

PRCP schedule

Environmental Protection Act 1994

PRCP Schedule P-PRCP-100837276_V2 Vulcan South Mine

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-100837276_V2

PRCP schedule holder(s)

Name(s)	Registered address
Queensland Coking Coal Pty Ltd	Level 6, Suite 2, 12 Creek Street, Brisbane QLD 4000
Qld Coal Aust No.1 Pty Ltd	

Location details

Location(s)
Mining Lease (ML) 700073

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.



Signature

30 April 2025

Date

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

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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 - Attachments
- Section E - Definitions

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

There are no conditions beyond those contained in section 206A of the *Environmental Protection Act 1994* that apply to this PRCP schedule.

General conditions

PRCP1 Prior to any significant disturbance occurring within the mining lease, the holder must nominate in writing to the administering authority, a commencement date for the authorised activities.

Note: that for the purposes of this condition, significant disturbance means disturbance of the land surface or clearing of vegetation but does not include access tracks for land management, fire breaks or disturbance associated with environmental monitoring.

PRCP2 The holder must comply with each milestone criteria stated in the schedule.

PRCP3 Where land becomes available for rehabilitation earlier than the nominated 'Date area is available', 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.

PRCP4 The holder must keep records in relation to relevant matters for a minimum of five years and provide such records to the administering authority on request.

Relevant matters for this condition include, but are not necessarily limited 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;
- iv) Designs, drawings, specifications or any similar documents required under the PRCP schedule; and
- v) Certifications, assessments, investigations, inspections, audits or any similar processes carried out in relation to rehabilitation milestones or milestone criteria.

PRCP5 Where an area achieves a rehabilitation milestone, it must be maintained and continue to comply with the rehabilitation milestone criteria for that rehabilitation milestone.

PRCP6 Where an area has achieved the final rehabilitation milestone, it must be maintained and continue to comply with the rehabilitation 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.

- PRCP7** The holder must provide to the Department, bore specific limits for quality characteristics identified in PRCP schedule **Attachment 7 - Groundwater Quality Limits** before completion of the first rehabilitation milestone due on **31 December 2026**.
- PRCP8** Groundwater monitoring must demonstrate the baseline groundwater quality is within the trigger values listed in **Attachment 7 - Groundwater Quality Limits** at the locations listed in **Attachment 6 – Groundwater Monitoring Locations** for a minimum of 5 consecutive years after achievement of the final rehabilitation milestone.
- PRCP9** Disturbance due to exploration activities in areas not authorised to be mined must be rehabilitated in accordance with the provisions detailed in the *‘Eligibility criteria and standard conditions for exploration and mineral development projects’* or its successor, with the exception that land must be rehabilitated to a stable condition that achieves the relevant PMLU as indicated by Figure 1 Final Site Design. Stable condition is defined by s111A of the EP Act. Stable condition is defined by s111A of the EP Act.
- PRCP10** 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.

Note: The areas prescribed for each rehabilitation area and that depicted in the figures of this schedule provide for areas of buffer in which the activities may occur provided for flexibility. Where there is an inconsistency in the areas or locations depicted in the environmental authority **P-EA-100265081** and this PRCP Schedule, the environmental authority prevails to the extent of the inconsistency. The total area of authorised disturbance is that prescribed in **Table A1 – Maximum disturbance area** for each mining area type of environmental authority **P-EA-100265081**.

