PRCP schedule

Environmental Protection Act 1994

PRCP schedule P-PRCP-101009601

This is the approved form for a PRCP schedule issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

PRCP schedule: P-PRCP-101009601_V2

PRCP schedule holder(s)

Name(s)	Registered address
Ribfield Pty Ltd ACN: 080 772 283	Level 9, 127 Creek Street, Brisbane, QLD, 4000
Middlemount Coal Pty Ltd ACN: 122 348 412	Level 9, 127 Creek Street, Brisbane, QLD, 4000

Location details

Location(s)
ML70379, ML70417, ML700014, ML700027

Take effect

In accordance with section 202B of the *Environmental Protection Act 1994* (EP Act), the PRCP schedule has effect on the day the environmental authority for carrying out relevant activities on land to which the schedule relates takes effect. Pursuant to section 202C of the EP Act, a PRCP schedule continues in force until the environmental authority for the relevant activities to which the PRCP schedule relates is cancelled or surrendered, even if the resource tenure expires or is cancelled and even if the relevant environmental authority is suspended under Chapter 5, part 11 or 11A of the EP Act.

	6 February 2026
Signature	Date

Jason Dunlop
Department of the Environment, Tourism, Science and Innovation
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
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Obligations under the *Environmental Protection Act 1994*

Pursuant to section 202E of the EP Act, if there is an inconsistency between an environmental authority and a PRCP schedule, the environmental authority prevails to the extent of the inconsistency.

Pursuant to section 285 of the EP Act:

- the holder of a PRCP schedule must commission an audit of the schedule by a rehabilitation auditor for the following periods (each an audit period) —

  (a) the 3-year period starting on the day the schedule takes effect

  (b) each 3-year period starting on the day after the previous audit period ended.

- the holder must, within 4 months after the end of each audit period, give the administering authority -

  (a) the rehabilitation auditor's report (an audit report) about the audit that complies with section 286 of the EP Act, and

  (b) a declaration for the audit report that complies with section 285 of the EP Act.

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

PRCP schedule

The PRCP schedule incorporates the following sections:

- Section A - Conditions of PRCP schedule
- Section B - Final site design and reference maps
- Section C - Post mining land uses
- Section D – Non-use management areas.

Section A - Conditions of PRCP schedule

Pursuant to section 206A of the EP Act:

- it is a condition of this PRCP schedule that, in carrying out a relevant activity under the schedule, the holder must comply with a requirement stated in the environmental authority relevant to carrying out the activity.
- it is a condition of this PRCP schedule that the holder must comply with the following matters stated in the schedule -

  (a) each rehabilitation milestone and management milestone

  (b) when each rehabilitation milestone and management milestone is to be achieved

General conditions

PRCP1 The holder must comply with each milestone criterion stated in the schedule.

PRCP2 Where land becomes available for rehabilitation earlier than the nominated 'Date area is available' or is able to commence earlier than the 'Commencement of first milestone' date, progressive rehabilitation for that land must commence as soon as practicable. Progressive rehabilitation commenced early under this condition must be carried out in accordance with the milestones and criteria in this schedule, except that each of the dates by which milestones are to be completed is brought forward by the same amount of time as the commencement was brought forward.

PRCP3 Where an area achieves a rehabilitation milestone, it must be maintained and continue to comply with the rehabilitation milestone criteria for that rehabilitation milestone until the next rehabilitation milestone is achieved.

PRCP4 Where an area has achieved the final rehabilitation management (RM7) and improvement area milestone (MM3), it must be maintained and continue to comply with the rehabilitation and improvement area milestone criteria for the final milestone and continue to be in a stable condition, until the area is progressively certified according to the requirements of the EP Act, or that area is surrendered.

PRCP5 Monitoring and maintenance must be carried out in accordance with:

i. the monitoring and maintenance program described in the rehabilitation planning part relating to this PRCP schedule; and

ii. any requirement under this PRCP schedule

PRCP6 The holder must keep records in relation to relevant matters for a minimum of five years and provide such records to the administer authority on request. Relevant matters for this condition include, but are not necessarily limits to, the following:

i. Rehabilitation activities and the results of these activities;

ii. Maintenance activities and the results of maintenance activities;

iii. Monitoring activities and the results of monitoring; and

iv. Certifications, assessments, investigations, inspections, audits, or any similar processes carried out in relation to rehabilitation milestones or milestone criteria

PRCP7 The holder must establish bore MW16AR at the location specified in **PRCP schedule Appendix 6: Groundwater Quality Monitoring Locations and Frequency** and provide to the department groundwater quality limits for the quality characteristics listed in **PRCP schedule Appendix 7: Groundwater Quality limits** by 10 February 2031.

