

PRCP schedule

Environmental Protection Act 1994

PRCP schedule P-PRCP-100886173

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-100886173_v1

PRCP schedule holder(s)

Name(s)	Registered address
Queensland Energy Resources (Aussun) Pty Limited	Level 8, 193 North Quay, Brisbane QLD 4000
Queensland Energy Resources (No.1) (Stuart) Pty Limited	Level 8, 193 North Quay, Brisbane QLD 4000
Queensland Energy Resources (No.2) (Stuart) Pty Limited	Level 8, 193 North Quay, Brisbane QLD 4000

Location details

Location(s)
ML80003; PFL8

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

12 June 2025

Date

Ben Byrd
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 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 For each rehabilitation area the holder must achieve the rehabilitation milestone criteria (milestone reference):

- (a) for the cumulative area available specified in this schedule; and
- (b) by the milestone completion date specified in this schedule.

PRCP2 Where land becomes 'available for rehabilitation' earlier than the date nominated in this schedule, the holder must:

- (a) notify the administering authority in writing within 30 days of the land becoming 'available for rehabilitation'. The written notification must include precise details of the relevant land area and the date when that land became 'available for rehabilitation'; and
- (b) within 90 days of the land becoming 'available for rehabilitation', apply to the administering authority to amend this schedule in a way that maximises the progressive rehabilitation of the land to a stable condition.

Note: reference to "earlier than the nominated date in the schedule" means a date that is greater than 1 year prior to the date nominated in the schedule.

PRCP3 Where an area achieves a rehabilitation milestone, the holder must continue to achieve the milestone criteria until a surrender is approved.

PRCP4 The holder must maintain a risk register that identifies the risks to not achieving a stable condition for post-mining land uses, and how the risks are being managed or minimised. The risk register must be reviewed annually.

PRCP5 The holder must undertake monitoring and maintenance as described in this schedule and the rehabilitation planning part for the activity. Where there is any inconsistency between this schedule and the rehabilitation planning part the schedule criteria prevail to the extent of the inconsistency.

PRCP6 The holder must make and keep up to date records on:

- (a) Achievement and maintenance of achievement of each rehabilitation milestone criteria of this schedule.
- (b) Rehabilitation activities and the results of those activities (including but not limited to, actions taken, date, location, methods, data collected, Quality Assurance/Quality Control, photos, waste tracking and disposal records, appropriately qualified person details and assumptions);
- (c) Maintenance of rehabilitation and the results of maintenance activities;

- (d) Monitoring of rehabilitation and the results of monitoring;
- (e) Details and results of rehabilitation trials;
- (f) Designs, drawings, specifications and any similar documents developed in accordance with good professional practice in relation to rehabilitation milestones or milestone criteria;
- (g) All documents in relation to the requirements of this schedule, including reports (e.g. site investigation report), statements (e.g. site suitability statement), certifications, assessments, investigations, inspections, audits or any similar documents developed in relation to rehabilitation milestones or milestone criteria;
- (h) Landholder agreements;
- (i) Details of community consultation in the community consultation register relating to rehabilitation and closure activities.

- PRCP7 Records made under **PRCP6** must be kept until the relevant environmental authority has been surrendered or cancelled.
- PRCP8 Records made under **PRCP6** must be provided to the administering authority in the specified format within 10 business days of a written request.
- PRCP9 An appropriately qualified person (AQP) and SQP must consider any relevant material published by an Australian government agency and The Office of the Queensland Mine Rehabilitation Commissioner and document how it was considered in any assessment required within the schedule.
- PRCP10 The holder must, by **5 June 2026**, apply to amend this PRCP schedule to provide site-specific groundwater quality values as listed in **Appendix 7 – Groundwater quality values** for bores identified as Rundle Formation and Weathered Tertiary in **Appendix 6 – Groundwater monitoring bores** and review groundwater quality values for bores identified as Alluvium in **Appendix 6 – Groundwater monitoring bores**.

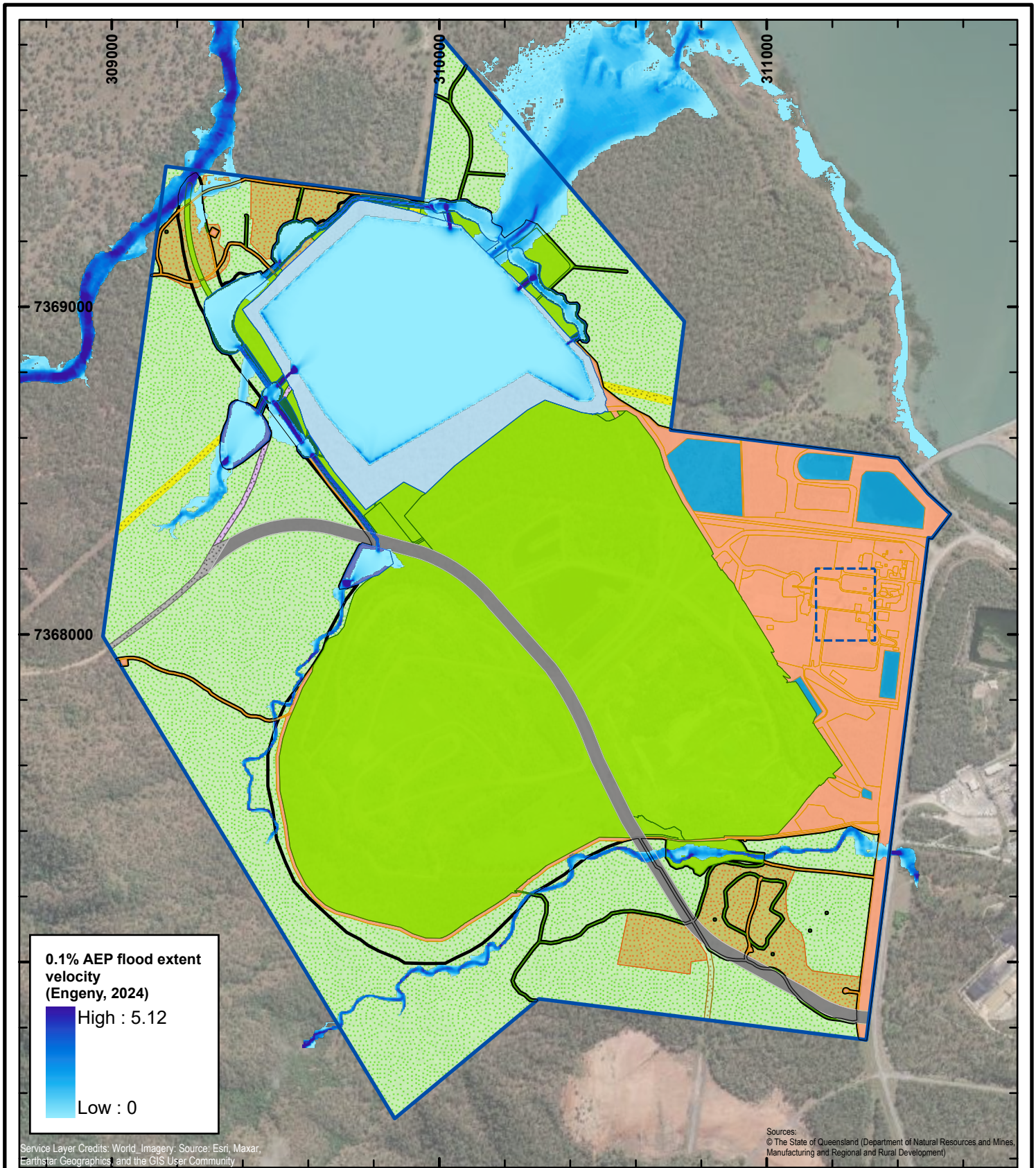
END OF CONDITIONS

Section B - Final site design and reference maps

List of figures:

Figure 1 – Final Site Design

Figure 2 –Rehabilitation Areas

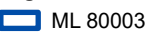
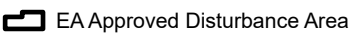


