity, means the eligibility criteria and/ or the standard conditions set by the administering authority.
Major amendment	For an environmental authority, means an amendment that is not a minor amendment.
Material change of use of premises for an ERA	A category of assessable development requiring a development permit under the *Planning Act 2016*. Refer Schedule 10, Division 2, Item 8 of the Planning Regulation 2017.
Minor amendment	For an environmental authority, means an amendment that is – (a) a condition conversion; or (b) a minor amendment (threshold).
Minor amendment (threshold)	For an environmental authority, means an amendment that the administering authority is satisfied— (a) is not a change to a condition identified in the authority as a standard condition, other than— (i) a change that is a condition conversion; or (ii) a change that is not a condition conversion but that replaces a standard condition of the authority with a standard condition for the environmentally relevant activity to which the authority relates; and (b) does not significantly increase the level of environmental harm caused by the relevant activity; and

	(c) does not change any rehabilitation objectives stated in the authority in a way likely to result in significantly different impacts on environmental values than the impacts previously permitted under the authority; and (d) does not significantly increase the scale or intensity of the relevant activity; and (e) does not relate to a new relevant resource tenure for the authority that is— (i) a new mining lease; or (ii) a new petroleum lease; or (iii) a new geothermal lease under the Geothermal Energy Act; or (iv) a new GHG injection and storage lease under the GHG storage Act; and (f) involves an addition to the surface area for the relevant activity of no more than 10% of the existing area; and (g) for an environmental authority for a petroleum activity— (i) if the amendment involves constructing a new pipeline—the new pipeline does not exceed 150km; and (ii) if the amendment involves extending an existing pipeline—the extension does not exceed 10% of the existing length of the pipeline; and (h) if the amendment relates to a new relevant resource tenure for the authority that is an exploration permit or GHG permit—the amendment application under section 224 seeks an amended environmental authority that is subject to the standard conditions for the relevant activity or authority, to the extent it relates to the permit.
Mobile and temporary ERA	A prescribed ERA, other than an activity that is dredging material, extracting rock or other material, or the incinerating of waste: (a) carried out at various locations using transportable plant or equipment, including a vehicle (b) that does not result in the building of any permanent structures or any physical change of the landform at the locations (other than minor alterations solely necessary for access and setup including, for example, access ways, footings and temporary storage areas) (c) carried out at any one of the locations: (i) for less than 28 days in a calendar year, or (ii) for 28 or more days in a calendar year only if the activity is necessarily associated with, and is exclusively used in, the construction or demolition phase of a project.
Prescribed ERA	An environmentally relevant activity that is not a resource activity and is prescribed under section 19 of the EP Act.
Prescribed ERA project	All prescribed ERAs carried out, or proposed to be carried out, as a single integrated operation.

Registered suitable operator	A person who, or a corporation which, under section 318I of the EP Act has been assessed as being suitable to carry out an ERA and has been listed on the suitable operator register.
Resource activity	An activity that is any of the following: (a) a geothermal activity (b) a greenhouse gas (GHG) storage activity (c) a mining activity (d) a petroleum activity.
Resource project	Resource activities carried out, or proposed to be carried out, under 1 or more resource tenures, in any combination, as a single integrated operation.
Single integrated operation	Occurs when all of the below criteria are met: (a) the activities are carried out under the day-to-day management of a single responsible individual, for example, a site or operations manager; (b) the activities are operationally interrelated; (c) the activities are, or will be, carried out at one or more places; and (d) the places where the activities are carried out are separated by distances short enough to make feasible the integrated day-to-day management of the activities.
Underground water rights	Means any of the following: (a) underground water rights within the meaning of the *Mineral Resources Act 1989*; (b) underground water rights within the meaning of the *Petroleum and Gas (Production and Safety) Act 2004*; (c) underground water rights within the meaning of the *Petroleum Act 1923*, section 87(3).

Appendix B - Current EA (EPML00817713)

Permit

Environmental Protection Act 1994

Environmental authority EPML00817713

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

Environmental authority number: EPML00817713

Environmental authority takes effect on 2 February 2023

Environmental authority holder(s)

Name(s)	Registered address
NC COAL COMPANY PTY LIMITED	Level 44 Gateway Building 1 Macquarie Place SYDNEY NSW 2000

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 13: Mining black coal	ML4748, ML4754, ML4755, ML4761, ML4771, ML4774, ML10176, ML10316, ML10317, ML10322, ML10348, ML10352, ML10361, ML10362, and ML70460
Ancillary 08 - Chemical Storage 3: Storing more than 500 cubic metres of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1)(c)	ML4748, ML4754, ML4755, ML4761, ML4771, ML4774, ML10176, ML10316, ML10317, ML10322, ML10348, ML10352, ML10361, ML10362 and ML70460
Ancillary 31 - Mineral processing 2: Processing, in a year, the following quantities of mineral products, other than coke (b) more than 100,000t	ML4748, ML4754, ML4755, ML4761, ML4771, ML4774, ML10176, ML10316, ML10317 ML10322, ML10348, ML10352, ML10361, ML10362 and ML70460
Ancillary 60 - Waste disposal 2: Operating a facility for disposing of, in a year, the following quantity of waste mentioned in subsection (1)(d) more than 10,000t but not more than 20,000t	ML4748, ML4754, ML4755, ML4761, ML4771, ML4774, ML10176, ML10316, ML10317, ML10322, ML10348, ML10352, ML10361, ML10362 and ML70460,
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (b-i) more than 100	ML4748, ML4754, ML4755, ML4761, ML4771, ML4774, ML10176, ML10316, ML10317,

Queensland Government

Environmentally relevant activity/activities	Location(s)
but not more than 1500EP if treated effluent is discharged from the works to an infiltration trench or through an irrigation scheme	ML10322, ML10348, ML10352, ML10361, ML10362, and ML70460

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days);

that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term 'duty to notify'.

Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or

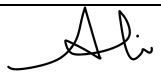
b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or

c) otherwise-on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Sustainable Planning Act 2009* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.

	2 February 2023
Signature	Date

Dr Alison Cummings
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
Business Centre Coal
PO Box 3028, EMERALD QLD 470
Phone: (07) 4987 9320
Email: CRMining@des.qld.gov.au

Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

Conditions of environmental authority

The environmentally relevant activity(ies) conducted at the location as described above must be conducted in accordance with the following site-specific conditions of approval. This environmental authority consists of the following Schedules and Appendices:

Schedule A General

Schedule B Air

Schedule C Waste Management

Schedule D Noise

Schedule E Groundwater

Schedule F Water

Schedule G Regulated Structures

Schedule H Land and Rehabilitation

Schedule J Sewage Treatment

Schedule K Biodiversity

1.1 Appendix A – Watercourse Subsidence

Definitions

Figures

Schedule A – General	
Condition number	**Condition**
A1	**Scope of activity** This environmental authority authorises the mining of **fifteen (15) million tonnes run of mine coal per annum (Mtpa)**.
A2	This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm.
A3	The environmental authority holder must: (a) Install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority; (b) Maintain such measures, plant and equipment in a proper and efficient condition; (c) Operate such measures, plant and equipment in a proper and efficient manner; and (d) Ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.
A4	**Monitoring** Except where specified otherwise in another condition of this environmental authority, all monitoring records or reports required by this environmental authority must be kept for a period of not less than **five (5) years**.
A5	**Risk Management** The environmental authority holder must develop and implement a risk management system for mining activities which aligns with the content requirement of the Standard for Risk Management (ISO31000:2009), or the latest edition of an Australian standard for risk management, to the extent relevant to environmental management, within **three (3) months** from date of issue of this environmental authority.
A6	**Notification of emergencies, incidents and exceptions** The environmental authority holder must notify the administering authority within **twenty-four (24) hours**, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with, the conditions of this environmental authority.
A7	Within **ten (10) business days** following the notification under condition **A6**, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, including the following: (a) Results and interpretation of any samples taken and analysed; (b) Outcomes of actions taken at the time to prevent or minimise unlawful environmental harm; and (c) Proposed actions to prevent a recurrence of the emergency or incident.

A8	**Complaints** The environmental authority holder must record all environmental complaints received about the mining activities including: (a) Name, address and contact number for of the complainant; (b) Time and date of complaint; (c) Reasons for the complaint; (d) Investigations undertaken; (e) Conclusions formed; (f) Actions taken to resolve the complaint; (g) Any abatement measures implemented; and (h) Person responsible for resolving the complaint.
A9	When requested by the administering authority, the environmental authority holder must investigate any nuisance, or contaminant release, or environmental harm, or complaint that is neither frivolous nor vexatious in the opinion of the authorised person, by: (a) Undertaking the monitoring specified by the administering authority; (b) Undertaking the monitoring in the timeframe nominated or agreed to by the administering authority; (c) Completing an analysis and interpretation of the monitoring results; (d) Implementing abatement measures, where required; and (e) The results of the investigation must be provided to the administering authority within **ten (10) business days** of completion of the investigation, or no later than **ten (10) business days** after the end of the timeframe nominated by the administering authority to undertake the investigation.
A10	**Third-party reporting** The environmental authority holder must: (a) Obtain from an appropriately qualified person a report on compliance with the conditions of this environmental authority not exceeding **three (3) yearly** intervals following **July 2015**; and (b) Provide each report to the administering authority within **ninety (90) days** of its completion.
A11	Where a condition of this environmental authority requires compliance with a standard, policy or guideline published externally to this environmental authority and the standard is amended or changed subsequent to the issue of this environmental authority, the environmental authority holder must: (a) Comply with the amended or changed standard, policy or guideline within **two (2) years** of the amendment or change being made, unless a different period is specified in the amended standard or relevant legislation, or where the amendment or change relates specifically to regulated structures referred to in **Table G1 – Transitional hydraulic performance requirements for existing structures**, the time specified in condition **G25**; and (b) Until compliance with the amended or changed standard, policy or guideline is achieved, continue to remain in compliance with the corresponding provision that was current immediately prior to the relevant amendment or change.

A12	Upon request from the administering authority, copies of monitoring results, complaints, records, registers, management plans and reports required by the conditions of this environmental authority must be made available in the requested format and provided to the administering authority within— (a) **Ten (10) business days**; or (b) An alternative timeframe agreed between the administering authority and the environmental authority holder.

Schedule B – Air	
Condition number	**Condition**
B1	Dust and particulate matter must not exceed the following levels when measured at any sensitive or commercial place: (a) Dust deposition of 120 milligrams per square metre per day, averaged over **1 month**, when monitored in accordance with the most recent version of Australian Standard AS3580.10.1 Methods for sampling and analysis of ambient air—Determination of particulate matter—Deposited matter – Gravimetric method; (b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometres (PM10) suspended in the atmosphere of 50 micrograms per cubic metre over a **24-hour** averaging time, when monitored in accordance with the most recent version of either: (i) Australian Standard AS3580.9.6 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 high volume sampler with size-selective inlet – Gravimetric method; or (ii) Australian Standard AS3580.9.9 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM10 low volume sampler—Gravimetric method; (c) A concentration of particulate matter with an aerodynamic diameter of less than 2.5 micrometres (PM2.5) suspended in the atmosphere of 25 micrograms per cubic metre over a 24-hour averaging time, when monitored in accordance with the most recent version of AS/NZS3580.9.10 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—PM (sub)2.5(/sub) low volume sampler—Gravimetric method; and (d) A concentration of particulate matter suspended in the atmosphere of 90 micrograms per cubic metre over a 1-year averaging time, when monitored in accordance with the most recent version of AS/NZS3580.9.3:2003 Methods for sampling and analysis of ambient air—Determination of suspended particulate matter—Total suspended particulate matter (TSP)—High volume sampler gravimetric method or using an alternative sampling methodology determined in consultation with the administering authority.
B2	When requested by the administering authority, dust and particulate monitoring must be undertaken in accordance with Condition **B1(a)** and **B1(c)** at a location(s) and within a timeframe nominated by the administering authority, and the results must be submitted within **ten (10) business days** to the administering authority following completion of monitoring.
B3	If the monitoring, carried out in accordance with condition **B2**, indicates an exceedance of the relevant limits in condition **B1**, then the environmental authority holder must investigate whether the exceedance is due to emissions from the activity. If the mining activity is found to be the cause of the exceedance, then the environmental authority holder must immediately implement dust abatement measures so that emissions of dust from the activity do not result in further environmental nuisance.

Schedule C –Waste management	
Condition number	**Condition**
C1	**Waste Management Plan** Waste, other than waste managed under condition **C5**, must be managed in accordance with the procedures contained within the Waste Management Plan, which must be developed and implemented for all stages of the authorised mining activities. The Waste Management Plan must: (a) Describe how the waste and resource management hierarchy set out by the *Waste Reduction and Recycling Act 2011* are recognised and applied; (b) Identify the waste streams for the project; (c) Nominate a program for the safe recycling or disposal of all wastes, including which reuse and recycling options are utilised; (d) Propose waste management control strategies that consider: (i) The type and source of wastes; (ii) Segregation of the wastes; (iii) Storage of the wastes (iv) Transport of the wastes; (v) Monitoring and reporting matters concerning the waste; (vi) Emergency response planning; (vii) Disposal, reuse and recycling options. (e) Detail the hazardous characteristics of the waste generated (if any); (f) Cover a disposal procedure for hazardous waste; (g) Outline the process to be implemented to allow for continuous improvement of the Waste Management Plan; and (h) Cover a staff awareness and induction program with regard to the content of the Waste Management Program.
C2	**Landfill** General and regulated waste (other than tyres, which can be buried above the water table in pit and with location co-ordinates recorded) identified in the Waste Management Plan must only be disposed of into the waste disposal facility (landfill) on ML4748 or removed from site.
C3	**Burning waste** Unless otherwise permitted by the conditions of this environmental authority or with prior approval from the administering authority and in accordance with a relevant standard operating procedure, waste must not be burnt.
C4	The environmental authority holder may burn vegetation cleared in the course of carrying out extraction activities provided the activity does not cause environmental harm at any sensitive place or commercial place.

C5	**Tailings disposal** Tailings must be managed in accordance with procedures contained within the Mineral Waste Management Plan which must be developed and implemented for all stages of the authorised mining activities. The Mineral Waste Management Plan must include provisions for: (a) Containment of tailings; (b) The management of seepage and leachates both during operation and the foreseeable future; (c) The control of fugitive emissions to air; (d) A program of progressive sampling and characterisation to identify acid producing potential and metal concentrations of tailings; (e) Maintaining records of the relative locations of any other waste stored within the tailings; (f) Rehabilitation strategy; and (g) Monitoring of rehabilitation, research and/or trials to verify the requirements and methods for decommissioning and final rehabilitation of tailings, including the prevention and management of acid mine drainage, erosion minimisation and establishment of vegetation cover.
C6	**Acid sulphate soils** Treat and manage acid sulphate soils in accordance with the latest edition of the Queensland Acid Sulfate Soil Technical Manual.

Schedule D – Noise	
Condition number	**Condition**
D1	**Noise nuisance** Noise from the mining activity must not cause an environmental nuisance, at any sensitive or commercial place.
D2	When requested by the administering authority, noise monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous or vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within **fourteen (14) days** to the administering authority following completion of monitoring.
D3	If the environmental authority holder can provide evidence through monitoring that the limits defined in **Table D1- Noise Limits** and **Table D2- Blasting noise limits**, are not being exceeded then the holder is not in breach of condition **D1**. Monitoring must include: (a) $L_{A, max\ adj, T}$; (b) Relevant background sound level; (c) The level and frequency of occurrence of impulsive or tonal noise; (d) Atmospheric conditions including wind speed and direction; and (e) Location, date and time of recording.
D4	If monitoring indicates exceedance of the limits in **Table D1- Noise Limits** and **Table D2- Blasting noise limits**, then the environmental authority holder must: (a) Address the complaint including the use of appropriate dispute resolution if required; and (b) Immediately implement noise abatement measures so that emissions of noise from the activity do not result in further environmental nuisance.

Table D1 – Noise Limits

Noise level dB(A)	**Monday to Sunday (including public holidays)**		
	7am - 6pm	**6pm - 10pm**	**10pm - 7am**
	Noise measured at a 'sensitive or commercial place'		
$L_{A10, adj, 10\ mins}$	B/g + 5	B/g + 5	B/g + 3
$L_{A1, adj, 10\ mins}$	B/g + 10	B/g + 10	B/g + 5

Note: *Where "Background" means background sound pressure level measured in accordance with the latest edition of the administering authority's Noise Measurement Manual.* ***Table D1*** *does not purport to set operating hours for the mining activities.*

Table D2 – Blasting noise limits

Blasting noise limits	Sensitive or commercial blasting noise limits		
	Monday – Saturday 7am – 6pm	**Sunday and Public Holidays 9am - 6pm**	**Other times**
Airblast overpressure	115 dB (Linear) Peak for 4 out of 5 consecutive blasts initiated and not greater than 120 dB (Linear) Peak at any time	115 dB (Linear) Peak for 4 out of 5 consecutive blasts initiated and not greater than 120 dB (Linear) Peak at any time	No blasting impacts to occur
Ground vibration peak particle velocity	5mm/second peak particle velocity for 4 out of 5 consecutive blasts and not greater than 10 mm/second peak particle velocity at any time	5mm/second peak particle velocity for 4 out of 5 consecutive blasts and not greater than 10 mm/second peak particle velocity at any time	No blasting impacts to occur

D5	**Vibration nuisance** Vibration from the mining activity must not cause an environmental nuisance, at any sensitive place.
D6	When requested by the administering authority, vibration monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive or commercial place, and the results must be notified within **fourteen (14) days** to the administering authority following completion of monitoring.
D7	If the environmental authority holder can provide evidence through monitoring that the limits defined in **Table D2 – Blasting noise limits**, are not being exceeded then the holder is not in breach of condition **D5**. Monitoring must include: (a) Peak particle velocity (mm/s) (b) Air blast overpressure level (dB linear peak) (c) Location of the blast/s within the mining area (including which bench level) (d) Atmospheric conditions including temperature, relative humidity and wind speed and direction, and (e) Location, date and time of recording.
D8	For the purposes of condition **D5** the mining activities will not cause environmental nuisance where noise from the mining activities does not exceed the criteria specified in **Table D2 – Blasting noise limits**.
D9	If monitoring indicates exceedance of the limits in **Table D2 – Blasting noise limits**, then the environmental authority holder must: (a) Address the complaint including the use of appropriate dispute resolution if required, and (b) Immediately implement noise abatement measures so that emissions of noise from the activity do not result in further environmental nuisance.