END OF CONDITIONS

Section B - Final site design and reference maps

Figure 1 – Final Site Design

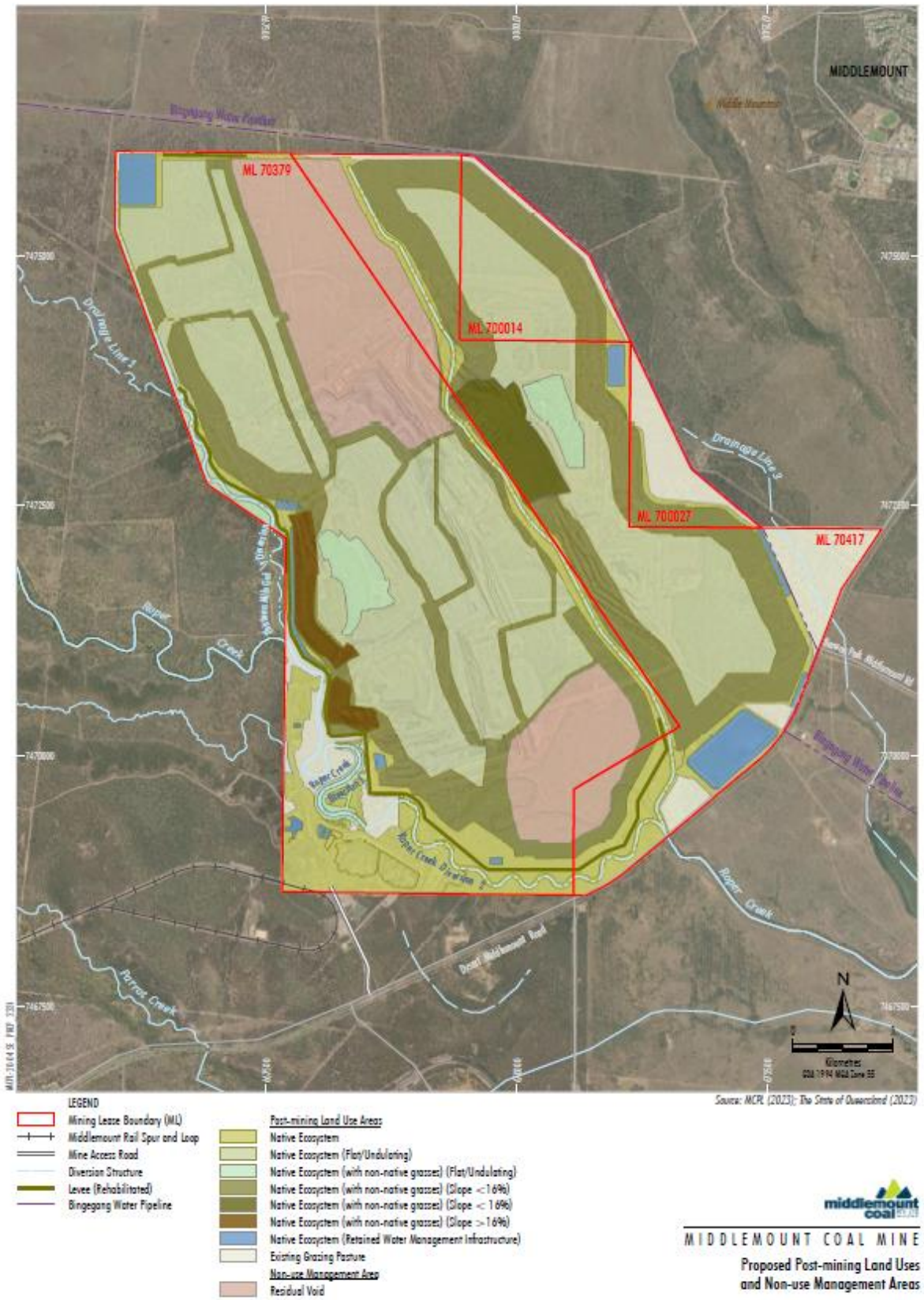
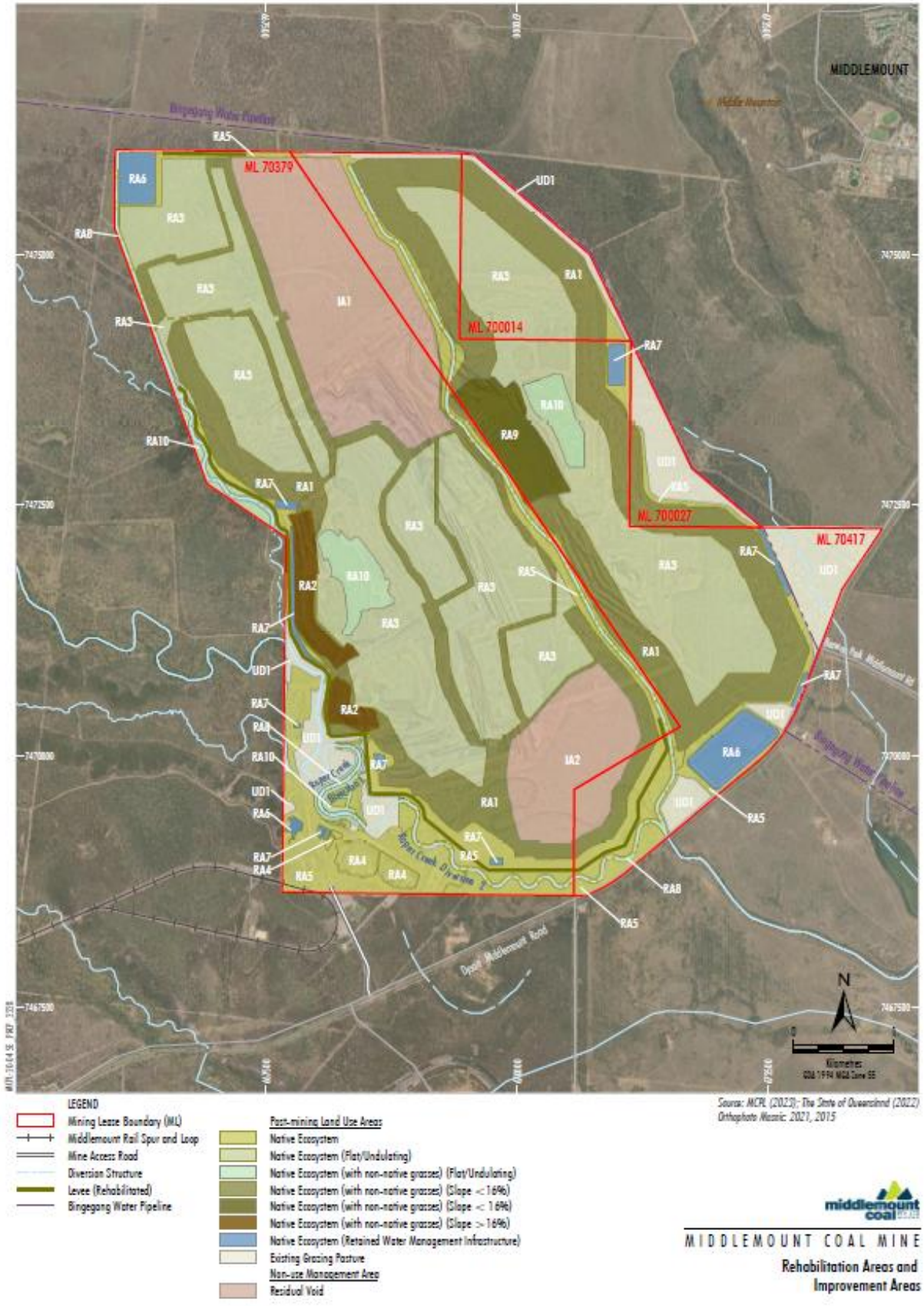


Figure 2 – Rehabilitation Areas



Section C – Post Mining Land Uses

(RA1) Rehabilitation Area 1

Post-mining land uses (PMLU)							
Rehabilitation area	RA1						
Relevant activities	Waste Rock Emplacement (slope <16%)						
Total rehabilitation area size (ha)	766						
Commencement of first milestone: RM1	10/12/2023						
PMLU	Native Ecosystem (RE 11.5.3) (with non-native grasses)						
Date area is available	10/12/2023	10/12/2024	10/12/2028	10/12/2032	10/12/2035	10/12/2038	10/12/2041
Cumulative area available (ha)	101	247	387	589	766	766	766
Milestone complete by	10/12/2024	10/12/2028	10/12/2032	10/12/2035	10/12/2038	10/12/2041	10/12/2044
Milestone Reference	**Cumulative area achieved (ha)**						
RM1	101	247	387	589	766		
RM2	101	247	387	589	766		
RM3	101	247	387	589	766		
RM4	101	247	387	589	766		
RM5	101	247	387	589	766		
RM6		101	247	387	589	766	
RM7			101	247	387	589	766

(RA2) Rehabilitation Area 2

Post-mining land uses (PMLU)				
Rehabilitation area	RA2			
Relevant activities	Waste Rock Emplacement – Existing Rehabilitation (slopes ≤33^0)			
Total rehabilitation area size (ha)	52			
Commencement of first milestone: RM1	10/12/2023			
PMLU	Native Ecosystem (RE11.5.3) (with non-native grasses)			
Date area is available	10/12/2023	10/12/2024	10/12/2037	10/12/2044
Cumulative area available (ha)	28	52	52	52
Milestone completed by	10/12/2024	10/12/2037	10/12/2044	10/12/2049
Milestone Reference	**Cumulative area achieved (ha)**			
RM1	28	52		
RM2	28	52		
RM3	28	52		
RM4	28	52		
RM5	28	52		
RM6		28	52	
RM7			28	52

(RA3) Rehabilitation Area 3

Post-mining land uses (PMLU)						
Rehabilitation area	RA3					
Relevant activities	Waste Rock Emplacement (Flat/Undulating)					
Total rehabilitation area size (ha)	1205					
Commencement of first milestone: RM1	10/12/2023					
PMLU	Native Ecosystem (RE11.5.3)					
Date area is available	10/12/2023	10/12/2025	10/12/2032	10/12/2036	10/12/2040	10/12/2043
Cumulative area available (ha)	78	736	1050	1205	1205	1205
Milestone complete by	10/12/2025	10/12/2032	10/12/2036	10/12/2040	10/12/2043	10/12/2046
Milestone Reference	**Cumulative area achieved (ha)**					
RM1	78	736	1050	1205		
RM2	78	736	1050	1205		
RM3	78	736	1050	1205		
RM4	78	736	1050	1205		
RM5	78	736	1050	1205		
RM6		78	736	1050	1205	
RM7			78	736	1050	1205

(RA4) Rehabilitation Area 4

Post-mining land uses (PMLU)			
Rehabilitation area	RA4		
Relevant activities	Tailings Storage Facility		
Total rehabilitation area size (ha)	23		
Commencement of first milestone: RM1	10/12/2044		
PMLU	Native Ecosystem (RE11.7.2)		
Date area is available	10/12/2044	10/12/2046	10/12/2049
Cumulative area available (ha)	23	23	23
Milestone completed by	10/12/2046	10/12/2049	10/12/2052
Milestone Reference	**Cumulative area achieved (ha)**		
RM1	23		
RM2	23		
RM3	23		
RM4	23		
RM5	23		
RM6		23	
RM7			23