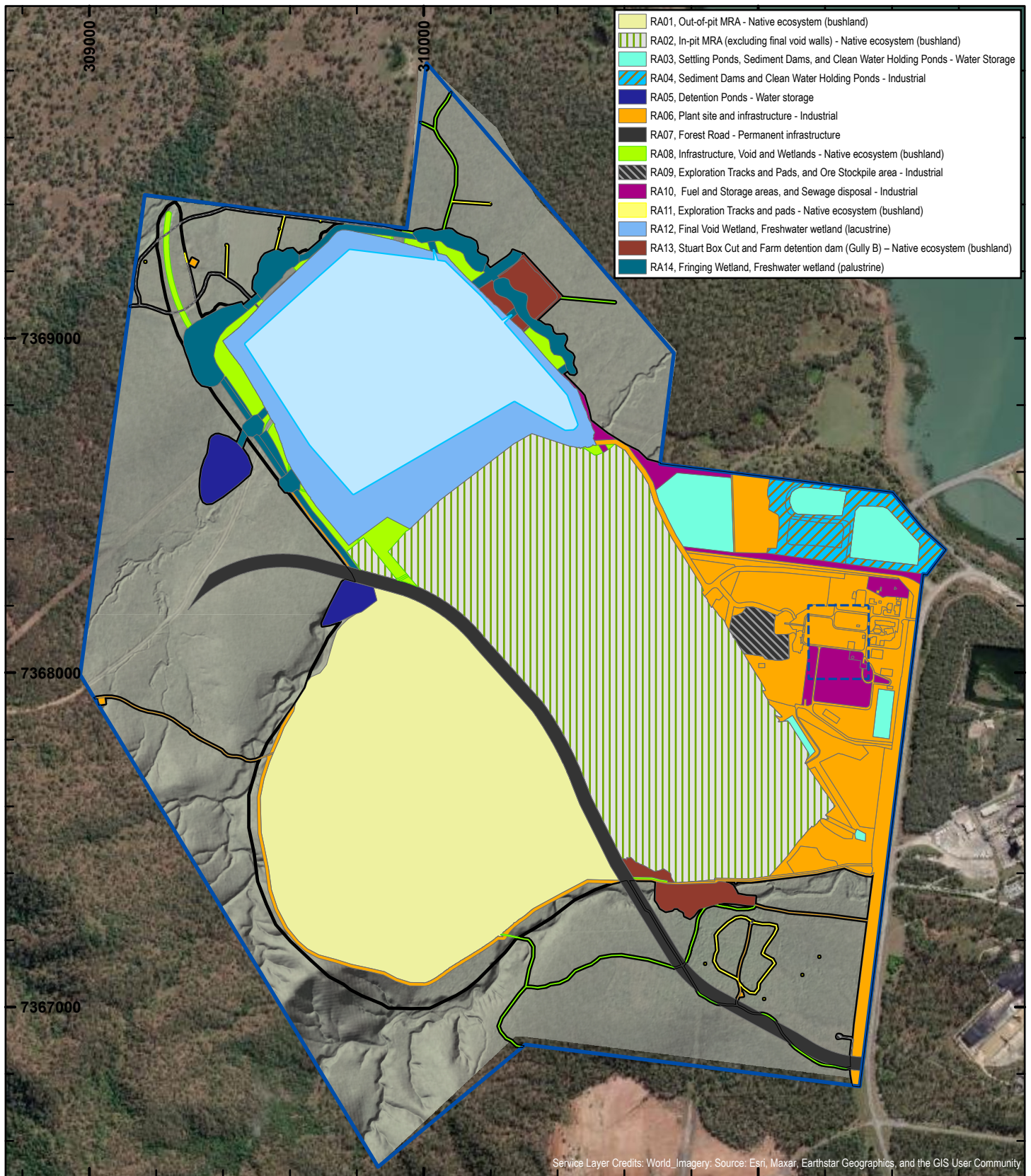
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QUEENSLAND ENERGY RESOURCES

Stuart Kerogen Shale Project

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GDA2020, MGA Zone 56

 QER QUEENSLAND ENERGY RESOURCES	Figure 1 Final Site Design Post Mining Land use	Legend  ML 80003  EA Approved Disturbance Area  PFL 8 Mining and Project Areas - Industrial - Native ecosystem (bushland) - Permanent infrastructure - Forest Road - Freshwater wetland (lacustrine) - Freshwater wetland (palustrine) - Water Storage - Stock Use - Water Storage - Industrial Use Balance of ML, Non-mining Areas - Native Ecosystem - No Disturbance Area - Native Ecosystem - Agriculture - Permanent Infrastructure - Forest Road - Permanent Infrastructure - Unused Forest Road - Permanent Infrastructure - Power and services	
Date: 21/03/2025	Drawn By: Chris Schlebusch		
RTPL_QER_STPRC_PRCMAP1001_C	Requested by: John Linden		



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QUEENSLAND ENERGY RESOURCES

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Figure 2
Rehabilitation areas

Legend

- ML 80003
- PFL 8
- EA Approved Disturbance Area
- Typical Water Level (RL 8.1m)



Date: 12/03/2025

Drawn By: Chris Schlebusch

RTPL_QER_STPRC_PRCMAP1002_B

Requested by: John Linden

Sources:
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Section C – Post mining land uses

(RA1) Rehabilitation area 1

Post-mining land uses (PMLU)				
Rehabilitation area	RA01			
Relevant activities	Out-of-pit Mine Reject Area (MRA)			
Total rehabilitation area size (ha)	80			
Commencement of first milestone: RM1	10/12/2045			
PMLU	Native ecosystem (bushland)			
Date area is available	10/12/2045			
Cumulative area available (ha)	80	80	80	80
Milestone completed by	10/12/2048	10/12/2050	10/12/2080	10/12/2085
Milestone Reference				
RM1	80			
RM2	80			
RM3	80			
RM4		80		
RM5		80		
RM8			80	
RM12				80

(RA2) Rehabilitation area 2

Post-mining land uses (PMLU)																							
Rehabilitation area										RA02													
Relevant activities										In-pit MRA													
Total rehabilitation area size (ha)										88.5													
Commencement of first milestone: RM1										10/12/2045													
PMLU										Native ecosystem (bushland)													
Date area is available	10/12/2045	10/12/2046	10/12/2047	10/12/2048	10/12/2049	10/12/2050			10/12/2055		10/12/2060												
Cumulative area available (ha)	10.3	16.9	22.7	28.5	34.2	40.1			60.8		88.5										88.5		
Milestone completed by	10/12/2048	10/12/2049	10/12/2050	10/12/2051	10/12/2052	10/12/2053	10/12/2054	10/12/2055	10/12/2058	10/12/2060	10/12/2063	10/12/2065	10/12/2068	10/12/2069	10/12/2070	10/12/2071	10/12/2072	10/12/2073	10/12/2074	10/12/2078	10/12/2079	10/12/2083	10/12/2088
Milestone Reference	Cumulative area achieved (ha)																						
RM1	10.3	16.9	22.7	28.5	34.2	40.1			60.8		88.5												
RM2	10.3	16.9	22.7	28.5	34.2	40.1			60.8		88.5												
RM3	10.3	16.9	22.7	28.5	34.2	40.1			60.8		88.5												
RM4			10.3	16.9	22.7	28.5	34.2	40.1		60.8		88.5											
RM5			10.3	16.9	22.7	28.5	34.2	40.1		60.8		88.5											
RM8													10.3	16.9	22.7	28.5	34.2	40.1		60.8		88.5	
RM12														10.3	16.9	22.7	28.5	34.2	40.1		60.8		88.5

(RA3) Rehabilitation area 3

Post-mining land uses (PMLU)		
Rehabilitation area	RA03	
Relevant activities	Settling ponds, Sediment dams, and Clean water holding ponds (CWHPs)	
Total rehabilitation area size (ha)	9.3	
Commencement of first milestone: RM1	10/12/2068	
PMLU	Water storage – industrial use	
Date area is available	10/12/2068	
Cumulative area available (ha)	9.3	9.3
Milestone completed by	10/12/2070	10/12/2075
Milestone Reference	Cumulative area achieved (ha)	
RM1	9.3	
RM2	9.3	
RM3	9.3	
RM4	9.3	
RM11		9.3

(RA4) Rehabilitation area 4

Post-mining land uses (PMLU)		
Rehabilitation area	RA04	
Relevant activities	Sediment dams and Clean water holding ponds (CWHPs)	
Total rehabilitation area size (ha)	6.3	
Commencement of first milestone: RM1	10/12/2060	
PMLU	Industrial	
Date area is available	10/12/2060	
Cumulative area available (ha)	6.3	6.3
Milestone completed by	10/12/2063	10/12/2068
Milestone Reference	Cumulative area achieved (ha)	
RM1	6.3	
RM2	6.3	
RM3	6.3	
RM4	6.3	
RM11		6.3

(RA5) Rehabilitation area 5

Post-mining land uses (PMLU)		
Rehabilitation area	RA05	
Relevant activities	Detention ponds	
Total rehabilitation area size (ha)	3.3	
Commencement of first milestone: RM1	10/12/2060	
PMLU	Water storage – stock use	
Date area is available	10/12/2060	
Cumulative area available (ha)	3.3	3.3
Milestone completed by	10/12/2064	10/12/2069
Milestone Reference	Cumulative area achieved (ha)	
RM1	3.3	
RM2	3.3	
RM3	3.3	
RM4	3.3	
RM10	3.3	
RM14		3.3