Schedule E – Groundwater	
Condition number	**Condition**
E1	The environmental authority holder must not release contaminants to groundwater.
E2	**Monitoring and reporting** All determinations of groundwater quality and biological monitoring must be performed by an appropriately qualified person.
E3	Groundwater quality and levels must be monitored at the locations and frequencies defined in **Table – E1 Groundwater monitoring locations and frequency**, **Figure 1: Newlands Coal Project Groundwater Bore Monitoring Locations** for quality characteristics identified in **Table E2A – Interim groundwater trigger limits** and **Table E2B – Interim groundwater trigger limits**

Table E1 – Groundwater monitoring locations and frequency

Monitoring Point	Location		Monitoring Frequency
	Longitude (GDA94)	Latitude (GDA94)	
Terrill's Bore	147.8872	-21.3126	Six Monthly
MB02*	147.9694	-21.2427	
MB03*	147.9691	-21.2058	
MB04	147.9579	-21.1527	
MB05*	147.9919	-21.2216	
MB06*	148.0230	-21.2472	
MB07	148.0446	-21.2394	
MB08*	148.0386	-21.1830	
MB09*	148.0238	-21.1469	
MB10*	148.0158	-21.1269	
SC9874	147.8621	-21.3700	
SC9908W	147.8624	-21.3446	
SC9878	147.8894	-21.3813	
SC9884W	147.8746	-21.3326	
SC9904W	147.9090	-21.3838	
SC9905W	147.8680	-21.3803	
SC9906W	147.9628	-21.3524	
R3906W	147.9029	-21.1399	
R3890W	147.9122	-21.1497	
E2104W	148.0083	-21.1788	
E2105W	148.0124	-21.1607	
E2106W	148.0159	-21.2287	
R3891W	147.9585	-21.2306	
R3900W	147.9474	-21.2400	
R3902W	147.9096	-21.1721	
SW8896W	147.9666	-21.4030	
SW8897W	147.9685	-21.4079	
LWDNMI	147.9592	-21.4484	
LWBRKS	147.9029	-21.4021	

**Bores to be installed progressively in line with extension operations. After installation the bores will be monitored at the described frequency.*

Table E2A– Interim groundwater trigger limits

Parameter	Contaminant triggers
Standing water level (m)	>2m fluctuation
pH (Units)	6.5 - 8.5
Electrical Conductivity (µS/cm)	Interim bore specific triggers proposed (see table below)
Total Dissolved Solids (mg/L)	Interim bore specific triggers proposed (see table below)
Calcium (mg/L)	No trigger – monitored for groundwater quality interpretation only
Magnesium (mg/L)	No trigger – monitored for groundwater quality interpretation only
Sodium (mg/L)	No trigger – monitored for groundwater quality interpretation only
Potassium (mg/L)	No trigger – monitored for groundwater quality interpretation only
Chloride (mg/L)	No trigger – monitored for groundwater quality interpretation only
SO4 (mg/L)	Livestock guideline = 1,000mg/L
CO3 (mg/L)	No trigger – monitored for groundwater quality interpretation only
HCO3 (mg/L)	No trigger – monitored for groundwater quality interpretation only
Iron (mg/L)	No livestock guideline. Interim trigger value equivalent to the STV Irrigation guideline of 10mg/L
Aluminium (mg/L)	Livestock guideline = 5mg/L
Silver (mg/L)	No livestock guideline. Interim trigger value equivalent to the Aquaculture guideline of 0.003mg/L
Arsenic (mg/L)	Livestock guideline = 0.5mg/L
Mercury (mg/L)	Livestock guideline = 0.002mg/L
Antimony (mg/L)	No livestock guideline. Interim trigger value equivalent to the Freshwater aquatic ecosystem guideline of 0.009mg/L
Molybdenum (mg/L)	Livestock guideline = 0.15mg/L
Selenium (mg/L)	Livestock guideline = 0.034mg/L
Total Petroleum Hydrocarbon (mg/L)	LOR of 0.1mg/L

Table E2B – Interim groundwater trigger limits

BORE_ID	Site	Formation	EC (µS/cm)	TDS (mg/L)
MB09	Bangarra and Ramp 13	Rewan	5,000	2,700
E2104W		RCM	3,000	1,700
E2105W		RCM	2,800	1,600
MB10		FCCM	2,300	1,500
R3902W	Main Deposit Ramp 6N and 8S	Rewan	3,500	2,100
MB03		FCCM	3,800	2,100
R3906W		FCCM	5,500	3,600
SC9878	Wollombi	MCM	12,400	8,400
SC9907W		MCM	7,600	4,800
SC9908W		MCM	20,200	14,900
SC9874W		Exmoor Formation	16,400	10,900

E4	Groundwater levels when measured at the monitoring locations specified in **Table E1 – Groundwater monitoring locations and frequency** must not exceed the groundwater level trigger change thresholds specified in **Table E2A – Interim groundwater trigger limits** and **Table E2B – Interim groundwater trigger limits.**
E5	**Exceedance Investigation** If quality characteristics of groundwater from groundwater compliance bores identified in **Table E1 – Groundwater monitoring locations and frequency** exceed any of the trigger limits stated in **Table E2A – Interim groundwater trigger limits** and **Table E2B – Interim groundwater trigger limits**, the environmental authority holder must: (a) Compare the compliance monitoring bore results to the reference bore results; (b) Complete an investigation into the potential for environmental harm and prepare a report; (c) Notify the administering authority within **twenty-eight (28) days** of receiving the analysis results; and (d) Submit to the administering authority the investigation report required under this condition within **three (3) months** of the exceedance.
E6	The environmental authority holder must submit the latest groundwater monitoring results via WaTERS when completing the annual return. The results must include all available data that has been collected from the monitoring locations identified in **Table E1 – Groundwater monitoring locations and frequency** for the parameters stated in **Table E2A – Interim groundwater trigger limits** and **Table E2B – Interim groundwater trigger limits**.
E7	Groundwater contaminant trigger limits as per **Table E2A: Interim groundwater quality triggers limits** and **Table E2B – Interim groundwater trigger limits** must be reviewed by **30 September 2023** to: (a) Evaluate whether the groundwater monitoring network is fit for purpose; (b) Adequately determine water quality characteristics and trigger values for inclusion in this environmental authority; (c) Identify and interpret any trends in the groundwater network monitoring data; (d) Provide recommendations for the future development of the groundwater management and monitoring program; and (e) Be in a report submitted to the administering authority by **11 October 2023** for comment.
E8	Within **twenty (20) business days** of receiving comments from the administering authority, the report as required under condition **E7** must be updated to address the comments and submitted to the administering authority.
E9	**Bore construction and maintenance and decommissioning** The construction, maintenance and management of groundwater bores (including groundwater monitoring bores) must be undertaken in a manner that prevents or minimises impacts to the environment and ensures the integrity of the bores to obtain accurate monitoring.

Schedule F – Water	
Condition number	**Condition**
F1	**Contaminant release** Contaminants that will, or have the potential to cause environmental harm must not be released directly or indirectly to any waters as a result of the authorised mining activities, except as permitted under the conditions of this environmental authority.
F2	Unless otherwise permitted under the conditions of this environmental authority, the release of mine affected water to waters must only occur from the release points specified in **Table F1 – Mine affected water release points, sources and receiving waters** and depicted in **Figure 2: Newlands Coal Project Release Point Locations** attached to this environmental authority.
F3	The release of mine affected water to internal water management infrastructure installed and operated in accordance with a water management plan that complies with condition **F26** is permitted.

Table F1 – Mine affected water release points, sources and receiving waters

Release Point (RP)	Easting (GDA94)	Northing (GDA94)	Mine Affected Water Source and Location	Monitoring Point	Receiving waters description
DP1	592607.622900	7658124.767000	Ramp 14 Evap Pond	At end of pipe	Overflow Creek
DP2	593645.356500	7661159.813000	Ramp 8 Mine Void	At end of pipe/pump	Cerito Creek
DP3	604305.509400	7655979.517000	Ramps 9 & 10 Mine Void	Darren's Dam Spillway	Wilson Creek
DP6	594920.580912	7654223.105020	Ramp 4 Mine Void	At discharge pipe	Cerito Creek
DP8	594349.931200	7655841.357000	Ramp 6 Mine Void	At discharge pipe	Cerito Creek
DP9	594171.826532	7648515.413380	Highwall of Ramp 1 Mine Void	At end of pipe/pump	Cerito Creek
DP10	592770.197700	7651803.127000	Lake Austin	At pontoon pump	Overflow Creek
DP11	592410.670300	7656416.288000	CHPP Anti-Pollution Pond	At spillway	Overflow Creek
DP14A / 14B	595332.434200	7654365.471000	Levee 5	At spillway (14A) At end of pipe (14B)	Cerito Creek
DP18	597531.031845	7637357.937070	Banrock C Mine Void	At end of pipe/pump	Suttor Creek
DP19	595315.071570	7638228.032950	Dirty Water Dam	At end of pipe	Suttor Creek
DP20	596419.185200	7639702.420000	Banrock A Evaporation Dam	At outflow spillway	Suttor Creek
DP23	596091.088426	7636455.085510	Ramp 17 Mine Void	At end of pipe	Suttor Creek
DP24	592750.502500	7636611.661000	Wollombi East Drain Sediment Dam	At end of pipe	Suttor Creek
DP26	596015.658600	7632837.282000	Somerled Sediment Dam	At end of pipe	Boundary Creek
DP29	607774.215445	7656546.323820	Ramp 12 Discharge Dam	At end of pipe	Eastern Creek
DP30	605081.963400	7656731.167000	R9 North End Wall	At end of pipe	Wilson Creek
DP32	597417.068800	7635714.846000	Saddlers Pit	At end of pipe	Suttor Creek
DP33	595777.311000	7637246.379000	Ramp 15 Mine Void	At end of pipe	Suttor Creek
DP34*	607371.889900	7654881.618530	Ramp 10	At discharge location	Eastern Creek
DP35*	604936.102000	7653855.170000	Eastern Creek South Pit	At discharge location	Wilson Creek
DP36*	605511.790000	7662706.884000	Bangarra Dirty Water Dam	At discharge location	Eastern Creek
DP37*	-21.1569 (latitude)	148.9511 (longitude)	Eastern Creek West (Northern) Pit	At discharge location	Wilson Creek
DP38*	599762.508000	7656521.842000	Eastern Creek West (Southern) Pit	At discharge location	Wilson Creek
DP39*	604413.345000	7662529.112000	Bangarra ROM Dam	At end of pipe	Eastern Creek
DP40*	603884.738000	7651736.552000	Eastern Creek South Pit	At discharge location	Cerito Creek

**Denotes proposed water release points. To be updated.*

F4	The release of mine affected water to waters from the release points must be monitored at the locations specified in **Table F1 – Mine affected water release points, sources and receiving waters** for each quality characteristic and at the frequency specified in **Table F2 – Release contaminant trigger investigation levels, potential contaminants**. *Note: the administering authority will take into consideration any extenuating circumstances prior to determining an appropriate enforcement response in the event condition F4 is contravened due to a temporary lack of safe or practical access. The administering authority expects the environmental authority holder to take all reasonable and practicable measures to maintain safe and practical access to designated monitoring locations.*

Table F2 – Release contaminant trigger investigation levels, potential contaminants

Quality Characteristic	Trigger Levels (µg/L)	Comment on Trigger Level	Monitoring Frequency
Aluminium	138	*80% upstream background levels*	Commencement of release and thereafter weekly during release
Cadmium	0.2	*For aquatic ecosystem protection, based on SMD guideline*	
Chromium	1	*For aquatic ecosystem protection, based on SMD guideline*	
Copper	3	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Iron	280	*80% established background levels*	
Lead	4	*For aquatic ecosystem protection, based on SMD guideline*	
Nickel	11	*For aquatic ecosystem protection, based on SMD guideline*	
Zinc	8	*80% established background levels*	
Boron	370	*For aquatic ecosystem protection, based on SMD guideline*	
Manganese	1900	*For aquatic ecosystem protection, based on SMD guideline*	
Molybdenum	34	*For aquatic ecosystem protection, based on low reliability guideline*	
Uranium	2	*80% established background levels*	
Vanadium	10	*For aquatic ecosystem protection, based on LOR for ICPMS*	
Ammonia	900	*For aquatic ecosystem protection, based on SMD guideline*	
Nitrate	1100	*For aquatic ecosystem protection, based on ambient Qld WQ Guidelines (2006) for TN*	
Petroleum hydrocarbons (C6-C9)	20	*For aquatic ecosystem protection, based on LOR for Lab Analysis*	
Petroleum hydrocarbons (C10-C36)	100	*For aquatic ecosystem protection, based on LOR for Lab Analysis*	
Sodium (mg/L)	210	80% established background levels	

Table F2 – Release contaminant trigger investigation levels, potential contaminants *notes:*
1. All metals and metalloids must be measured as total (unfiltered) and dissolved (filtered). Trigger levels for metal/metalloids apply if dissolved results exceed trigger.
2. The quality characteristics required to be monitored as per ***Table F2 – Release contaminant trigger investigation levels, potential contaminants*** *can be reviewed once the results of two (2) years monitoring data is available, or if sufficient data is available to adequately demonstrate negligible environmental risk, and it may be determined that a reduced monitoring frequency is appropriate or that certain quality characteristics can be removed from* ***Table F2 – Release contaminant trigger investigation levels, potential contaminants*** *by amendment.*
3. SMD – slightly moderately disturbed level of protection, guideline refers ANZECC & ARMCANZ (2000).
4. LOR – typical reporting for method stated. ICPMS/CV FIMS – analytical method required to achieve LOR.

F5	If quality characteristics of the release exceed any of the trigger levels specified in **Table F2 – Release contaminant trigger investigation levels, potential contaminants** during a release event, the environmental authority holder must compare the downstream results in the receiving waters to the trigger values specified in **Table F2 – Release contaminant trigger investigation levels, potential contaminants** and: (a) Where the trigger values are not exceeded then no action is to be taken; or (b) Where the downstream results exceed the trigger values specified **Table F2 – Release contaminant trigger investigation levels, potential contaminants** for any quality characteristic, compare the results of the downstream site to the data from background monitoring sites and: (i) If the result is less than the background monitoring site data, then no action is to be taken; or (ii) If the result is greater than the background monitoring site data, complete an investigation into the potential for environmental harm and provide a written report to the administering authority within **90 days** of receiving the result , outlining: (A) Details of the investigations carried out; and (B) Actions taken to prevent environmental harm. *Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with **F5(b)(ii)** of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.*
F6	If an exceedance in accordance with condition **F5(b)(ii)** is identified, the environmental authority holder must notify the administering authority in writing within **twenty-four (24) hours** of receiving the result.
F7	**Mine affected water release events** The holder must ensure a stream flow gauging station/s is installed, operated and maintained to determine and record stream flows at the locations and flow recording frequency specified in **Table F3 – Mine affected water release during flow events**.
F8	Notwithstanding any other condition of this environmental authority, the release of mine affected water to waters in accordance with condition **F2** must only take place during periods of natural flow in accordance with the receiving water flow criteria for discharge specified in **Table F3 – Mine affected water release during flow events** for the release point(s) specified in **Table F1 – Mine affected water release points, sources and receiving waters**.
F9	The release of mine affected water to waters in accordance with condition **F2** must not exceed the Maximum Release Rate (for all combined release point flows) for each receiving water flow criterion for discharge specified in **Table F3 – Mine affected water release during flow events** when measured at the monitoring points specified in **Table F1 – Mine affected water release points, sources and receiving waters**.
F10	If the release limits defined in **Table F3 – Mine affected water release during flow events** is exceeded, then the environmental authority holder must immediately cease the release of mine affected water.
F11	The daily quantity of mine affected water release from each release point must be measured and recorded.
F12	Releases to waters must be undertaken so as not to cause erosion of the bed and banks of the receiving waters, or cause a material build-up of sediment in such waters.

Table F3 – Mine affected water release during flow events

Kangaroo Creek Discharge Criteria

SCENARIO	***FLOW RATES***		***END OF PIPE (For All Kangaroo Creek Receiving Point Flow Scenarios)***					***RECEIVING WATER QUALITY LIMITS***					
	RECEIVING WATER FLOW RATE AT WQS5	**END OF PIPE MAX. RELEASE RATE (Combined)**	**END OF PIPE WATER QUALITY (WQ) RELEASE LIMITS:** (DP1, DP2, DP3, DP6, DP8, DP9, DP10, DP11, DP14A, DP14B, DP30, DP35, DP37, DP38, DP40)				**RELEASE TRIGGER LIMITS (End of Pipe)**	**Receiving Water Contaminant Trigger Levels**					**ASSIMILATION TRIGGER LIMIT - At Bowen River (FSS18)**
	m^3/s	*m^3/s*	**EC** (*µS/cm*)	**pH**	**Turbidity** (*NTU*)	**Sulphate** (*mg/l*)		**EC** (*µS/cm*)	**pH**	**Turbidity** (*NTU*)	**Sulphate** (*mg/l*)	**Sodium** (*mg/l*)	
	Sample Frequency		**DAILY[2]**	**DAILY[2]**	**DAILY[2]**	**DAILY[2]**	**Weekly During Release**	**Daily During Release**			**Weekly During Release**		**Weekly During Release**
Low Flow	For a period of 28 days after natural flow event that exceeds **1.0 m^3/s**	*0.5*	2500	Min. - 6.5 Max. - 9.2	600	500	**Not Applicable**	2900	Min. - 6.5 Max. - 9.0	400	500	N/A	**EC - FSS17 + 200uS/cm at FSS18**
Medium Flow	***0.5 - 2m^3/s***	*0.75*	3000	Min. - 6.5 Max. - 9.2	600	500	**[2]Table F2**	2400	Min.- 6.5 Max.- 9.0	400	500	180	**Not Required**
	0.5 - 2m^3/s	*0.45*	4000		600	750		2400					
High Flow	***2-6m^3/s***	*0.9*	4000	Min. - 6.5 Max. - 9.2	600	750	**[2]Table F2**	2000	Min.- 6.5 Max.- 9.0	400	500	180	**Not Required**
	2-6m^3/s	*0.6*	5500		600	1000		2000					
Very High Flow	***6-12m^3/s***	*1.4*	4500	Min. - 6.5 Max. - 9.2	600	750	**[2]Table F2**	1850	Min.- 6.5 Max.- 9.0	400	250	180	**Not Required**
	6-12m^3/s	*1*	6500		600	1000		1850					
Flood Event	***12-30m^3/s***	*3*	4500	Min. - 6.5 Max. - 9.2	600	750	**[2]Table F2**	1850	Min.- 6.5 Max.- 9.0	400	250	180	**Not Required**
	12-30m^3/s	*2*	6500		600	1000		1850					
Extreme Flood	***>30m^3/s***	*7*	4500	Min. - 6.5 Max. - 9.2	600	750	**[2]Table F2**	1850	Min.- 6.5 Max.- 9.0	400	250	180	**Not Required**
	>30m^3/s	*5*	6500		600	1000		1850					

Table F3 Cont. – Mine affected water release during flow events

Eastern Creek Discharge Criteria

SCENARIO	FLOW RATES		END OF PIPE (For All Eastern Creek Receiving Point Flow Scenarios)					RECEIVING WATER QUALITY LIMITS -					
	RECEIVING WATER FLOW RATE AT WQS9	END OF PIPE MAX. RELEASE RATE (Combined)	END OF PIPE WATER QUALITY (WQ) RELEASE LIMITS: (DP29, DP34, DP36, DP39)				RELEASE TRIGGER LIMITS (End of Pipe)	Receiving Water Contaminant Trigger Levels					ASSIMILATION TRIGGER LIMIT - At Bowen River (FSS18)
	m^3/s	m^3/s	EC (μS/cm)	pH	Turbidity (NTU)	Sulphate (mg/l)		EC (μS/cm)	pH	Turbidity (NTU)	Sulphate (mg/l)	Sodium (mg/l)	
	Sample Frequency		DAILY[2]	DAILY[2]	DAILY[2]	DAILY[2]	Weekly During Release	Daily During Release			Weekly During Release		Weekly During Release
Low Flow	For a period of 28 days after natural flow event that exceeds **1.0 m^3/s**	0.5	2500	Min.- 6.5 Max.- 9.2	600	500	Not Applicable	2900	Min. - 6.5 Max. - 9.0	400	500	N/A	EC - FSS17 + 200uS/cm at FSS18
Medium Flow	0.5 - 2m^3/s	0.5	3000	Min.- 6.5 Max.- 9.2	600	500	[2]Table F2	2400	Min.- 6.5 Max.- 9.0	400	500	180	Not Required
	0.5 - 2m^3/s.	0.33	4000		600	750		2400					
High Flow	2-6m^3/s	0.75	4000	Min.- 6.5 Max.- 9.2	600	750	[2]Table F2	2000	Min.- 6.5 Max.- 9.0	400	500	180	Not Required
	2-6m^3/s	0.5	5500		600	1000		2000					
Very High Flow	6-12m^3/s	1.4	4500	Min.- 6.5 Max.- 9.2	600	750	[2]Table F2	1850	Min.- 6.5 Max.- 9.0	400	250	180	Not Required
	6-12m^3/s	1	6500		600	1000		1850					
Flood Event	12-30m^3/s	3	4500	Min.- 6.5 Max.- 9.2	600	750	[2]Table F2	1850	Min.- 6.5 Max.- 9.0	400	250	180	Not Required
	12-30m^3/s	2	6500		600	1000		1850					
Extreme Flood	>30m^3/s	7	4500	Min.- 6.5 Max.- 9.2	600	750	[2]Table F2	1850	Min.- 6.5 Max.- 9.0	400	250	180	Not Required
	>30m^3/s	5	6500		600	1000		1850					