END OF CONDITIONS

Section B - Final site design and reference maps

Figure 1 – Final Site Design

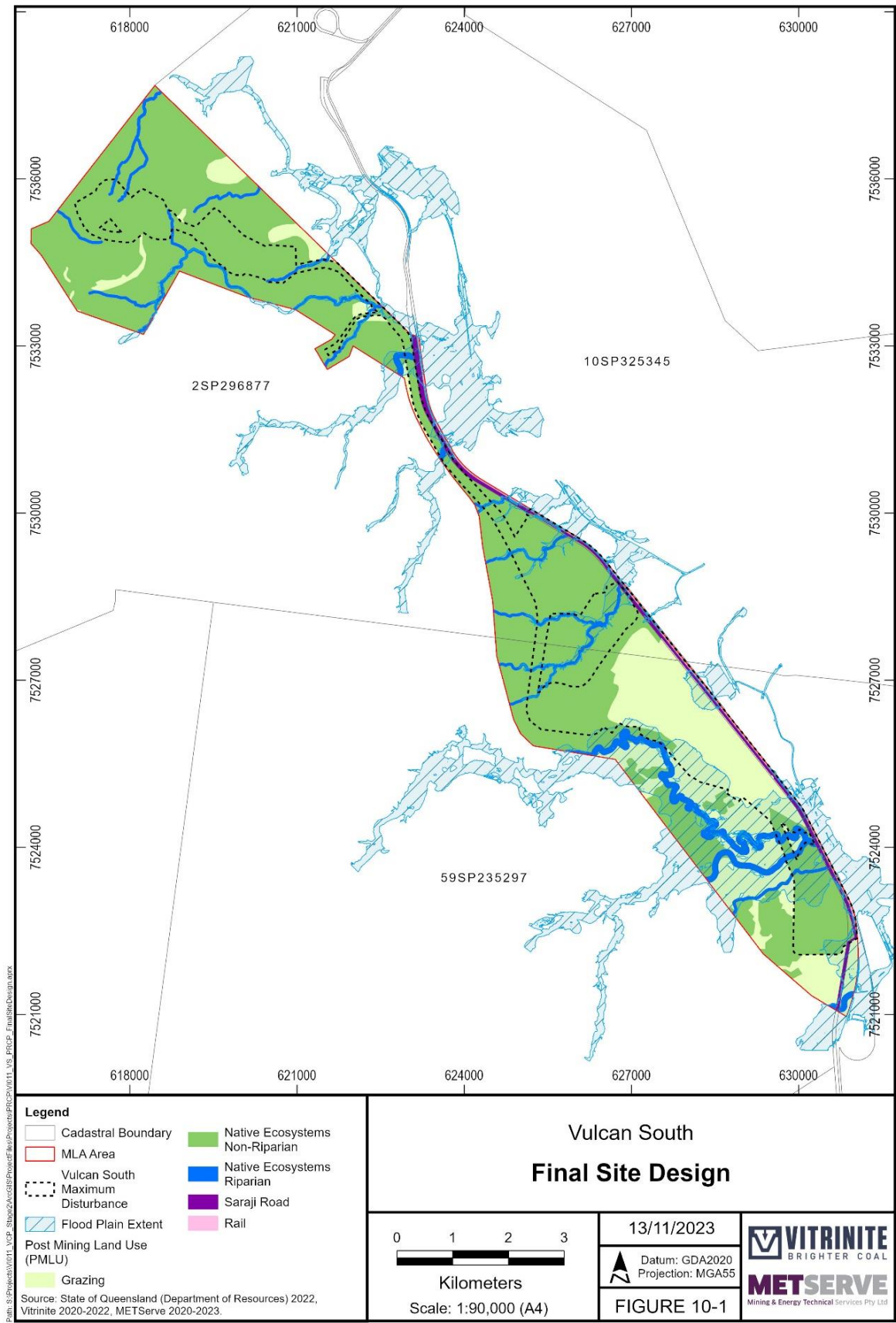


Figure 2 – Rehabilitation areas – northern section

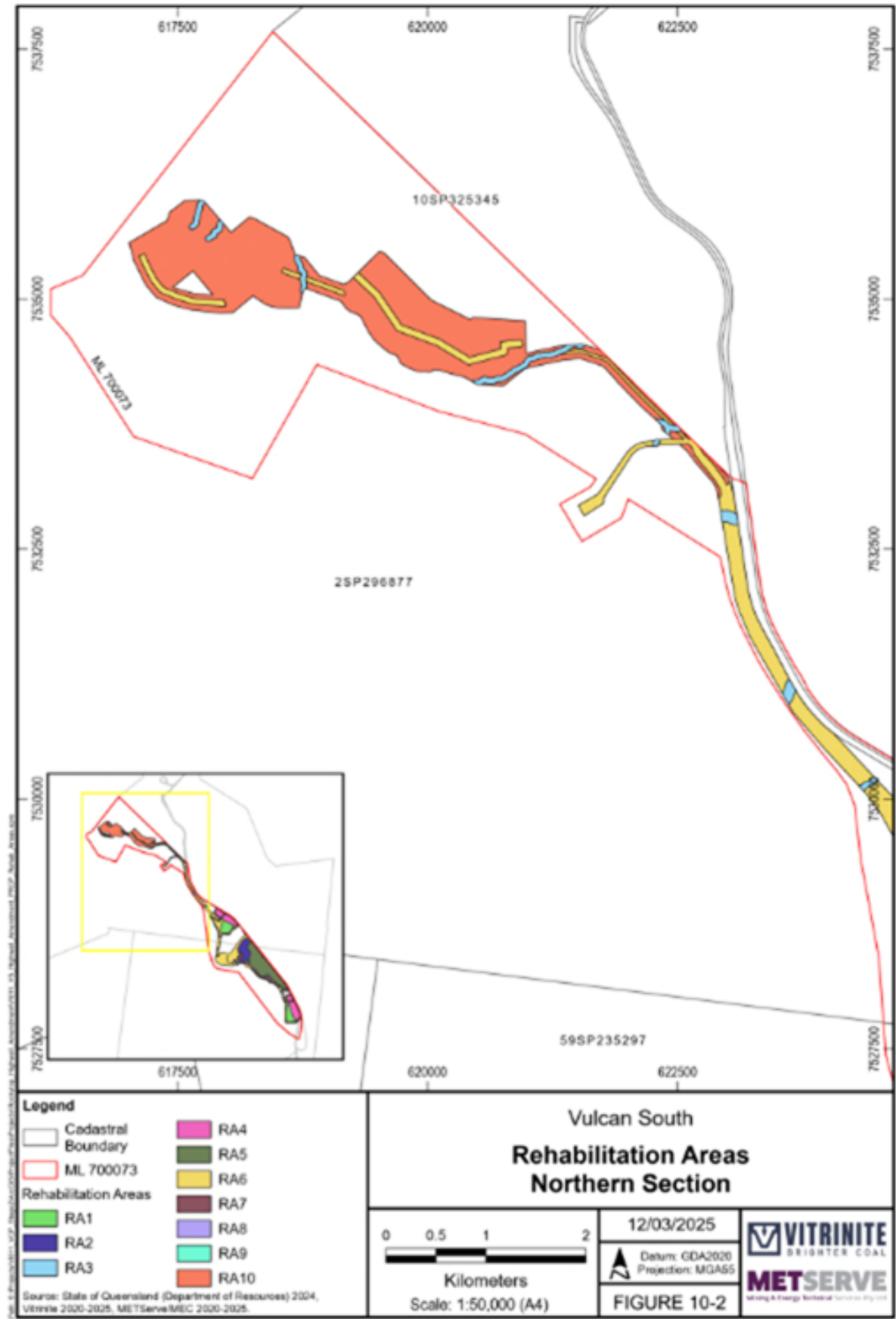


Figure 3 – Rehabilitation areas – southern section

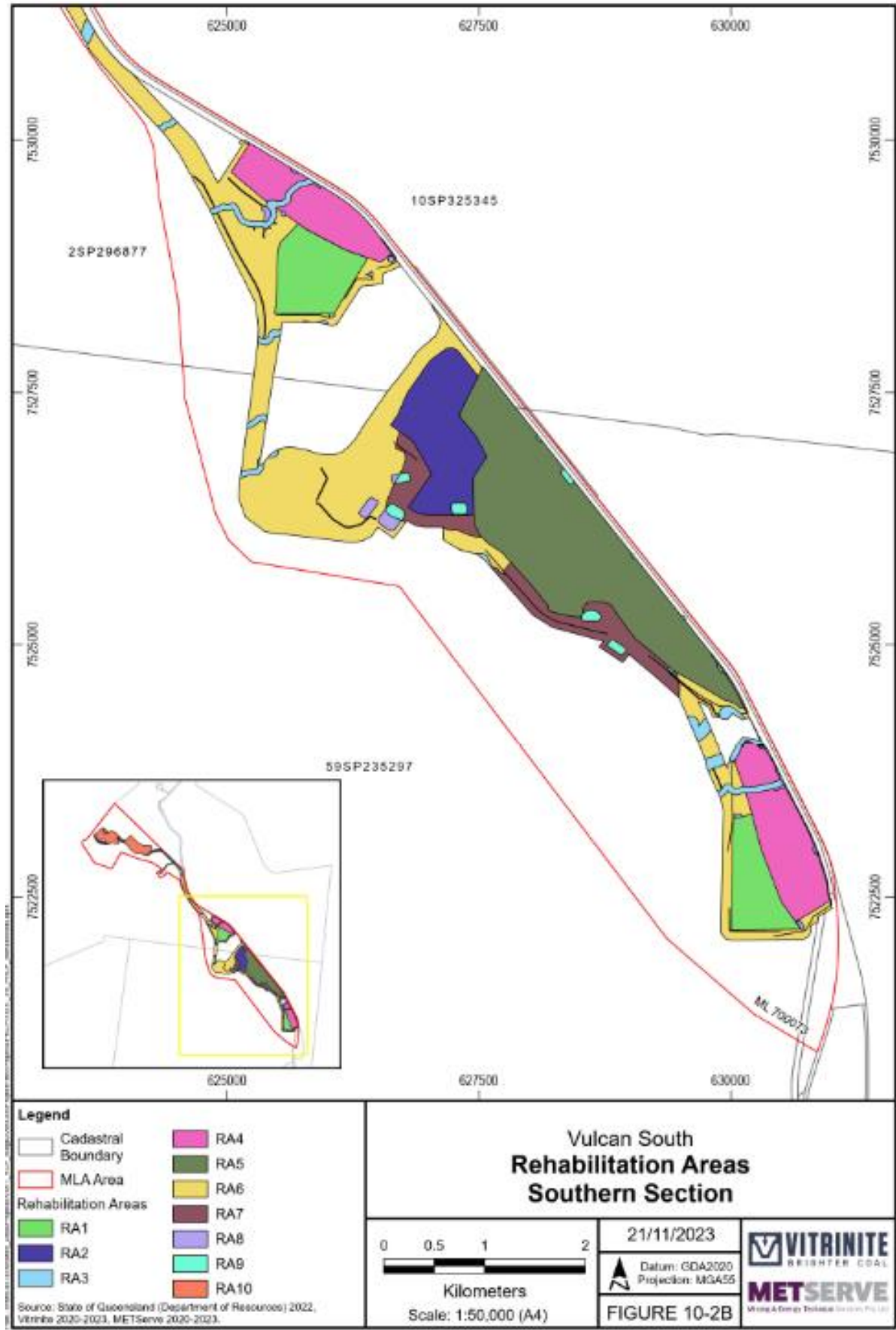
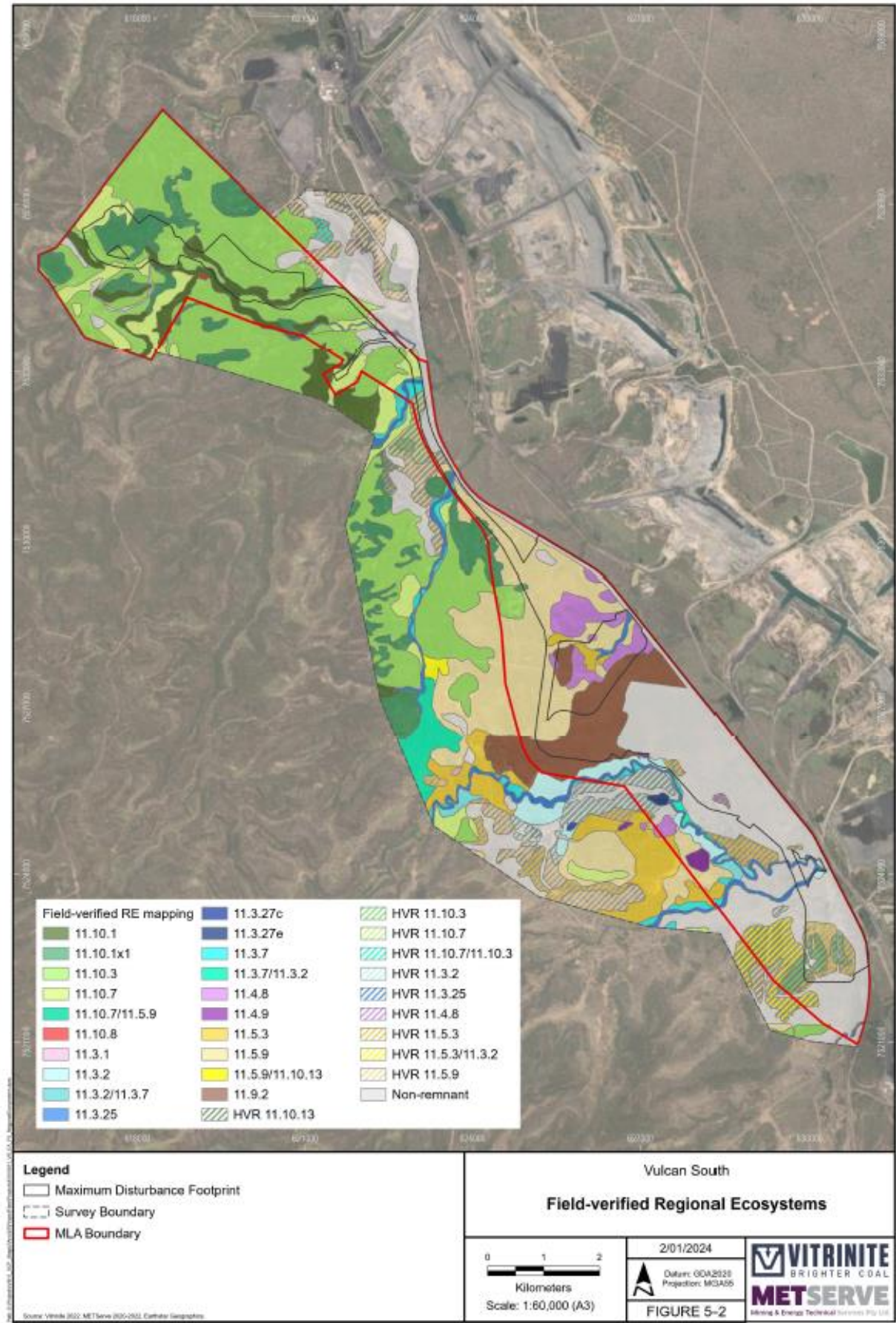