(RA6) Rehabilitation area 6

Post-mining land uses (PMLU)			
Rehabilitation area	RA06		
Relevant activities	Plant site, haul road, and infrastructure		
Total rehabilitation area size (ha)	39.5		
Commencement of first milestone: RM1	10/12/2065		
PMLU	Industrial		
Date area is available	10/12/2065		
Cumulative area available (ha)	39.5	39.5	39.5
Milestone completed by	10/12/2068	10/12/2069	10/12/2074
Milestone Reference	Cumulative area achieved (ha)		
RM1	39.5		
RM2		39.5	
RM3		39.5	
RM4		39.5	
RM11			39.5

(RA7) Rehabilitation area 7

Post-mining land uses (PMLU)	
Rehabilitation area	RA07
Relevant activities	Forest road Realignment
Total rehabilitation area size (ha)	11
Commencement of first milestone: RM1	10/12/2053
PMLU	Road Reserve
Date area is available	10/12/2053
Cumulative area available (ha)	11
Milestone completed by	10/12/2055
Milestone Reference	Cumulative area achieved (ha)
RM1	11
RM2	11
RM3	11
RM4	11
RM7	11

(RA8) Rehabilitation area 8

Post-mining land uses (PMLU)			
Rehabilitation area	RA08		
Relevant activities	Infrastructure, and Final void perimeter		
Total rehabilitation area size (ha)	6.4		
Commencement of first milestone: RM1	10/12/2060		
PMLU	Native ecosystem (bushland)		
Date area is available	10/12/2060		
Cumulative area available (ha)	6.4	6.4	6.4
Milestone completed by	10/12/2061	10/12/2091	10/12/2096
Milestone Reference	Cumulative area achieved (ha)		
RM1	6.4		
RM2	6.4		
RM3	6.4		
RM4	6.4		
RM5	6.4		
RM8		6.4	
RM12			6.4

(RA9) Rehabilitation area 9

Post-mining land uses (PMLU)			
Rehabilitation area	RA09		
Relevant activities	Exploration tracks and pads, and Ore stockpile area		
Total rehabilitation area size (ha)	2.62		
Commencement of first milestone: RM1	10/12/2060		
PMLU	Industrial		
Date area is available	10/12/2060		
Cumulative area available (ha)	2.62	2.62	2.62
Milestone completed by	10/12/2061	10/12/2062	10/12/2067
Milestone Reference	Cumulative area achieved (ha)		
RM1	2.62		
RM2		2.62	
RM3		2.62	
RM4		2.62	
RM11			2.62

(RA10) Rehabilitation area 10

Post-mining land uses (PMLU)			
Rehabilitation area	RA10		
Relevant activities	Fuel and storage areas, and Sewage disposal area		
Total rehabilitation area size (ha)	6		
Commencement of first milestone: RM1	10/12/2065		
PMLU	Industrial		
Date area is available	10/12/2065		
Cumulative area available (ha)	6	6	6
Milestone completed by	10/12/2068	10/12/2069	10/12/2074
Milestone Reference	Cumulative area achieved (ha)		
RM1	6		
RM2		6	
RM3		6	
RM4		6	
RM11			6

(RA11) Rehabilitation area 11

Post-mining land uses (PMLU)			
Rehabilitation area	RA11		
Relevant activities	Exploration tracks and pads		
Total rehabilitation area size (ha)	0.42		
Commencement of first milestone: RM1	10/12/2025		
PMLU	Native ecosystem (bushland)		
Date area is available	10/12/2025		
Cumulative area available (ha)	0.42	0.42	0.42
Milestone completed by	10/12/2027	10/12/2056	10/12/2061
Milestone Reference	Cumulative area achieved (ha)		
RM1	0.42		
RM2	0.42		
RM3	0.42		
RM4	0.42		
RM5	0.42		
RM8		0.42	
RM12			0.42

(RA12) Rehabilitation area 12

Post-mining land uses (PMLU)				
Rehabilitation area	RA12			
Relevant activities	Final void			
Total rehabilitation area size (ha)	68.6			
Commencement of first milestone: RM1	10/12/2060			
PMLU	Freshwater wetland (lacustrine)			
Date area is available	10/12/2060			
Cumulative area available (ha)	68.6	68.6	68.6	68.6
Milestone completed by	10/12/2063	10/12/2082	10/12/2102	10/12/2103
Milestone Reference	Cumulative area achieved (ha)			
RM1	68.6			
RM2	68.6			
RM3	68.6			
RM4		68.6		
RM6		68.6		
RM9			68.6	
RM13				68.6

(RA13) Rehabilitation area 13

Post-mining land uses (PMLU)		
Rehabilitation area	RA13	
Relevant activities	Farm dam - Gully B and Stuart Box Cut	
Total rehabilitation area size (ha)	4.5	
Commencement of first milestone: RM1	10/12/2026	
PMLU	Native ecosystem (bushland)	
Date area is available	10/12/2026	
Cumulative area available (ha)	4.5	4.5
Milestone completed by	10/12/2041	10/12/2046
Milestone Reference	Cumulative area achieved (ha)	
RM1	4.5	
RM2	4.5	
RM3	4.5	
RM9	4.5	
RM12		4.5

(RA14) Rehabilitation area 14

Post-mining land uses (PMLU)				
Rehabilitation area	RA14			
Relevant activities	Void perimeter			
Total rehabilitation area size (ha)	9.2			
Commencement of first milestone: RM1	10/12/2060			
PMLU	Freshwater wetland (palustrine)			
Date area is available	10/12/2060			
Cumulative area available (ha)	9.2	9.2	9.2	9.2
Milestone completed by	10/12/2063	10/12/2068	10/12/2088	10/12/2089
Milestone Reference	Cumulative area achieved (ha)			
RM1	9.2			
RM2	9.2			
RM3	9.2			
RM4		9.2		
RM6		9.2		
RM9			9.2	
RM13				9.2

Rehabilitation area milestones

Milestone reference	Rehabilitation milestone	Milestone criteria
RM1	Infrastructure decommissioning and removal	1.1 With the exception of any infrastructure to remain as part of the post mining land use (PMLU) and where infrastructure is to be retained by the landholder as evidenced by a signed landholder agreement, the following are complete: (a) All services disconnected, terminated and removed. (b) All buildings and associated infrastructure dismantled and removed offsite. (c) All hardstand, concrete areas and roads (bitumen, blue metal, aggregate etc.) removed. (d) All fencing that is not part of PMLU requirements removed. (e) All pipelines drained and removed. (f) All waste removed. (g) All surface water drainage infrastructure removed. (h) All drillholes, bores, sediment ponds and sumps decommissioned. (i) All machinery and equipment removed from site. (j) All water storages dewatered, desilted and liners removed (as relevant)
RM2	Identification, remediation and removal of contaminated land	2.1 Contaminated Land Investigation Document completed in accordance with the EP Act, including a site investigation report, and, where required, a Validation Report and/or a draft Site Management Plan. 2.2 A site suitability statement from a SQP confirms the uses or activities for which the land is suitable, align to the approved PMLUs for the site. 2.3 Any residual ore in infrastructure or surface areas has been removed and buried.
RM3	Landform development, and reshaping/reprofiling	All rehabilitation areas 3.1 All major earthworks completed, which include the earthworks to achieve required landform and slopes and general reshaping and pushing/trimming to achieve final landform. 3.2 Erosion and sediment control systems are installed as per the construction design and verified by an AQP. 3.3 AQP certifies that as constructed landform achieves design criteria for geotechnical stability with a Factor of Safety (FOS) ≥ 1.5. Additional for Out-of-pit MRA (RA01) and In-pit MRA (RA02) 3.4 Reshaping and reprofiling works completed to achieve: (a) Maximum slope angles of 12 degrees. (b) Potentially acid forming (PAF) material does not report to the surface of the landform. (c) The landform is capped with ≥ 2 m of Non-Acid Forming (NAF) overburden and interburden (waste) (d) design geometries are achieved to ± 0.2 m vertical height measured over a maximum distance of 50 m (e) no weathered tertiary sediment waste rock less than moderately to highly weathered is present on the final landform surfaces.