Table F3 Cont. – Mine affected water release during flow events

Suttor Creek Discharge Criteria

SCENARIO	FLOW RATES		END OF PIPE (For All Suttor Creek Receiving Point Flow Scenarios)					RECEIVING WATER QUALITY LIMITS -					
	RECEIVING WATER FLOW RATE AT WQS4	END OF PIPE MAX. RELEASE RATE (Combined)	END OF PIPE WATER QUALITY RELEASE LIMITS: (DP18, DP19, DP20, DP23, DP24, DP26, DP32, DP33)				RELEASE TRIGGER LIMITS (End of Pipe)	Receiving Water Contaminant Trigger Levels					ASSIMILATION TRIGGER LIMIT - At Suttor River (FSS16)
	m^3/s	m^3/s	EC ($\mu S/cm$)	pH	Turbidity (NTU)	Sulphate (mg/l)		EC ($\mu S/cm$)	pH	Turbidity (NTU)	Sulphate (mg/l)	Sodium (mg/l)	
	Sample Frequency		DAILY[2]	DAILY[2]	DAILY[2]	DAILY[2]	Weekly During Release	Daily During Release			Weekly During Release		Weekly During Release
Low Flow	For a period of 28 days after natural flow event that exceeds **1.0 m^3/Sec**.	0.5	2500	Min.- 6.5 Max.- 9.2	600	500	Not Applicable	2400	Min. - 6.5 Max. - 9.0	400	500	N/A	EC - WQS3 + 200uS/cm at FSS16
Medium Flow	1.0 - 3m^3/s	0.73	3000	Min.- 6.5 Max.- 9.2	600	500	[2]Table F2	2000	Min.- 6.5 Max.- 9.0	400	500	180	Not Required
	1.0 - 3m^3/s	0.5	4000		600	750		2000					
High Flow	3-10m^3/s	0.9	4000	Min.- 6.5 Max.- 9.2	600	750	[2]Table F2	1850	Min.- 6.5 Max.- 9.0	400	250	180	Not Required
	3-10m^3/s	0.66	5500		600	1000		1850					
Very High Flow	10-20m^3/s	2.4	4500	Min.- 6.5 Max.- 9.2	600	750	[2]Table F2	1850	Min.- 6.5 Max.- 9.0	400	250	180	Not Required
	10-20m^3/s	1.76	6500		600	1000		1850					
Flood Event	20-50m^3/s	4.8	4500	Min.- 6.5 Max.- 9.2	600	750	[2]Table F2	1850	Min.- 6.5 Max.- 9.0	400	250	180	Not Required
	20-50m^3/s	3.2	6500		600	1000		1850					
Extreme Flood	>50m^3/s	10.17	4500	Min.- 6.5 Max.- 9.2	600	750	[2]Table F2	1850	Min.- 6.5 Max.- 9.0	400	250	180	Not Required
	>50m^3/s	7.04	6500		600	1000		1850					

[1] *Flow triggers should be compared to natural flow only. Where stream flow measurements are obtained downstream of the discharges for WQS5, WQS9 and WQS4, the discharge rates should be subtracted from the stream flow measurements before comparing to the stream flow trigger.*
[2] *Upon commencement of release of mine water, the first sample must be collected within 4 hours of initial discharge to the receiving environment.*

F13	**Notification of release event** The environmental authority holder must notify the administering authority as soon as practicable and no later than **twenty-four (24) hours** after commencing to release mine affected water to the receiving environment. Notification must include the submission of written advice to the administering authority of the following information: (a) Release commencement date/time; (b) Details regarding the compliance of the release with the conditions of **Schedule F – Water** of this environmental authority (that is, contaminant limits, natural flow, discharge volume); (c) Release point/s; (d) Release rate; (e) Release salinity; and (f) Receiving water/s including the natural flow rate.
F14	The environmental authority holder must notify the administering authority as soon as practicable and no later than **twenty-four (24) hours** after cessation of a release event of the cessation of a release notified under condition **F13** and within **twenty-eight (28) days** provide the following information in writing: (a) Release cessation date/time; (b) Natural flow rate in receiving water; (c) Volume of water released; (d) Details regarding the compliance of the release with the conditions of **Schedule F – Water** of this environmental authority (i.e. contaminant limits, natural flow, discharge volume); (e) All in-situ water quality monitoring results; and (f) Any other matters pertinent to the water release event. *Note: Successive or intermittent releases occurring within **twenty-four (24) hours** of the cessation of any individual release can be considered part of a single release event and do not require individual notification for the purpose of compliance with conditions **F13** and **F14**, provided the relevant details of the release are included within the notification provided in accordance with conditions **F13** and **F14**.*
F15	**Notification of release event exceedance** If the release limits defined in **Table F3 – Mine affected water release during flow events** are exceeded, the environmental authority holder must notify the administering authority in writing within **twenty-four (24) hours** of receiving the results.
F16	The environmental authority holder must, within **twenty-eight (28) days** of a release that is not compliant with the conditions of this environmental authority, provide a report to the administering authority detailing: (a) The reason for the release; (b) The location of the release; (c) The total volume of the release and which (if any) part of this volume was non-compliant; (d) The total duration of the release and which (if any) part of this period was non-compliant; (e) All water quality monitoring results (including all laboratory analyses); (f) Identification of any environmental harm as a result of the non-compliance; (g) All calculations; and (h) Any other matters pertinent to the water release event.

F17	**Monitoring of water storage quality** Water storages stated in **Table F4 – Water storage monitoring** which are associated with the release points must be monitored for the water quality characteristics specified in **Table F5 – Onsite water storage contaminant limits** at the monitoring locations and at the monitoring frequency specified in **Table F4 – Water storage monitoring**.

Table F4 – Water storage monitoring

Site Code	Water Storage Description	Easting (GDA94)	Northing (GDA94)	Monitoring Location	Frequency of Monitoring
PP2	Darrens Dam	604312.774228	7655957.982253	At spillway	Quarterly
PP3	Ramp 9 North Pit	605474.281798	7655535.983671	At bottom of Ramp	Quarterly
PP6	Ramp 8 Pit	594139.625268	7661167.015685	At bottom of Nth Ramp	Quarterly
PP9	CHPP Anti-Pollution Pond	592390.959371	7656413.832984	At Spillway	Quarterly
PP10	100ML Raw Water Dam	591741.638827	7657572.649523	At walkway	Quarterly
PP11	CHPP Process Water Pond	592454.188605	7655181.495507	At pump infrastructure	Quarterly
PP12	Levee 5	595547.247149	7653522.247567	At embankment	Quarterly
PP15	Levee 3	596188.437280	7652339.097926	At embankment	Quarterly
PP17	Lake Austin	592730.827858	7651804.787772	At pump infrastructure	Quarterly
PP20	Levee 7	594678.161482	7654974.173987	At embankment	Quarterly
PP24	Ramp 4 Pit	594852.744697	7653617.461450	At Ramp 4a pump infrastructure	Quarterly
PP26	Ramp 6 Pit	594178.048349	7656146.953419	At base of ramp	Quarterly
PP27	Ramp 1 Pit	593237.240680	7649073.294715	At base of South Ramp	Quarterly
PP30	Ramp 10 Pit	606680.287600	7654122.993457	At base of Ramp	Quarterly
PP49	Banrock A Pit	595904.347104	7639832.491557	At base of Ramp	Quarterly
PP51	Banrock C Pit	596593.891261	7638385.937027	At base of Ramp	Quarterly
PP53	Lenny's Lagoon	595949.417717	7637273.449905	At Micks Drain	Quarterly
PP56	McLaren Ramp 15 Pit	595400.314363	7637139.089163	At base of Ramp	Quarterly
PP58	McLaren Ramp 17 Pit	595737.544442	7636076.880267	At base of Ramp	Quarterly
PP59	McLaren Ramp 18 Pit	596224.370571	7635037.979660	At base of Ramp	Quarterly
PP62	Wollombi Ramp 21 Pit	591510.836006	7636217.061468	At base of Ramp (Wollombi No.1)	Quarterly
PP66	Somerled Ramp 20 Pit	595904.347104	7639832.491557	At base of Ramp	Quarterly
PP76	Saddlers Pit	21.3781 (latitude)	147.9397 (longitude)	At base of Ramp	Quarterly
PP81	Eastern Creek South Pit	608145.798000	7655793.639000	At discharge location	Quarterly

PP82	Eastern Creek South Pit	604936.102000	7653855.170000	At discharge location	Quarterly
PP83	Bangarra Dirty Water Dam	605058.472752	7661795.624841	At discharge location	Quarterly
PP84	Eastern Creek West (Northern) Pit	-21.1569 (latitude)	148.9511 (longitude)	At discharge location	Quarterly
PP85	Ramp 12 Discharge Dam	607830.394662	7656544.337627	At discharge location	Quarterly
PP86	Bangarra ROM Dam	604130.057053	7662727.397909	At discharge location	Quarterly
PP87	Eastern Creek South Pit	603884.738000	7651736.552000	At discharge location	Quarterly

F18	In the event that water storages defined in **Table F4 – Water storage monitoring** exceed the contaminant limits defined in **Table F5 – Onsite water storage contaminant limits**, the environmental authority holder must implement measures, where practicable, to prevent access to waters by all livestock.

Table F5 – Onsite water storage contaminant limits

Quality Characteristic[3]	Test Value	Contaminant Limit
pH (pH unit)	Range	Greater than 4, less than 9[2]
EC (µS/cm)	Maximum	5970[1]
Sulphate (mg/L)	Maximum	1000[1]
Aluminium (mg/L)	Maximum	5[1]
Copper (mg/L)	Maximum	1[1]
Lead (mg/L)	Maximum	0.1[1]
Nickel (mg/L)	Maximum	1[1]
Uranium (mg/L)	Maximum	20
Zinc (mg/L)	Maximum	20[1]

Note:

[1] Contaminant limit based on ANZECC & ARMCANZ (2000) stock water quality guidelines.

[2] Page 4.2-15 of ANZECC & ARMCANZ (2000) "Soil and animal health will not generally be affected by water with pH in the range of 4–9".

[3] With the exception of pH and EC, total measurements (unfiltered) must be taken and analysed for each quality characteristic.

F19	**Receiving environment monitoring and contaminant trigger levels** The quality of the receiving waters must be monitored at the locations specified in **Table F6 - Receiving water upstream background sites, downstream monitoring points and downstream assimilation monitoring points** shown on **Figure 3: Newlands Coal Project Water quality monitoring point locations** for each quality characteristic and at the monitoring frequency stated in **Table F3 – Mine affected water release during flow events.**
F20	During periods of natural flow, when mine water discharge is not occurring, the sampling frequency for water quality characteristics contained in **Table F3 – Mine affected water release during flow events** is monthly.

Table F6 – Receiving water upstream background sites, downstream monitoring points and downstream assimilation monitoring points

Monitoring points	Receiving waters location description	Easting (GDA94)	Northing (GDA94)
Upstream background monitoring points			
Monitoring point FSS20	Eastern Creek Upstream (near Salt Mill bore)	608806.623574	7655313.577970
Monitoring point WQS7	Cerito Creek Upstream at Highwall Dam	596028.444645	7651425.315252
Monitoring point WQS3	Suttor Creek Upstream at Lease Boundary	599949.741406	7636002.954754
Monitoring Point FSS7	Suttor Creek at the Bridge	610355.952390	7640237.324703
Monitoring Point FSS17	Bowen River Upstream	588424.076095	7704807.586295
Downstream monitoring points			
Monitoring point WQS5	Kangaroo Creek Downstream	596996.295614	7668061.141646
Monitoring point WQS4	Suttor Creek Downstream	589437.460407	7635371.010490
Monitoring point WQS9	Eastern Creek Downstream	602803.135619	7668222.242629
Downstream assimilation points			
Monitoring point FSS16	Suttor River Downstream	567670.055328	7622605.398262
Monitoring point FSS18	Bowen River Downstream	580770.862002	7702559.382386

F21	If quality characteristics of the receiving water at the downstream monitoring points (WQS9, WQS5 and WQS4) or assimilation monitoring points (FSS16 and FSS18) exceed any of the trigger levels specified in **Table F3 – Mine affected water release during flow events** the environmental authority holder must compare the downstream results to the upstream results in the receiving waters and: (a) Where the downstream result is the same or a lower value than the upstream value for the quality characteristic, then no action is to be taken; or (b) Where the downstream results exceed the upstream results, provide the administering authority written notification within **24 hours** of becoming aware of the exceedance and then complete an investigation into the potential for environmental harm and provide a written report to the administering authority within **20 business days** of receiving the results, outlining: (i) Details of the investigation carried out, and (ii) Actions taken to prevent environmental harm. *Note: Where an exceedance of a trigger level has occurred and is being investigated, in accordance with **F21(b)** of this condition, no further reporting is required for subsequent trigger events for that quality characteristic.*
F22	All determinations of water quality and biological monitoring must be performed by an appropriately qualified person.
F23	**Water reuse** Mine affected water may be piped or trucked or transferred by some other means that does not contravene the conditions of this environmental authority and deposited into artificial water storage structures, such as farm dams or tanks, or used directly at properties owned by the environmental authority holder or a third party (with the consent of the third party).
F24	**Annual water monitoring reporting** The following information must be recorded in relation to all water monitoring required under the conditions of this environmental authority and submitted to the administering authority in the specified format: (a) The date on which the sample was taken; (b) The time at which the sample was taken; (c) The monitoring point at which the sample was taken; (d) The measured or estimated daily quantity of mine affected water released from all release points; (e) The release flow rate at the time of sampling for each release point; (f) The results of all monitoring and details of any exceedances of the conditions of this environmental authority; and (g) Water quality monitoring data must be provided to the administering authority in the specified electronic format upon request.
F25	**Temporary Interference with waterways** Destroying native vegetation, excavating, or placing fill in a watercourse, lake or spring necessary for and associated with mining operations must be undertaken in accordance with Department of Natural Resources, Mines and Energy's (or its successor's) Guideline – *Riverine protection permit exemption requirements* (WSS/2013/726*)*.
F26	**Water management plan** A Water Management Plan must be developed by an appropriately qualified person and implemented.

F27	**Stormwater and water sediment controls** An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented for all stages of the mining activities on the site to minimise erosion and the release of sediment to receiving waters and contamination of stormwater.
F28	Stormwater, other than mine affected water, is permitted to be released to waters from: (a) Erosion and sediment control structures that are installed and operated in accordance with the Erosion and Sediment Control Plan required by condition **F27**; and (b) Water management infrastructure that is installed and operated, in accordance with a Water Management Plan that complies with condition **F26**, for the purpose of ensuring water does not become mine affected water.

Schedule G – Regulated structures	
Condition number	**Condition**
G1	**Assessment of consequence category** The consequence category of any structure must be assessed by a suitably qualified and experienced person in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (ESR/2016/1933) at the following times: (a) Prior to the design and construction of the structure, if it not an existing structure; (b) If it is an existing structure, prior to the adoption of this schedule; or (c) Prior to any change in its purpose or the nature of its stored contents.
G2	A consequence assessment report and certification must be prepared for each structure assessed and the report may include a consequence assessment for more than one structure.
G3	Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (ESR/2016/1933).
G4	**Design and construction of a regulated structure** Conditions **G5** to **G9** inclusive do not apply to existing structures.
G5	All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (ESR/2016/1933). *Note: Construction of a dam includes modification of an existing dam. Certification of design and construction may be undertaken by different persons.*
G6	Construction of a regulated structure is prohibited unless the holder has submitted a consequence category assessment report and certification to the administering authority that has been certified by a suitably qualified and experienced person for the design and design plan and the associated operating procedures in compliance with the relevant condition of this authority.
G7	Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (ESR/2016/1933), and must be recorded in the Regulated Dams/Levees register.
G8	Regulated structures must: (a) Be designed and constructed in accordance with and conform to the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (ESR/2016/1933)*;* (b) Be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of: (i) Floodwaters from entering the regulated dam from any watercourse or drainage line; and (ii) Wall failure due to erosion by floodwaters arising from any watercourse or drainage line; and (c) Have the floor and sides of the dam designed and constructed to prevent or minimise the passage of the wetting front and any entrained contaminants through either the floor or sides of the dam during the operational life of the dam and for any period of decommissioning and rehabilitation of the dam.

G9	Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that: (a) The 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure; and (b) Construction of the regulated structure is in accordance with the design plan.
G10	**Operation of a regulated structure** Operation of a regulated structure, except for an existing structure, is prohibited unless the holder has submitted to the administering authority: (a) One paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition **G6**; (b) A set of 'as constructed' drawings and specifications; (c) Certification of those 'as constructed drawings and specifications' in accordance with condition **G7**; (d) Where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan; (e) The requirements of this authority relating to the construction of the regulated structure have been met; (f) The holder has entered the details required under this authority into a Register of Regulated Dams; and (g) There is a current operational plan for the regulated structures.
G11	For existing structures that are regulated structures: (a) Where the existing structure that is a regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, the holder must submit to the administering authority within **twelve (12) months** of the commencement of this condition a copy of the certified system design plan including that structure; and (b) There must be a current operational plan for the existing structures.
G12	Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in a manner that is consistent with the current operational plan, and if applicable, the current design plan and associated certified 'as constructed' drawings.
G13	**Mandatory reporting level** Conditions **G13** to **G16** inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.
G14	The Mandatory Reporting Level (the MRL) must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.
G15	The holder must, as soon as practical and within **forty-eight (48) hours** of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.
G16	The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.
G17	The holder must record any changes to the MRL in the Register of Regulated Structures.

G18	**Design storage allowance** The holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to **1 July** of each year.
G19	By **1 November** of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).
G20	The holder must, as soon as possible and within **forty-eight (48) hours** of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on **1 November** of any year, notify the administering authority.
G21	The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on **1 November** of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.
G22	**Annual inspection report** Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
G23	At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed and a suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and include recommended actions to ensure the integrity of the regulated structure.
G24	The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures* (ESR/2016/1933).
G25	The holder must: (a) Within **twenty (20) business days** of receipt of the annual inspection report, provide to the administering authority: (i) The recommendations section of the annual inspection report; and (ii) If applicable, any actions being taken in response to those recommendations; and (b) If, following receipt of the recommendations and (if applicable) actions, the administering authority requests a full copy of the annual inspection report from the holder, provide this to the administering authority within **ten (10) business days** of receipt of the request. *Note: Regulated structures which have been certified as low consequence category for 'failure to contain – overtopping', an annual inspection report is not needed unless significant changes or modifications have occurred to the regulated structure's operation/construction.*
G26	**Transfer arrangements** The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, consequence assessment, design plan and other supporting documentation, to a new holder on transfer of this authority.
G27	**Register of Regulated Dams** A Register of Regulated Dams must be established and maintained by the holder for each regulated dam.
G28	The holder must provisionally enter the required information in the Register of Regulated Dams when a design plan for a regulated dam is submitted to the administering authority.