Figure 4 – Spatial extent of regional ecosystems to be established post-mining



Section C – Post mining land uses

(RA1) Rehabilitation area 1

Post-mining land uses (PMLU)										
Rehabilitation area				RA1						
Relevant activities				North and South Ex-Pit Waste Rock Dump						
Total rehabilitation area size (ha)				100.6 ha						
Commencement of first milestone: RM3				1-Aug-26						
PMLU				Native Ecosystem (RE11.4.8, 11.5.3 and 11.10.3)						
Date area is available	31/07/26	10/12/27	31/07/30	10/12/31	10/12/32	10/12/38				
Cumulative area available (ha)	56	56	100.6	100.6	100.6	100.6				
Milestone completed by	10/12/27	10/12/28	10/12/31	10/12/32	10/12/38	10/12/42				
Milestone Reference	Cumulative area achieved (ha)									
RM3	56	56	100.6							
RM4		56	56	100.6						
RM5		56	56	100.6	100.6					
RM7					56	100.6				
RM9					56	100.6				

(RA2) Rehabilitation area 2

Post-mining land uses (PMLU)										
Rehabilitation area				RA2						
Relevant activities				Main Ex-pit Waste Rock Dump						
Total rehabilitation area size (ha)				91.1 ha						
Commencement of first milestone: RM3				1-Aug-27						
PMLU				Low-intensity cattle grazing						
Date area is available	31/07/27	10/12/28	10/12/29							
Cumulative area available (ha)	91.1	91.1	91.1							
Milestone completed by	10/12/28	10/12/29	10/12/39							
Milestone Reference	Cumulative area achieved (ha)									
RM3	91.1									
RM4		91.1								
RM5		91.1								
RM6			91.1							
RM10			91.1							

(RA3) Rehabilitation area 3

Post-mining land uses (PMLU)										
Rehabilitation area				RA3						
Relevant activities				Reinstated Watercourses						
Total rehabilitation area size (ha)				46.1						
Commencement of first milestone: RM3				1-Aug-34						
PMLU				Native ecosystems – riparian (RE11.3.25)						
Date area is available	31/07/34	31/07/35	10/12/36	10/12/37	10/12/46					
Cumulative area available (ha)	23.1	46.1	46.1	46.1	46.1					
Milestone completed by	10/12/35	10/12/36	10/12/37	10/12/46	10/12/47					
Milestone Reference	Cumulative area achieved (ha)									
RM3	23.1	46.1								
RM4		23.1	46.1							
RM5		23.1	46.1	46.1						
RM8				23.1	46.1					
RM9				23.1	46.1					

(RA4) Rehabilitation area 4

Post-mining land uses (PMLU)										
Rehabilitation area				RA4						
Relevant activities				North and South In-pit Dumps						
Total rehabilitation area size (ha)				135.4 ha						
Commencement of first milestone: RM2				1-Aug-25						
PMLU				Native ecosystems (RE11.4.8, 11.5.3 and 11.10.3)						
Date area is available	31/07/25	31/07/26	31/07/30	31/07/31	10/12/32	10/12/33	10/12/37	10/12/41	10/12/42	
Cumulative area available (ha)	32.7	62.1	92.4	135.4	135.4	135.4	135.4	135.4	135.4	
Milestone completed by	10/12/26	10/12/27	10/12/31	10/12/32	10/12/33	10/12/37	10/12/41	10/12/42	10/12/43	
Milestone Reference	Cumulative area achieved (ha)									
RM2	32.7	62.1	92.4	135.4						
RM3	32.7	62.1	92.4	135.4						
RM4		32.7	62.1	92.4	135.4					
RM5		32.7	62.1	92.4	135.4	135.4	135.4	135.4		
RM7						32.7	62.1	92.4	135.4	
RM9						32.7	62.1	92.4	135.4	

(RA5) Rehabilitation area 5

Post-mining land uses (PMLU)											
Rehabilitation area				RA5							
Relevant activities				Main In-pit Waste Rock Dump							
Total rehabilitation area size (ha)				264.7 ha							
Commencement of first milestone: RM2				1-Aug-26							
PMLU				Low-intensity cattle grazing							
Date area is available	31/07/26	31/07/28	31/07/29	31/07/30	31/07/31	10/12/32	10/12/33	10/12/39	10/12/40	10/12/41	10/12/42
Cumulative area available (ha)	39.9	134.8	178.6	220.4	264.7	264.7	264.7	264.7	264.7	264.7	264.7
Milestone completed by	10/12/27	10/12/29	10/12/30	10/12/31	10/12/32	10/12/33	10/12/39	10/12/40	10/12/41	10/12/42	10/12/43
Milestone Reference	Cumulative area achieved (ha)										
RM2	39.9	134.8	178.6	220.4	264.7						
RM3	39.9	134.8	178.6	220.4	264.7						
RM4		39.9	134.8	178.6	220.4	264.7					
RM5		39.9	134.8	178.6	220.4	264.7	264.7	264.7	264.7	264.7	
RM6							39.9	134.8	178.6	220.4	264.7
RM10							39.9	134.8	178.6	220.4	264.7

(RA6) Rehabilitation area 6

Post-mining land uses (PMLU)										
Rehabilitation area				RA6						
Relevant activities				Previously wooded infrastructure areas (infrastructure, haul roads, offices, stockpiles, train load-out, rail loop CHPP, MIA and magazine)						
Total rehabilitation area size (ha)				412.7						
Commencement of first milestone: RM1				1-Aug-32						
PMLU				Native ecosystems (RE11.9.2, 11.5.9, 11.5.3, 11.10.1, 11.10.3, and 11.4.8)						
Date area is available	31/07/32	31/07/33	31/07/34	31/07/35	10/12/36	10/12/37	10/12/44	10/12/45	10/12/46	
Cumulative area available (ha)	99.7	199.4	299.1	412.7	412.7	412.7	412.7	412.7	412.7	
Milestone completed by	10/12/33	10/12/34	10/12/35	10/12/36	10/12/37	10/12/44	10/12/45	10/12/46	10/12/47	
Milestone Reference	Cumulative area achieved (ha)									
RM1	99.7	199.4	299.1	412.7						
RM2	99.7	199.4	299.1	412.7						
RM3	99.7	199.4	299.1	412.7						
RM4		99.7	199.4	299.1	412.7					
RM5		99.7	199.4	299.1	412.7					
RM7						99.7	199.4	299.1	412.7	
RM9						99.7	199.4	299.1	412.7	

(RA7) Rehabilitation area 7

Post-mining land uses (PMLU)										
Rehabilitation area				RA7						
Relevant activities				Previously cleared infrastructure areas (haul roads)						
Total rehabilitation area size (ha)				68.0 ha						
Commencement of first milestone: RM1				1-Aug-35						
PMLU				Low-intensity cattle grazing						
Date area is available	31/07/35	10/12/36	10/12/37							
Cumulative area available (ha)	68	68	68							
Milestone completed by	10/12/36	10/12/37	10/12/47							
Milestone Reference	Cumulative area achieved (ha)									
RM1	68									
RM2	68									
RM3	68									
RM4		68								
RM5		68								
RM6			68							
RM10			68							

(RA8) Rehabilitation area 8

Post-mining land uses (PMLU)										
Rehabilitation area				RA8						
Relevant activities				Water management infrastructure in previously wooded areas						
Total rehabilitation area size (ha)				14.1 ha						
Commencement of first milestone: RM1				1-Aug-32						
PMLU				Native ecosystems - non-riparian (RE11.9.2, 11.5.9, 11.5.3, 11.10.1, 11.10.3 and 11.4.8)						
Date area is available	31/07/32	10/12/33	10/12/34							
Cumulative area available (ha)	14.1	14.1	14.1							
Milestone completed by	10/12/33	10/12/34	10/12/44							
Milestone Reference	Cumulative area achieved (ha)									
RM1	14.1									
RM2	14.1									
RM3	14.1									
RM4		14.1								
RM5		14.1								
RM7			14.1							
RM9			14.1							

(RA9) Rehabilitation area 9

Post-mining land uses (PMLU)										
Rehabilitation area				RA9						
Relevant activities				Water management infrastructure in previously cleared areas						
Total rehabilitation area size (ha)				10.1 ha						
Commencement of first milestone: RM1				1-Aug-32						
PMLU				Low-intensity cattle grazing						
Date area is available	31/07/32	10/12/32	10/12/33							
Cumulative area available (ha)	10.1	10.1	10.1							
Milestone completed by	10/12/32	10/12/33	10/12/43							
Milestone Reference	Cumulative area achieved (ha)									
RM1	10.1									
RM2	10.1									
RM3	10.1									
RM4		10.1								
RM5		10.1								
RM6			10.1							
RM10			10.1							

(RA10) Rehabilitation area 10

Post-mining land uses (PMLU)										
Rehabilitation area				RA10						
Relevant activities				Highwall Mining Area (bench, dams, ex-pit WRD)						
Total rehabilitation area size (ha)				252.1 ha						
Commencement of first milestone: RM1				1-Aug-25						
PMLU				Native ecosystems - non-riparian (RE11.10.1 and 11.10.3)						
Date area is available	31/07/25	10/12/26	10/12/27							
Cumulative area available (ha)	252.1 (65.6)*	252.1 (65.6)*	252.1 (65.6)*							
Milestone completed by	10/12/26	10/12/27	10/12/37							
Milestone Reference	Cumulative area achieved (ha)									
RM1	252.1									
RM2	252.1									
RM3	252.1									
RM4		252.1								
RM5		252.1								
RM7			252.1							
RM9			252.1							

*252.1ha is the disturbance area of the entire highwall trial area (including all underground panels). 65.6ha is the surface disturbance area associated with the highwall trial area.