(RA5) Rehabilitation Area 5

Post-mining land uses (PMLU)						
Rehabilitation area	RA5					
Relevant activities	Infrastructure Area					
Total rehabilitation area size (ha)	382					
Commencement of first milestone: RM1	10/12/2023					
PMLU	Native Ecosystem (RE11.5.9)					
Date area is available	10/12/2023	10/12/2026	10/12/2030	10/12/2044	10/12/2049	10/12/2053
Cumulative area available (ha)	16	32	32	382	382	382
Milestone complete by	10/12/2026	10/12/2030	10/12/2034	10/12/2049	10/12/2053	10/12/2057
Milestone Reference	**Cumulative area achieved (ha)**					
RM1	16	32	32	382		
RM2	16	32	32	382		
RM3	16	32	32	382		
RM4	16	32	32	382		
RM5	16	32	32	382		
RM6		16	32	32	382	
RM7			16	32		382

(RA6) Rehabilitation Area 6

Post-mining land uses (PMLU)		
Rehabilitation area	RA6	
Relevant activities	Water Management Infrastructure (Mine Water Dams)	
Total rehabilitation area size (ha)	57	
Commencement of first milestone: RM1	10/12/2044	
PMLU	Native Ecosystem 11.3.27 (Retained Water Management Infrastructure)	
Date area is available	10/12/2044	10/12/2049
Cumulative area available (ha)	57	57
Milestone completed by	10/12/2048	10/12/2053
Milestone Reference	**Cumulative area achieved (ha)**	
RM1	57	
RM2	57	
RM3	57	
RM8		57

(RA7) Rehabilitation Area 7

Post-mining land uses (PMLU)		
Rehabilitation area	RA7	
Relevant activities	Water Management Infrastructure (Sediment Dams)	
Total rehabilitation area size (ha)	23	
Commencement of first milestone: RM1	10/12/2044	
PMLU	Native Ecosystem 11.3.27 (Retained Water Management Infrastructure)	
Date area is available	10/12/2044	10/12/2049
Cumulative area available (ha)	23	23
Milestone completed by	10/12/2049	10/12/2053
Milestone Reference	**Cumulative area achieved (ha)**	
RM1	23	
RM2	23	
RM3	23	
RM8		23

(RA8) Rehabilitation Area 8

Post-mining land uses (PMLU)						
Rehabilitation area	RA8					
Relevant activities	Water Diversions					
Total rehabilitation area size (ha)	58					
Commencement of first milestone: RM1	10/12/2023					
PMLU	Native Ecosystem (RE11.3.25) (with non-native grasses)					
Date area is available	10/12/2023	10/12/2024	10/12/2028	10/12/2032	10/12/2036	10/12/2039
Cumulative area available (ha)	15	15	31	58	58	58
Milestone complete by	10/12/2024	10/12/2028	10/12/2032	10/12/2036	10/12/2039	10/12/2043
Milestone Reference	**Cumulative area achieved (ha)**					
RM1	15	15	31	58		
RM2	15	15	31	58		
RM3	15	15	31	58		
RM4	15	15	31	58		
RM5	15	15	31	58		
RM6		15	15	31	58	
RM7			15	31	31	58

(RA9) Rehabilitation Area 9

Post-mining land uses (PMLU)			
Rehabilitation area	RA9		
Relevant activities	Waste Rock Emplacement – Existing Rehabilitation (slope <16%)		
Total rehabilitation area size (ha)	66		
Commencement of first milestone: RM1	10/12/2023		
PMLU	Native Ecosystem (RE11.5.3) (with non-native grasses)		
Date area is available	10/12/2023	10/12/2024	10/12/2028
Cumulative area available (ha)	66	66	66
Milestone complete by	10/12/2024	10/12/2028	10/12/2032
Milestone Reference	**Cumulative area achieved (ha)**		
RM1	66		
RM2	66		
RM3	66		
RM4	66		
RM5	66		
RM6		66	
RM7			66

(RA10) Rehabilitation Area 10

Post-mining land uses (PMLU)			
Rehabilitation area	RA10		
Relevant activities	Waste Rock Emplacement – Existing Rehabilitation (Flat/Undulating)		
Total rehabilitation area size (ha)	116		
Commencement of first milestone: RM1	10/12/2023		
PMLU	Native Ecosystem (11.5.3) (with non-native grasses)		
Date area is available	10/12/2023	10/12/2024	10/12/2028
Cumulative area available (ha)	116	116	116
Milestone complete by	10/12/2024	10/12/2028	10/12/2032
Milestone Reference	**Cumulative area achieved (ha)**		
RM1	116		
RM2	116		
RM3	116		
RM4	116		
RM5	116		
RM6		116	
RM7			116

Rehabilitation Area Milestones

Milestone reference	Rehabilitation milestone	Milestone criteria
RM1	Infrastructure decommissioning and removal	1. a) Services disconnected and decommissioned. 1. b) Built and service infrastructure demolished and removed (except if agreed in writing by the post-mining landowner/holder to retain for beneficial re-use as stated in **Attachment 3 (of the PRC Plan):** Landholder statement of the PRC plan). 1. c) All waste removed from site.
RM2	Identification & remediation of contaminated land	2. a) Contaminated land investigation completed by an appropriately qualified person[1] (AQP) in accordance with the *Environmental Protection Act (1994)* including: • Confirmation that contaminated materials have been removed or remediated; • Confirmation that contaminated water and sediment in dams are treated or removed off site; • No potential for acid rock drainage, and acid rock drainage is measured against the threshold detailed in the Global Acid Rock Drainage Guide (INAP, 2009); and • A Site Suitability Statement confirming the suitability of the property for the PMLUs. 2. b) The Contaminated Land Investigation Document is supported by a Site Investigation Report and, where appropriate, a Validation Report and/or a draft Site Management Plan 2. c) Where ongoing management of residual contamination is deemed appropriate: • Hydrocarbon, heavy metal, or other contaminants limits are established in accordance with DES Queensland Auditor Handbook for Contaminated Land; • A draft Site Management Plan is prepared, and approval of the draft Site Management Plan is obtained from the administering authority; and • Site added to the Environmental Management Register if required. [1]***Appropriately qualified person****: 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*
RM3	Landform Establishment	**General (applicable to all rehabilitated areas)**

		3. a) All major earthworks (including reshaping, pushing/trimming) completed in accordance with design specification provided by an AQP to achieve final stable landforms. 3. b) AQP certifies all rehabilitated landforms achieves a Factor of Safety (FOS) ≥ 1.5. 3. c) The erosion and sediment control systems are designed by an AQP, installed, and fit for purpose. **Infrastructure area (MIA, CHPP, Roads)** 3. d) Rehabilitated areas slopes ≤5%. 3. e) Slopes over 2% do not exceed continuous slope length of 70m. 3. f) Natural drainage lines are reinstated. **Water storage structures** 3. g) Dam liners removed from site. 3. h) Dams to remain for landholder use are safe for stock access and have vegetated banks. 3. i) Landform shaped to be gently sloping characteristic of the natural landform. **Waste rock emplacement areas** 3. j) Overburden spoil dump area slopes are <17%. 3. k) Rock mulch applied to slopes >16% at minimum application rate of 0.5m. 3. l) For existing rehabilitation areas and waste dumps designed areas (RA2) totaling 52ha, where previously constructed slopes are ≤33 degrees, rock mulch is applied at a minimum application rate of 0.5m. 3. m) Potentially Acid Forming material (PAF) is lime dosed at a rate of 10 t/ha or an alternate rate confirmed by field trials. 3. n) Lime dosed PAF material covered with 10 m of Non-acid forming (NAF) Permian spoil with maximum ratio of PAF to Permian spoil as 1:10. **TSF** 3. o) Establishment of Permian caps and bunds on coal reject cells.