G29	The holder must make a final entry of the required information in the Register of Regulated Dams once compliance with condition **G10** and **G11** has been achieved.
G30	The holder must ensure that the information contained in the Register of Regulated Dams is current and complete on any given day.
G31	All entries in the Register of Regulated Dams must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.
G32	The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Dams, in the electronic format required by the administering authority.
G33	**Transitional arrangements** All existing structures that have not been assessed in accordance with either the Manual or the former Manual for Assessing Hazard Categories and Hydraulic Performance of Dams must be assessed and certified in accordance with the Manual within 6 months of amendment of the authority adopting this schedule.
G34	All existing structures must subsequently comply with the timetable for any further assessments in accordance with the Manual specified in **Table G1 – Transitional hydraulic performance requirements for existing structures**, depending on the consequence category for each existing structure assessed in the most recent previous certification for that structure.
G35	**Table G1 – Transitional hydraulic performance requirements for existing structures** ceases to apply for a structure once any of the following events has occurred: (a) It has been brought into compliance with the hydraulic performance criteria applicable to the structure under the Manual; (b) It has been decommissioned; or (c) It has been certified as no longer being assessed as a regulated structure.
G36	Certification of the transitional assessment required by **G33** and **G34** (as applicable) must be provided to the administering authority within **six (6) months** of amendment of the authority adopting this schedule.

Table G1 – Transitional hydraulic performance requirements for existing structures

Transition period required for existing structures to achieve the requirements of the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures*			
Compliance with criteria	**High**	**Significant**	**Low**
>90% and a history of good compliance performance in last 5 years	No transition required	No transition required	No transitional conditions apply. Review consequence assessment every 7 years
>70%-≤90%	Within 7 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases	Within 10 years, unless otherwise agreed with the administering authority, based on no history of unauthorised releases	No transitional conditions apply. Review consequence assessment every 7 years
>50-≤70%	Within 5 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases	Within 7 years unless otherwise agreed with the administering authority, based on no history of unauthorised releases	Review consequence assessment every 7 years
≤50%	Within 5 years or as per compliance requirements (e.g. TEP timing)	Within 5 years or as per compliance requirements (e.g. TEP timing)	Review consequence assessment every 5 years

Note: Good compliance performance relates to the hydraulic performance of the applicable structure, including its ability to comply with release parameters if applicable. It does not relate to administrative non-compliance such as notification errors or to unrelated conditions such as air quality.

Schedule H – Land and rehabilitation	
Condition number	**Condition**
H1	Land disturbed by mining must be rehabilitated in accordance with **Table H1 – Rehabilitation Requirements.**
H2	Rehabilitation must commence progressively as areas become available.
H3	**Contaminated land** Before applying for surrender of a mining lease, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the mining lease which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use.
H4	Before applying for progressive rehabilitation certification for an area, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the area the subject of the application which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use under condition **H1**.
H5	Minimise the potential for contamination of land by hazardous contaminants.
H6	**Infrastructure** All buildings, structures, mining equipment and plants erected and/or used for the mining activities must be removed from the site prior to surrender, except where agreed in writing by the administering authority.
H7	**Subsidence** A Subsidence Management Plan must be developed by an appropriately qualified person(s) and implemented by the environmental authority holder prior to the commencement of activities that result in subsidence.

Table H1 – Rehabilitation requirements

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
Overburden	In and out of pit dumps, roads, open pit and ramps, stripped topsoil, cleared area	Safe and stable	Safe for humans and animals	Structural and geotechnical adequacy Minimal erosion	Up to 15% slopes for box cut and external batters, except for the areas defined in **Figure 4a: Areas Rehabilitated Prior to 2013** and **Figure 4b: Areas Rehabilitated Prior to 2013**, which are permitted to have a slope at the angle of repose. Minimal slumping or gullying after 5 years (<2% planimetric surface). Engineered drop structures in place and functioning.
		Non-polluting	Water quality solute concentrations met	Table F3 receiving water contaminant limits at downstream monitoring points	Water quality within the receiving water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void.
		Self-sustaining	Natural communities or grazing area (<15% slope)	Species diversity and multiple canopy layers – ground, middle and upper	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. >70% overall ground cover. Evidence collected during established rehab / IDC monitoring program.
Rejects	In and out of pit reject storage areas / dumps	Safe and stable	Safe for humans and animals	Structural and geotechnical adequacy. Minimal erosion.	Up to 10% slopes for external batters. Fully capped with no spontaneous combustion. Minimal slumping or gullying after 5 years (<2% planimetric surface).
		Non-polluting	Water quality solute concentrations met	Table F3 receiving water contaminant limits at downstream monitoring points	Water quality within the receiving water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void.
		Self-sustaining	Natural communities or grazing area (<15% slope)	Species diversity and multiple canopy layers – ground, middle and upper	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. >70% overall ground cover. Evidence collected during established rehab / IDC monitoring program.
Diversion	Licensed diversion channel – Including subsided areas of the	Safe and stable	Safe for humans and animals	Structural, geotechnical and hydraulic adequacy.	Meet engineering design criteria – consideration for natural, ephemeral geomorphic processes.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
	Cerito Creek South Diversion.			Minimal erosion.	Drainage lines and drop structures functioning.
		Non-polluting	Water quality solute concentrations within 80%ile	Table F3 receiving water contaminant limits at downstream monitoring points	Water quality within the receiving water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void.
		Self-sustaining	Native *Eucalyptus tereticornis* / *Corymbia tessellaris* community	Species diversity and multiple canopy layers – ground, middle and upper	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. >80% overall ground cover (embankments only). Evidence collected during established rehab / IDC monitoring program.
Drain	Unlicensed diversion drain	Safe and stable	Safe for humans and animals	Structural, geotechnical and hydraulic adequacy. Minimal erosion.	Resembles regional ephemeral, gully lines (analogue site) – show natural geomorphic processes. Drainage lines and drop structures functioning.
		Non-polluting	Water quality solute concentrations within 80%ile	Table F3 receiving water contaminant limits at downstream monitoring points	Water quality within the receiving water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void.
		Self-sustaining	Native *Eucalyptus tereticornis* / *Corymbia tessellaris* community	Species diversity and multiple canopy layers – ground, middle and upper	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. Evidence collected during established rehab or IDC monitoring program.
Levee	Constructed embankment – Including subsided areas of Levee 5 and Levee 7	Safe and stable	Protects infrastructure, humans and animals	Structural geotechnical and hydraulic adequacy. Minimal erosion.	Align with design criteria: 1:100 ARI plus 1 metre freeboard. Rock armour intact. Drop structures functioning.
		Non-polluting	Water quality solute concentrations within 80%ile	Table F3 receiving water contaminant limits at downstream monitoring points	Water quality within the receiving water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		Self-sustaining	Native ecosystem and/or sustainable grazing area (<15% slopes)	Species diversity and multiple canopy layers – ground, middle and upper	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. >70% overall ground cover. Evidence collected during IDC monitoring program.
Dams	Tailings and sediment dams – Including subsided areas of Highwall Dam	Safe and stable	Protects infrastructure, humans and animals	Structural, geotechnical and hydraulic adequacy. Minimal erosion.	Final structure is stable with no subsidence. Gully and rill erosion <0.3metres. Bywash / spillway must have adequate capacity. Sign off by post mining landholder (for retained structures only) – asset transfer agreement.
		Non-polluting	Water quality solute concentrations within 80%ile	Table F3 receiving water contaminant limits at downstream monitoring points	Water quality within the receiving water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void. No acid mine drainage or discharges. No contamination to groundwater.
		Self-sustaining	Native ecosystem and/or sustainable grazing area (<15% slopes)	Species diversity and multiple canopy layers – ground, middle and upper	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. Photographic evidence collected during rehab monitoring program.
Residual Voids	Mining pits, borrow pits and quarries – Excluding Wollombi Pit NUMA and Wollombi Pit Low Wall	Safe and stable	Safe for humans and animals	Geotechnical stability	Coal seams with an ISCP Classification of greater than I are to be fully capped with no Spontaneous Combustion. No public access to high wall and end wall (bunding and security fencing as a minimum).
		Non-polluting	Water quality solute concentrations met	Table F5 onsite water storage contaminant limits	Water quality within the receiving water contaminant limits in **Table F5 – Onsite water storage contaminant limits**. In the event that the water quality within the residual voids exceeds the contaminant limits defined in **Table F5 – Onsite water storage contaminant limits,** the environmental authority holder must implement measures to prevent access to waters by all livestock.
		Self-sustaining	Natural communities. Grazing area (<15% slope).	Species diversity and multiple canopy layers – ground, middle and upper	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
					>70% overall ground cover above natural ground level. Evidence collected during established rehab monitoring program.
	Wollombi Pit non-use management area (NUMA) – Including: • High wall; • End wall; • Pit Lake to an elevation 20 m above the maximum water level; and • Locations above the High wall and end wall with a factor of safety less than 1.5. See **Figures 6a** and **6b** for indicative extent.	Safe and stable*	Safe for humans and animals	Geotechnical and erosional stability	The following matters are certified by an appropriately qualified person accredited by a credible external body: (a) Maximum NUMA extent no greater than 2 km length, 1 km width and 300 m in depth; (b) Coal seams with an ISCP Classification of greater than I are to be fully capped and there is no spontaneous combustion observed; (c) Residual void is safe to humans and animals; (d) High and end wall weathered zone treatment – (i) Maximum slope of 22%; (ii) >50% overall vegetative ground cover. (e) Achievement of surface requirements – (i) Fencing and abandonment bunds are erected above the high and end walls; (ii) Warning signage posted at 50 m intervals above high and end walls;
		Non-polluting	Water quality solute concentrations met	Void water contaminant levels and depth of water	The following matters are certified by an appropriately qualified person accredited by a credible external body: (a) Achievement of sufficient improvement: (i) Residual void will not cause environmental harm outside of the relevant tenure boundary; (ii) Residual void water quality and quantity will not cause harm to the surrounding environment. (b) Water levels within the residual void do not reach the maximum operational WSL (water surface level) of 2,195m RL.
		Self-sustaining	Not Applicable	Not Applicable	No self-sustaining requirements
	Wollombi Pit Low Wall See **Figures 6a** and **6b** for indicative extent.	Safe and stable	Safe for humans and animals	Geotechnical and erosional stability	The following matters are certified by an appropriately qualified person accredited by a credible external body: (a) Maximum external slope of 15 %; (b) Maximum internal slope of 15 %; and Minimal slumping or gullying after 5 years (<2% planimetric surface).
		Non-polluting	Water quality solute concentrations within 80%ile	Table F3 receiving water contaminant limits at downstream monitoring points	Water quality within the receiving water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
					(c) No contaminated mine drainage or discharges.
		Self-sustaining	Natural communities. Grazing area (<15% slope).	Species diversity and multiple canopy layers – ground, middle and upper	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. >70% overall ground cover. Evidence collected during established rehab monitoring program.
Infrastructure	Haul roads, hard stands, sediment dams, easement, transmission lines, airstrip and car parks	Safe and stable	Protects retained infrastructure, humans and animals	Geotechnical adequacy. Minimal erosion.	Final landform is stable. Sign off by post mining landholder (for retained structures only) – asset transfer agreement.
		Non-polluting	Water quality solute concentrations within 80%ile	Table F3 receiving water contaminant limits at downstream monitoring points	Water quality within the receiving water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void. No contaminated mine drainage or discharges.
		Self-sustaining	Native ecosystem and/or sustainable grazing area (<15% slopes)	Species diversity and multiple canopy layers – ground, middle and upper	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. Evidence collected during rehab monitoring program.
	Buildings, conveyors, rail line	Safe and stable	Protects retained infrastructure, humans and animals	Geotechnical adequacy. Minimal erosion. Product stewardship performance. Condition of retained equipment.	Final landform is stable. Manage waste to meet the waste management hierarchy of control. Sign off by post mining landholder (for retained structures only) – asset transfer agreement.
		Non-polluting	Water quality solute concentrations within 80%ile	Table F3 receiving water contaminant limits at downstream monitoring points.	Water quality within the receiving water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void. No contaminated mine drainage or discharges. Contaminated soil to be remediated (to meet the criteria stipulated in the Newlands Waste Management Procedure) or placed within the Ramp 7 Landfill.
		Self-sustaining	Native ecosystem and/or sustainable grazing area (<15% slopes)	Species diversity and multiple canopy layers – ground, middle and upper	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
					Evidence collected during rehab monitoring program.
Contaminated land	Landfill, protective bunds and around other infrastructure	Safe and stable	Protects retained infrastructure, humans and animals	Geotechnical adequacy. Minimal erosion.	Final landform is stable. Most be a non-combustible environment.
		Non-polluting	Water quality solute concentrations within 80%ile	Table F3 receiving water contaminant limits at downstream monitoring points. Table F2 release contaminant limits.	Water quality within the EA Groundwater, the receiving water and the release water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void. No contaminated mine drainage or discharges. Contaminated soil to be remediated (to meet the criteria stipulated in the Newlands Waste Management Plan) or placed within the Ramp 7 Landfill. Other chemical contamination is to meet the EP Regs (Waste Management) 2000.
		Self-sustaining	Native ecosystem and/or sustainable grazing area (<15% slopes)	Species diversity and multiple canopy layers – ground, middle and upper	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. Evidence collected during rehab monitoring program. No visible surface rubbish.
Exploration	Tracks, drilling sumps and bore holes on MLs (not including EPCs)	Safe and stable	Protects humans and animals	Minimal erosion.	Gully and rill erosion <0.3metres. Holes grouted and cut off below ground surface. Sumps filled in.
		Non-polluting	Water quality solute concentrations within 80%ile	Table F3 receiving water contaminant limits at downstream monitoring points.	Water quality within the receiving water and release water contaminant limits during runoff events. Note: The above water quality contaminant limits do not apply to any surface runoff which drains to a residual void.
		Self-sustaining	Native ecosystem and/or sustainable grazing area (<15% slopes)	Species diversity and multiple canopy layers – ground, middle and upper	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. Evidence collected during rehab monitoring program.
Subsidence	Subsidence within General Areas	Safe and stable	Safe for humans and animals	Structural and geotechnical adequacy. Minimal subsidence induced cracking and erosion.	No tension cracks greater than 20 mm wide and 10 m long. Drainage features within subsided areas resemble drainage lines outside of subsidence areas.

Mine Domain	Mine Feature Name	Rehabilitation Goal	Rehabilitation Objectives	Indicators	Completion Criteria
		Non-polluting	Surface water quality suitable for environmental values	Water quality at downstream receiving water monitoring point WQS5 (Kangaroo Creek Downstream)	Surface water quality at downstream monitoring point WQS5 less than or equal to receiving water contaminant trigger levels in Table F3 of the EA or water quality at upstream monitoring point WQS7
		Self-sustaining	Natural communities or grazing area	Species diversity and multiple canopy layers – ground, middle and upper	Minimum of 10 (6 in grazing areas) species present and evidence of recruitment (regrowth) during past 5 years. >70% overall ground cover. Soil disturbance within 50 m of Threatened Ecological Communities (TECs) are rehabilitated with native vegetation.
	Subsidence within Newlands Nature Refuge and Wollombi Offset Area	Safe and stable	Safe for humans and animals	Structural and geotechnical adequacy. Minimal subsidence induced cracking and erosion.	Impacts upon TECs will be avoided when undertaking any surface stabilisation and soil remediation and rehabilitation works. Surface cracks in subsided areas will only be remediated where they are assessed as a high erosion risk where cracks >0.3m wide pose a safety concern to personnel or may endanger native fauna or livestock. This risk is assessed on the basis of post-subsidence visual inspections.
		Non-polluting	Surface water quality suitable for environmental values	Water quality at downstream receiving water monitoring point WQS5 (Kangaroo Creek Downstream)	Surface water quality at downstream monitoring point WQS5 less than receiving water contaminant trigger levels in Table F3 of the EA or water quality at upstream monitoring point WQS7
		Self-sustaining	Natural communities	Species diversity and multiple canopy layers – ground, middle and upper	Minimum of 10 species present and evidence of recruitment (regrowth) during past 5 years. >70% overall ground cover. Soil disturbance within TECs are rehabilitated with native vegetation.

H8	The Subsidence Management Plan must: (a) Provide for the proper and effective management of the actual and potential environmental impacts resulting from the mining activity and to ensure compliance with the conditions of this environmental authority; (b) Be developed in accordance with **Appendix A – Watercourse subsidence** for watercourse subsidence; (c) Describe the proposed impacts of subsidence on any land, watercourse and floodplain including but not limited to: (i) Physical condition of surface drainage: (A) Erosion; (B) Areas susceptible to higher levels of erosion such as watercourse confluences; (C) Incision processes; (D) Stream widening; (E) Tension cracking; (F) Lowering of bed and banks; (G) Creation of instream waterholes; and (H) Changes to local drainage patterns (ii) Overland flow: (A) Capture of overland flow by subsided long-wall panels; (B) Increased overbank flows due to lowering of high bank of watercourses; and (C) The portion of local and large scale catchment likely to be captured by subsided long-wall panels and the associated impacts on downstream users; (iii) Water quality: (A) Surface water; and (B) Groundwater; (iv) Land condition: current land condition to be impacted by subsidence; and (v) Infrastructure: detail of existing infrastructure (pipelines, railway, powerlines and haul roads) should be identified where there is a potential impact from effects of land subsidence; (d) Propose options for mitigating any impacts associated with subsidence and how these mitigation methods will be implemented; (e) Describe cumulative impacts on watercourses or catchments; (f) Describe impacts on groundwater; and (g) Describe contingency procedures for emergencies; and include a program for monitoring and review of the effectiveness of the Subsidence Management Plan.
H9	The Subsidence Management Plan must be reviewed by an appropriately qualified person: (a) each calendar year; or (b) **Three (3) yearly** once underground mining has ceased
H10	The appropriately qualified person that undertakes the review required by condition **H9** must prepare a report that: (a) Assesses the Subsidence Management Plan against the requirements under condition **H8**; (b) Includes recommended actions to ensure actual and potential environmental impacts are effectively managed; (c) Identifies any amendments made to the Subsidence Management Plan following the review; and (d) Be made available to the administering authority upon request.

H11	The environmental authority holder must attach to the review report required by condition **H10**, a written response to the report and recommended actions, detailing the actions taken or to be taken by the environmental authority holder on stated dates: (a) To ensure compliance with this environmental authority; and (b) To prevent a recurrence of any non-compliance issues identified.
H12	**Inspection of subsidence** The environmental authority holder must arrange for each subsided longwall panel to be inspected by a suitably qualified and experienced person, in accordance with conditions **H13** to **H15** inclusive.
H13	The inspection required by condition **H12** must be conducted between **1 April** and **1 November:** (a) Each calendar year; or (b) **Three (3) yearly** once underground mining has ceased**.**
H14	At each inspection, the condition of each subsided longwall panel must be assessed, including the structural, geotechnical and hydraulic adequacy of the subsided longwall panel and the adequacy of the works with respect to the Subsidence Management Plan.
H15	For each inspection, copies of a report certified by the suitably qualified and experienced person, including any recommendations to ensure the integrity of each subsided longwall panel must be provided to the administering authority upon request.
H16	**Overland flow** The subsided longwall panels must not result in the capture of significant overland flow and must allow water to drain from the panel. The maximum surface area for ponded areas must not exceed 200m^2 and 1m in depth.
H17	**Progressive Rehabilitation** Certification of progressive rehabilitation was granted on 2 June 2017 in the area specified in **Figure 5a: Progressive Rehabilitation Certification 2017** (total area 73.48ha). Certification of progressive rehabilitation was approved on 14 June 2021 in the areas specified in **Figure 5b: Progressive Rehabilitation Certification 2021** (total area 138.4ha) (a) **Tailings Dam 1** (7.2 ha) (b) **Banrock A** (16.9 ha) (c) **Banrock B** (37.5 ha) (d) **Banrock ROM** (11.2 ha) (e) **Banrock Regrowth** (13.2 ha) (f) **Lenny's** (12.6 ha) (g) **Pub Hill** (8.1 ha) (h) **Ramp 3** (20.7 ha) (i) **Ramp 5** (11.0ha)

Schedule J – Sewage Treatment	
Condition number	**Condition**
J1	The only contaminant permitted to be released to land is treated sewage effluent in compliance with the release limits stated in **Table J1 – Contaminant release limits to land**.