Rehabilitation area milestones

Milestone reference	Rehabilitation milestone	Milestone criteria
RM1	Infrastructure decommissioning and removal (RA6, RA7, RA8, RA9 and RA10)	With the exception of any infrastructure to remain as part of the post-mining land use (PMLU) or where infrastructure is agreed to be retained by the landholder as evidenced by a signed landholder agreement, the following are complete: RM1.1 All services disconnected, terminated and removed; RM1.2 All hardstand, concrete areas and road materials (bitumen, gravel) removed; RM1.3 All pipelines (above- and below- ground) drained and removed; RM1.4 All fencing that is not part of the post mining land use (PMLU) removed; RM1.5 All buildings demolished and removed; RM1.6 All machinery and equipment removed; RM1.7 All surface water drainage infrastructure that is not required in the PMLU is removed; RM1.8 All rubbish removed; RM1.9 All waste is to be transported, disposed of, and handled in accordance with relevant waste legislature; and RM1.10 All drifts, shafts, tunnels, boreholes, and other openings to be sealed, and are geotechnically stable and certified by an appropriately qualified person (AQP).
RM2	Remediation of contaminated land (RA4, RA5, RA6, RA7, RA8, RA9 and RA10)	RM2.1 Detailed site investigation report, as required under the <i>Environmental Protection Act 1994</i> (EPA 1994), completed; RM2.2 All contamination is remediated or removed from site; RM2.3 Any contamination removed from site has been removed in accordance with relevant regulations; and RM2.4 A contaminated land investigation document has been prepared by an approved auditor, containing a site suitability statement that states that land is not contaminated and is suitable to achieve the PMLU.

RM3	Landform development and reshaping/reprofiling (RA1, RA2, RA3, RA4, RA5, RA6, RA7, RA8, RA9 and RA10)	RM3.1 All earthworks except topsoil handling and placement are complete; RM3.2 Subsoil of a suitable quality, as signed-off by an AQP, has been applied, spread and compacted over RA2 (in-pit dumps) to the specified depth (minimum of 0.3 m) and design specifications; RM3.3 All erosion and sediment control systems have been installed as per the construction design and are functioning properly as verified by an AQP; RM3.4 The final landform surveyed is to be constructed as per the approved design plan; RM3.5 Batters do not exceed a maximum slope of 15% and are stable as demonstrated by erosion modelling; RM3.6 All areas of substantial surface cracking (vertisol soil types) or subsidence are remediated and no associated effects of erosion or changed surface water flow paths are evident; RM3.7 Areas of surface ponding are remediated by re-profiling and ripping to be free draining; RM3.8 All rehabilitation and associated works are to have 'as-constructed' plans prepared; RM3.9 All pits are backfilled and are certified as geotechnically stable by an AQP; RM3.10 Post-closure drainage channels are reinstated with similar geometry and vegetation characteristics to pre-mining drainage channels. This includes: a) Pre-mining channel longitudinal slope and geometry to be reinstated; and b) Channel and floodplain to function as a natural drainage line including similar geomorphic and vegetation characteristics to pre-mining conditions; RM3.11 Permanent drainage channels to be designed in accordance with the Guideline: Works that interfere with water in a watercourse for a resource activity— watercourse diversions authorised under the <i>Water Act 2000</i>; and RM3.12 All drainage channels and associated works are to have 'as-constructed' plans prepared.
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RM4	Surface preparation (RA1, RA2, RA3, RA4, RA5, RA6, RA7, RA8, RA9 and RA10)	RM4.1 Any erosion classified as 'moderate' or 'severe' as defined in Attachment 1 - Erosion classification framework, that occurs after the achievement of RM3, has been remediated prior to topsoil application; RM4.2 All substantial surface cracks or subsidence evident after the achievement of RM3, have been remediated prior to topsoil application; RM4.3 Areas of ponding that persist after the achievement of RM3 have been remediated and are free draining prior to topsoil application; RM4.4 Soil health and suitability is assessed and documented by an AQP to confirm topsoil is suitable for the PMLU and target vegetation establishment; RM4.5 Prior to topsoil application, an assessment of the need for soil amelioration has been undertaken and soil ameliorants such as fertiliser, gypsum and/or organic matter have been applied at rates determined by an AQP; RM4.6 A minimum of 0.25 m of topsoil suitable for the PMLU has been placed over all areas (except for RA10). RM4.7 Topsoil (equivalent to a depth of 0.15 m) has been mixed with crushed rock to achieve a final depth of 0.25m and applied to RA10 as per final design specifications; RM4.8 Organic mulch is applied at a rate of at least 5t/ha of hay or organic material on all slopes; RM4.9 Topsoil to meet the following suitability targets: a) pH in the range of 5.5 - 8.5 (average); b) Electrical Conductivity (EC) ≤ 1.5 dS/m (1,500 μS/cm); and c) Exchangeable sodium percentage (ESP) <6%.
RM5	Revegetation (RA1, RA2, RA3, RA4, RA5, RA6, RA7, RA8, RA9, RA10)	RM5.1 Seeding is completed at an average rate of: a) Grazing PMLU - 0.25 kg/ha for trees and shrubs, 13-15 kg/ha for grasses and 13-15 kg/ha for sterile cover crops; b) Native ecosystem PMLU - 2-3 kg/ha for trees and shrubs, 9-11 kg/ha for grasses and 8-10 kg/ha for sterile cover crops; and c) Native ecosystem – riparian PMLU – 2-3 kg/ha for trees and shrubs, 13-15 kg/ha for grasses and 13-15 kg/ha for sterile cover crops; RM5.2 With the exception of a non-permanent cover crop species, the seed mix to satisfy RM5.1 contains only those species listed in Attachment 2 – Seed Mix Species List for the relevant PMLU and reflect the

		regional ecosystem distribution spatially shown in Figure 4 - Spatial extent of regional ecosystems to be established post-mining; RM5.3 Vegetation groundcover >40%; RM5.4 Any species not establishing after seeding (as identified 12 months after seeding) have been planted as tubestock in RA2, RA3 and RA4 at a density suitable to establish the tree cover and shrub cover of the relevant PMLU; and RM5.5 Supplementary seeding and tubestock planting completed within one year of sites failing to achieve vegetation establishment on initial attempt.
RM6	Land is suitable for the commencement of grazing (RA7 and RA9)	RM6.1 Perennial pasture cover >50%; RM6.2 Rehabilitated areas are to have less than 0.2% cover of <i>Parthenium hysterophorus</i> AND rehabilitated areas are to have less than 0.1% cover of <i>Harrisia martinii</i> AND any invasive plants listed under the <i>Biosecurity Act 2014</i> are not to exceed densities of 1 individual per hectare, as confirmed by an AQP from annual monitoring; RM6.3 All corrective actions recommended by an AQP in response to erosion or deficiencies in vegetation cover criteria have been implemented; RM6.4 Rehabilitated areas are to have a land suitability class for cattle grazing of 3 or lower; RM6.5 No active rill or gully erosion deeper than 30 cm present as stated in Attachment 1 - Erosion classification framework; RM6.6 Trees of the target species, as identified in Attachment 2 – Seed Mix Species List are, on average, at least 4 m tall; RM6.7 Stock water sources have been installed and meet the approved water criteria for stock use (EC <7800 µS/cm); RM6.8 Stock fencing installation is complete; and RM6.9 Rehabilitation is non-polluting of surface water and achieves surface water runoff water quality criteria of: a) pH: 6.5-8.5; b) TSS <110 mg/L; and c) EC: <310 µS/cm.