		3. p) TSF surface reshaped to prevent ponding. 3. q) Engineering report for completed cover system certifies that the installed capping system is as per engineering design plan and is geotechnically stable. **Creek Diversions, Floodplain and levee modification** 3. r) Diversions constructed in accordance with the engineering designs developed by an AQP. 3. s) Drainage system installed and confirmed by an AQP that it is stable and fit for purpose. 3. t) Ground level modifications completed to increase conveyance of floodplain at Roper Creek Diversion 2. 3. u) The operational flood protection levee at Roper Creek decommissioned and rehabilitated to widen the Roper Creek floodplain. 3. v) Roper Creek floodplain modified to provide flood immunity to the southern void up to Probable Maximum Flood (PMF) level as certified by AQP.
RM4	Growth Medium Application	4. a) An assessment of soil health and suitability has been completed by an AQP to confirm soil suitability to support relevant PMLU as per this schedule. 4. b) An assessment of growth media characteristics is completed by an AQP that identifies appropriate level of growth medium to achieve requirements stipulated in PRCP schedule **Appendix 11:** Target range for growth medium nutrients. 4. c) Topsoil ameliorated based on following targets: (i) Total Nitrogen: >1,500 milligram [mg] per kg [mg/kg] (ii) Phosphate: >20 mg/kg) (iii) Organic matter: >1.7% (iv) ESP:<6% 4. d) Topsoil placed to a minimum depth of 200 mm. 4. e) Topsoil harrowed on areas <16% slope. 4. f) Topsoil and spoil ripped to improve the water infiltration rate. 4. g) Soil surface crusting less than 2%.

<table>
<tr>
<td>RM5</td>
<td>Revegetation</td>
<td>
5. a) Direct seeding completed as per the following:

PRCP Schedule Appendix 1: Seed mix proportion; and
PRCP Schedule Appendix 2: Species list for remnant and non-remnant vegetation

5. b) Seeding is based on achieving the following REs at the following domains:
<table>
<tr><td>MIA and CHPP area</td><td>RE11.5.9</td></tr>
<tr><td>Roads including haul roads</td><td>RE11.3.2</td></tr>
<tr><td>Water storage/management dams</td><td>RE11.3.27</td></tr>
<tr><td>TSF and TFC</td><td>RE11.7.2</td></tr>
<tr><td>Creek diversion and levee banks</td><td>RE11.3.25</td></tr>
<tr><td>Waste Rock Emplacement areas</td><td>RE11.5.3</td></tr>
</table>
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<tr>
<td>RM6</td>
<td>Achievement of surface conditions</td>
<td>
6. a) Rehabilitated areas are devoid of slumping and active gully erosion.
6. b) Non-vegetation cover (stones, rock cover, litter, logs etc) does not cover greater than 30% of the total area.
6. c) A minimum of 65% ground cover is present.
6. d) Bare surface areas not exceeding 10 m^2 in area or, 10 m in length on a slope.
6. e) Target native trees, shrubs and grass species number and composition is consistent with –

PRCP schedule Appendix 2: Species list for remnant and non-remnant vegetation and;
PRCP schedule Appendix 3: Benchmark for Regional Ecosystem

6. f) Reseeding or plantation of tube stock completed if determined necessary by an AQP to achieve PRCP schedule Appendix 3: Benchmark for Regional Ecosystem.
6. g) The annual monitoring conducted by an AQP shows absence of prohibited or restricted invasive plants (as defined in Biosecurity Act 2014) in groundcover.
6. h) No evidence of erosion classified as ‘moderate’ or ‘severe’ as defined by Appendix 4: Erosion classification framework.
6. i) Soil testing demonstrates achievement of the following parameters:
<ol type="a">
Rootzone EC <0.15mS/cm
Soil pH <9 and >6 as measured at any part of the root zone
Exchangeable Sodium Percentage (ESP%) <6% (at 0-10cm depth)

</td>
</tr>
</table>

		6. j) Surface water quality results monitored monthly during flow at, but not limited to, downstream locations specified in the **Appendix 5: Receiving Water Upstream and Downstream Monitoring Points** of this schedule achieve the following water quality criteria: a. pH: 6.5-9.0 b. Electrical conductivity: <700-µS/cm c. Sulfate: <66mg/L d. Total suspended solids (TSS): <562mg/L 6. k) If the downstream surface water quality exceeds criteria above, the applicable upstream/reference site must be compared to the downstream site result; and if the quality measured at a downstream site is equal to or less than the quality measured at the applicable upstream/reference site, no further action is required. 6. l) A Bushfire Management Plan developed in accordance with relevant Queensland Fire and Emergency Services is implemented and risk reviewed every 2 years.
RM7	Stable PMLU condition	7. a) AQP certified the final landform is geotechnically stable and achieved a 1.5 factor of safety. 7. b) Site not listed in the Environment Management Register. 7. c) Rehabilitation area has remained stable when comparing photographs from successive monitoring events, for a period of at least five years post-rehabilitation. 7. d) No evidence of erosion classified as 'severe' as defined by **Appendix 4:** Erosion classification framework. 7. e) All drainage follows appropriate drainage paths, fit for purpose designed by an AQP. 7. f) Non-native cover crop grass species constitute no more than 20% total vegetative groundcover confirmed by an AQP in annual monitoring (except for RA9 and RA10, which has up to 100% non-native cover crop grass species). 7. g) A BioCondition assessment is completed by an AQP using the methodology outlined in the latest version of the Queensland Herbarium's 'BioCondition Assessment Manual'. 7. h) The BioCondition assessment required under RM7(7.g) demonstrates achievement of the PRCP Benchmark for each assessable attribute for the relevant regional ecosystem as per **Appendix 3: Benchmark for Regional Ecosystem**. The relevant regional ecosystem for each domain is given in the following table:

Domain	Relevant Regional Ecosystem
MIA and CHPP area	RE11.5.9
Roads including haul roads	RE11.3.2
Water storage/management dams	RE11.3.27
TSF and TFC	RE11.7.2
Creek diversion and levee banks	RE11.3.25
Waste Rock Emplacement areas	RE11.5.3

7. i) AQP reviewed and confirmed that the hydraulic and geomorphic characteristics of rehabilitated portions of Roper Creek (Diversion 1 and 2), and Thirteen Mile Gully (Diversion) are similar to the undisturbed sections of Roper Creek and Thirteen Mile Gully channels.
7. j) There is no evidence of seepage occurring within the mining tenure.
7. k) Surface water quality results monitored monthly during flow at, *but not limited to,* downstream locations specified in the **Appendix 5: Receiving Water Upstream and Downstream Monitoring Points** of this schedule must not exceed the following, for a minimum of 5 consecutive years:
    a. pH: 6.5-9.0
    b. Electrical conductivity: <700-µS/cm
    c. Sulfate: <66mg/L
    d. TSS: <562mg/L
    e. Iron (Dissolved): 300 µg/L
    f. Mercury (Dissolved): 0.2 µg/L
    g. Selenium (Dissolved): 10 µg/L
    h. Aluminium (Dissolved): 55 µg/L
    i. Boron (Dissolved): 370 µg/L
    j. Uranium (Dissolved): 1 µg/L
7. l) If the downstream surface water quality exceeds criteria above, the applicable upstream/reference site must be compared to the downstream site result; and if the quality

		measured at a downstream site is equal to or less than the quality measured at the applicable upstream/reference site, no further action is required. 7. m) Groundwater quality should be monitored quarterly at, *but not limited to,* monitoring bores listed in **Appendix 7: Groundwater Quality Monitoring Locations and Frequency** of the schedule, for quality characteristics listed in **Appendix 8: Groundwater Quality Limits** of the schedule and 3 consecutive results must not exceed limits included in **Appendix 8: Groundwater Quality Limits** of the schedule for a minimum of 5 consecutive years. 7. n) Groundwater level is monitored quarterly at, *but not limited to,* monitoring bores listed in **Appendix 9: Groundwater level monitoring locations** of the schedule, and all results must not exceed the Trigger Level Thresholds outlined in **Appendix 10: Groundwater Level Thresholds** of the schedule for a minimum of 5 consecutive years.
RM8	Retained Water Structures	8. a) All retained water storages to be assessed and approved as safe and stable by an AQP. 8. b) Retained water storage water quality for quality characteristics must not exceed the trigger values for livestock drinking water defined in ANZECC & ARMCANZ 2000.