Table J1 – Contaminant release limits to land

Contaminant	Unit	Release limit	Limit type	Frequency
5 day Biochemical oxygen demand (BOD)	mg/L	20	Maximum	Monthly
Total suspended solids	mg/L	30	Maximum	Monthly
Nitrogen	mg/L	30	Maximum	Monthly
Phosphorus	mg/L	15	Maximum	Monthly
E-coli	Organisms/100ml	1000	Maximum	Monthly
pH	pH units	6.0 – 9.0	Range	Monthly

J2	Treated sewage effluent may only be released to land in accordance with the conditions of this approval at the following locations: (a) Within the nominated area(s) identified in the Standard, Potable, Raw and Effluent Management Plan; and (b) Other land for the purpose of dust suppression and/or firefighting.
J3	The application of treated effluent to land must be carried out in a manner such that: (a) Vegetation is not damaged; (b) There is no surface ponding of effluent; and (c) There is no run-off of effluent.
J4	If areas irrigated with effluent are accessible to employees or the general public, prominent signage must be provided advising that effluent is present and care should be taken to avoid consuming or otherwise coming into unprotected contact with the effluent.
J5	All sewage effluent released to land must be monitored at the frequency and for the parameters specified in **Table J1 – Contaminant release limits to land**.
J6	The daily volume of effluent release to land must be measured and records kept of the volumes of effluent released.
J7	When circumstances prevent the irrigation or beneficial reuse of treated sewage effluent such as during or following rain events, waters must be directed to wet weather storage or alternative measures must be taken to store or lawfully dispose of effluent.
J8	A minimum area of 0.2 hectares (ha) of land, excluding any necessary buffer zones, must be utilised for the irrigation and/or beneficial reuse of treated sewage effluent.
J9	Treated sewage effluent must only be supplied to another person or organisation that has a written plan detailing how the user of the treated sewage effluent will comply with their general environmental duty whilst using the treated sewage effluent.

J10	Bio-solids produced by the activity for re-use must be: (a) Sampled, analysed, graded and classified according to the procedures specified in the administering authority's systems and standards; and (b) Re-used under a relevant approval issued by the administering authority.

Schedule K – Biodiversity	
Condition number	**Condition**
K1	**Biodiversity offsets** The environmental authority holder must provide a Biodiversity offset for impacts on applicable state significant biodiversity values consistent with the requirements for an offset as identified in the Biodiversity Offset Strategy (as per condition **K2**): (a) Prior to impacting on state significant biodiversity values; or (b) Where a land based offset is to be provided, within **twelve (12) months** of the later of either of the following: (i) The date of issue of this environmental authority; or (ii) The relevant stage identified in the Biodiversity Offset Strategy submitted under condition K2; or (c) Where an offset payment is to be provided, within 4 months of the later of either of the following: (i) The date of issue of this environmental authority; or (ii) The relevant stage identified in the Biodiversity Offset Strategy submitted under condition **K2**.
K2	A Biodiversity Offset Strategy must be developed in accordance with the Queensland Biodiversity Offset Policy and submitted to the administering authority within either **thirty (30) days**, or a lesser period agreed to by the administering authority, prior to impacting on applicable state significant biodiversity values.
K3	**Biodiversity management** A detailed survey plan (including GPS points) of all Wollombi Surface Area 2 indicating all areas of 'of concern' and 'endangered' regional ecosystems to remain undisturbed must be developed.
K4	Prior to clearing, the clearing boundary must be defined to ensure that 'of concern' and 'endangered' regional ecosystems and buffer areas are not disturbed beyond the areas permitted to be cleared by the administering authority.

END OF PERMIT CONDITIONS

1.1 Appendix A – Watercourse subsidence

When to use

This appendix is to be used by the Environmental Authority (EA) holders in the preparation of a Subsidence Management Plan (SMP) where a watercourse, as defined under the *Water Act 2000*, is to be impacted as a result of underground longwall mining. For a feature to be defined as a watercourse under Chapter 1, Part 2 of the *Water Act 2000,* the feature must possess particular characteristics. Watercourse determinations are regularly undertaken across Central Queensland by the Department of Natural Resources and Mines as it is the determining factor in the requirement for approvals under the *Water Act 2000*.

In addition, this appendix is to be used by the department when providing advice and assessing Subsidence Management Plans submitted by EA holders or proposed EA holders.

Purpose

The purpose of this appendix is to detail the information to be provided in a SMP and the legislative basis of the requirement for approval. The SMP forms the major reference document regarding subsidence impacts on watercourses as a result of underground longwall mining and is required to accompany proposals for watercourse subsidence.

The objective of the SMP is to ensure that the impacts of subsidence are properly managed. Where surface subsidence intersects a watercourse, it is important for the situation to be managed effectively to ensure no long-term maintenance is required within the watercourse, and to ensure that naturally occurring processes are not impaired.

A SMP should include the following information:

- Location of proposed longwall panels and modelled subsidence effects on the watercourse;
- Pre-subsidence management of watercourses proposed to be subsided;
- Monitoring methods pre and post-subsidence to detect and document any impacts on watercourses;
- Post-subsidence management of impacted watercourses through remediation and rehabilitation;
- Agreed outcome for proposed future landscape between the department and the proponent.

Governing legislation

Subsidence on mining leases is managed under two separate Government Departments; the Department of Environment and Heritage Protection (EHP) and the Department of Natural Resources and Mines (NRM).

Environmental impact associated with mining activities is regulated under the *Environmental Protection Act 1994*. While this legislation does not identify longwall mining as a specific mining activity, it provides a definition of a 'mining activity' and 'environmental harm'. The process of longwall mining and resultant subsidence is governed by the legislation and authorised under a proponent's EA.

The holder or holders of a mining tenement issued under the *Mineral Resources Act 1989* must hold an EA for the mining activities to be carried out on the tenement. When applying for an EA, a number of environmental management documents must be in place describing the proposed project and the management of any environmental impacts.

A Plan of Operations describes the actions and programs required to achieve compliance with the conditions of an EA. All activities carried out on a mining lease must be carried out in accordance with the submitted Plan of Operations. A Plan of Operations describes an action program for complying with the conditions of the associated EA, contains a plan showing where all activities are to be carried out on the land, and includes a rehabilitation program for land disturbed or proposed to be disturbed.

Whilst management of subsidence will be included in the Plan of Operations, the Subsidence Management Plan is a stand-alone document authorised under the conditions of the EA.

Background

Throughout the Bowen Basin, economically viable coal deposits frequently extend beneath watercourses. Consequently, underground mining operations targeting the associated coal seams often also extend beneath watercourses. Underground mining is not a new concept in the extraction of coal throughout the Bowen Basin. This form of mining is preferred when economic constraints reduce the feasibility of mining using open cut

methods. Whilst coal deposits located beneath watercourses contribute to total extractable coal, more importantly, extraction of this coal facilitates underground mining activities to continue along a coal seam uninterrupted across both sides of a watercourse. This provides for a more cost effective extraction of coal that might otherwise be uneconomic to mine.

Technological improvements in underground mining methods have provided the ability to extract coal in areas previously inaccessible for mining. Modern day underground coal mining operations commonly utilise longwall mining techniques which allow extraction of more of the coal seam. Longwall mining allows access to the coal seam via a shaft, a decline or a highwall portal and system of underground workings, without the need to remove overburden. This technique is used to extract the coal seam via a series of “panels”, which can be hundreds of metres wide and kilometres in length. As the coal shearer removes the coal in the seam along the length of a panel, the overlying strata is collapsed behind, filling the void (goaf) left by the extracted coal. The collapse and settlement of the overlying strata can extend to the land surface above, resulting in localised lowering of the surface profile, and depressions in the landscape (commonly referred to as subsidence troughs).

Where a watercourse is located above a longwall panel, extraction of the coal seam causes subsidence of the panel can have a number of impacts on the watercourse. Some of these impacts include:

- Lowering of bed and banks
- Creation of in-stream waterholes
- Changes to local drainage patterns
- Incision processes
- Stream widening
- Erosion
- Increased overbank flows due to lowering of the high banks
- Tension cracking through both shallow and deeper underlying strata (including aquifers)
- Root shear and loss of riparian vegetation
- Changes to water quality (surface water and groundwater).

The degree of subsidence is generally a function of thickness of coal extracted, depth of overburden, strata type and panel width. The point of maximum subsidence generally occurs along the centreline of an extracted panel, whilst the pillar zones located between panels remain at natural surface level. Experience gained through widespread adoption of longwall mining processes in the Bowen Basin has seen advancement in the modelling and ability to predict the likely impacts of a subsidence event. This technology has also facilitated improved design and implementation of mitigation measures (engineered structures and associated earthworks) and highlighted potential short and long term maintenance issues which may require specific management intervention.

Subsidence Management Plan

The objective of the SMP is to ensure that the impacts of subsidence are properly managed. Where surface subsidence intersects a watercourse, effective management is required to ensure no long-term maintenance is required within the watercourse, and to ensure that naturally occurring processes are not unduly impaired. Consideration must be given for potential impacts on erosion, groundwater and surface water as a result of a proposed subsidence event.

A Subsidence Management Plan must address the following issues:

1. *Description of Pre Subsidence Situation & Survey*

    i) A general description of the area pre subsidence including photographic record should be provided.

    ii) Survey of cross-section and longitudinal profiles should be undertaken on all watercourses with potential to be impacted through subsidence. Permanent transects should be detailed within the proposed Subsidence Management Plan. Surveys should include the confluence with any other watercourses in the impacted area as well as any infrastructure spanning the watercourse. Surface drainage patterns should be investigated to determine current paths of water movement

through the landscape. This path of water movement should be maintained where possible post-subsidence.

2. *Predicted Subsidence*

   The degree of anticipated subsidence should be provided, including the length of watercourse to be impacted and the average depth of subsidence across individual panels. The predicted subsidence should be modelled to indicate the change in surface elevations expected. The volumes of water expected to be captured within the bed of the watercourse due to creation of waterholes should be provided. Consequences of any lowering of the high banks of the watercourse should be discussed, including impacts associated with greater floodplain interaction and potential for creation of new channels.

3. *Infrastructure*

   Prior to mining, the anticipated impacts from subsidence should be determined on all infrastructure located within or above the watercourse to be subsided along with measures to be implemented to mitigate any impacts. Priority should be given to infrastructure which provides services to external parties (other mines, towns, industry). Measures for dealing with any interruption to such services should be outlined. Relocation of infrastructure may be necessary should the proposed subsidence pose sufficient risk.

4. *Preventative Works*

   Where preventative measures are required to ensure the stability of the bed and banks of the watercourse (establishment of pile fields, exclusion of cattle, bentonite treatment) these should be discussed in the Subsidence Management Plan, including supporting evidence outlining the legitimacy of such works. These works may be required where self-repair by natural processes will not provide adequate remediation of impacted areas. Where there is potential for root shear to result in significant loss of riparian vegetation, mitigation measures may be required.

5. *Engineered Structures*

   Engineered works may be required to maintain the stability and function of a watercourse impacted by subsidence. These works are often constructed prior to subsidence occurring within the watercourse. Such works can include timber pile fields, rock revetment, reshaping of existing stream banks, and riverbed treatment to prevent increased ingress of surface water into underground aquifers. Where subsidence mitigation measures require engineered structures be installed, the design, monitoring and maintenance of these structures should be detailed in the Subsidence Management Plan. The plan should detail the purpose of each structure and any consequences should the structure fail to be installed. Appropriate design plans including the location of each structure will be required. As a minimum, fourth and fifth order watercourse will require the installation of engineered structures. Works undertaken within the bed and banks of a watercourse aimed at mitigating or remediating any physical impacts pre or post-subsidence are authorised under the conditions of the Environmental Authority. Where a separate report has been produced for engineered structures, this should be included as an appendix to the Subsidence Management Plan.

6. *Erosion*

   The Subsidence Management Plan should detail the current watercourse condition to be impacted by subsidence. Identification of erosion zones which are likely to be exacerbated through tension cracking should be stabilised using appropriate methods. Such areas may include reaches with elevated rates of bed and bank erosion, access tracks and areas with poor quality, sparsely populated riparian vegetation. Sufficient riparian vegetation should be established prior to subsidence to assist with initial stabilisation of the bed and banks. Removal of grazing animals to allow establishment or recovery of riparian vegetation may be required for an extended period prior to subsidence.

7. *Groundwater*

   Where groundwater aquifers exist beneath the mine plan area, investigations should be undertaken regarding the potential for impacts on these aquifers as a result of subsidence. The Subsidence Management Plan should discuss these aquifers, any anticipated impacts on each aquifer and proposed measures for mitigating these impacts. Any anticipated movement of surface water into underlying aquifers should be discussed, as this can result in loss of surface water from the system and impacts on water quality in these aquifers. Geotechnical assessment across the bed and banks of the watercourse

should be undertaken to provide an indication of potential permeability issues related to sub-surface cracking and interaction with local groundwater tables. Monitoring bores should be established in each aquifer prior to subsidence and monitored for a period of time sufficient for obtaining background water levels and trends. Monitoring of these bores should continue post-subsidence to aid the detection of impacted aquifers.

8. *Surface Water*

    i) *Baseline* Monitoring

    The Subsidence Management Plan should detail baseline condition monitoring of all watercourses likely to be impacted through subsidence. The preferred monitoring assessment technique for stream condition in the Bowen Basin is the Index of Diversion Condition. This methodology was established as a result of the Australian Coal Association Research Program (ACARP) Project C9068. Monitoring of watercourses should extend a minimum of 1km upstream and downstream of the proposed area to be impacted and should include a geomorphic assessment of the entire reach. Where a baseline monitoring assessment has been undertaken as part of an Environmental Impact Statement (EIS) process, this may be considered sufficient provided there has been no subsequent modification or interference to the watercourse. The condition of riparian vegetation should also be detailed.

    ii) *Cumulative Impacts on Watercourses*

    With an increasing number of mines being established in close proximity to watercourses, a proponent utilising longwall mining methods may be requested to investigate the cumulative impact of these activities on the watercourse.

Monitoring and Reporting Requirements

The following criteria have been developed to provide detailed direction regarding monitoring and reporting requirements associated with subsidence of watercourses.

These criteria are outlined in a four step approach:

- Monitoring
- Assessment
- Reporting
- Mitigation

Monitoring

- Representative sites need to be identified that allow the impacts of subsidence to be assessed in a particular watercourse with particular attention to the following:
    - Sites must be located at all pillar zones intersecting a watercourse or tributary.
    - Sites must include representative locations at the interface of natural ground level and observed changes in surface elevation from subsidence within a watercourse.
- Control sites beyond proposed mining extents should be established to verify pre-mining conditions. In watercourses, the sites should extend a minimum of 1km both upstream and downstream of the subsidence reach.
- Assessment of watercourse condition: Specific monitoring assessment techniques for watercourse condition should include but not be limited to the Index of Diversion Condition, as outlined in the ACARP Project C9068.
- Vegetation and ecological condition assessments should form part of the baseline dataset.
- Rainfall monitoring should be undertaken within areas proposed to be impacted by subsidence. In addition, flow event monitoring should occur in watercourses proposed to be impacted by subsidence. The type of monitoring devices and locations to be installed should be detailed in the Subsidence Management Plan.

- Where preventative works are undertaken pre-subsidence, subsequent monitoring assessments should include the integrity and effectiveness of these works in reducing the impact of subsidence within the watercourse.
- Surveys must include cross-sectional area and bed slope throughout all monitored reaches of impacted watercourses.
- Annual aerial photography and Digital Terrain Mapping is required to verify predicted subsidence surface profiles, and to identify potential short and long term erosion issues resulting from subsidence of watercourses.
- Surveys pre-subsidence should quantify the following features within watercourses:
    - pool/riffle sequences
    - bed controls
    - entry points of other watercourses and localised tributaries
    - existing bed and bank scour points
    - infrastructure located within the watercourse.
- Surveys post-subsidence should quantify any changes to the pre-mining conditions including:
    - erosion or deposition processes that have occurred as a result of subsidence,
    - migration of head cut erosion within watercourses and tributaries,
    - localised changes to stream bed slope,
    - localised widening of channels,
    - destabilisation of stream bed and banks including fracturing and incision,
    - localised changes to bank heights
    - size of subsidence void created within the watercourse.
- The subsidence monitoring program for groundwater must include the following information:
    - Sites must include representative locations at the interface of natural ground surface and observed changes in surface elevation from subsidence.
    - Monitoring bores should be established in each aquifer at each monitoring site.
    - Monitoring must include both water level measurements and water quality sampling in accordance with the following:
        - water level measurement to be taken quarterly
        - water quality field conductivity measurement to be taken 6 monthly
        - full chemical analysis of water samples to be taken annually.

Frequency of Monitoring

A proposed timeframe should be provided by the proponent in relation to the monitoring outlined in the Subsidence Management Plan. The Department, upon review of the proposed Subsidence Management Plan will determine a suitable monitoring timeframe based on the information provided. Monitoring requirements will depend on a number of factors, including the stream order of the watercourse proposed to be impacted. As a guide:

Stream Order 1, 2 and 3

Monitoring must be undertaken at the following intervals:

- immediately prior to subsidence,
- within two (2) months of the initial subsidence,
- following a rainfall event of **1 in 2 year** ARI for the duration equal to the time of concentration for the catchment at the location of the subsidence.

- following a peak flow event of greater than a **1 in 2 year** ARI and
- annually.

Stream Order 4 and higher

Monitoring (including surveys) must be undertaken at the following intervals:

- immediately prior to subsidence,
- within two (2) months of the initial subsidence,
- following a rainfall event of **1 in 5 year** ARI for the duration equal to the time of concentration for the catchment at the location of the subsidence.
- following a peak flow event of greater than a **1 in 5 year** ARI, and
- annually.

Cumulative Impacts

Where subsidence is proposed in a Subsidence Management Plan, and the watercourse has already been subsided upstream or downstream, the monitoring assessment must determine not only the localised impacts on the watercourse resulting from the proposed subsidence, but also any cumulative impacts on the watercourse as a result of all other subsidence events.

Assessment

The design and assessment of engineered structures should be performed by a Registered Professional Engineer of Queensland (RPEQ). All other assessments should be performed by suitably qualified and experienced persons in the fields that they are assessing.

- The results of all monitoring activities should be reviewed by a suitably qualified person and detailed in the associated monitoring report.
- Recommendations should be made after assessment of the results regarding any specific treatment, remediation works, or engineered structures required post-subsidence to achieve stability in the watercourse.

Reporting

An annual report will be requested by the administering authority post-subsidence. The report should detail mining activities and all monitoring and rehabilitation activities as outlined within the Subsidence Management Plan. The reporting date will be determined in consultation with the administering authority.