RM7	Establishment of target vegetation in non-riparian areas. (RA1, RA4, RA6, RA8 and RA10)	RM7.1 Rehabilitated areas are to have less than 0.2% cover of <i>Parthenium hysterophorus</i> AND rehabilitated areas are to have less than 0.1% cover of <i>Harrisia martinii</i> AND any invasive plants listed under the <i>Biosecurity Act 2014</i> are not to exceed densities of 1 individual per hectare, as confirmed by an AQP from annual monitoring; RM7.2 Vegetation groundcover >50%; RM7.3 A BioCondition assessment is undertaken by an AQP using the methodology outlined in the latest version of the Queensland Herbarium's 'BioCondition Assessment Manual'; RM7.4 A rehabilitation performance assessment completed under RM7.3 achieves a score of at least 40/80 of the reference site based on the benchmark criteria in Attachment 3 – BioCondition Benchmark Criteria for the relevant ecosystem PMLU; RM7.5 Rehabilitation is non-polluting of surface water and achieves water quality criteria of: a) pH: 6.5-8.5; b) TSS 110 mg/L; and c) EC: <310 µS/cm; RM7.6 Soil testing indicates the following parameters are met: a) Rootzone EC <1.5 dS/m (1,500 µS/cm); b) Soil pH <8.5 and >5.5 (average) as measured at any part of the root zone; c) Exchangeable Sodium Percentage (ESP%) <6% (at 0-10cm depth).
RM8	Establishment of target vegetation in riparian areas (RA3)	RM8.1 Rehabilitated areas are to have less than 0.2% cover of <i>Parthenium hysterophorus</i> AND rehabilitated areas are to have less than 0.1% cover of <i>Harrisia martinii</i> AND any invasive plants listed under the <i>Biosecurity Act 2014</i> are to be <1 individual per hectare, as confirmed by an AQP from annual monitoring; RM8.2 Vegetation groundcover > 50%; RM8.3 <i>Eucalyptus camaldulensis</i> is to constitute 33% of the total basal area of woody vegetation; RM8.4 A BioCondition assessment is undertaken by an AQP using the methodology outlined in the latest version of the Queensland's Herbarium 'BioCondition Assessment Manual';

		RM8.5 A rehabilitation performance assessment completed under RM8.4 must achieve a score of 40/80 of the reference site based on the benchmark criteria in Attachment 3 – BioCondition Benchmark Criteria for the native ecosystem - riparian PMLU (RE11.3.25); RM8.6 Rehabilitation is non-polluting of surface water and achieves water quality criteria of: a) pH: 6.5-8.5; b) TSS 110 mg/L; and c) EC: <310 µS/cm; RM8.7 Soil testing indicates the following parameters are met: a) Rootzone EC <1.5 dS/m (1,500 µS/cm); b) Soil pH <8.5 and >5.5 (average) as measured at any part of the root zone; c) Exchangeable Sodium Percentage (ESP%) <6% (at 0-10cm depth).
RM9	Achievement of native vegetation land use with a stable condition (RA1, RA3, RA4, RA6, RA8 and RA10)	RM9.1 All corrective actions recommended by an AQP in response to erosion or deficient vegetation cover have been implemented; RM9.2 No evidence of erosion classified as 'moderate' or 'severe' as defined by Attachment 1 - Erosion classification framework; RM9.3 An AQP has certified that the final landform is geotechnically stable; RM9.4 Native ecosystems are to be substantially established spatially as per Figure 4 - Spatial extent of regional ecosystems to be established post-mining for the relevant PMLU; RM9.5 A BioCondition assessment has been undertaken by an AQP using the methodology outlined in the latest version of the Queensland Herbarium's 'BioCondition Assessment Manual'; RM9.6 A rehabilitation performance assessment completed under RM9.5 achieves a score of 60/80 based on the benchmark criteria in Attachment 3 – BioCondition Benchmark Criteria for the relevant PMLU; RM9.7 Groundcover is to remain above 80% on all slopes with a gradient higher than 10%, and 50% on slopes with a gradient lower than 10%; RM9.8 Erosion monitoring has been completed and the average erosion rate is <5 t/ha/year; RM9.9 No active rill or gully erosion deeper than 30cm present;

		RM9.10 Rehabilitated areas have less than 0.2% cover of <i>Parthenium hysterophorus</i> AND rehabilitated areas less than 0.1% cover of <i>Harrisia martinii</i> AND any invasive plants listed under the <i>Biosecurity Act 2014</i> are not to exceed 1 individual per hectare, as confirmed by an AQP from annual monitoring; RM9.11 At least 60% of established target species show natural recruitment; RM9.12 Free draining landform and no cracks greater than 0.15 m deep; RM9.13 The extent and frequency of surface cracking and ponding of the mined land is within 10% of that measured in adjacent unmined land; RM9.14 Surface water quality results monitored monthly during flow at, but not limited to, downstream locations specified in Attachment 4 - Surface Water Monitoring Locations, must not exceed the parameters and limits defined in Attachment 5 - Surface Water Quality Limits for a minimum of 5 consecutive years; RM9.15 Soil testing indicates the following parameters are met: a) Rootzone EC <1.5 dS/m (1,500 µS/cm); b) Soil pH <8.5 and >5.5 (average) as measured at any part of the root zone; c) Exchangeable Sodium Percentage (ESP%) <6% (at 0-10cm depth).
RM10	Achievement of cattle grazing land use with a stable condition (RA2, RA5, RA7 and RA9)	RM10.1 All corrective actions recommended by an AQP in response to erosion or deficient vegetation cover have been implemented; RM10.2 No evidence of erosion classified as 'moderate' or 'severe' as defined by Attachment 1 - Erosion classification framework; RM10.3 An AQP has certified that the final landform is geotechnically stable; RM10.4 The land suitability class of rehabilitated land is to be 3 or lower for cattle grazing; RM10.5 >6 species of perennial pasture species present and perennial grass cover >30%; RM10.6 Groundcover is to remain above 80% on all slopes with a gradient higher than 10%, and 70% on slopes with a gradient lower than 10%; RM10.7 Erosion monitoring has been completed and the average erosion rate is <5 t/ha/year; RM10.8 No active rill or gully erosion deeper than 30 cm present;

		RM10.9 Rehabilitated areas have less than 0.2% cover of <i>Parthenium hysterophorus</i> AND rehabilitated areas are to have less than 0.1% cover of <i>Harrisia martinii</i> AND any invasive plants listed under the <i>Biosecurity Act 2014</i> do not exceed 1 individual per hectare, as confirmed by an AQP from annual monitoring; RM10.10 Surface water quality results monitored monthly during flow at, but not limited to, downstream locations specified in Attachment 4 - Surface Water Monitoring Locations, must not exceed the parameters and limits defined in Attachment 5 - Surface Water Quality Limits for a minimum of 5 consecutive years; RM10.11 Soil testing indicates the following parameters are met: a) Rootzone EC <1.5 dS/m (1,500 µS/cm); b) Soil pH <8.5 and >5.5 (average) as measured at any part of the root zone; c) Exchangeable Sodium Percentage (ESP%) <6% (at 0-10cm depth).
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Attachments

Attachment 1 - Erosion classification framework

Erosion classification	Minor	Moderate	Severe
Sheet erosion	Shallow soil deposits downslope.	Partial exposure of roots; moderate soil deposits downslope.	Loss of surface horizon; subsoil exposure; root exposure; substantial soil deposits downslope.
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

Source: NCST (2009) *Australian Soil and Land Survey Field Handbook, 3rd edition*. The National Committee on Soil and Terrain. CSIRO Publishing, Collingwood, Australia.

Attachment 2 – Seed Mix Species List

This attachment articulates the list of species which are permitted to be included in the seed mix for Rehabilitation Areas (RAs). For RAs, the list of species is further specific to the PMLU to be achieved.

For RAs, the seed mix should be selected and apportioned with appreciation for the BioCondition benchmarks at later milestones. Hence, the proportion of each species (kg/ha) within the seed mix should reflect the relative cover and frequency of the relevant Regional Ecosystems (REs) Technical Description (<https://publications.qld.gov.au/dataset/re-technical-descriptions>).

Despite introduced species occurring in the RE Technical Descriptions (due to data being collected at disturbed sites or poor condition sites), introduced species must not be included in the seed mix. Finally, the seed mix must not include Indian Couch *Bothriochloa pertusa* or *Seca Stylosanthes* spp, both of which have significant impacts on surrounding native remnant vegetation.