		(f) An AQP confirms the achievement of items (a) to (e) including testing of the top 2m of cover for items (b), (c) and (e). 3.5 Completion of bunding works, including construction of the crest-bunding included in the landform design 3.6 maximum 0.3 m of surface cross-slope ripping of batter slopes using a tyned machine with tynes spaced no wider than 0.5 m. 3.7 Completion of a geotechnical assessment to be carried out by an AQP to ensure slopes and void overflow points are stable. Freshwater wetland (lacustrine) (RA12) 3.8 Reshaping and reprofiling works completed to achieve: (a) Maximum slope angles of 16.7 degrees (b) Average slope of ≤ 11.3 degrees across the void slopes (c) slope length ≤ 30 m with a vertical height of maximum 10 m (d) Landform is capped with ≥ 2 m of NAF overburden and interburden (e) Tw3 waste and PAF material is not present at the final landform surfaces. (f) Littoral zone/s established as per Appendix 1 Diagram 1 for all void slopes reporting to the final void wetland. 3.9 Completion of a geotechnical assessment to be carried out by a suitably qualified person to ensure slopes and overflow points are stable. 3.10 Surface water runoff to the mining void do not exceed the parameters of Appendix 5 - Surface water quality values. 3.11 To minimise the potential for algae blooms and aquatic weeds development in the void, structures have been established in the landform to manage surface water runoff from disturbed land e.g. the establishment of interception or drainage structures to meet the objectives of 'Treatment wetlands' of administering agency's Wetland Info Treatment wetlands — Planning and design (Department of the Environment, Tourism, Science and Innovation). Fringing wetland (palustrine) (RA14) 3.12 Reshaping and reprofiling works completed to achieve: (a) Depressions and drainage features suitable to fringing palustrine wetlands around the perimeter of the final void that are comparable to analogue sites (Byellee Wildlife Reserve wetland and Wilmot Lagoon). (b) A gentle slope of ≤ 12 degrees. (c) Reshaping varied around the waterbody to create both wider (shallower angle) and narrower (steeper angle) vegetation zones, increasing habitat variability around the wetland. (d) Littoral zone/s established as per Appendix 1 Diagram 2 along the edges of all wetland ponds.
RM4	Surface preparation	RA01, RA02 (excluding northern drainage zone), RA08, RA11 4.1 Soil health and suitability is assessed and documented by an AQP to confirm growth media is suitable for the PMLU and target vegetation establishment specified in RM6. 4.2 An assessment of the need for soil amelioration undertaken and applied at rates determined by an AQP to achieve the properties outlined in point (4.6) below and suitable for the PMLU. 4.3 Completion of surface ripping to a minimum of 0.3 m.

		4.4 Topsoil is applied to a minimum depth of 0.3 m 4.5 Growth media is scarified to incorporate soil ameliorants but not to a depth that will bring waste material to the surface (i.e. less than 0.3 m, the minimum depth of growth media). 4.6 Soil depth (0 to 0.3m) demonstrates properties to support the PMLU including: (a) cation exchange capacity of >20cmol+/kg (b) major macronutrient concentrations (i) Nitrogen: Total >0.2% (ii) Phosphorus: at the recommendation of an AQP (iii) Potassium: available K>200mg K/kg soil (iv) Organic C: at the recommendation of an AQP (c) pHw range is between 6.0 to 7.5 (d) salinity (EC1:5) ≤0.5 dS/m. (e) Exchangeable sodium percentage (ESP)(%) < 6. (f) Emerson aggregate class: <3. 4.5 The surface and groundwater monitoring network is installed and monitoring commenced. Northern drainage zone (RA02) 4.6 Topsoil is spread to a minimum depth of 0.5 m. 4.7 Placement of rock cover/armour has been completed to achieve 30% rock cover. 4.8 Rock used for rock cover/armour must be NAF and have minimum slake durability of 85% after two cycles and resistant to chemical and mechanical breakdown in-situ) and must not contribute to any increase in salinity or sodicity of the soil. Freshwater wetland (lacustrine) (RA12) 4.9 The pit has filled with water to an equilibrium level of 8.1 mAHd (expected to take approximately 18 years post closure). 4.10 Results of an external groundwater review completed at closure (2060) confirming the relevant compliance bores, water quality criteria, and monitoring schedule. Fringing wetlands (palustrine) (RA14) 4.11 Conducting sampling and testing to confirm Acid Sulfate Soils are not exposed in the wetland, completed by an AQP. 4.12 Fringing wetland fills with water during which time surface water quality monitoring will be undertaken by AQP. Industrial PMLU (RA03, RA04, RA05, RA06, RA07, RA09, RA10) 4.13 Apply a groundcover over all bare ground through revegetation with grass species listed in Appendix 1, Table 1 for RE 12.11.14 and/or RE 12.3.3.
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RM5	Revegetation – native ecosystem (bushland) PMLU	RA01, RA02, RA08, and RA11 5.1 Seeding (or planting of tubestock) of all topsoiled surfaces completed using a species mix and seeding rate stated in Appendix 1, Table 1 for RE 12.11.6 (for RA01); RE 12.11.6, RE 12.3.3, and RE 12.11.14 (for RA02); RE 12.11.6, RE 12.11.14, and RE12.3.3 (for RA08); and RE 12.11.16 (for RA11). 5.2 Non-native seed has not been used for the revegetation (except for when sterile cover crops are used). 5.3 Tilling on the contour with tyne spacing no greater than 0.5 m.
RM6	Revegetation – water storage (stock use), freshwater wetland (lacustrine), and freshwater wetland (palustrine) PMLUs	6.1 Non-native seed has not been used for the revegetation (except for when sterile cover crops are used). 6.2 Tilling on the contour with tyne spacing no greater than 0.5 m. RA05 (water storage [stock use]) 6.3 Seeding of all topsoiled surfaces completed using the seed mix and seeding rate stated in Appendix 1, Table 1 for RE 12.11.6. 6.4 Aquatic plant species tube stock have been planted, in the relevant zones, as detailed in Appendix 1, Table 2. RA12 (freshwater wetland [lacustrine]) & RA14 (freshwater wetland [palustrine]) 6.5 Seeding of all topsoiled surfaces completed using the seed mix and seeding rate stated Appendix 1, Table 1 for RE 12.11.6. 6.6 Aquatic plant species tube stock planted in the relevant zones as detailed in Appendix 1, Table 2. 6.7 Native fish and macro-crustacean species introduced (once food webs develop), as detailed in Appendix 1, Table 3.
RM7	Achievement of Forest Road Realignment	7.1 The realignment of Forest Road is gazetted as a State Road and accepted by the relevant QLD Government Department (i.e. Gladstone Regional Council and/or Department of Transport and Main Roads).
RM8	Achievement of surface requirements – native ecosystem (bushland) PMLU	8.1 A BioCondition assessment is completed by an AQP using the methodology outlined in the latest version of the Queensland Herbarium's 'BioCondition Assessment Manual'. 8.2 The BioCondition assessment completed under (RM8.1) complies with the >20/60 PRCP Benchmark for the PMLU, as per Appendix 2 – Biocondition Benchmark. 8.3 Where RM8.2 is not achieved, an AQP has confirmed that the ecosystem is on a trajectory to achieving the biocondition benchmarks 10-15 years of Appendix 2 – Biocondition Benchmark. 8.4 Species used in revegetation remain present and showing evidence of natural recruitment. Evidence of flora recruitment from rehabilitation monitoring data. 8.5 Supplemental hand planting of trees and shrubs, based on success of seed germination, has been completed. 8.6 Final tree/shrub density of 600 to 800 trees per hectare has been achieved. 8.7 Weed presence is a maximum of 10% of total vegetative groundcover. 8.8 AQP confirms through annual monitoring that the ground cover achieves item (RM8.6). 8.9 No evidence of erosion classified as 'moderate' or 'severe' as defined by Appendix 3 – Erosion classification framework. 8.10 No evidence of salt accumulation at soil surface, prolonged water ponding, or bare areas greater than 10m².