- A monitoring report should contain the results of all monitoring activities, the assessment of these results, and recommendations for any remedial works required. The report should comment on the following:
  - Watercourse condition and geomorphic processes;
  - The condition of vegetation in riparian zones;
  - Examination of pillar zones in watercourses with particular attention to potential for tension cracking;
  - The creation of in-stream waterholes;
  - Any impacts on groundwater.
- Where preventative works were undertaken pre-subsidence, subsequent monitoring assessments should include assessment of the integrity and effectiveness of these works in mitigating the impacts of subsidence.
- An annual report in the form of two (2) hard copies and one electronic copy shall be furnished to the administering authority. The report should in addition to addressing specific monitoring requirements provide comment on:
  - The current state of the groundwater and surface water resources;

- Any impacts on these features;
- Any remedial works required to be undertaken including a timetable for implementation.
- Commitment from the proponent to addressing the recommendations in the report.

Mitigation

Where recommendations are made regarding specific treatment, remediation works, or engineered structures required post-subsidence to achieve stability in the watercourse, the proponent must ensure this work is undertaken.

Rehabilitation

The holder of the EA, if directed by the administering authority, will carry out additional remedial works deemed necessary to minimise the impacts of subsidence on the physical integrity of the watercourse.

Relinquishment

Relinquishment of monitoring and rehabilitation responsibilities conditional under a proponent's EA can only occur after the subsidence and approved mitigation and rehabilitation measures have been subjected to a suitable range of rainfall and flow events, and are deemed by the administering authority to be in a stable and functional condition. Any request for relinquishment will be negotiated with the administering authority and will require a submission containing monitoring data demonstrating stability and functionally in the watercourse over a suitable range of rainfall and flow events.

Acknowledgement

In 2007, BMA and Anglo Coal instigated discussions with the Department into a proposed assessment on the cumulative impacts of longwall mining beneath the Isaac River in Central Queensland. A final report was produced by Alluvium Consulting in July 2009 documenting the outcomes of the study. The Department greatly acknowledges the findings from this report and the assistance provided in the development of this guideline.

R Lucas, J Crerar, R Hardie, J Merritt and B Kirsch, 2009. *Isaac River Cumulative Impact Assessment of Mining Developments*. Report by Alluvium Consulting. ACARP for Diversion assessment guideline ex C9068

Definitions

Key terms and/or phrases used in this document are defined in this section. Where a term is not defined, the definition in the *Environmental Protection Act 1994*, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

'acid rock drainage' means any contaminated discharge emanating from a mining activity formed through a series of chemical and biological reactions when geological strata is disturbed and exposed to oxygen and moisture.

'airblast overpressure' means energy transmitted from the blast site within the atmosphere in the form of pressure waves. The maximum excess pressure in this wave, above ambient pressure is the peak airblast overpressure measured in decibels linear (dBL).

'annual exceedance probability or AEP' the probability that at least one event in excess of a particular magnitude will occur in any given year.

'annual inspection report' means an assessment prepared by a suitably qualified and experienced person containing details of the assessment against the most recent consequence assessment report and design plan (or system design plan);

(a) Against recommendations contained in previous annual inspections reports;

(b) Against recognised dam safety deficiency indicators;

(c) For changes in circumstances potentially leading to a change in consequence category;

(d) For conformance with the conditions of this authority;

(e) For conformance with the 'as constructed' drawings;

(f) For the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems);

(g) For evidence of conformance with the current operational plan.

'appropriately qualified person' means a person who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relating to the subject matter using the relevant protocols, standards, methods or literature.

'assessed or assessment' by a suitably qualified and experienced person in relation to a hazard assessment of a dam, means that a statutory declaration has been made by that person and, when together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow and independent audit of the assessment:

(a) Exactly what has been assessed and the precise nature of that determination;

(b) The relevant legislative, regulatory and technical criteria on which the assessment has been based;

(c) The relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and

(d) The reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

'associated works' in relation to a dam, means:

(a) Operations of any kind and all things constructed, erected or installed for that dam; and

(b) Any land used for those operations.

'**Act'** means the *Environmental Protection Act 1994*

'authority' means an environmental authority.

'background', with reference to the water schedule means the average of samples taken prior to the commencement of mining from the same waterway that the current sample has been taken.

'blasting' means the use of explosive materials to fracture:

(a) Rock, coal and other minerals for later recovery; or

(b) Structural components or other items to facilitate removal from a site or for reuse.

'brine' means saline water with a total dissolved solid concentration greater than 40,000 mg/L.

'brine dam' means a regulated dam that is designed to receive, contain or evaporate brine.

'certification' means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by the *Manual for Assessing Consequence Categories and Hydraulic Performance of Dams (EM635)*, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy Certification by RPEQs.

'certifying, certify or certified' have a corresponding meaning as 'certification'.

'chemical' means:

(a) An agricultural chemical product or veterinary chemical product within the meaning of the Agricultural and *Veterinary Chemicals Code Act 1994* (Commonwealth); or

(b) A dangerous good under the Australian Code for the Transport of Dangerous Goods by Road and Rail approved by the Australian Transport Council; or

(c) A lead hazardous substance within the meaning of the Workplace Health and Safety Regulation 1997; or

(d) A drug or poison in the Standard for the Uniform Scheduling of Drugs and Poisons prepared by the Australian Health Ministers' Advisory Council and published by the Commonwealth; or

(e) Any substance used as, or intended for use as:

(i) A pesticide, insecticide, fungicide, herbicide, rodenticide, nematicide, miticide, fumigant or related product; or

(ii) A surface active agent, including, for example, soap or related detergent; or

(iii) A paint solvent, pigment, dye, printing ink, industrial polish, adhesive, sealant, food additive, bleach, sanitiser, disinfectant, or biocide; or

(iv) A fertiliser for agricultural, horticultural or garden use; or

(v) A substance used for, or intended for use for mineral processing or treatment of metal, pulp and paper, textile, timber, water or wastewater; or

(vi) Manufacture of plastic or synthetic rubber.

'commercial place' means a workplace used as an office or for business or commercial purposes, which is not part of the mining activity and does not include employees' accommodation or public roads.

'consequence' in relation to a structure as defined, means the potential for environmental harm resulting from the collapse or failure of the structure to perform its primary purpose of containing, diverting or controlling flowable substances.

'consequence category' means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635).*

'construction' or **'constructed'** in relation to a dam includes building a new dam and modifying or lifting an existing dam, but does not include investigations and testing necessary for the purpose of preparing a design plan.

'dam' means a land-based structure or a void that contains, diverts or controls flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and associated works.

'dam crest volume' means the volume of material (liquids and/or solids) that could be within the walls of a dam at any time when the upper level of that material is at the crest level of that dam. That is, the instantaneous maximum volume within the walls, without regard to flows entering or leaving (e.g. via spillway).

'design storage allowance or DSA' means an available volume, estimated in accordance with the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority, must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an annual exceedance probability (AEP) specified in that manual.

'designer' for the purposes of a regulated dam, means the certifier of the design plan for the regulated dam.

'disturbance' of land includes:

(a) Compacting, removing, covering, exposing or stockpiling of earth;

(b) Removal or destruction of vegetation or topsoil or both to an extent where the land has been made susceptible to erosion;

(c) Carrying out mining within a watercourse, waterway, wetland or lake;

(d) The submersion of areas by tailings or hazardous contaminant storage and dam/structure walls;

(e) Temporary infrastructure, including any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be removed after the mining activity has ceased; or

(f) Releasing of contaminants into the soil, or underlying geological strata.

However, the following areas are not included when calculating areas of 'disturbance':

(a) Areas off lease (e.g. Roads or tracks which provide access to the mining lease);

(b) Areas previously disturbed which have achieved the rehabilitation outcomes;

(c) By agreement with the administering authority, areas previously disturbed which have not achieved the rehabilitation objective(s) due to circumstances beyond the control of the mine operator (such as climatic conditions);

(d) Areas under permanent infrastructure. Permanent infrastructure includes any infrastructure (roads, tracks, bridges, culverts, dam/structures, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads etc) which is to be left by agreement with the landowner;

(e) Disturbance that pre-existed the grant of the tenure.

'EC' means electrical conductivity.

'effluent' treated wastewater released from sewage treatment plants.

'emergency action plan' means documentation forming part of the operational plan held by the holder or a nominated responsible officer, that identifies emergency conditions that sets out procedures and actions that will be followed and taken by the dam owner and operating personnel in the event of an emergency. The actions are to minimise the risk and consequences of failure, and ensure timely warning to downstream communities and the implementation of protection measures. The plan must require dam owners to annually update contact details.

'estimated rehabilitation cost (ERC)' for a resource activity, see section 300(2) of the *Environmental Protection Act 1994.*

'ERC decision' means a decision made by the administering authority under section 300 of the *Environmental Protection Act 1994* about the estimated rehabilitation cost for a resource activity.

'ERC period' for the estimated rehabilitation cost for a resource activity, means:

(a) If a PRCP schedule applies for the activity, the period of between 1 and 5 years stated in the application for an ERC decision under section 298(2)(b); or

(b) If the activity is a petroleum activity that is an ineligible ERA, other than a petroleum activity to which a plan of operations applied, or the activity relates to a 1923 Act petroleum tenure granted under the *Petroleum Act 1923*, the period of between 1 and 5 years stated in the ERC decision about the estimated rehabilitation cost; or

(c) If a plan of operations applies for the activities, the plan period for the plan of operations; or

(d) Otherwise, the total period during which the resource activity is likely to be carried out under the environmental authority for the activity.

'existing structure' means a structure that was in existence prior to the adoption of this schedule of conditions under the authority.

'extreme storm surge' means a storm storage allowance determined in accordance with the criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority.

'flowable substance' means matter or a mixture of materials which can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids, fluids or solids, or a mixture that includes water and any other liquids, fluids or solids either in solution or suspension.

'holder' for a mining tenement, means a holder of the tenement under the *Mineral Resources Act 1989*, and the holder of the associated environmental authority under the *Environmental Protection Act 1994*.

'hydraulic performance' means the capacity of a regulated dam to contain or safely pass flowable substances based on the design criteria specified for the relevant consequence category in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635).***'infrastructure'** means water storage dams, levees, roads and tracks, buildings and other structures built for the purpose of the mining activity.

'ISCP' means the Intrinsic Spontaneous Combustion Propensity classification which enables a general appraisal of the possible likelihood of a spontaneous combustion event, with the following classifications:

- A Low ISCP Classification (I) has an R_{70} Value (°C/hr) of <0.5;
- A Low-Medium ISCP Classification (II) has an R_{70} Value (°C/hr) of between 0.5 and 1;
- A Medium ISCP Classification (III) has an R_{70} Value (°C/hr) of between 1 and 2;
- A High ISCP Classification (IV) has an R_{70} Value (°C/hr) of between 2 and 4;
- A Very High ISCP Classification (V) has an R_{70} Value (°C/hr) of between 4 and 8;
- An Extremely High ISCP Classification (VI) has an R_{70} Value (°C/hr) of between 8 and 16; and
- An Exceptionally High ISCP Classification (VI) has an R_{70} Value (°C/hr) of ≥16.

*'**R_{70} Value (°C/hr)**' means the adiabatic R70 Self Heating Rate - determined as a ratio of the time taken for the coal temperature to increase from 40°C to 70°C, which gives a relative measure of the oxidation rate of the coal. This value is used as an index to determine the propensity of the coal to spontaneously combust.*

'land' in the 'land schedule' of this document means land excluding waters and the atmosphere, that is, the term has a different meaning from the term as defined in the *Environmental Protection Act 1994*. For the purposes of the *Acts Interpretation Act 1954*, it is expressly noted that the term 'land' in this environmental authority relates to physical land and not to interests in land.

'land use' –means the selected post mining use of the land, which is planned to occur after the cessation of mining operations.

'leachate' means a liquid that has passed through or emerged from, or is likely to have passed through or emerged from, a material stored, processed or disposed of at the operational land which contains soluble, suspended or miscible contaminants likely to have been derived from the said material.

'levee' means an embankment that only provides for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from releases from other works, during the progress of those stormwater or flood flows or those releases; and does not store any significant volume of water or flowable substances at any other times.

'licensed place' means the mining activities carried out at the mining tenements detailed in this environmental authority.

'low consequence dam' means any dam that is not a high or significant consequence category as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635).*

'm' means metres.

'mandatory reporting level or MRL' means a warning and reporting level determined in accordance with the criteria in the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority.

'manual' means that *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (ESR/2016/1933)* published by the administering authority.

'measures' includes any measures to prevent or minimise environmental impacts of the mining activity such as bunds, silt fences, diversion drains, capping, and containment systems.

'mine affected water':

(a) means the following types of water:

  (i) Pit water, tailings dam water, processing plant water;

  (ii) Water contaminated by a mining activity which would have been an environmentally relevant activity under Schedule 2 of the *Environmental Protection Regulation 2008* if it had not formed part of the mining activity;

  (iii) Rainfall runoff which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated, excluding rainfall runoff discharging through release points associated with erosion and sediment control structures that have been installed in accordance with the standards and requirements of an Erosion and Sediment Control Plan to manage such runoff, provided that this water has not been mixed with pit water, tailings dam water, processing plant water or workshop water;

  (i) Groundwater which has been in contact with any areas disturbed by mining activities which have not yet been rehabilitated;

  (ii) Groundwater from the mine's dewatering activities;

  (iii) A mix of mine affected water (under any of paragraphs i)-v) and other water.

(b) does not include surface water runoff which, to the extent that it has been in contact with areas disturbed by mining activities that have not yet been completely rehabilitated, has only been in contact with:

  (i) Land that has been rehabilitated to a stable landform and either capped or revegetated in accordance with the acceptance criteria set out in the environmental authority but only still awaiting maintenance and monitoring of the rehabilitation over a specified period of time to demonstrate rehabilitation success; or

  (ii) Land that has partially been rehabilitated and monitoring demonstrates the relevant part of the landform with which the water has been in contact does not cause environmental harm to waters or groundwater, for example:

    (A) Areas that are been capped and have monitoring data demonstrating hazardous material adequately contained with the site;

    (B) Evidence provided through monitoring that the relevant surface water would have met the water quality parameters for mine affected water release limits in this environmental authority, if those parameters had been applicable to the surface water runoff; or

  (iii) Both.

'modification or modifying' see definition of 'construction'.

'NATA' means National Association of Testing Authorities, Australia.

'natural flow' means the flow of water through waters caused by nature.

'non polluting' means having no adverse impacts upon the receiving environment.

'operational plan' includes:

(a) Normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA allowance);

(b) Contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure.

'peak particle velocity (ppv)' means a measure of ground vibration magnitude which is the maximum rate of change of ground displacement with time, usually measured in millimetres/second (mm/s).

'protected area' means – a protected area under the *Nature Conservation Act 1992*; or

(a) A marine park under the *Marine Parks Act 1992*; or

(b) A World Heritage Area.

'receiving environment' in relation to an activity that causes or may cause environmental harm, means the part of the environment to which the harm is, or may be, caused. The receiving environment includes (but is not limited to):

(a) A watercourse;

(b) Groundwater; and

(c) An area of land that is not specified in this environmental authority.

The term does not include land that is specified in this environmental authority.

'receiving waters' means the waters into which this environmental authority authorises releases of mine affected water.

'register of regulated dams' includes:

(a) Date of entry in the register;

(b) Name of the dam, its purpose and intended/actual contents;

(c) The consequence category of the dam as assessed using the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635);

(d) Dates, names, and reference for the design plan plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam;

(e) Name and qualifications of the suitably qualified and experienced person who certified the design plan and 'as constructed' drawings;

(f) For the regulated dam, other than in relation to any levees –

(i) The dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam;

(ii) Coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area

(iii) Dam crest volume (megalitres);

(iv) Spillway crest level (metres AHD);

(v) Maximum operating level (metres AHD);

(vi) Storage rating table of stored volume versus level (metres AHD);

(vii) Design storage allowance (megalitres) and associated level of the dam (metres AHD);

(viii) Mandatory reporting level (metres AHD);

(g) The design plan title and reference relevant to the dam;

(h) The date construction was certified as compliant with the design plan;

(i) The name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan;

(j) Details of the composition and construction of any liner;

(k) The system for the detection of any leakage through the floor and sides of the dam;

(l) Dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;

(m) Dates when recommendations and actions arising from the annual inspection were provided to the administering authority;

(n) Dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.

'regulated dam' means any dam in the significant or high consequence category as assessed using the *Manual for Assessing Consequence Categories and Hydraulic Performance of Structures (EM635)* published by the administering authority.

'regulated structure' includes any land-based containment structures, levees, bunds and voids, but not a tank or container designed and constructed to an Australian Standard that deals with strength and structural integrity.

'rehabilitation' the process of reshaping and revegetating land to restore it to a stable landform

'release event' means a surface water discharge from mine affected water storages or contaminated areas on the licensed place.

'RL' means reduced level, relative to mean sea level as distinct from depths to water.

'representative' means a sample set which covers the variance in monitoring or other data either due to natural changes or operational phases of the mining activities.

'residual void' means an open pit resulting from the removal of ore and/or waste rock which will remain following the cessation of all mining activities and completion of rehabilitation processes.

'saline drainage' The movement of waters, contaminated with salts, as a result of the mining activity.

'sensitive place' means:

(a) A dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or

(b) A motel, hotel or hostel; or

(c) An educational institution; or

(d) A medical centre or hospital; or

(e) A protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 1992* or a World Heritage Area; or

(f) A public park or gardens.

Note: The definition of 'sensitive place' and 'commercial place' is based on Schedule 1 of EPP Noise. That is, a sensitive place is inside or outside on a dwelling, library & educational institution, childcare or kindergarten, school or playground, hospital, surgery or other medical institution, commercial & retail activity, protected area or an area identified under a conservation plan under Nature Conservation Act 1992 as a critical habitat or an area of major interest, marine park under Marine Parks Act 2004, park or garden that is outside of the mining lease and open to the public for the use other than for sport or organised entertainment. A commercial place is inside or outside a commercial or retail activity.

A mining camp (i.e., accommodation and ancillary facilities for mine employees or contractors or both, associated with the mine the subject of the environmental authority) is not a sensitive place for that mine or mining project, whether or not the mining camp is located within a mining tenement that is part of the mining project the subject of the environmental authority. For example, the mining camp might be located on neighbouring land owned or leased by the same company as one of the holders of the environmental authority for the mining project, or a related company. Accommodation for mine employees or contractors is a sensitive place if the land is held by a mining company or related

company, and if occupation is restricted to the employees, contractors and their families for the particular mine or mines which are held by the same company or a related company.

For example, a township (occupied by the mine employees, contractors and their families for multiple mines that are held by different companies) would be a sensitive place, even if part or all of the township is constructed on land owned by one or more of the companies.

'structure' means dam or levee.

'spillway' means a weir, channel, conduit, tunnel, gate or other structure designed to permit discharges from the dam, normally under flood conditions or in anticipation of flood conditions.

'state significant biodiversity values' are those values listed in Appendix 1 of the Queensland Biodiversity Offsets Policy.

'suitably qualified and experienced person' in relation to regulated structures means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 2002*, and has demonstrated competency and relevant experience:

(a) For regulated dams, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design.

(b) For regulated levees, an RPEQ who is a civil engineer with the required qualifications in the design of flood protection embankments.

Note: It is permissible that a suitably qualified and experienced person obtain subsidiary certification from an RPEQ who has demonstrated competence and relevant experience in either geomechanics, hydraulic design or engineering hydrology.

'system design plan' means a plan that manages an integrated containment system that shares the required DSA and/or ESS volume across the integrated containment system.

'the Act' means the *Environmental Protection Act 1994*.

'µS/cm' means micro siemens per centimetre.

'void' means any constructed, open excavation in the ground.

'watercourse' has the same meaning given in the *Water Act 2000*.

'water quality' means the chemical, physical and biological condition of water.

'waters' includes all or any part of a river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water in natural or artificial watercourses, bed and bank of any watercourse, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater runoff and groundwater.