Table 1. Seed Mix Species List

11.4.8 - Eucalyptus cambageana woodland to open forest with Acacia harpophylla or A. argyrodendron on Cainozoic clay plains <u>Trees</u> <i>Dominant: Acacia harpophylla, Eucalyptus cambageana</i> <i>Frequent: Eucalyptus cambageana, Acacia harpophylla, Eucalyptus populnea, Eucalyptus thozetiana, Terminalia oblongata subsp. Oblongata, Eremophila mitchellii, Lysiphyllum carronii</i> <u>Shrubs</u> <i>Dominant: Geijera parviflora, Acacia harpophylla, Eremophila mitchellii, Alectryon diversifolius, Carissa ovata</i> <i>Frequent: Eremophila mitchellii, Acacia harpophylla, Alectryon diversifolius, Carissa ovata, Atalaya hemiglauca, Flindersia dissosperma, Geijera parviflora, Apophyllum anomalum, Alphitonia excelsa, Capparis lasiantha, Clematicissus opaca, Enchylaena tomentosa, Eucalyptus cambageana, Terminalia oblongata</i> <u>Ground</u> <i>Dominant: Chloris ventricose, Enteropogon ramosus, Sporobolus scabridus, Paspalidium caespitosum, Trianthema triquetra</i> <i>Frequent Grasses: Sporobolus caroli, Enteropogon acicularis, Enteropogon ramosus, Cyperus gracilis, Eragrostis lacunaria, Sporobolus scabridus, Aristida personata, Chloris ventricose, Dactyloctenium radulans, Enneapogon lindleyanus, Paspalidium caespitosum, Ancistrachne uncinulata, Aristida indet., Aristida jerichoensis, Astrebla squarrosa, Cymbopogon refractus, Cyperus indet., Eriochloa pseudoacrotricha, Fimbristylis dichotoma, Heteropogon contortus, Panicum effusum, Paspalidium constrictum, Paspalidium distans</i>
11.5.3 - Eucalyptus populnea +/- E. melanophloia +/- Corymbia clarksoniana woodland on Cainozoic sand plains and/or remnant surfaces <u>Trees</u> <i>Dominant: Eucalyptus populnea, Eucalyptus melanophloia</i> <i>Frequent: Eucalyptus populnea Eucalyptus melanophloia Eucalyptus brownii, Corymbia clarksoniana, Eucalyptus crebra, Ventilago viminalis, Eremophila mitchellii</i> <u>Shrubs</u> <i>Dominant: Eremophila mitchellii Erythroxylum australe, Grewia latifolia</i> <i>Frequent: Eremophila mitchellii, Erythroxylum australe, Grewia latifolia, Acacia excelsa, Atalaya hemiglauca, Carissa ovata, Eucalyptus populnea, Acacia sericophylla, Archidendropsis basaltica, Capparis lasiantha,</i>

Cassia brewsteri, *Denhamia cunninghamii*, *Eucalyptus brownii*, *Eucalyptus melanophloia*, *Flindersia dissosperma*, *Lysiphyllum carronii*, *Psydrax oleifolia*, *Carissa lanceolata*

Ground

Dominant: Themeda triandra, Aristida calycina, Chrysopogon fallax, Fimbristylis dichotoma

Frequent Grasses: Chrysopogon fallax, Fimbristylis dichotoma, Heteropogon contortus, Aristida calycina, 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

11.10.1 - Corymbia citriodora woodland on coarse-grained sedimentary rocks

Trees

Dominant: Corymbia citriodora subsp. Citriodora, Corymbia citriodora subsp. Variegata, Eucalyptus crebra

Frequent: Corymbia citriodora subsp. Variegata, Eucalyptus crebra, Corymbia citriodora subsp. Citriodora, Corymbia citriodora, Angophora leiocarpa, Eucalyptus fibrosa subsp. Nubilis, Eucalyptus longirostrata, Eucalyptus melanophloia

Shrubs

Dominant: Acacia leiocalyx subsp. Leiocalyx, Alphitonia excelsa

Frequent: Acacia leiocalyx subsp. leiocalyx, Alphitonia excelsa, Corymbia citriodora subsp. Variegata, Eucalyptus crebra, Petalostigma pubescens, Acacia longispicata

Ground

Dominant: Cleistochloa subjuncea, Aristida indet., Eremochloa bimaculata, Arundinella nepalensis, Themeda triandra

Frequent Grasses: Panicum effusum, Cymbopogon refractus, Arundinella nepalensis, Eremochloa bimaculata, Themeda triandra, Entolasia stricta, Fimbristylis dichotoma, Aristida caput-medusae, Scleria sphacelata, Aristida indet., Eragrostis elongata, Aristida ramosa, Cleistochloa subjuncea, Aristida queenslandica, Cyperus gracilis, Heteropogon contortus, Digitaria diffusa, Digitaria indet., Scleria mackaviensis, Chrysopogon fallax, Paspalidium criniforme, Digitaria breviglumis, Eulalia aurea, Setaria surgens, Sporobolus elongatus, Aristida calycina var. calycina, Aristida queenslandica var. queenslandica, Bothriochloa decipiens var. decipiens

11.10.3 - Acacia catenulata or A. shirleyi open forest on coarse-grained sedimentary rocks. Crests and scarps

Trees

Dominant: Eucalyptus crebra, Acacia shirleyi, Alphitonia excelsa

Frequent: Eucalyptus crebra, Corymbia citriodora, Acacia shirleyi

Shrubs

Dominant: Acacia shirleyi, Alphitonia excelsa

Frequent: Alphitonia excelsa, Acacia shirleyi, Alstonia constricta, Erythroxylum sp. (Splityard Creek L. Pedley 5360), Erythroxylum australe

Ground

Dominant: *Cleistochloa subjuncea* *Scleria sphacelata*, *Entolasia stricta*, *Eragrostis lacunaria*, *Thyridolepis xerophila*

Frequent: *Aristida caput-medusae*, *Panicum effusum*, *Aristida queenslandica* var. *dissimilis*, *Entolasia stricta*, *Eragrostis lacunaria*, *Cleistochloa subjuncea* *Scleria sphacelata*, *Thyridolepis xerophila*, *Digitaria parviflora*, *Eragrostis sororia*, *Setaria dielsii*, *Aristida gracilipes*, *Aristida jerichoensis* var. *subspinulifera*, *Cymbopogon refractus*, *Digitaria ramularis*, *Paspalidium distans*, *Paspalidium gracile*, *Aristida jerichoensis* var. *jerichoensis*, *Calyptochloa gracillima* subsp. *gracillima*, *Cyperus gracilis*, *Digitaria breviglumis*, *Schoenus kennyi*

11.5.9 - Eucalyptus crebra and other Eucalyptus spp. and Corymbia spp. woodland on Cainozoic sand plains and/or remnant surfaces

Trees

Dominant: *Eucalyptus crebra*, *Corymbia clarksoniana*, *Acacia leptostachya*, *Bursaria incana*, *Petalostigma banksii*

Frequent: *Eucalyptus crebra*, *Corymbia clarksoniana*, *Casuarina cristata*¹, *Petalostigma pubescens*, *Acacia cowleana*, *Acacia leptostachya*, *Alphitonia pomaderroides*, *Antidesma parvifolium*, *Bursaria incana*, *Gardenia indet.*, *Geijera salicifolia*, *Grevillea glauca*, *Larsenaikia ochreatea*, *Petalostigma banksii*, *Siphonodon indet.*

Shrubs

Dominant: *Acacia conferta*, *Acacia disparrima* subsp. *Calidestris*, *Acacia cowleana*, *Gardenia indet.*, *Petalostigma pubescens*, *Grewia retusifolia*, *Petalostigma banksia*, *Eucalyptus crebra*, *Persoonia falcata*

Frequent: *Erythroxylum austral*, *Acacia conferta*, *Acacia cowleana*, *Acacia disparrima* subsp. *calidestris*, *Acacia holosericea*, *Alphitonia pomaderroides*, *Breynia oblongifolia*, *Coelospermum reticulatum*, *Gardenia indet.*, *Grevillea parallela*, *Petalostigma pubescens*, *Eucalyptus crebra*, *Grewia retusifolia*, *Acacia leptostachya*, *Corymbia clarksoniana*, *Indigofera australis*, *Persoonia falcata*, *Petalostigma banksia*

Ground

Dominant: *Eremochloa bimaculate*, *Brunoniella acaulis*, *Desmodium brachypodum*, *Aristida holathera* var. *holathera*

Frequent Grasses: *Alloteropsis semialata*, *Aristida calycina* var. *calycina*, *Chrysopogon fallax*, *Eragrostis spartinoideis*, *Eremochloa bimaculata*, *Panicum effusum*, *Ancistrachne uncinulata*, *Aristida holathera* var. *holathera*, *Calyptochloa cylindrosperma*, *Ectrosia indet.*, *Heteropogon contortus*, *Mnesithea Formosa*, *Paspalidium indet.*, *Scleria brownii*, *Themeda triandra*

11.9.2 - Eucalyptus melanophloia +/- E. orgadophila woodland on fine-grained sedimentary rocks

Trees

Dominant: *Eucalyptus orgadophila*, *Eucalyptus melanophloia*

Frequent: *Eucalyptus melanophloia*, *Eucalyptus orgadophila*, *Acacia excelsa*, *Angophora subvelutina*, *Brachychiton populneus*, *Brachychiton populneus* subsp. *Populneus*, *Corymbia citriodora*, *Corymbia erythrophloia*, *Corymbia trachyphloia*, *Eremophila mitchellii*, *Eucalyptus populnea*, *Lysiphyllum carronii*

Shrubs

Dominant: *Carissa ovata*, *Archidendropsis basaltica*, *Alectryon diversifolius*, *Ehretia membranifolia*

Frequent: *Alectryon diversifolius*, *Archidendropsis basaltica*, *Carissa ovata*, *Ehretia membranifolia*, *Atalaya hemiglauc*, *Breynia oblongifolia*, *Denhamia cunninghamii*, *Dodonaea filifolia*, *Eremophila mitchellii*,

¹ *Casuarina cristata* is not listed in the technical description for 11.5.9; however, it has been included as it occurs locally and is an important species for the Glossy Black-cockatoo.