		8.11 Annual soil condition monitoring confirms growth media depth (0-0.3m) meets the following suitability criteria: (a) cation exchange capacity of >20cmol+/kg (b) major macronutrient concentrations: (i) Nitrogen: Total >0.2% (ii) Phosphorus: at the recommendation of an AQP (iii) Potassium: available K>200mg K/kg soil (iv) Organic C: at the recommendation of an AQP (c) pHw range is between 6.0 to 7.5. (d) salinity (EC1:5) is less than 0.5 dS/m. (e) Exchangeable sodium percentage (ESP) (%) < 6. (f) Fencing has been assembled around Rehabilitation Areas, as applicable. (g) Emerson aggregate class: <3. 8.12 Fencing has been assembled around Rehabilitation Areas, as applicable. 8.13 Surface water runoff from rehabilitated areas is non-polluting to receiving waters and complies with Appendix 5 – Surface water quality values.
RM9	Achievement of surface and water quality requirements – freshwater wetland (lacustrine) and freshwater wetland (palustrine) PMLUs	9.1 Absence of blooms of algae or macrophytes which are sufficiently large, or prolonged in duration, to compromise the ecological functioning of the wetland. 9.2 AQP confirms that any algal or macrophyte blooms present is not of an extent that would compromise the ecological function of the wetland. 9.3 Macroinvertebrate diversity indices are similar to those of analogue sites¹ and have reached a stable trajectory. 9.4 Freshwater native fish have formed self-sustaining populations and do not require supplementary stocking. Species diversity comparable to analogue sites, taking into consideration differences in habitat. 9.5 AQP confirms the species presence and colonisation of Macroinvertebrates and species required to support the trajectory for the wetlands to be self-sustaining. 9.6 Native fauna species identified are comparable to those at analogue sites and of a presence that supports the wetlands to be self-sustaining i.e. frogs and fish at various lifecycles and insignificant to no populations of cane toads. 9.7 Aquatic plant species from Appendix 1, table 2 have established a continuous fringe of dense aquatic vegetation along the littoral zone depicted in Appendix 1, Diagram 1. 9.8 Supplemental hand planting of trees and shrubs, based on success of seed germination, has been completed. 9.9 Final tree/shrub density of 600 to 800 trees per hectare has been achieved. 9.10 No evidence of erosion classified as ‘moderate’ or ‘severe’ as defined by Appendix 3 – Erosion classification framework. 9.11 Annual soil condition monitoring confirms growth media depth (0-0.3m) meets the following suitability criteria:

¹ Analogue sites:

- a. Freshwater wetland (Lacustrine) - Northern embayment of Lake Awoonga
- b. Fringing wetland (palustrine) - Byellie Wildlife Reserve wetland and Wilmot Lagoon

		(a) cation exchange capacity and major macronutrient (N, P, K, and organic C) concentrations (i) Nitrogen: Total >0.2% (ii) Phosphorus: at the recommendation of an AQP (iii) Potassium: available K>200mg K/kg soil (iv) Organic C: at the recommendation of an AQP a. pHw range is between 6.0 to 7.5. b. primary growth media salinity (EC1:5) is less than 0.5 dS/m. c. Exchangeable sodium percentage (ESP) (%) < 6. d. Fencing has been assembled around RAs. 9.12 Water quality results at representative locations of the wetlands and locations identified in Appendix 4 – Surface Water Quality Monitoring Locations monitored monthly are compliant with the values of Appendix 5 – Surface water quality values for a minimum period of 5 consecutive years. 9.13 If the surface water quality exceeds criteria (RM9.12), the applicable upstream site must be compared to the downstream site result; if the quality result measured at a downstream site is equal to or less than the quality result measured at the applicable upstream site, then the water quality is deemed compliant with RM9.12. 9.14 For a minimum of five consecutive years groundwater quality must be monitored quarterly at compliance bores specified as Alluvium in Appendix 6 – Groundwater monitoring bores. Groundwater quality results must not exceed any value specified in Appendix 7 - Groundwater quality values for 3 consecutive results.
RM10	Achievement of surface requirements – water storage (stock use) PMLU	10.1 All retained water storages assessed and confirmed as safe for humans, wildlife and stock and stable by an AQP. 10.2 Dams are safe for stock access and have vegetated banks. 10.3 Surface water quality results monitored quarterly must not exceed the values in Appendix 5 – Surface water quality values.
RM11	Achievement of PMLU to stable condition - Industrial PMLU and Permanent Infrastructure PMLU	11.1 Minimum 70% groundcover is achieved through revegetation with grass species. 11.2 Weed presence is a maximum of 10% of total vegetative groundcover in annual monitoring. 11.3 No evidence of erosion classified as ‘moderate’ or ‘severe’ as defined by Appendix 3 – Erosion classification framework. 11.4 A Hazard and Safety Assessment is completed by an AQP that demonstrates: 11.5 Hazards are of a similar type and not significantly different to hazards in neighbouring landscapes subject to a similar land use 11.6 All retained water storages (banks and spillways) are safe and stable. 11.7 Erosion and sediment control systems are installed as per the construction design and verified by an appropriately qualified person (AQP); 11.8 AQP certifies that the as constructed landform achieves design criteria and is geotechnically stable. 11.9 AQP certifies that retained infrastructure is stable and non-polluting. 11.10 All retained water storages to be assessed and approved as safe and stable by an AQP. 11.11 Surface water runoff is non-polluting to receiving waters and complies with the values in Appendix 5 – Surface water quality values.

		11.12 Surface water quality results monitored quarterly must not exceed the values in Appendix 5 – Surface water quality values, for a minimum of 5 consecutive years. 11.13 Surface water quality results monitored within 48 hours of flow at, but not limited to, downstream locations specified in Appendix 4 – Surface Water Quality Monitoring Locations, must not exceed the limits in Appendix 5 – Surface water quality values, for a minimum of 5 consecutive years. 11.14 If the surface water quality exceeds criteria (RM11.13), the applicable upstream site must be compared to the downstream site result; if the quality result measured at a downstream site is equal to or less than the quality result measured at the applicable upstream site then the water quality is deemed compliant with RM11.13. 11.15 For a minimum of five consecutive years groundwater quality must be monitored quarterly at, but not limited to, bores specified Alluvium in Appendix 6 – Groundwater monitoring bores, identified in <i>Figure 3a</i> and <i>Figure 3b</i>, for all quality characteristics listed in Appendix 7 – Groundwater quality values. 11.16 Groundwater quality results at Alluvium sites in <i>Figure 3a</i> must not exceed the values in Appendix 7 – Groundwater quality values, for 3 consecutive results.
RM12	Achievement of PMLU to stable condition – native ecosystem (bushland) PMLU	12.1 Completion of a Hazard and Safety Assessment by an AQP to confirm safety hazards in rehabilitation are not significantly different to surrounding unmined landscapes subject to the same land use. 12.2 Water quality results monitored monthly at, but not limited to, downstream locations specified in Appendix 4 – Surface Water Quality Monitoring Locations, must achieve criteria specified in Appendix 5 – Surface water quality values, for a minimum period of 5 consecutive years. 12.3 Where the surface water quality exceeds criteria (RM12.2), the applicable upstream site must be compared to the downstream site result; if the quality result measured at a downstream site is equal to or less than the quality result measured at the applicable upstream site then the water quality is deemed compliant with RM12.2. 12.4 For a minimum of five consecutive years groundwater quality must be monitored quarterly at, <i>but not limited to</i>, compliance bores specified as Alluvium in Appendix 6 – Groundwater monitoring bores, for all quality characteristics listed in Appendix 7 – Groundwater quality values. 12.5 Groundwater quality results must not exceed the values in Appendix 7 – Groundwater quality values, for 3 consecutive results. 12.6 No evidence of erosion classified as ‘moderate’ or ‘severe’ as defined by Appendix 3 – Erosion classification framework. 12.7 An assessment of BioCondition benchmarks for Native Ecosystem (Bushland) complies with the >40/60 PRCP Benchmark for the PMLU as per Appendix 2 - BioCondition Benchmark, Table 4.
RM13	Achievement of PMLU to a stable condition – Freshwater wetland (lacustrine) and freshwater wetland (palustrine)	RA12 (freshwater wetland [lacustrine]) 13.1 For the final void: (a) highwalls and low walls are internally draining. (b) void banks, spillway, and upstream water management drainage systems to manage catchment inflows to the void are assessed as safe and stable.

		(c) stratification modelling conducted with analysis confirming that the effects of disassembly does not impact on the achievement of the achievement and maintenance of the freshwater (lacustrine) wetland and survivability of fauna. (d) Assessment using the Queensland Government's Wetland Condition Assessment Tool confirms that the lacustrine wetland is comparable to the analogue sites (Northern embayment of Lake Awoonga). (e) AQP confirms that disassembly events do not impact on the achievement of the freshwater (lacustrine) wetland. (f) is protected from flood water ingress. (g) will not cause environmental harm outside of the relevant tenure boundary. (h) is safe to humans, wildlife and livestock. (i) certification of the final void by a AQP will be undertaken to verify criteria (a) to (d) above. 13.2 Hazard and Safety Assessment completed by a appropriately qualified person demonstrates: (a) hazards are of a similar type and not significantly different to hazards in neighbouring landscapes subject to a similar land use. (b) retained water storages (banks and spillways) are safe and stable. RA14 (freshwater wetland [palustrine]) 13.3 The palustrine wetland: (a) is stable. (b) is protected from marine flood water ingress. (c) will not cause environmental harm outside of the relevant tenure boundary. (d) is safe to humans, wildlife and livestock. (e) Assessment using the Queensland Government's Wetland Condition Assessment Tool confirms that the lacustrine wetland is comparable to the analogue sites (Byellee Wildlife Reserve wetland and Wilmot Lagoon). (f) Certification by an AQP to verify criteria (a) to (e) above. 13.4 Hazard and Safety Assessment completed by an AQP demonstrates: (a) hazards are of a similar type and not significantly different to hazards in neighbouring landscapes subject to a similar land use. (b) retained water storages (banks and spillways) are safe and stable.
RM14	Achievement of PMLU to stable condition – water storage (stock use) PMLU	14.1 Hazard and Safety Assessment completed by an AQP demonstrates: (a) hazards are of a similar type and not significantly different to hazards in neighbouring landscapes subject to a similar land use. (b) retained water storages (banks and spillways) are safe and stable. 14.2 Dams are safe for stock access and have vegetated banks. 14.3 No evidence of erosion classified as 'moderate' or 'severe' as defined by Appendix 3 – Erosion classification framework.