WaTERS means the Water Tracking and Electronic Reporting System.

'water year' means the 12-month period from 1 July to 30 June.

'wet season' means the time of year, covering one or more months, when most of the average annual rainfall in a region occurs. For the purposes of DSA determination this time of year is deemed to extend from 1 November in one year to 31 May in the following year inclusive.

Figure 1: Newlands Coal Project Groundwater Bore Monitoring Locations

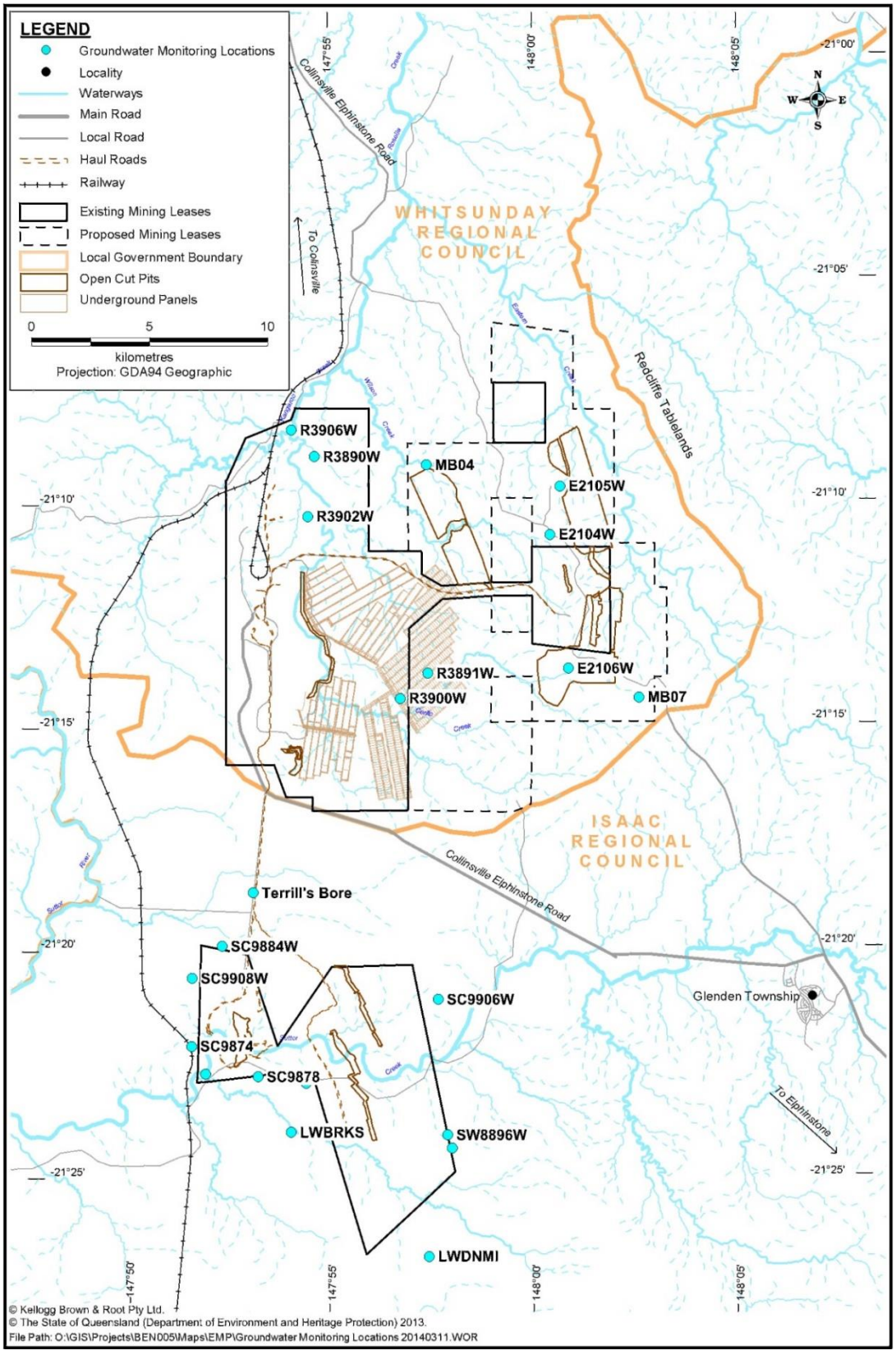


Figure 2: Newlands Coal Project Release Point Locations

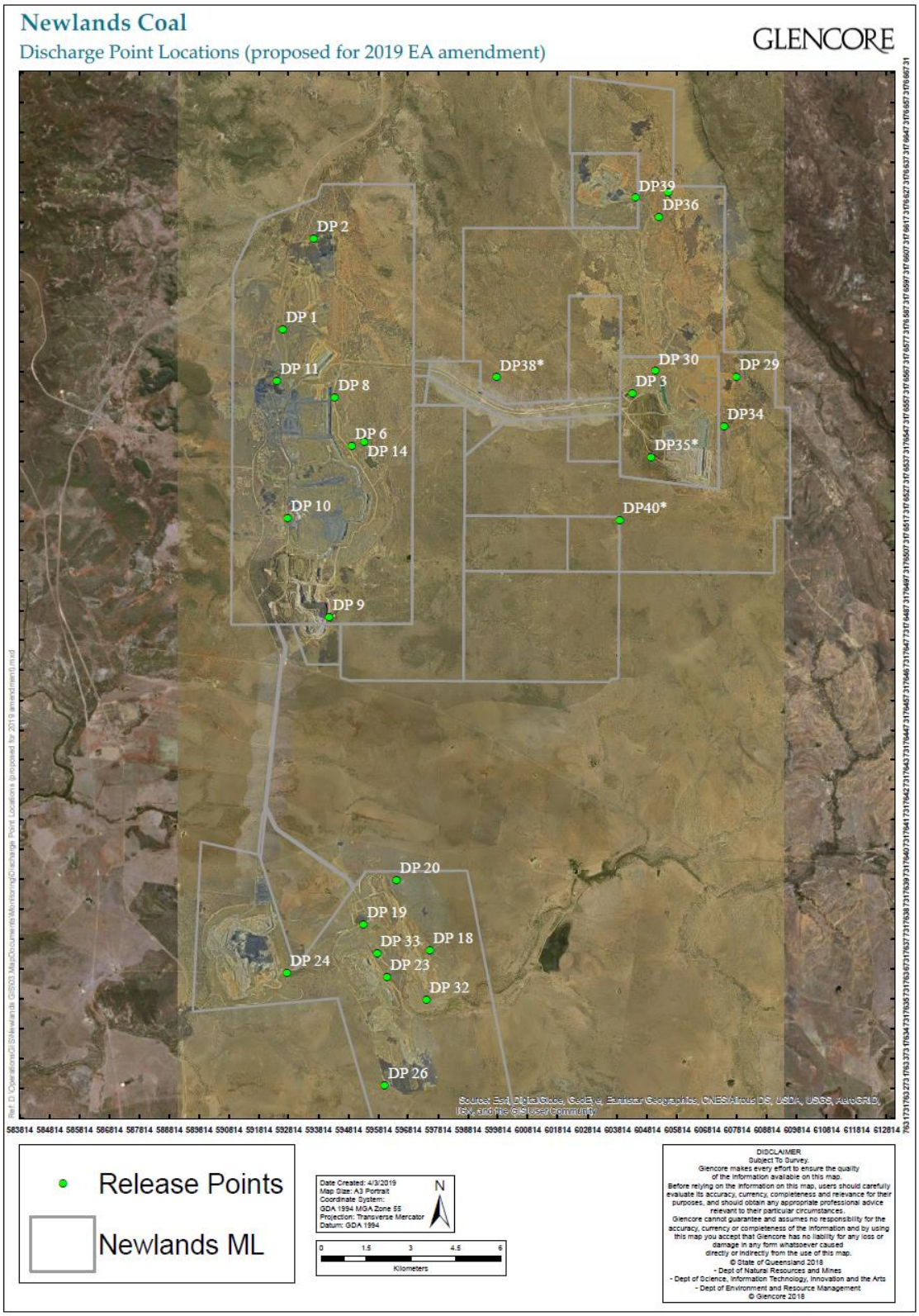


Figure 3: Newlands Coal Project Water Quality Monitoring Point Locations

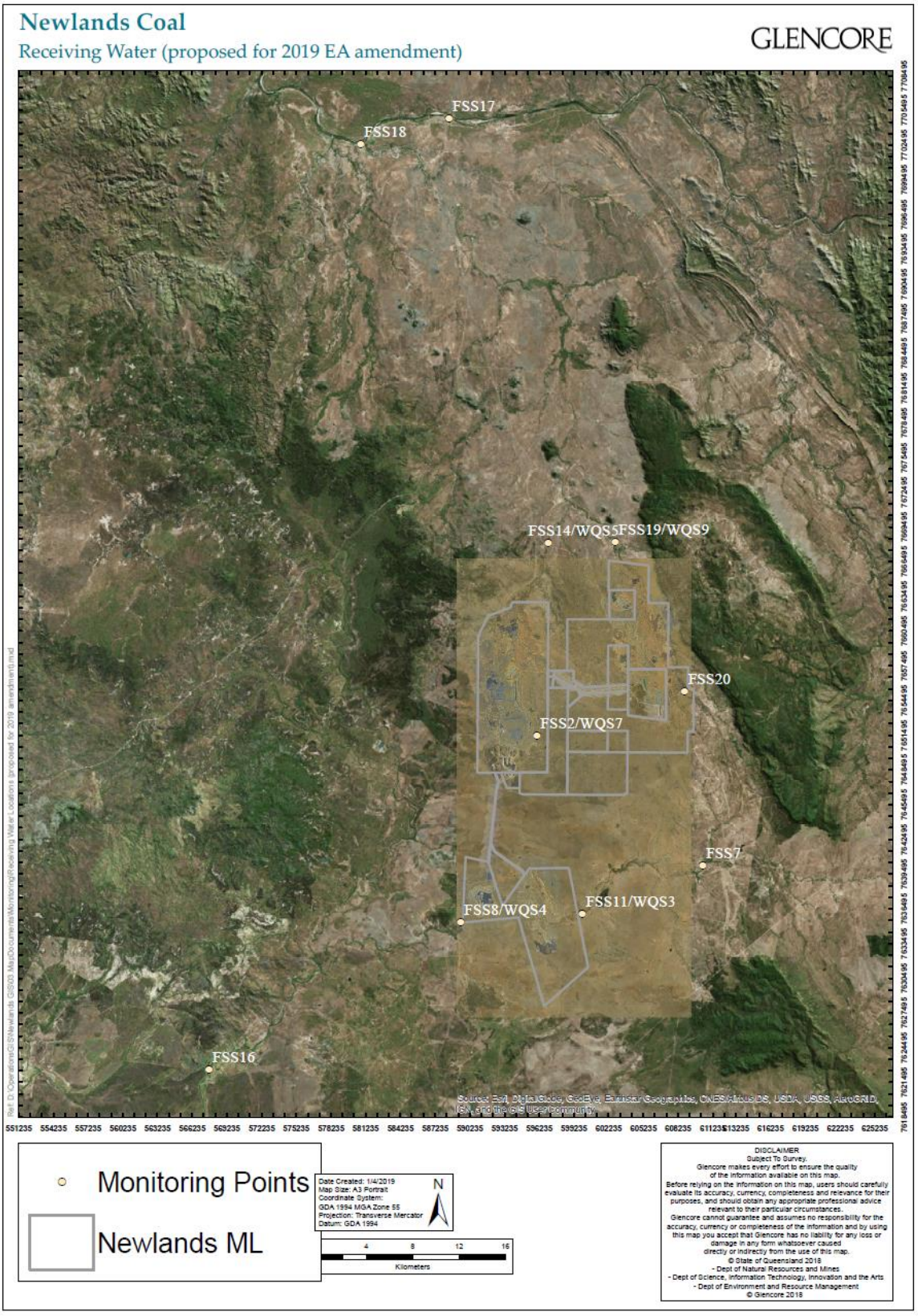


Figure 4a: Areas Rehabilitated Prior to 2013

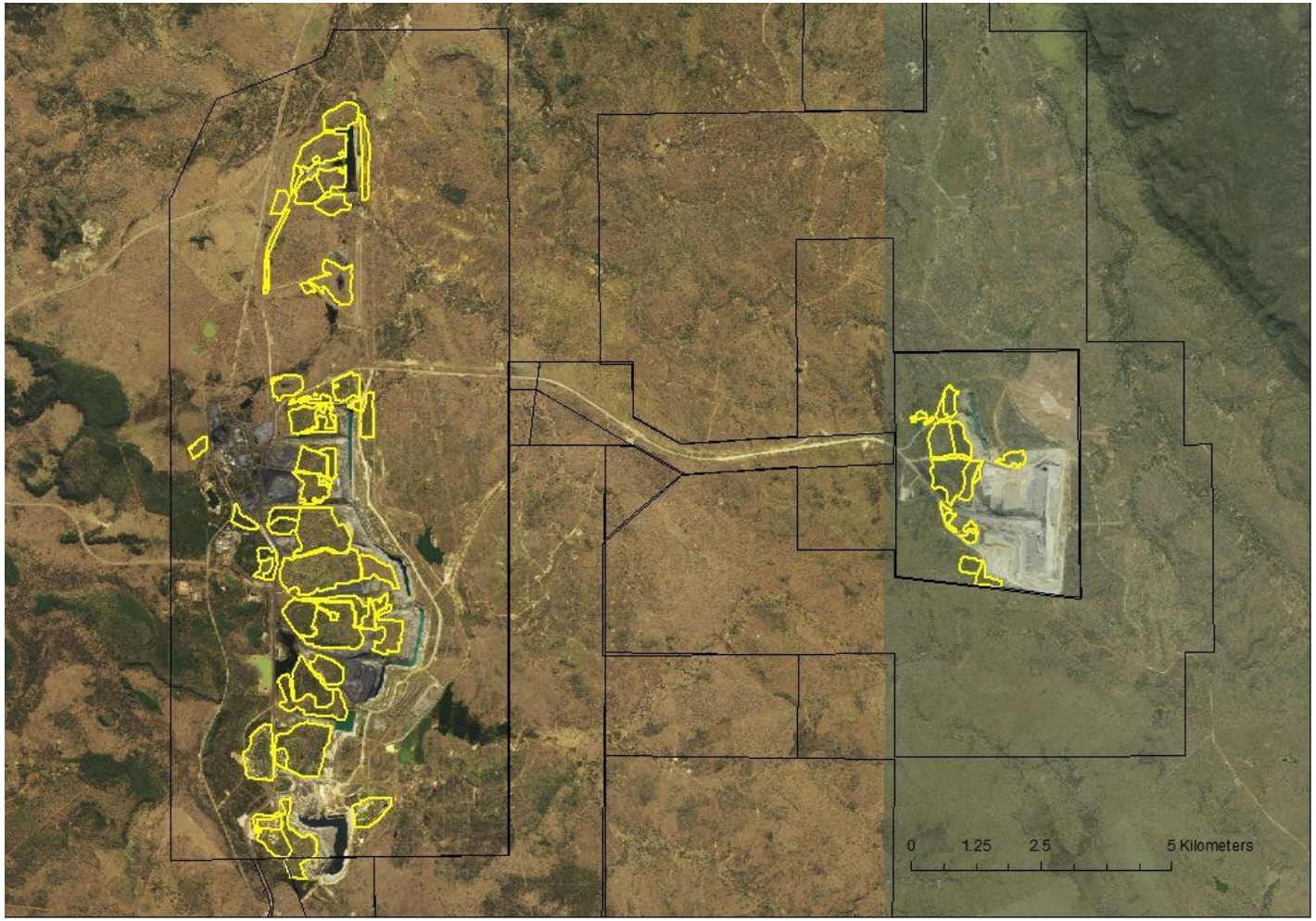


Figure 4b: Areas Rehabilitated Prior to 2013

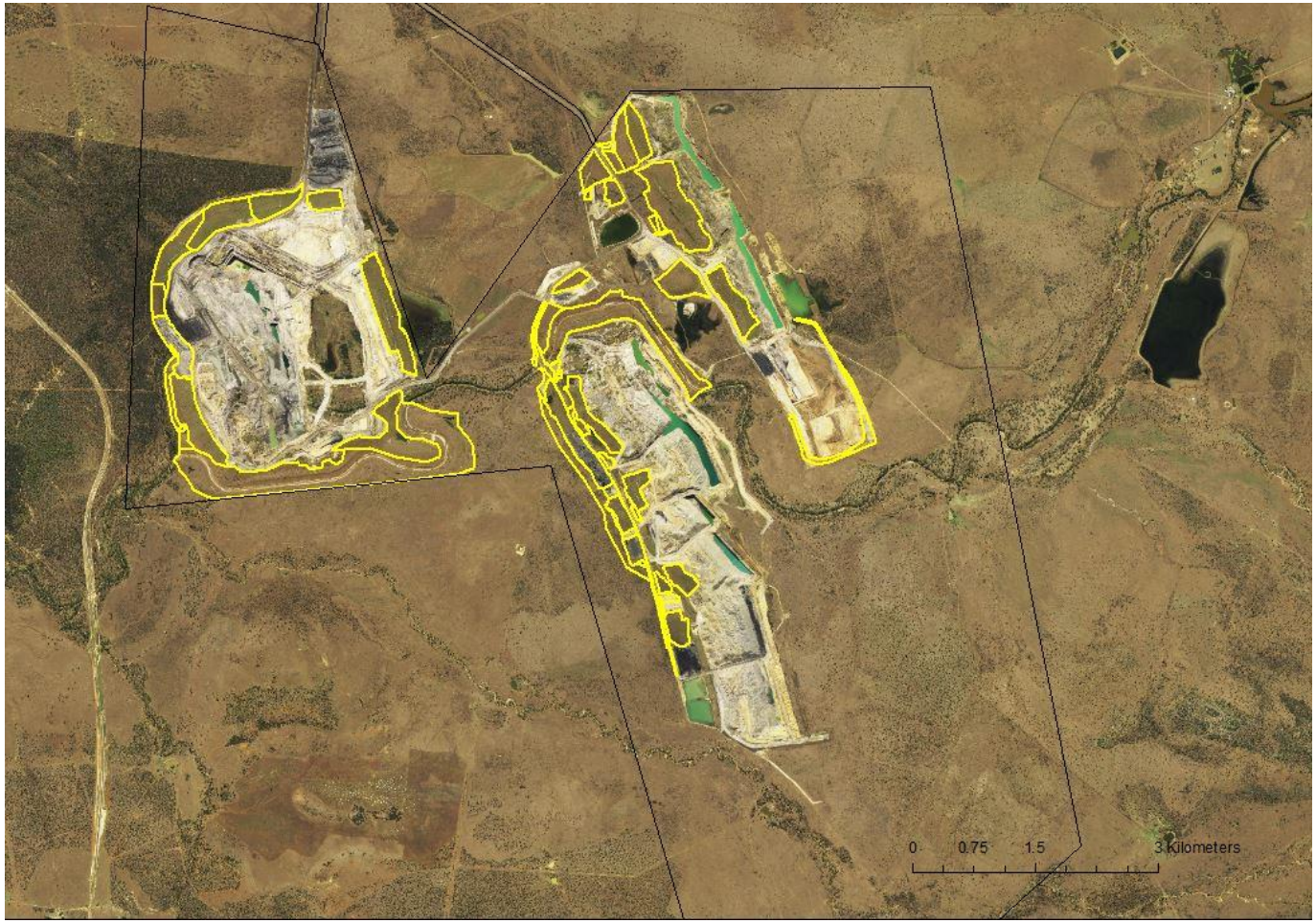


Figure 5a: Progressive Rehabilitation Certification 2017

Figure 5b: Progressive Rehabilitation Certification 2021

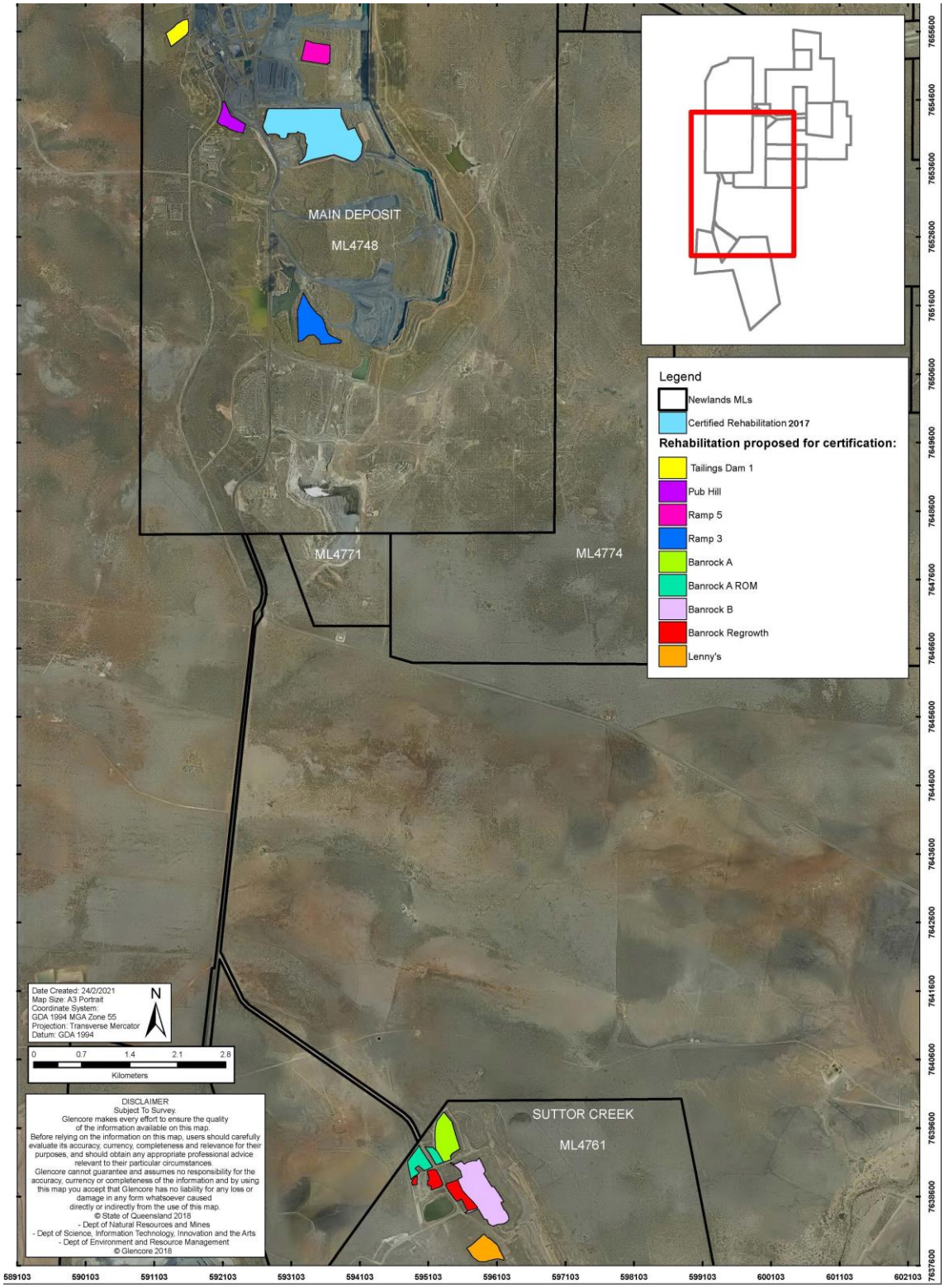


Figure 6a: Wollombi Pit proposed final landform – Plan view

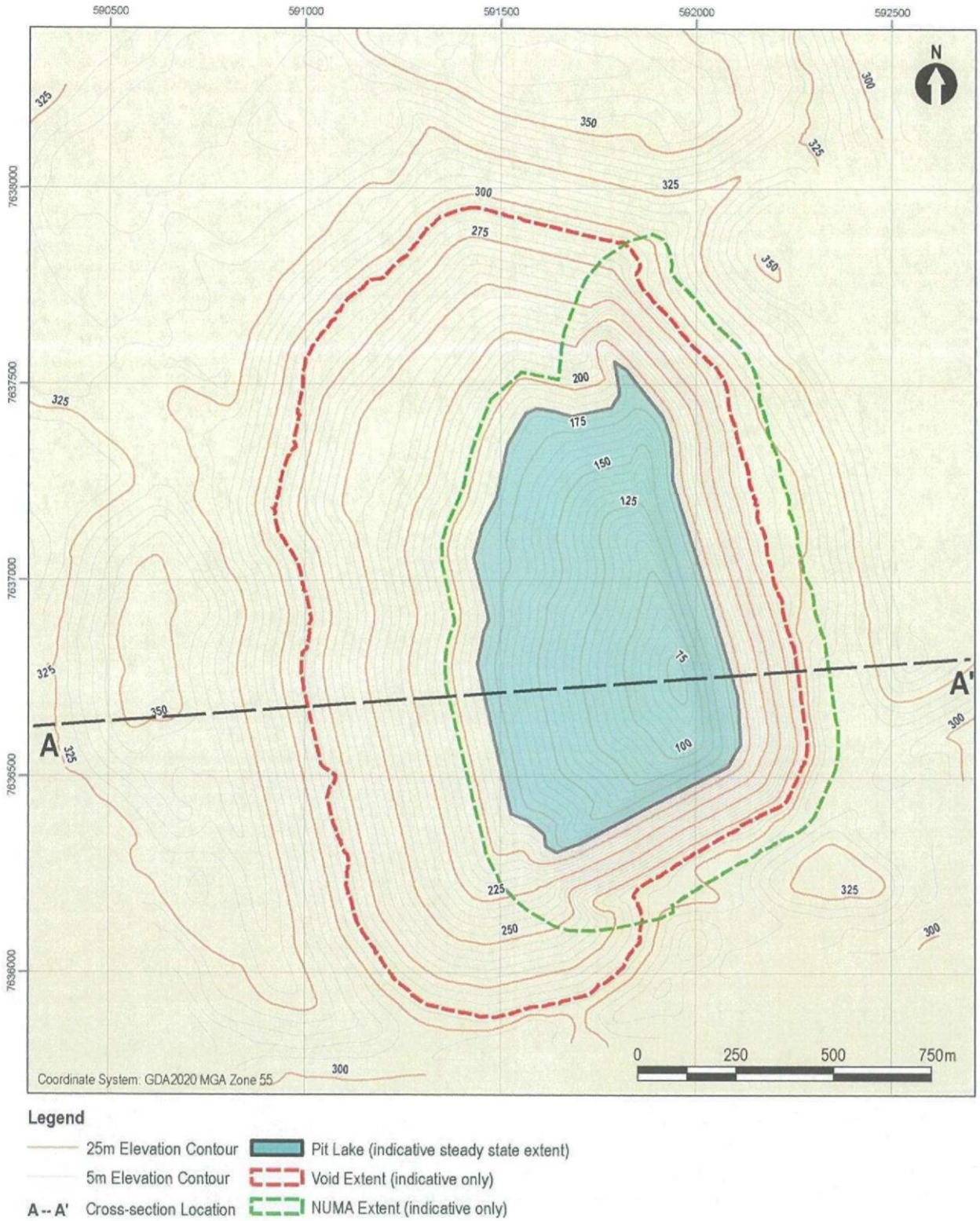
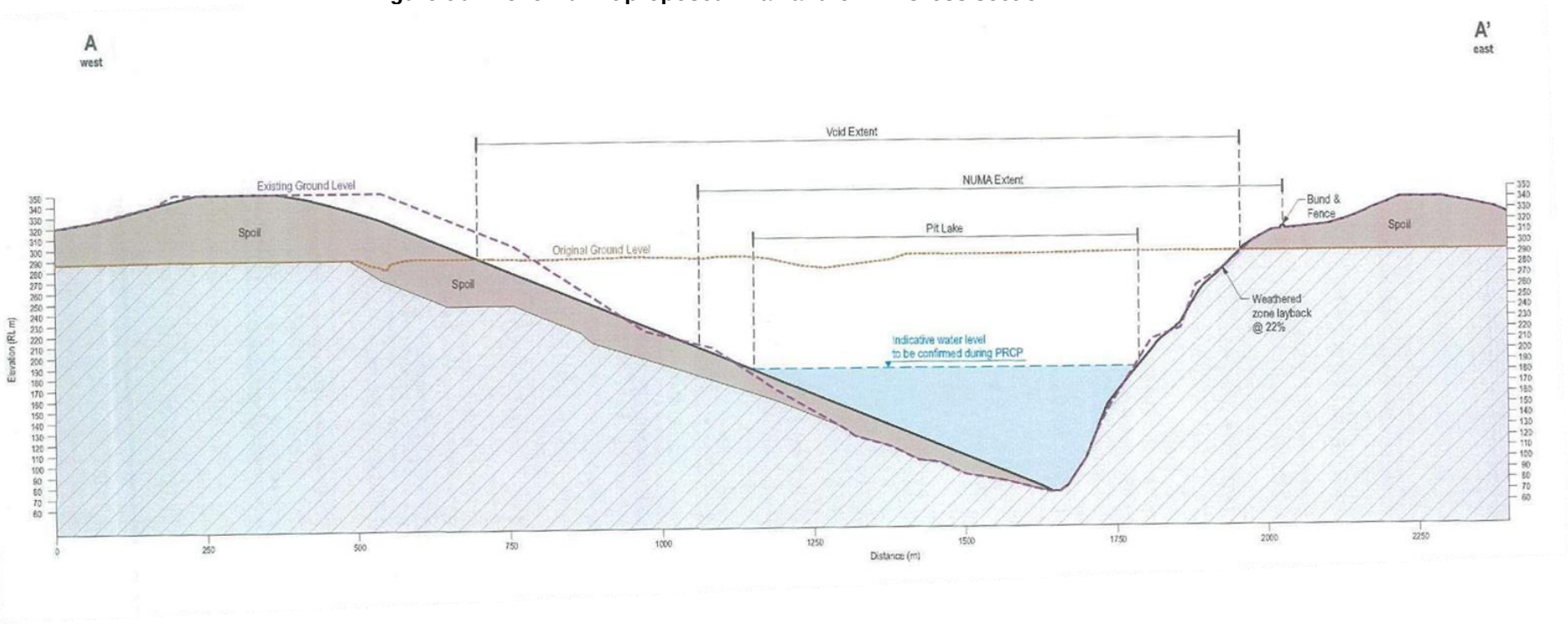


Figure 6b: Wollombi Pit proposed final landform – Cross section A – A'



END OF ENVIRONMENTAL AUTHORITY

Appendix C - Slope Assessment of Areas with a Grazing PMLU within the Distrubance Footprint

Newlands Open Cut

PMLU Overview

GLENCORE

Ramp 14 Bangarra
Ramp 13N
Ramp 13S
Ramp 8N
Ramp 8S
Ramp 6N
Ramp 9 Girrah
Ramp 12
Ramp 6
Ramp 10
Ramp 4
Ramp 5
Landfill
Ramp 3
Ramp 2
Ramp 1 Tailings
Wollombi
Banrock Saddlers
NUMA
Ramp 15 - 17
Ramp 18 - 20

21°5'S 21°6'S 21°7'S 21°8'S 21°9'S 21°10'S 21°11'S 21°12'S 21°13'S 21°14'S 21°15'S 21°16'S 21°17'S 21°18'S 21°19'S 21°20'S 21°21'S 21°22'S 21°23'S 21°24'S 21°25'S 21°26'S 21°27'S 21°28'S

147°47'E 147°48'E 147°49'E 147°50'E 147°51'E 147°52'E 147°53'E 147°54'E 147°55'E 147°56'E 147°57'E 147°58'E 147°59'E 148°E 148°1'E 148°2'E 148°3'E 148°4'E 148°5'E 148°6'E

0 1 2 3
Kilometers

Date Created: 14/09/2023
1:129,804
Map Size: A3 Portrait

N

Coordinate System:
GDA2020 MGA Zone 55
Projection: Transverse Mercator

Legend

Disturbance Footprint

PMLU

- Grazing (outside disturbance footprint)
- Managed Resource Protection
- NUMA
- Native Ecosystem
- Riparian and Water Mangement

Slope - Grazing land within disturbance footprint

- < 10
- 10 - 15
- 15 - 20
- > 20

Newlands Open Cut

PMLU Main Deposit

GLENCORE

Ramp 8N
Ramp 8S