Erythroxylum austral, *Eucalyptus melanophloia*, *Geijera parviflora*, *Hovea longipes*, *Petalostigma pubescens*, *Senna indet.*, *Xanthorrhoea glauca* subsp. *glauca*

Ground

Dominant: Aristida calycina var. *calycina*, *Enneapogon lindleyanus*, *Bothriochloa bladhii*, *Aristida indet.*

Frequent Grasses: Enneapogon lindleyanus, *Heteropogon contortus*, *Cymbopogon refractus*, *Themeda triandra*, *Ancistrachne uncinulata*, *Aristida calycina* var. *calycina*, *Aristida indet.*, *Bothriochloa bladhii*, *Bothriochloa decipiens* var. *decipiens*, *Chloris ventricose*, *Cyperus indet.*, *Enneapogon virens*, *Eragrostis lacunaria*, *Eulalia aurea*, *Panicum effusum*, *Paspalidium indet.*, *Abildgaardia ovata*, *Aristida acuta*, *Aristida caput-medusae*, *Aristida holathera* var. *holathera*, *Aristida latifolia*, *Aristida leptopoda*, *Aristida personata*, *Bothriochloa bladhii* subsp. *bladhii*, *Bothriochloa ewartiana*, *Bulbostylis barbata*, *Chloris divaricate*, *Cyperus bifax*, *Cyperus gilesii*, *Cyperus gracilis*, *Dactyloctenium radulans*, *Dichanthium sericeum* subsp. *sericeum*, *Digitaria indet.*, *Enneapogon indet.*, *Enneapogon polyphyllus*, *Enteropogon acicularis*, *Eragrostis indet.*, *Eragrostis sororia*, *Eriochloa crebra*, *Eriochloa pseudoacrotricha*, *Heteropogon indet.*, *Imperata cylindrica*, *Microlaena stipoides*, *Panicum decompositum*, *Paspalidium criniforme*, *Paspalidium distans*, *Paspalidium globoideum*, *Paspalidium gracile*, *Sarga leiocladum*, *Scleria brownii*, *Sporobolus caroli*, *Sporobolus creber*, *Themeda avenacea*, *Tragus australianus*, *Urochloa foliosa*, *Urochloa indet.*

11.3.25 - Eucalyptus tereticornis or E. camaldulensis woodland fringing drainage lines

Trees

Dominant: Eucalyptus camaldulensis, *Eucalyptus tereticornis*, *Corymbia tessellaris*

Frequent: Eucalyptus tereticornis, *Eucalyptus camaldulensis*, *Corymbia tessellaris*, *Angophora floribunda*, *Eucalyptus coolabah*, *Eucalyptus populnea*, *Acacia salicina*, *Acacia stenophylla*

Shrubs

Frequent: Acacia salicina, *Ficus opposita*, *Alphitonia excelsa*, *Melaleuca trichostachya*

Ground

Dominant: Arundinella nepalensis, *Heteropogon contortus*, *Themeda triandra*, *Lomandra longifolia*

Frequent grasses: Cyperus gracilis, *Heteropogon contortus*, *Dichanthium sericeum* subsp. *sericeum*, *Paspalidium distans*, *Arundinella nepalensis*, *Bothriochloa bladhii* subsp. *bladhii*, *Cyperus indet.*, *Paspalidium jubiflorum*, *Themeda triandra*, *Aristida personata*, *Eriochloa crebra*, *Chrysopogon filipes*, *Dichanthium sericeum*, *Eriochloa procera*, *Sporobolus mitchellii*, *Capillipedium spicigerum*, *Eulalia aurea*, *Imperata cylindrica*, *Leptochloa digitata*, *Panicum effusum*, *Anthosachne scabra*, *Bothriochloa bladhii*, *Cymbopogon refractus*, *Eragrostis leptostachya*, *Panicum laevinode*, *Sporobolus creber*, *Urochloa foliosa*

Low-intensity grazing

Grasses

Ancistrachne uncinata

Bothriochloa ewartiana

Chloris divaricate

Chloris ventricose

Cymbopogon refractus

Dichanthium sericeum

Themeda triandra

Japanese Millet - sterile hybrid

Silk Sorghum

Attachment 3 – BioCondition Benchmark Criteria

This attachment articulates the benchmark criteria to be achieved for each assessable attribute. The benchmark criteria for each RA is determined by the corresponding PMLU. Benchmark criteria and assessable attributes are derived from the Queensland Government's BioCondition benchmark database².

Table 1. Pre-mining Regional ecosystems references – Native ecosystem

Relevant PMLU	Native Vegetation																	
BioCondition Assessable Attributes	11.4.8			11.5.3			11.9.2			11.10.1			11.10.3			11.5.9		
	40/80	60/80	80/80	40/80	60/80	80/80	40/80	60/80	80/80	40/80	60/80	80/80	40/80	60/80	80/80	40/80	60/80	80/80
Recruitment (tree species)	1	2	3	3	4	6	1	1	2	2	3	4	1	2	3	1	2	3
Non-native plant cover (%)	max. 10	max. 5	0	max. 10	max. 5	0	max. 10	max. 5	0	max. 10	max. 5	0	max. 10	max. 5	0	max. 10	max. 5	0
Tree (native) species richness*	1	2	3	3	4	6	1	1	2	2	3	4	1	2	3	1	2	3
Shrub (native) species richness*	5	7	10	3	4	6	5	7	10	2	3	4	2	3	4	3	4	6
Grass (native) species richness*	4	7	9	3	4	6	3	5	7	4	7	9	3	5	7	4	7	9
Forb/other (native) species richness	3	5	7	5	7	10	6	9	12	8	13	17	4	7	9	5	8	11
Tree canopy cover (%)	8	13	17	8	12	16	7	11	15	12	18	24	7	11	15	12	19	25
Native perennial grass cover (%)	10	15	20	9	14	19	9	13	18	8	12	16	11	17	23	13	19	26
Litter and other vegetation cover (%)	18	28	37	10	15	20	15	22	30	25	37	50	16	24	32	15	22	30

*Species richness must be based on species that occur in the RE technical description (refer Attachment 2).

² Source: <https://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks>

Table 2. Pre-mining Regional ecosystems references – Native ecosystem riparian

Relevant PMLU	Native Vegetation – Riparian		
BioCondition Assessable Attributes	11.3.25		
	40/80	60/80	80/80
Recruitment (tree species)	2	3	4
Non-native plant cover (%)	max. 10	max. 5	0
Tree (native) species richness*	2	3	4
Shrub (native) species richness*	2	3	4
Grass (native) species richness*	4	6	8
Forb/other (native) species richness	6	10	13
Tree canopy cover (%)	17	25	34
Native perennial grass cover (%)	17	26	35
Litter and other vegetation cover (%)	10	16	21

*Species richness must be based on species that occur in the RE technical description (refer Attachment 2).

Attachment 4 - Surface Water Monitoring Locations

Station ID	Previous Station ID	Catchment Area	Latitude (GDA2020)	Longitude (GDA2020)	Description
Upstream sites					
DL2_US	N/A	Boomerang Creek	22.290841264° S	148.154357187° E	Drainage line 2 upstream of the highwall mining area
DL3_US	N/A	Boomerang Creek	22.305612596° S	148.192716185° E	Drainage line 3 upstream of the haul road
DL4_US	N/A	Boomerang Creek	22.323035473° S	148.200252458° E	Drainage line 4 at the upstream mining lease boundary
DL6_US	N/A	East Creek	22.339508200° S	148.207957289° E	Drainage line 6 at the upstream mining lease boundary
DL7_US	N/A	East Creek	22.347211456° S	148.209392813° E	Drainage line 7 at the upstream mining lease boundary
HCN_US	N/A	Hughes Creek	22.370485469° S	148.226638033° E	Hughes Creek north tributary approximately 5.5 km upstream of Saraji Road
HC_US	VSW5	Hughes Creek	22.395927439° S	148.224656137° E	Hughes Creek approximately 2.8 km upstream of Saraji Road
DL8_US	N/A	Hughes Creek	22.395784122° S	148.251629364° E	Drainage line 8 approximately 2.2 km upstream of Saraji Road
BC1_US	VSW6	Hughes Creek	22.411388907° S	148.269449617° E	Barrett Creek upstream of Saraji
Downstream sites					
DD1_US	VSW1	Boomerang Creek	22.276596290° S	148.174514955° E	Diversion bund approximately
DD1_DS	VSW2	Boomerang Creek	22.301050508° S	148.195240117° E	Drainage line 2, downstream of the confluence of existing diversion drain
DL2_DS	VSW11	Boomerang Creek	22.298264498° S	148.189625245° E	Drainage line 2 upstream of confluence of existing diversion drain