		14.4 Surface water quality results monitored quarterly must not exceed the values in Appendix 5 – Surface water quality values, for a minimum of 5 consecutive years. 14.5 Surface water runoff is non-polluting to receiving waters and complies with Appendix 5 – Surface water quality values. 14.6 Surface water quality results monitored within 48 hours of flow at, but not limited to, downstream locations specified in Appendix 4 – Surface Water Quality Monitoring Locations, must not exceed the limits in Appendix 5 – Surface water quality values, for a minimum of 5 consecutive years. 14.7 If the surface water quality exceeds criteria (RM14.6), the applicable upstream site must be compared to the downstream site result; if the quality result measured at a downstream site is equal to or less than the quality result measured at the applicable upstream site then the water quality is deemed compliant with RM14.6. 14.8 For a minimum of five consecutive years groundwater quality must be monitored quarterly at, but not limited to, alluvium bores specified in the Appendix 6 – Groundwater monitoring bores and <i>Figure 3a</i>, for all quality characteristics listed in Appendix 7 – Groundwater quality values. 14.9 Groundwater quality results must not exceed the values in Appendix 7 – Groundwater quality values, for 3 consecutive results.
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Appendix 1 –Species List Tables

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

Table 1 – Native Ecosystem PMLU Seed Mix¹

PMLU	Species	Common Name	Proportions of each species in the EA approved disturbance area (%/Cover type)	Cover Type
RE 12.11.14	<i>Eucalyptus crebra</i>	Narrow Leaved Ironbark	30	Upper Canopy
	<i>Eucalyptus tereticornis</i>	Forest Red Gum	30	
	<i>Corymbia intermedia</i>	Pink Bloodwood	20	
	<i>Corymbia tessellaris</i>	Moreton Bay Ash	20	
	<i>Lophostemon suaveolens</i>	Swamp Mahogany	35	Lower Canopy
	<i>Angophora subvelutina</i>	Broad-leaved Apple	35	
	<i>Allocasuarina torulosa</i>	Forest Oak	20	
	<i>Lophostemon confertus</i>	Brush Box	10	
	<i>Planchonia careya</i>	Cocky Apple	50	Tall Shrubs
	<i>Acacia disparrima</i>	Southern Salwood	50	
	<i>Breynia oblongifolia</i>	Coffee Bush	100	Small Shrubs
	<i>Themeda triandra</i>	Kangaroo Grass	60	Ground
	<i>Imperata cylindrica</i>	Cogongrass	20	
	<i>Cymbopogon refractus</i>	Barbed Wire Grass	10	
	<i>Panicum effusum</i>	Hairy Panic	10	
Minimum total sowing rate			10 kg/ha	
RE 12.3.3	<i>Eucalyptus tereticornis</i>	Forest Red Gum	65	Upper Canopy
	<i>Eucalyptus moluccana</i>	Grey Box	5	
	<i>Eucalyptus crebra</i>	Narrow Leaved Ironbark	15	

PMLU	Species	Common Name	Proportions of each species in the EA approved disturbance area (%/Cover type)	Cover Type
	<i>Angophora leiocarpa</i>	Rusty Gum	5	Lower Canopy
	<i>Corymbia clarksoniana</i>	Clarkson's Bloodwood	10	
	<i>Acacia disparrima</i>	Southern Salwood	15	
	<i>Acacia leiocalyx</i>	Black Wattle	10	
	<i>Lophostemon suaveolens</i>	Swamp mahogany	40	
	<i>Melaleuca nervosa</i>	Fibrebark	35	Tall Shrubs
	<i>Acacia leiocalyx</i>	Black Wattle	33	
	<i>Jacksonia scoparia</i>	Dogwood	33	
	<i>Alphitonia excelsa</i>	Red Ash	33	
	<i>Themeda triandra</i>	Kangaroo Grass	20	Ground
	<i>Cymbopogon refractus</i>	Barbed Wire Grass	10	
	<i>Heteropogon contortus</i>	Black Speargrass	30	
	<i>Panicum effusum</i>	Hairy Panic	5	
	<i>Imperata cylindrica</i>	Cogongrass	30	
	<i>Bothriochloa decipiens</i>	Pitted Bluegrass	5	
Minimum total sowing rate			10 kg/ha	
RE 12.11.6	<i>Corymbia citriodora</i> subsp. <i>variegata</i>	Spotted Gum	40	Upper Canopy
	<i>Eucalyptus crebra</i>	Narrow Leaved Ironbark	20	
	<i>Angophora leiocarpa</i>	Rusty Gum	15	
	<i>Corymbia erythrophloia</i>	Red Bloodwood	10	
	<i>Corymbia intermedia</i>	Pink Bloodwood	15	
	<i>Acacia disparrima</i>	Southern Salwood	50	

PMLU	Species	Common Name	Proportions of each species in the EA approved disturbance area (%/Cover type)	Cover Type
	<i>Allocasuarina littoralis</i>	Black Sheoak	50	Lower Canopy
	<i>Coelospermum reticulatum</i>	Medicine Bush	20	Tall Shrubs
	<i>Planchonia careya</i>	Cocky Apple	20	
	<i>Acacia leiocalyx</i>	Black Wattle	30	
	<i>Acacia decora</i>	Western Silver Wattle	30	
	<i>Grewia latifolia</i>	Dogs Balls or Emu Berry	100	Small Shrubs
	<i>Heteropogon contortus</i>	Black Speargrass	40	Ground
	<i>Themeda triandra</i>	Kangaroo Grass	30	
	<i>Bothriochloa bladhii</i>	Australian Bluestem	20	
	<i>Cymbopogon refractus</i>	Barbed Wire Grass	10	
Minimum total sowing rate			10 kg/ha	

¹ This Appendix articulates the list of species which are permitted to be included in the seed mix for Rehabilitation Areas (RAs). For Rehabilitation Areas (RAs), the list of species is further specific to the PMLU to be achieved. Listed species are known to occur on site in their respective Regional Ecosystem. Seed mixes may be supplemented with native species from the Technical Descriptions of each Regional Ecosystem, if confirmed to be present on site or within approved analogue sites, prior to the commencement of rehabilitation activities.

Table 2 – Freshwater Wetland PMLU Seed Mix

PMLU	Species	Common Name	Planting Density /m ² (tubestock)	Approximate Depth relative to stable water level (mAHD)	Zone
Final void and lacustrine wetland (RA12) and Fringing palustrine wetland (RA14)	<i>Juncus spp.</i> , including <i>Juncus krausii</i> <i>Juncus polyanthemus</i>	N/A – Several rush species	8-10	-0.2 to 0	A
	<i>Cyperus spp.</i>	N/A – Several sedge species	8-10		
	<i>Fimbristylis spp.</i> , including <i>Fimbristylis ferruginea</i> and <i>Fimbristylis polytrichoides</i>	N/A – Several sedge species	8-10		
	<i>Lomandra longifolia</i>	Basket grass	4-6		
	<i>Lomandra hystrix</i>	Green mat-rush	4-6		
	<i>Pseudoraphis spinescens</i>	Spiny mudgrass	8-10		
	<i>Sporobolus virginicus</i>		turf		
	<i>Typha orientalis</i> ,		3-5	0.1 to 0.6	B
	<i>Typha domingensis</i> ,		3-5		
	<i>Phragmites australis</i>		3-5		
	<i>Baumea spp.</i>		6-8		
	<i>Lepironia spp.</i>		6-8		
	<i>Bolboschoenus spp.</i>		4-6		
	<i>Cyperus spp.</i>	N/A – Several sedge species	6-8		