Ramp 6N
Ramp 6
Ramp 5
Ramp 4
Landfill
Ramp 2
Ramp 3
Ramp 1
Tailings

21°7'S
21°7'30"S
21°8'S
21°8'30"S
21°9'S
21°9'30"S
21°10'S
21°10'30"S
21°11'S
21°11'30"S
21°12'S
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21°14'S
21°14'30"S
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21°16'S
21°16'30"S

147°50'30"E 147°51'E 147°51'30"E 147°52'E 147°52'30"E 147°53'E 147°53'30"E 147°54'E 147°54'30"E 147°55'E 147°55'30"E 147°56'E 147°56'30"E 147°57'E 147°57'30"E 147°58'E 147°58'30"E

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Kilometers

Date Created: 14/09/2023
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N

Coordinate System:
GDA2020 MGA Zone 55
Projection: Transverse Mercator

Legend

Disturbance Footprint

PMLU

- Grazing (outside disturbance footprint)
- Managed Resource Protection
- NUMA
- Native Ecosystem
- Riparian and Water Mangement

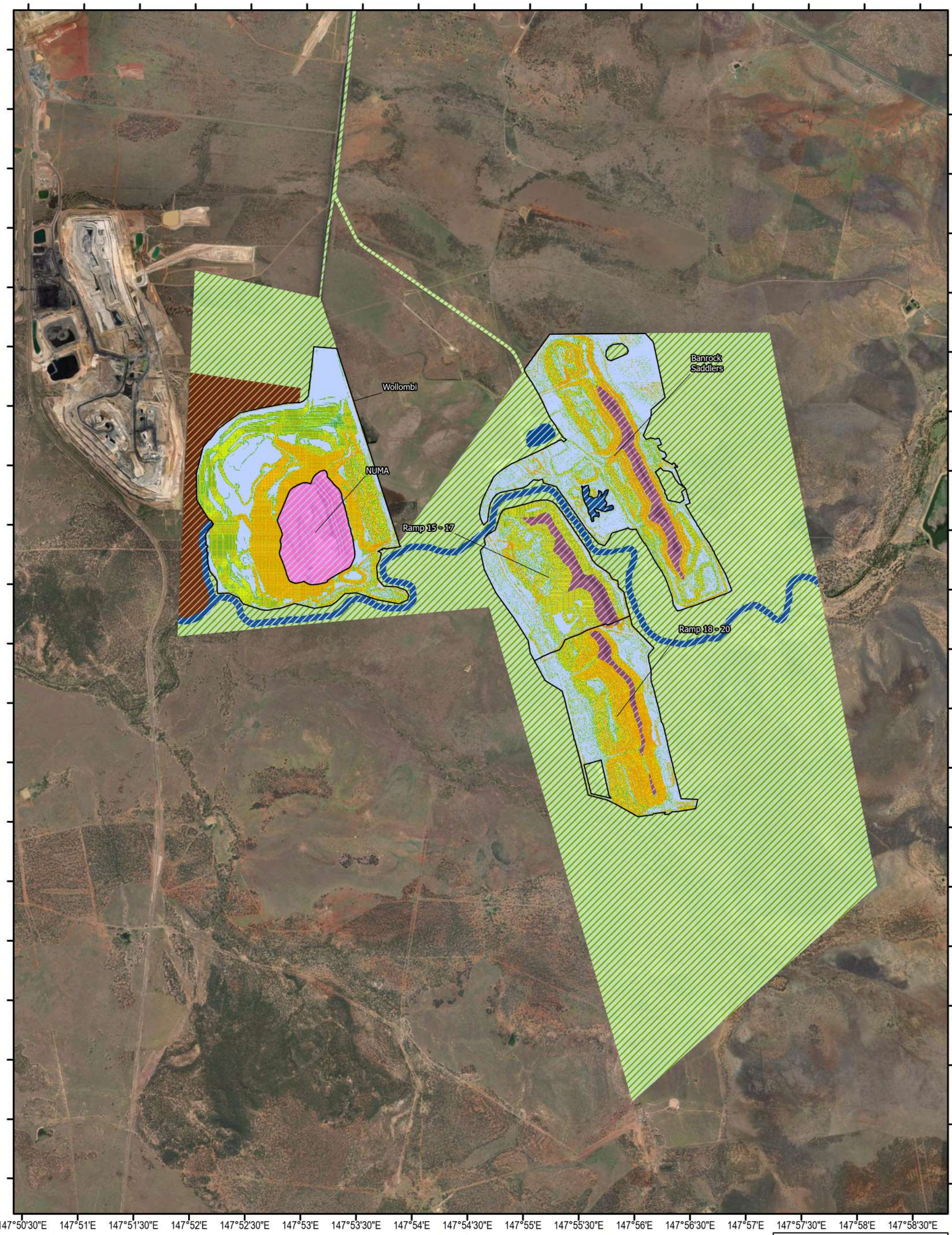
Slope - Grazing land within disturbance footprint

- < 10
- 10 - 15
- 15 - 20
- > 20

Newlands Open Cut

PMLU Suttor Creek / Wollombi

GLENCORE



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Kilometers

Date Created: 14/09/2023

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Map Size: A3 Portrait

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Coordinate System:
GDA2020 MGA Zone 55
Projection: Transverse Mercator

Legend

Disturbance Footprint

PMLU

- Grazing (outside disturbance footprint)
- Managed Resource Protection
- NUMA
- Native Ecosystem
- Riparian and Water Mangement

Slope - Grazing land within disturbance footprint

- < 10
- 10 - 15
- 15 - 20
- > 20

Newlands Open Cut

PMLU Eastern Creek

GLENCORE

Ramp 14 Bangarra

Ramp 13N

Ramp 13S

Ramp 12

Ramp 9 Girrah

Ramp 10

147°56'30"E 147°57'E 147°57'30"E 147°58'E 147°58'30"E 147°59'E 147°59'30"E 148°E 148°0'30"E 148°1'E 148°1'30"E 148°2'E 148°2'30"E 148°3'E 148°3'30"E 148°4'E 148°4'30"E

21°5'S 21°5'30"S 21°6'S 21°6'30"S 21°7'S 21°7'30"S 21°8'S 21°8'30"S 21°9'S 21°9'30"S 21°10'S 21°10'30"S 21°11'S 21°11'30"S 21°12'S 21°12'30"S 21°13'S 21°13'30"S 21°14'S 21°14'30"S

0 1 2 3

Kilometers

Date Created: 14/09/2023

1:53,168

Map Size: A3 Portrait

N

Coordinate System: GDA2020 MGA Zone 55

Projection: Transverse Mercator

Legend

Disturbance Footprint

PMLU

- Grazing (outside disturbance footprint)
- Managed Resource Protection
- NUMA
- Native Ecosystem
- Riparian and Water Mangement

Slope - Grazing land within disturbance footprint

- < 10
- 10 - 15
- 15 - 20
- > 20

GLENCORE