Section D – Non-use Management Areas

(IA1) Improvement Area 1

Non-use management area (NUMA)	
Improvement area	IA1
Relevant activities	Northern Void
Total size (ha)	358
Commencement of first milestone: MM1	2044
NUMA	Final Residual Void
Date area is available	10/12/2044
Cumulative area available (ha)	358
Milestone completed by	10/12/2049
Milestone Reference	**Cumulative area achieved (ha)**
MM1	358
MM2	358
MM3	358

(IA2) Improvement area 2

Non-use management area (NUMA)	
Improvement area	IA2
Relevant activities	Southern Void
Total size (ha)	163
Commencement of first milestone: MM1	2044
NUMA	Final Residual Void
Date area is available	10/12/2044
Cumulative area available (ha)	163
Milestone completed by	10/12/2049
Milestone Reference	**Cumulative area achieved (ha)**
MM1	163
MM2	163
MM3	163

Improvement Area Milestones

Milestone reference	Management milestone	Milestone criteria
MM1	High and Low Wall treatment	1 .a) Certification from an AQP that the final void landform, including low and high walls are geotechnically stable and achieved a factor of safety 1.5. 1 .b) Highwall competent rock slopes are <60°, and incompetent slopes <55° with geotechnical stability achieving the minimum 1.5 Factor of Safety. 1 .c) Low wall batters <37°. 1 .d) Low wall Overall slope <27° and treated with rock mulch. 1 .e) Slope geometry for the final voids is as follows: i. Surficial Soils - Overall slope angle <20° ii. Weathered Permian - Bench height <30 m - Berm width <25 m - Batter Angle <55° iii. Fresh Permian - Bench height ≤60 m - Berm width 60 m - Batter angle ≤60 degrees 1 .f) Northern Void ≤358 ha in surface area and 285,870,000 m3 in volume. 1 .g) Southern void ≤163 ha in surface area and 157,960,000 m3 in volume.
MM2	Achievement of surface requirements	2. a) Access is prohibited to final voids by a bund wall with a minimum height of 2 m, a minimum base width of 4 m and be located at least 10 m beyond the area potentially affected by any instability of the pit edge. 2. b) Bunding confirmed to be geotechnically stable by an AQP. 2. c) Appropriate signage placed every 100m of the perimeter of the void to clearly identify and convey the purpose (e.g. EP Act 1994 Non- Use Management Area No Entry). 2. d) Installation of fencing completed for the residual void management areas to limit human and livestock access.

MM3	Achievement of sufficient improvement	3. a) Bund wall remains in place. 3. b) Appropriate signage remains in place. 3. c) Final voids remain structurally stable, with no maintenance requirements and are predicted to remain stable. 3. d) High walls and low walls certified by a AQP as geotechnically stable. 3. e) Installation of contour or graded drains as per construction design certified by an AQP. 3. f) Groundwater quality should be monitored quarterly at, *but not limited to,* monitoring bores listed in **Appendix 7: Groundwater Quality Limits** of the schedule, for quality characteristics listed in **Appendix 8: Groundwater level monitoring locations** of the schedule and all results comply with limits included in **Appendix 8: Groundwater level monitoring locations** of the schedule for a minimum of 5 consecutive years. 3. g) Final void walls confirmed to drain internally to the final void. 3. h) Certification from an AQP that water level in each residual void will not cause environmental harm to the surrounding environment, and the voids act as groundwater sinks to the receiving groundwater environment.

Appendix 1 – Seed Mix Proportion

Stratum	Lower Erosion Risk Areas	High Erosion Risk Areas	
	RA3 – Waste Rock Emplacement - **1209ha** **RA4 –** Tailing Storage Facility **– 23ha** **RA5 –** Infrastructure Area **– 382ha** **RA6 –** Water Management Infrastructure to be retained **– 57ha** **RA7 -** Water Management Infrastructure to be retained **– 23ha**	**RA1 -** Waste Rock Emplacement (slope less than <16%) – **752ha** **RA2 -** Waste Rock Emplacement Slope >16% - **52ha**	**RA8 –** Riparian – **58ha**
Target application rate	22kg/ha	40kg/ha	40kg/ha
Cover Crop	45% (10kg)	38% (15kg)	38% (15kg)
Non-Native Grasses	0%	33% (13kg)	25% (10kg)
Native grass	45% (10kg)	25% (10kg)	25% (10kg)
Native tree and shrub	9% (2kg)	5% (2kg)	5% (2kg)
Native sedge and species that can sustain flood	-	-	8% (3kg)
Tube stock planting	As per rehabilitation milestone criteria (RM6) 6. f)	As per rehabilitation milestone criteria (RM6) 6. f)	As per rehabilitation milestone criteria (RM6) 6. f)

Appendix 2 Species list for remnant and non-remnant vegetation

Recommended species for seeding native remnant vegetation in accordance with EA Table G2 and Appendix 1 of this schedule. The final proportion of seeds (kg/ha) should reflect the relative cover and frequency of each Regional Ecosystem Technical Descriptions. Additional potential species for the seed mix can be found in the Regional Ecosystem Technical Descriptions (https://publications.qld.gov.au/dataset/re-technical-descriptions). It should be noted, though introduced species do occur in the Regional Ecosystem Technical Description as the data is collected from field sites and some of these sites are disturbed or in poor condition, introduced species should not be used in the seed mix. Introduced species will invariably invade the regional ecosystem corridor due to edge effects and natural dispersal.

The seed mix for non-remnant grazed improved pasture should include species appropriate to the Guidelines for Agricultural Land Evaluation in Queensland and based on the land capability and agricultural land class (C1-C2). These species must all be 3P grasses as recommended by Grazing Land Management information provided by NQ Dry Tropics (https://nrm.nqdrytropics.com.au/land/3p-grasses/) or the Fitzroy Basin Association (https://fba.org.au/services/graziers/). The species mix must not include Indian Couch *Bothriochloa pertusa* or Seca *Stylosanthes* spp both of which have significant impacts on surrounding native remnant vegetation. The volume of seed mix (i.e., kg/ha) must be sufficient to ensure the land condition meets its recommended native ecosystem targets.

Category	RE11.3.2	RE11.3.25	RE11.3.27	RE11.5.3	RE11.5.9	RE11.7.2
Exemplar regional ecosystem image						
Species recorded (Total):	345; woody: 54; ground: 315; Avg. spp./site: 34.9; std dev.: 8.7, 22 site(s)	530; woody: 104; ground: 467; Avg. spp./site: 32.2; std dev.: 12.6, 38 site(s)	30; woody: 2; ground: 28; Avg. spp./site: 16.0; std dev.: 5.0, 2 site(s)	207; woody: 64; ground: 160; Avg. spp./site: 27.6; std dev.: 7.8, 12 site(s)	77; woody: 24; ground: 54; Avg. spp./site: 44.0; std dev.: 2.0, 2 site(s)	290; woody: 86; ground: 226; Avg. spp./site: 19.3; std dev.: 7.0, 29 site(s)
Tree 1 Dominant species	*Eucalyptus populnea*	*Eucalyptus tereticornis, Eucalyptus camaldulensis, Eucalyptus tereticornis*	*Eucalyptus camaldulensis, Corymbia intermedia*	*Eucalyptus populnea, Eucalyptus melanophloia*	*Eucalyptus crebra, Corymbia clarksoniana*	*Acacia catenulata, Acacia shirleyi, Acacia rhodoxylon, Eucalyptus crebra*
Tree 1 (>10% only)	*Eucalyptus populnea*	*Eucalyptus tereticornis, Eucalyptus camaldulensis, Corymbia tessellaris, Angophora*	*Eucalyptus camaldulensis, Corymbia intermedia*	*Eucalyptus populnea, Eucalyptus melanophloia, Eucalyptus brownii,*	*Eucalyptus crebra, Corymbia clarksoniana*	*Acacia shirleyi, Acacia rhodoxylon, Acacia catenulata, Eucalyptus crebra,*