PMLU	Species	Common Name	Planting Density /m ² (tubestock)	Approximate Depth relative to stable water level (mAHD)	Zone
	<i>Eleocharis</i> spp.		4-6		
	<i>Juncus</i> spp., including <i>Juncus polyanthemus</i> and <i>J usitatus</i>	N/A – Several rush species	6-8		
	<i>Philydrum lanuginosum</i>		6-8		
	<i>Isolepis mucronata</i>		6-8		
	<i>Sacciolepis indica</i>		10-12		
	<i>Ludwigia octovalvis</i>		2-4		
	<i>Triglochin procerum</i>		4-6		
	<i>Persicaria decipiens</i>		4-6		
	<i>Ceratopteris thalictroides</i>		2-4		
	<i>Nymphaea violacea</i>		2-3	0.1 to 4	C
	<i>Nymphoides crenata</i>		2-3		
	<i>Nymphoides indica</i>		2-3		
	<i>Ottelia alismoides</i>		2-3		
	<i>Ottelia ovalifolia</i>		2-3		
	<i>Potamogeton</i> spp.		1		
	<i>Marsilea mutica</i>		4-6		
	<i>Monochoria cyanea</i>		2-3		

PMLU	Species	Common Name	Planting Density /m ² (tubestock)	Approximate Depth relative to stable water level (mAHD)	Zone
	<i>Ceratophyllum demersum</i>		6-8		
Final void and lacustrine wetland (RA12)	<i>Myriophyllum</i> spp.		6-8	0.5 to 2	D
	<i>Hydrilla</i> spp.		6-8		
	<i>Najas tenuifolia</i>		6-8		

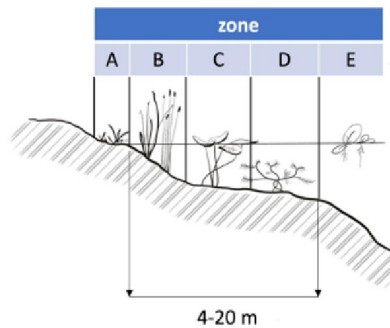


Diagram 1 Conceptual diagram showing relationship of aquatic habitat zones around the final void and lacustrine wetlands (RA12)

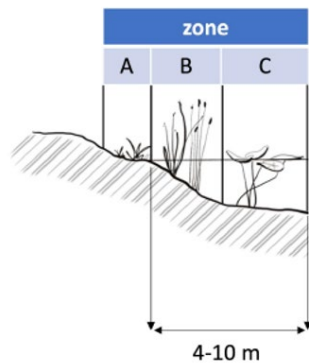


Diagram 2 Conceptual diagram showing relationship of aquatic habitat zones around the fringing palustrine wetlands (RA14)

Table 3 – Fish and macro-crustacean species potentially suitable for establishment in freshwater wetland areas (RA12 and RA14)

Common name	Species	Comments
Lacustrine wetlands		
eastern rainbowfish[#]	<i>Melanotaenia splendida splendida</i>	Omnivorous and breeds in lakes. Tolerant of a wide range of conditions.
Agassiz's glassfish^{***}	<i>Ambassis agassizii</i>	Schooling fish to 8 cm. Will breed in lakes.
Empire gudgeon[#]	<i>Hypseleotris compressa</i>	Omnivorous to 12 cm. Larvae generally develop in estuaries, so may not breed well in lakes.
Firetail gudgeon^{***}	<i>Hypseleotris galii</i>	Carnivorous fish to 7 cm. Will breed in lakes.
Midgley's gudgeon[#]	<i>Hypseleotris sp.</i>	Carnivorous fish to 4 cm.
purple-spotted gudgeon^{***}	<i>Mogurnda adspersa</i>	Mid-sized fish to 15 cm. Will breed in lakes.
Spangled perch^{***}	<i>Leiopotherapon unicolor</i>	Very hardy mid-sized fish to 25 cm. Will breed in lakes.
Long-finned eel[#]	<i>Anguilla reinhardtii</i>	Carnivorous to 1.6 m. Requires access to sea for breeding and may travel across land.
Pacific blue-eye^{**}	<i>Pseudomugil signifer</i>	Carnivorous to 6 cm. Will breed in lakes.
Hyrtl's catfish	<i>Neosilurus hyrtlii</i>	Mostly carnivorous to 4 cm.
fly-speckled hardyhead	<i>Craterocephalus stercusmuscarum</i>	Omnivorous to 8 cm.
orange-fingered yabby[#]	<i>Cherax depressus</i>	Feeds on organic matter and grows to 9 cm.
freshwater shrimp^{***}	<i>Family Atyidae and Palaemonidae</i>	Generally herbivorous to 8 cm. Will breed in lakes.

Common name	Species	Comments
Palustrine wetlands		
eastern rainbowfish[#]	<i>Melanotaenia splendida splendida</i>	Omnivorous and breeds in lakes. Tolerant of a wide range of conditions.
Agassiz's glassfish^{#**}	<i>Ambassis agassizii</i>	Schooling fish to 8 cm. Will breed in lakes.
purple-spotted gudgeon^{#**}	<i>Mogurnda adspersa</i>	Mid-sized fish to 15 cm. Will breed in lakes.
Pacific blue-eye^{**}	<i>Pseudomugil signifer</i>	Carnivorous to 6 cm. Will breed in lakes.
orange-fingered yabby[#]	<i>Cherax depressus</i>	Feeds on organic matter and grows to 9 cm.
freshwater shrimp^{#**}	Family Atyidae and Palaemonidae	Generally herbivorous to 8 cm. Will breed in lakes.

[#] recorded by Ecosure (2014c) in ML 80003 or surrounding areas.

^{**} readily available from commercial hatcheries.

Appendix 2 - Biocondition Benchmark

Table 4. BioCondition milestone criteria for mine site rehabilitation for Native Ecosystem (bushland) PMLU

BioCondition Assessable Attributes	BioCondition Assessable Attribute Weighting	Regional Ecosystem 12.3.3			Regional Ecosystem 12.11.6			Regional Ecosystem 12.11.14		
		BioCondition Benchmark ¹	PRCP benchmark ²		BioCondition Benchmark ¹	PRCP benchmark ²		BioCondition Benchmark ¹	PRCP benchmark ²	
			c. 5yrs RM x	c.10-15 yrs RM x		c. 5yrs	c.10-15 yrs		c. 5yrs	c.10-15 yrs
Non-native plant cover (%)	10	0	5 < 25% non-native cover	5 < 25% non-native cover	0	5 < 25% non-native cover	5 < 25% non-native cover	0	5 < 25% non-native cover	5 < 25% non-native cover
Recruitment of canopy species (%)	5	100	0	3 ≥ 20% of dominant canopy species	100	0	3 ≥ 20% of dominant canopy species	100	0	3 ≥ 20% of dominant canopy species
Tree (native) Species richness	5	5	2.5 ≥ 25% of benchmark	5 trees ≥ 90%	5	2.5 ≥ 25% of benchmark	5 trees ≥ 90%	6	2.5 ≥ 25% of benchmarks	5 trees ≥ 90%
Shrub (native) Species richness	5	5	2.5 ≥ 25% of benchmark	2.5 ≥ 25% of benchmark	5	2.5 ≥ 25% of benchmark	2.5 ≥ 25% of benchmarks	7	2.5 ≥ 25% of benchmark	2.5 ≥ 25% of benchmark
Grass (native) Species richness ³	5	9	2.5 ≥ 25% of benchmark	2.5 ≥ 25% of benchmark	9	2.5 ≥ 25% of benchmark	2.5 ≥ 25% of benchmark	8	2.5 ≥ 25% of benchmark	2.5 ≥ 25% of benchmark
Forbes (native) and other species richness ³	5	25	2.5 ≥ 25% of benchmark	2.5 ≥ 25% of benchmark	25	2.5 ≥ 25% of benchmark	2.5 ≥ 25% of benchmark	23	2.5 ≥ 25% of benchmark	2.5 ≥ 25% of benchmark
Tree canopy Height (m)	5	25	0	3 ≥ 25% of benchmark height	25	0	3 ≥ 25% of benchmark height	25	0	3 ≥ 25% of benchmark height
Tree layer (canopy) cover	5	40	2 ≥ 10% relative to benchmark	5 ≥ 50% and ≤ 200% relative to benchmark	40	2 ≥ 10% relative to benchmark	5 ≥ 50% and ≤ 200% relative to benchmark	40	2 ≥ 10% relative to benchmark	5 ≥ 50% and ≤ 200% relative to benchmark
Shrub layer (canopy) cover	5	4	3 ≥ 10% relative to benchmark	5 ≥ 50% or ≤ 200% relative to benchmark	4	3 ≥ 10% relative to benchmark	5 ≥ 50% or ≤ 200% relative to benchmark	4	3 ≥ 10% relative to benchmark	5 ≥ 50% or ≤ 200% relative to benchmark