Station ID	Previous Station ID	Catchment Area	Latitude (GDA2020)	Longitude (GDA2020)	Description
DL3_DS	VSW3	Hughes Creek	22.306311857° S	148.194663612° E	Minor drainage line, upstream of confluence of Drainage Line 2
DL4_DS	VESW4	Hughes Creek	22.321553686° S	148.200307744° E	Drainage line 4 upstream of the confluence of Boomerang Creek
DL6_DS	VSW9	East Creek	22.334779125° S	148.221868903° E	Drainage line 6, at the downstream mining lease boundary
DL7_DS1	VSW7	East Creek	22.343101091° S	148.231039608° E	Drainage line 7, at the downstream mining lease boundary
HC_DS1	VSW4	Hughes Creek	22.384885209° S	148.266275740° E	Hughes Creek at the downstream mining lease boundary
DL8_DS	VSW10	Hughes Creek	22.388240114° S	148.268093290° E	Drainage line 8 at the downstream mining lease boundary

Attachment 5 - Surface Water Quality Limits

Quality characteristic (units)	Limit	Comment on limit
pH	6.5-8.5	EPP WQO
Electrical Conductivity (µS/cm)	Baseflow: <720 Medium flow: <500 High flow: <250	EPP WQO
Turbidity (NTU)	50	EPP WQO
Suspended Solids (mg/L)	55	EPP WQO
Sulphate as SO ₄ (mg/L)	25	EPP WQO
Aluminium - dissolved (µg/L)	160	Locally derived
Arsenic - dissolved (µg/L)	13	ANZG 2018
Boron - dissolved (µg/L)	940	ANZG 2018
Cadmium - dissolved (µg/L)	0.2	ANZG 2018
Cobalt - dissolved (µg/L)	1.4	ANZG 2018
Chromium - dissolved (µg/L)	1	ANZG 2018
Copper - dissolved (µg/L)	1.4	ANZG 2018
Lead - dissolved (µg/L)	3.4	ANZG 2018
Mercury – dissolved (µg/L)	0.6	EPP WQO
Molybdenum - dissolved (µg/L)	34	ANZG 2018
Nickel - dissolved (µg/L)	11	ANZG 2018
Selenium - dissolved (µg/L)	5	ANZG 2018
Uranium - dissolved (µg/L)	0.5	ANZG 2018
Vanadium - dissolved (µg/L)	6	ANZG 2018
Zinc - dissolved (µg/L)	8	ANZG 2018
Ammonia (µg/L)	900	ANZG 2018
Nitrate (µg/L)	1100	For aquatic ecosystem protection, based on ambient Qld WQ Guidelines (2006) for Total Nitrate
Total recoverable hydrocarbons (C6-C9) (µg/L)	20	For aquatic ecosystem protection, based on LOR for GCMS
Total recoverable hydrocarbons (C10-C36) (µg/L)	100	For aquatic ecosystem protection, based on LOR for GCMS
Major ions (mg/L) Calcium, chloride, potassium, magnesium, sodium, bicarbonate, carbonate	For interpretation purposes only	
Hardness (mg/L)	For interpretation purposes only	

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.
- Locally derived receiving waters trigger values have been proposed for the Project using the 80th percentile of recorded reference site data.

Attachment 6 - Groundwater Monitoring Locations

Monitoring location	Hydrogeological unit	Latitude (GDA2020)	Longitude (GDA2020)
VS01	DLL coal seam	22.33343° S	148.22007° E
VS07	Weathered Permian	22.36468° S	148.250437058° E
VS08	Weathered Permian	22.35807° S	148.24433° E
VS09	DLL coal seam	22.37401° S	148.25830° E
VS10	DLL coal seam	22.36060° S	148.24659° E
VS11	DLL coal seam	22.35029° S	148.23738° E
VS12	Back Creek Group	22.36403° S	148.21565° E
VS14	DLL coal seam	22.38496° S	148.26599° E
VS15	Back Creek Group	22.28378° S	148.15181° E
VS16	Back Creek Group	22.28744° S	148.17396° E
VS17	Back Creek Group	22.34040° S	148.21373° E
VS18	DLL coal seam	22.40220° S	148.26238° E

Attachment 7 - Groundwater Quality Limits

Parameter	Unit	Bores	Limit	Comment
pH (field)	pH unit	All bores	5.5 - 8.0	ANZG (2018)
Electrical Conductivity (field)	µS/cm	VS01	16,000	EPP WQO
		VS077	5,791	Site-specific 95th percentile
		VS08	16,000*	EPP WQO
		VS09	12,007	Site-specific 95th percentile
		VS10	4,102	Site-specific 95th percentile
		VS11	16,000*	EPP WQO
		VS12	22,872	Site-specific 95th percentile
		VS14	16,000*	EPP WQO
		VS15	16,000*	EPP WQO
		VS16	16,000*	EPP WQO
		VS17	16,000*	EPP WQO
		VS18	16,000*	EPP WQO
Sulphate	mg/L	VS01	398	EPP WQO
		VS07	707	Site-specific 95th percentile
		VS08	398*	EPP WQO
		VS09	769	Site-specific 95th percentile
		VS10	418	Site-specific 95th percentile
		VS11	398*	EPP WQO
		VS12	874	Site-specific 95th percentile
		VS14	398*	EPP WQO
		VS15	398*	EPP WQO
		VS16	398*	EPP WQO
		VS17	398*	EPP WQO
		VS18	398*	EPP WQO
Dissolved Metals and metalloids				
Aluminium	mg/L	All bores	0.055	ANZG (2018)
Arsenic	mg/L	All bores	0.013	ANZG (2018)
Barium	mg/L	All bores	0.10	Site-specific 95th percentile (grouped)
Boron	mg/L	All bores	0.66	Site-specific 95th percentile (grouped)
Cobalt	mg/L	All bores	0.004	Site-specific 95th percentile (grouped)
Copper	mg/L	All bores	0.0014	ANZG (2018)
Iron	mg/L	VS01	0.246*	EPP WQO
	mg/L	VS07	0.46	Site-specific 95th percentile
	mg/L	VS08	0.246*	Site specific 95 th percentile
	mg/L	VS09	0.38	Site-specific 95th percentile
	mg/L	VS10	0.2	Site-specific 95th percentile
	mg/L	VS11	0.246*	EPP WQO

Parameter	Unit	Bores	Limit	Comment
	mg/L	VS12	4.94 [#]	Site-specific 95th percentile
	mg/L	VS14	0.246*	EPP WQO
	mg/L	VS15	0.246*	EPP WQO
	mg/L	VS16	0.246*	EPP WQO
	mg/L	VS17	0.246*	EPP WQO
	mg/L	VS18	0.246*	EPP WQO
Lead	mg/L	All bores	0.0034	ANZG (2018)
Mercury	mg/L	All bores	0.0006	ANZG (2018)
Molybdenum	mg/L	All bores	0.034	ANZG (2018)
Selenium	mg/L	All bores	0.005	ANZG (2018)
Strontium	mg/L	VS01	TBD	Site-specific 95th percentile
		VS07	2.2	Site-specific 95th percentile
		VS08	TBD*	Site specific 95 th percentile
		VS09	5.7	Site-specific 95th percentile
		VS10	1.2	Site-specific 95th percentile
		VS11	TBD*	Site specific 95 th percentile
		VS12	8.4	Site-specific 95th percentile
		VS14	TBD*	Site-specific 95th percentile
		VS15	TBD*	Site-specific 95th percentile
		VS16	TBD*	Site-specific 95th percentile
		VS17	TBD*	Site-specific 95th percentile
		VS18	TBD*	Site-specific 95th percentile
Uranium	mg/L	VS01	0.0005*	ANZG 2018
		VS07	0.003	Site-specific 95th percentile
		VS08	0.0005*	ANZG 2018
		VS09	0.005	Site-specific 95th percentile
		VS10	0.0005*	ANZG 2018
		VS11	0.0005*	ANZG 2018
		VS12	0.0005*	ANZG 2018
		VS14	0.0005*	ANZG 2018
		VS15	0.0005*	ANZG 2018
		VS16	0.0005*	ANZG 2018
		VS17	0.0005*	ANZG 2018
		VS18	0.0005*	ANZG 2018
TRH (C6-C10)	µg/L	All bores	<20	LOR
TRH (C10-40)	µg/L	All bores	<50	LOR

Parameter	Unit	Bores	Limit	Comment
Major Ions				
Major ions (mg/L) (calcium, chloride, potassium, magnesium, sodium, bicarbonate, carbonate)	mg/L	All bores		For interpretation purposes only
Hardness	mg/L	All bores		For interpretation purposes only

Notes:

All metals and metalloids must be measured as 'dissolved' (from analysis of a field filtered sample) and total (unfiltered). Limits are based on 'dissolved' measurements.

* Site-specific limits to be provided in accordance with condition PRCP7.

Requires additional investigation to ensure it is indicative of background conditions.

EPP WQO: Groundwater quality parameters derived from EPP (water) policy 2009 *Isaac River Sub-basin Environmental Values and Water Quality Objectives Basin No. 130 (part), including all waters of the Isaac River Sub-basin (including Connors River), Zone 34-deep (80th percentile).*

Definitions:

Appropriately qualified person (AQP) 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.

END OF PRCP SCHEDULE