Frequent species		*floribunda, Eucalyptus coolabah, Eucalyptus populnea, Casuarina cunninghamiana*		*Corymbia clarksoniana, Eucalyptus crebra, Ventilago viminalis*		*Eucalyptus exserta Melaluca sp. Corymbia tessallaris, Angophora spp.*
Tree 2 (>10% only) Frequent species	*Eucalyptus populnea, Eremophila mitchellii*	*Eucalyptus camaldulensis, Acacia salicina, Acacia stenophylla, Eucalyptus coolabah, Eucalyptus tereticornis*	N/A	*Acacia excelsa, Archidendropsis basaltica, Eucalyptus populnea, Terminalia oblongata subsp. oblongata, Atalaya hemiglauca, Corymbia dallachiana, Eucalyptus melanophloia, Grevillea parallela.*	*Eucalyptus crebra, Petalostigma pubescens, Acacia cowleana, Acacia leptostachya, Alphitonia pomaderroides, Antidesma parvifolium, Bursaria incana, Corymbia clarksoniana, Gardenia indet., Geijera salicifolia, Grevillea glauca, Larsenaikia ochreata, Petalostigma banksii, Siphonodon indet.*	*Acacia shirleyi, Acacia catenulata, Alphitonia excelsa, Alstonia constricta*
Shrub 1 Dominant species	*Eremophila mitchellii,, Eucalyptus populnea*		N/A	*Eremophila mitchellii, Erythroxylum australe, Grewia latifolia*	*Acacia conferta, Acacia disparrima subsp. calidestris, Acacia cowleana, Gardenia indet,*	*Acacia shirleyi, Acacia catenulata, Alstonia constricta*

					Petalostigma pubescens	
Shrub 1 (>10% only) Frequent species (cover, frequency):	*Eremophila mitchellii, Eucalyptus populnea, Geijera parviflora, Acacia salicina,, Atalaya hemiglauca, Eremophila deserti, Erythroxylum australe*	*Acacia salicina, Ficus opposita*	N/A	*Eremophila mitchellii Erythroxylum australe (Grewia latifolia Acacia excelsa, Atalaya hemiglauca), Carissa ovata, Eucalyptus populnea, Acacia sericophylla, Archidendropsis basaltica, Capparis lasiantha, Cassia brewsteri, Denhamia cunninghamii, Dodonaea viscosa Eucalyptus brownii, Eucalyptus melanophloia, Flindersia dissosperma, Lysiphyllum carronii Lysiphyllum hookeri, Psydrax oleifolia, Senna artemisioides, Carissa lanceolata.*	*Erythroxylum australe, Acacia conferta, Acacia cowleana, Acacia disparrima subsp. Calidestris, (Acacia holosericea (Alphitonia pomaderroides, Breynia oblongifolia, Coelospermum reticulatum, Gardenia indet, Grevillea parallela, Petalostigma Pubescens.*	*Acacia shirleyi, Alstonia constricta, Acacia catenulata, Erythroxylum sp. (Splityard Creek L.Pedley 5360), Everistia vacciniifolia, Erythroxylum australe, Alphitonia excelsa, Croton insularis.*
Ground (native species only) Dominant species (relative cover, frequency):	*Chloris ventricosa, Aristida calycina var. calycina, Chloris divaricata, Cenchrus ciliaris*, Dichanthium sericeum.*	*Phyla canescens*, Arundinella nepalensis, Heteropogon contortus, Themeda triandra, Lomandra longifolia.*	*Phyla canescens*, Eleocharis plana, Paspalum distichum, Marsilea drummondii, Cynodon dactylon*.*	*Cenchrus ciliaris*, Themeda triandra, Aristida calycina, Chrysopogon fallax, Fimbristylis dichotoma.*	*Bothriochloa pertusa*, Eremochloa bimaculata, Brunoniella acaulis, Desmodium brachypodum, Aristida holathera var. holathera.*	*Calyptochloa gracillima subsp. gracillima, Thyridolepis xerophila, Aristida caput-medusae, Eragrostis lacunaria, Entolasia stricta, Crotalaria montana, Sida spp.*
Ground Grasses and	**GRAMINOIDS:** *Cyperus gracilis, Cenchrus ciliaris* ,*	**GRAMINOIDS:** *Cyperus gracilis, Heteropogon contortus,*	**GRAMINOIDS:**	**GRAMINOIDS:** *Chrysopogon fallax, Fimbristylis dichotoma,*	**GRAMINOIDS:** *Alloteropsis semialata,*	**GRAMINOIDS:** *Aristida caput-medusae,*

Forbs (>10% only – native species only) Dominant species (relative cover, frequency):	*Chrysopogon fallax, Cymbopogon refractus, Enteropogon acicularis, Heteropogon contortus, Bothriochloa decipiens, Panicum effusum, Themeda triandra, Eragrostis lacunaria, Sporobolus caroli, Aristida calycina var. calycina,, Aristida personata, Chloris divaricata, Chloris ventricosa, Dichanthium sericeum, Enneapogon intermedius, Eragrostis sororia, Melinis repens*, Sporobolus creber, Bothriochloa decipiens var. decipiens, Chloris truncata, Enteropogon ramosus, Eriochloa pseudoacrotricha, Paspalidium caespitosum, Tragus australianus, Aristida calycina, Aristida indet,, Aristida ramosa, Austrostipa verticillata, Digitaria hystrichoides , Eremochloa bimaculata, Eulalia aurea, Fimbristylis dichotoma, Panicum decompositum, Panicum simile, Paspalidium gracile, Urochloa foliosa.*	*Dichanthium sericeum subsp. sericeum, Paspalidium distans, Arundinella nepalensis, Bothriochloa bladhii subsp. bladhii, Cyperus indet., Paspalidium jubiflorum, Cynodon dactylon*, Melinis repens*, Themeda triandra, Aristida personata, Eriochloa crebra, Chrysopogon filipes, Dichanthium sericeum, Eriochloa procera, Sporobolus mitchellii, Bromus catharticus* , Capillipedium spicigerum, Chloris gayana* , Eulalia aurea, Imperata cylindrica, Leptochloa digitata, Megathyrsus maximus var. pubiglumis*, Panicum effusum , Anthosachne scabra, Bothriochloa bladhii, Cymbopogon refractus, Cynodon dactylon var. dactylon*, Eragrostis leptostachya, Megathyrsus maximus*, Panicum laevinode,, Sorghum halepense*, Sporobolus creber , Urochloa foliosa.*	*Eleocharis plana, Anthosachne scabra, Austrostipa aristiglumis, Cynodon dactylon*, Cyperus indet., Dichanthium sericeum subsp. sericeum,Diplachne fusca*, Echinochloa colona*, Eleocharis pallens, Juncus indet, Panicum decompositum, Panicum laevinode, Paspalum distichum, Paspalum scrobiculatum.*	*Heteropogon contortus , Aristida calycina, Alternanthera micrantha Cenchrus ciliaris*, Digitaria brownii, Panicum effusum, Themeda triandra, Cyperus fulvus, Dichanthium sericeum, Eragrostis lacunaria, Eragrostis sororia , Aristida jerichoensis, Bothriochloa decipiens, Bothriochloa decipiens var. decipiens, Cymbopogon bombycinus, Cyperus gracilis, Digitaria ammophila, Enneapogon lindleyanus, Enneapogon virens, Eragrostis brownii, Eragrostis leptostachya , Eulalia aurea, Sporobolus caroli, Tragus australianus, Triodia pungens.*	*Aristida calycina var. calycina, Bothriochloa pertusa*, Chrysopogon fallax, Eragrostis spartinoides, Eremochloa bimaculata, Panicum effusum, Ancistrachne uncinulata, Aristida holathera var. holathera, Calyptochloa cylindrosperma, Ectrosia indet, Heteropogon contortus, Mnesithea formosa, Paspalidium indet, Scleria brownii, Themeda triandra.*	*Calyptochloa gracillima subsp. gracillima, Entolasia stricta, Eragrostis lacunaria, Aristida calycina, Paspalidium criniforme, Thyridolepis xerophila , Aristida jerichoensis var. subspinulifera, Paspalidium distans, Aristida queenslandica var. dissimilis, Cenchrus ciliaris*, Melinis repens*, Panicum effusum, Scleria sphacelata, Ancistrachne uncinulata, Cleistochloa subjuncea, Digitaria breviglumis, Digitaria ramularis, Dinebra decipiens, Enneapogon lindleyanus, Gahnia aspera, Paspalidium gracile, Setaria dielsii.*

	FORBS: *Eremophila debilis, Sida hackettiana, Brunoniella australis, Opuntia stricta*, Euphorbia drummondii, Evolvulus alsinoides, Boerhavia dominii, Cyanthillium cinereum, Malvastrum americanum var. americanum*, Phyllanthus virgatus, Achyranthes aspera, Neptunia gracilis, Rhynchosia minima, Sida rhombifolia*, Alternanthera nana, Carissa ovata, Einadia nutans subsp. linifolia, Euphorbia dallachyana, Gomphrena celosioides*, Maireana microphylla, Nyssanthes erecta, Parthenium hysterophorus*, Portulaca oleracea*, Pseuderanthemum variabile, Salsola australis, Sclerolaena birchii, Vittadinia sulcata, Abutilon oxycarpum, Breynia oblongifolia, Capparis lasiantha, Chrysocephalum apiculatum, Desmodium varians, Einadia hastata, Enchylaena tomentosa, Glandularia aristigera*, Glycine tabacina, Hibiscus sturtii, Jasminum*	**FORBS:** *Lomandra longifolia, Bidens pilosa*, Eustrephus latifolius, Phyla canescens*, Rumex brownii, Xanthium occidentale*, Cyanthillium cinereum, Cyclospermum leptophyllum*, Rapistrum rugosum*, Sonchus oleraceus*, Marsilea drummondii, Oxalis perennans, Alternanthera denticulata var. denticulata, Cirsium vulgare*, Emilia sonchifolia* , Erigeron bonariensis*, Gomphrena celosioides*, Malvastrum americanum var. americanum*, Sida hackettiana, Alternanthera nodiflora, Commelina diffusa, Malvastrum coromandelianum subsp. coromandelianum*, Rorippa palustris*, Sida rhombifolia*, Crinum flaccidum , Euphorbia dallachyana, Phyllanthus virgatus, Rhynchosia minima, Rorippa eustylis, Sida cordifolia*, Argemone ochroleuca subsp. ochroleuca*, Asperula conferta,*	**FORBS:** *Alternanthera denticulata var. micrantha, Arthropodium strictum, Asperula conferta, Cirsium vulgare*, Euphorbia indet, Glinus lotoides, Marsilea drummondii, Parthenium hysterophorus*, Phyla canescens*, Ranunculus meristus, Sesbania cannabina, Sonchus oleraceus*, Verbena indet, Xanthium indet.*	**FORBS:** *Evolvulus alsinoides, Phyllanthus virgatus, Glycine tomentella, Grewia latifolia, Spermacoce indet, Trianthema triquetra, Waltheria indica, Capparis lasiantha, Denhamia cunninghamii, Euphorbia hyssopifolia* , Malvastrum americanum var. americanum*, Melhania oblongifolia , Portulaca oleracea*, Pseuderanthemum variabile, Rhynchosia minima, Sauropus trachyspermus, Sida atherophora, Sida hackettiana, Sida indet, Zornia muelleriana subsp. Muelleriana.*	**FORBS:** *Apowollastonia spilanthoides, Crotalaria medicaginea, Cyanthillium cinereum, Evolvulus alsinoides, Glycine tomentella, Phyllanthus virgatus, Richardia brasiliensis*, Sida magnifica, Sida rhombifolia*, Brunoniella acaulis, Chamaecrista rotundifolia*, Desmodium brachypodum, Desmodium filiforme, Heliotropium indet, Larsenaikia ochreata, Lomandra indet, Melhania oblongifolia, Neptunia gracilis, Oxalis chnoodes, Parsonsia indet,*	**FORBS:** *Cheilanthes sieberi, Alphitonia excelsa, Calotis cuneifolia, Evolvulus alsinoides, Sida sp. (Musselbrook M.B.Thomas+ MRS437), Solanum ellipticum, Clematicissus opaca, Oxalis radicosa , Solanum parvifolium, Brunoniella australis, Cheilanthes sieberi subsp. sieberi, Lomandra longifolia, Parsonsia straminea, Sida hackettiana, Sida trichopoda, Everistia vacciniifolia, Goodenia rotundifolia, Lomandra confertifolia subsp. pallida, Malvastrum americanum var. americanum*, Melhania oblongifolia, Opuntia stricta*, Sida indet, Solanum indet.*

	didymum, Melhania oblongifolia, Murdannia graminea, Nyssanthes diffusa, Opuntia tomentosa, Peripleura hispidula, Pterocaulon redolens, Sida indet, Stackhousia muricata, Vittadinia pustulata, Wahlenbergia gracilis.*	*Boerhavia sp. (St George A.Hill AQ399299), Duma florulenta, Eclipta prostrata*, Opuntia stricta*, Sida spinosa*, Solanum nodiflorum* , Vachellia farnesiana*, Verbena indet, Vicia monantha.*			*Rostellularia adscendens, Sida atherophora, Sida corrugata, Sida hackettiana, Stylosanthes scabra*, Tephrosia filipes subsp. filipes, Uraria lagopodioides.*	

Appendix 3: Benchmark for Regional Ecosystem

Regional Ecosystem	11.3.2 PRCP benchmark	11.3.25 PRCP benchmark	11.3.27i PRCP benchmark	11.5.3 PRCP benchmark	11.5.9 PRCP benchmark	11.7.2 PRCP benchmark
Short description of RE	Rehabilitated Eucalyptus Populnea woodland on alluvial plains	Rehabilitated Eucalyptus tereticornis or E. camaldulensis woodland to open forest	Rehabilitated Eucalyptus camaldulensis or E. tereticornis woodland to open woodland with sedgeland ground layer	Rehabilitated Eucalyptus populnea +/- E. melanophloia +/- Corymbia clarksoniana +/- C. dallachiana and occasionally E. cambageana or E. brownii woodland	Rehabilitated Eucalyptus crebra and/or Eucalyptus melanophloia woodland	Rehabilitated Monospecific stands of Acacia spp. forest/woodland on Cainozoic lateritic duricrusts
BioCondition Assessable Attributes						
recruitment	100%	100%	100%	100%	100%	100%
non native_plant_cover	Max. 10%	Max. 10%	Max. 10%	Max. 10%	Max. 10%	Max. 10%
tree_sp_richness	2	4	2	3	3	3
native_shrub_sp_richness	2	4	N/A	3	3	4
native_grass_sp_richness	5	4	2	3	5	5
native_forb_other_sp_richness	8	7	4	5	5	5
tree_canopy_height	9	11	8	8	8	7
tree_subcanopy_height	5	5	N/A	N/A	8	5
tree_canopy_cover	18%	17%	16%	10%	12%	20%
tree_subcanopy_cover	4%	6%	N/A	N/A	3%	4%
shrub_canopy_cover	2%	3%	N/A	3%	5%	4%
native_perennial_grass	13%	17%	6%	9%	13%	7%
litter_grd_cov	18%	10%	22%	10%	15%	10%

Appendix 4 – Erosion Classification Framework

Erosion classification	Minor	Moderate	Severe
Sheet erosion	Shallow soil deposits downslope	Partial exposure of roots; moderate soil deposits downslope, etc.	Loss of surface horizon; root exposure, etc
Rill/gully erosion	<15 rills and <0.3m deep	15-30 rills and <0.3m deep	>30 rills and/or any >0.3m deep.
Tunnel erosion	Absent	Absent	Present
Mass movement	Absent	Absent	Present

Land Evaluation in Queensland (Second Edition), State of Queensland or later version. (https://www.publications.qld.gov.au/dataset/qld-agricultural_land-evaluation-guidelines/resource/d6591386-08e2-453f-a6fa-dff2a756215f)

Appendix 5: Receiving Water Upstream and Downstream Monitoring Points

Monitoring Points	Receiving waters location description	Easting (GDA94, MGA55)	Northing (GDA94, MGA55)
Upstream monitoring points			
Ref 1	Roper Creek at western ML70379 boundary (Upstream of Thirteen Mile Gully diversion)	667,484	7,471,112
Downstream monitoring points			
IMPAC1	Roper Creek at Middlemount Road	671,505	7,469,167
IMPAC2	Roper Creek Tributary at Middlemount Road	673,094	7,471,230

Appendix 6 – Groundwater Quality Monitoring Locations and Frequency

Monitoring point	Easting (GDA 94, MGA 55)	Northing (GDA 94, MGA 55)	Target Aquifer	Monitoring frequency
MW2	667,603	7,471,239	Tertiary	Quarterly
MW3	670,647	7,469,955	Tertiary	
MW4	667,683	7,468,659	Intrusives and Girrah coal seam	
MW5M	667,790	7,475,131	Middlemount coal seam	
MW5P	667,796	7,745,130	Pisces coal seam	
MW6	669,452	7,468,670	Tertiary	
MW9A	670,246	7,469,610	Tertiary	
MW9M	670,243	7,469,619	Middlemount coal seam	
MW9P	670,251	7,469,592	Pisces coal seam	
MW10A	669,783	7,475981	Tertiary	
MW11A	672,355	7,472,275	Tertiary	
MW12A	671,640	7,469,853	Tertiary	
MW16AR	666,797	7,472,787	Tertiary and weathered Fort Cooper Coal Measures	
MW17A	669,790	7,475,985	Weathered and fresh Fort Cooper Coal Measures	

Appendix 7 – Groundwater Quality Limits

Quality characteristic	Unit	MW2	MW3	MW4	MW5M	MW5P	MW6	MW9A	MW9M	MW9P	MW12A	MW16AR	MW17A
Electrical Conductivity	µS/cm	21,868	24,880	23,780	16,015	15,645	34,440	30,490	33,800	34,250	31,560	TBA	21,340
Sulfate	mg/L	1,550	1,093	500	8.5	2	500	1,134	20	48.8	1,835	TBA	500
Iron (Dissolved)	mg/L	1.06	2.08	2.60	6.85	4.16	4.10	13.2	15.24	3.63	0.47	TBA	10.10

Quality characteristic	Unit	Bore	Limit	Comment
pH	pH Units	All bores	6.4-8.5	Site-specific
Mercury (Dissolved)	µg/L	All bores	0.6	ANZG 2018
Selenium (Dissolved)	µg/L	All bores	11	ANZG 2018
Total recoverable hydrocarbons (C6-C9)	µg/L	All bores	20	-
Total recoverable hydrocarbons (C10-C36)	µg/L	All bores	100	-
Major ions Calcium, magnesium, sodium, potassium, carbonate, bicarbonate, chloride	mg/L	All bores	Interpretation	-
Water level	mAHD	All bores	Interpretation	-

Notes:

- All metals and metalloids must be measured as ‘dissolved’ (from analysis of a field filtered sample) and total (unfiltered).
- Limits for metals and metalloids apply to dissolved results.
- ANZG (2018) aquatic ecosystem protection for moderately disturbed system (95% species protection level).
- Groundwater Quality Limits for MW16AR to be provided in accordance with condition PRCP7.

Appendix 8 – Groundwater Level Monitoring Locations

Monitoring points	Easting (GDA94, MGA 55)	Northing (GDA94, MGA 55)	Surface RL (mAHD)	Target Aquifer	Frequency
MW2	667,603	7,471,239	163.12	Tertiary	Quarterly
MW4	667,683	7,468,659	183.11	Intrusive and Girrah coal seam	Quarterly
MW6	669,452	7,468,670	158.26	Tertiary	Quarterly
MW10A	669,783	7,475981	175.75	Tertiary	Quarterly
MW11A	672,355	7,472,275	156.21	Tertiary	Quarterly
MW12A	671,640	7,469,853	158.28	Tertiary	Quarterly
MW17A	669,790	7,475,985	175.77	Weathered and fresh Fort Cooper Coal Measures	Quarterly
MW18A	666,452	7,478,605	181.70	Tertiary and weathered Fort Cooper Coal Measures	Quarterly
MW19VWP	671,659	7,469,856	158.38	Weathered Fort Cooper Coal Measures and Fort Cooper Coal Measures	Quarterly
MW20VWP	672,816	7,471,543	155.90	Fort Cooper Coal Measures	Quarterly

Appendix 9 – Groundwater Level Thresholds

Monitoring points	Groundwater Level Threshold (maximum drawdown [metre])
MW2	4.17
MW4	0.0
MW6	11.6
MW10A	0.0
MW11A	0.0
MW12A	7.7
MW13A	0.0
MW17A	2.1
MW18A	0.1
MW19 VWP-VW3	10.2
MW19 VWP-VW2	5.8
MW19 VWP-VW1	5.8
MW20 VWP-VW2	0.4

Appendix 10 – Rehabilitation Reference Sites

Site	Easting	Northing	Domain Reference	Ecosystem Description
Existing Reference Sites as per Table G11 of EA EPML00716913 and Middlemount Rehabilitation Monitoring Program (MCPL, 2021)				
1	662226	7475606	• In-pit and out-of-pit spoil dumps	RE 11.5.3
2	665445	7469732	• MIA and CHPP Area • Roads including haul roads • Tailing Storage Facility	RE 11.5.9
3	665832	7470708	• Roads including Haul Roads	RE 11.7.2
4	666054	7469733	• MIA and CHPP Area • Roads including haul roads • Tailing Storage Facility	RE 11.5.9/11.5.18
5	666693	7469888		RE 11.7.2/11.7.1
6	667513	7469830		RE 11.3.2/11.3.7
7	667020	7469836		RE 11.7.2/11.7.1
8	667397	7471016	• Creek Diversions and Levee Banks	RE 11.3.25
9	667724	7471051		RE 11.3.25
10	666702	7473050		RE 11.3.1/11.3.2
11	671581	7472907	• In-pit and out-of-pit spoil dumps	RE 11.5.3
Proposed Reference Sites as per the Revegetation Management Plan				
AS1	662883	7475606	Area not currently in use.	Pre-clear RE 11.5.3
AS2	664591	7468202	Area not currently in use.	Pre-clear RE 11.12.2
AS3	663833	7471263	Area not currently in use.	Pre-clear RE 11.3.25

Appendix 11 – Target Ranges for Growth Medium Nutrients

Suite/Analyte	Parameter	Units[1]	Target range[2]
Physico-chemical	pH (H_2O)	pH (H_2O)	pH (H_2O)
	pH units	pH units	pH units
	6.5–7.5	6.5–7.5	6.5–7.5
	pH ($CaCl_2$)	pH ($CaCl_2$)	pH ($CaCl_2$)
	pH units	pH units	pH units
Exchangeable Cations	Exchangeable Sodium (Na)	cmol/kg	< 0.3 (<1% of cation-exchange capacity [CEC])
	Exchangeable Potassium (K)	cmol/kg	> 0.3 (1-5% of CEC)
	Exchangeable Magnesium (Mg)	cmol/kg	> 1.0 (10-15% of CEC)
	Exchangeable Calcium (Ca)	cmol/kg	> 2.0 (65-80% of CEC)
	Exchangeable Aluminium (Al)	cmol/kg	*Significant if pH < 5.5*
	Cation exchange capacity (CEC)	cmol/kg	> 4.0
	Exchangeable Sodium Percentage (ESP)	%	< 6.0
	Ca:Mg	-	1.5.0–6.0
Anions	Total Carbonate	mg/kg	N/A
	Chloride	mg/kg	N/A
Nitrogen	Ammonia-N (KCl)	mg/kg	> 3.0
	Nitrate	mg/kg	> 5
	Total Nitrogen	mg/kg	> 500
	C:N ratio	-	8–25
Phosphorous	Phosphorus (Colwell)	mg/kg	> 20
	PBI	-	N/A
	Total Phosphorous *(optional)*	mg/kg	N/A
Sulphur	Sulphur (KCl)	mg/kg	> 117
Carbon	Organic Carbon	%	>0.5
	Organic Matter	%	> 0.5
Trace Elements	Boron (CaCl2)	mg/kg	0.5–5.0
	DTPA extract Copper (Cu)	mg/kg	> 0.3
	DTPA extract Iron (Fe)	mg/kg	-
	DTPA extract Manganese (Mn)	mg/kg	> 1.0
	DTPA extract Zinc (Zn)	mg/kg	> 0.8 (pH >= 7.0) > 0.5 (pH < 7.0)

[1] dS = 0.1 Siemens; m = metre; cmol = 0.01 mol; kg = 1 kilogram; mg = 0.001gram

[2] There are no target ranges for Texture, Total Carbonate, Chloride, PBI, Total Phosphorous, or DTPA extract Iron.

END OF PRCP SCHEDULE