BioCondition Assessable Attributes	BioCondition Assessable Attribute Weighting	Regional Ecosystem 12.3.3			Regional Ecosystem 12.11.6			Regional Ecosystem 12.11.14		
		BioCondition Benchmark ¹	PRCP benchmark ²		BioCondition Benchmark ¹	PRCP benchmark ²		BioCondition Benchmark ¹	PRCP benchmark ²	
			c. 5yrs	c.10-15 yrs		c. 5yrs	c.10-15 yrs		c. 5yrs	c.10-15 yrs
			RM x	RM x						
Native perennial grass cover (%)	5	52	3 ≥50 – 90% of benchmark cover	3 ≥50 – 90% of benchmark cover	52	3 ≥50 – 90% of benchmark cover	3 ≥50 – 90% of benchmark cover	45	3 ≥50 – 90% of benchmark cover	3 ≥50 – 90% of benchmark cover
Organic litter groundcover (%)	5	20	0	5 ≥50% and ≤200% of benchmark	20	0	5 ≥50% and ≤200% of benchmark	30	0	5 ≥50% and ≤200% of benchmark
Total BioCondition Assessable weighting score	60		>20 (Total of above = 23)	>35 (Total of above = 41.5)		>20 (Total of above = 23)	>35 (Total of above = 41.5)		>20 (Total of above = 23)	>35 (Total of above = 41.5)

¹ Source: https://www.qld.gov.au/data/assets/excel_doc/0023/170285/bioconditon-benchmark-database-table.xlsx.

² Indicative minimum scores for attributes - a site's BioCondition score can be comprised of different attribute scores but must meet or exceed the minimum (modified) BC score for the relevant milestone. Attribute benchmark descriptions may be amended by application with approval of the administering authority if locally derived BioCondition Benchmarks are found to more adequately represent local conditions within well managed, undisturbed analogue sites in good condition. The 5-year PRCP benchmarks for BioCondition are intended as a guide to demonstrate rehabilitation is on an acceptable trajectory. It is acknowledged that progress may be affected (e.g. by a prolonged drought or other factors) and these factors will be taken into account when assessing rehabilitation progress / performance over short term intervals

³ Species richness must be based on native species that occur in RE 12.3.3, RE 12.11.6 and RE 12.11.14 as per the RE technical description

* [The BioCondition Site Assessment manual provides an assessment protocol to measure how well an area of vegetation is functioning for the maintenance of biodiversity values and can be accessed: https://www.qld.gov.au/environment/plants-animals/biodiversity/biocondition](https://www.qld.gov.au/environment/plants-animals/biodiversity/biocondition)

Appendix 3 – 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/transect* and <0.3m deep	15-30 rills/transect* and <0.3m deep	>30 rills/transect* 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.

*Transect 100 m across the contour (Source: Tongway, D. J. and Hindley, N. L. 2005. *Landscape Function Analysis: Procedures for Monitoring and Assessing Landscapes*. CSIRO Publishing, Canberra, Australia.)

Appendix 4 – Surface Water Quality Monitoring Locations

Monitoring Locations	Receiving waters location description	Latitude (decimal degree, GDA2020)	Longitude (decimal degree, GDA2020)
Upstream monitoring locations			
SW1	Gully B upstream	-23.79527	151.13791
SW2	Gully D upstream	-23.79106	151.13006
SW3	Gully E upstream	-23.78444	151.12818
Downstream monitoring locations			
SW4	Gully E waterbody	-23.77917	151.13256
SW8	Gully E downstream	-23.77553	151.13888
SW5	Gully C downstream	-23.78138	151.14506
SW9	Gully B downstream	-23.79404	151.14795

Appendix 5 – Surface water quality values

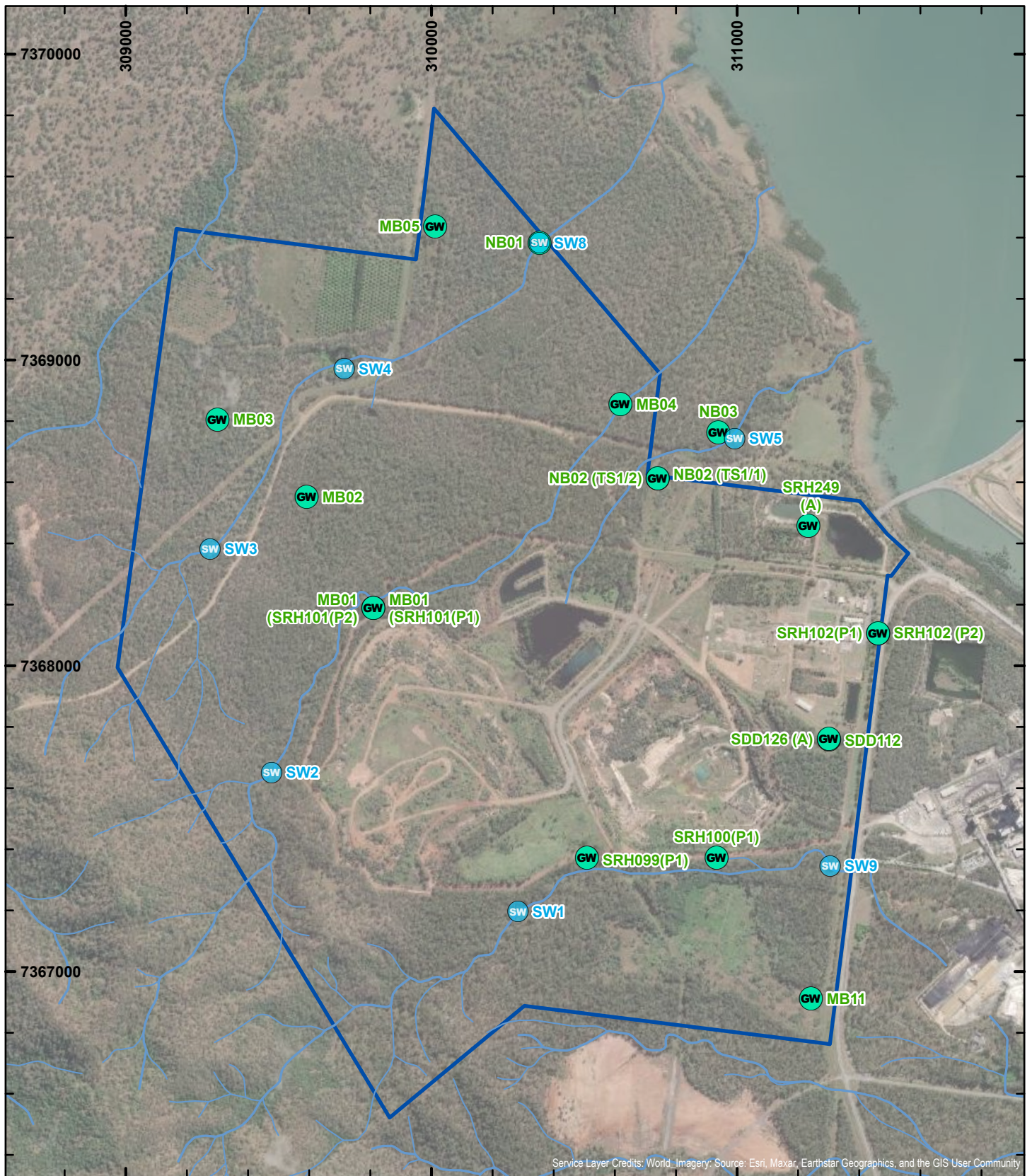
Quality characteristic (units)	Value*	Comment on Value
pH	6.5-8.0	Lowland freshwater inside SDA WQO (Table 2F)
Electrical Conductivity (µS/cm)	700	Site-specific
Turbidity (NTU)	56	Site-specific
Sulfate (mg/L)	20	Central Calliope WQO (Table 14)
Aluminium - dissolved (µg/L)	410	Site-specific
Cobalt - dissolved (µg/L)	1.4	ANZG 2018
Iron - dissolved (µg/L)	For Interpretation purposes only	
Manganese - dissolved (µg/L)	350	Site-specific
Nickel - dissolved (µg/L)	11	ANZG 2018
Zinc - dissolved (µg/L)	22	Site-specific
Nitrate (µg/L)	146	Site-specific
Total nitrogen (µg/L)	1500	Site-specific
Total recoverable hydrocarbons (C6-C9) (µg/L)	20	
Total recoverable hydrocarbons (C10-C36) (µg/L)	100	
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.
- ANZG (2018) Aquatic ecosystem protection for moderately disturbed system (95% protection)
- Lowland freshwater inside state development area (SDA) Water Quality Objective (WQO) - https://environment.desi.qld.gov.au/_data/assets/pdf_file/0034/87775/boyne-calliope-curtis-evs-wqos.pdf
- Surface water Central Calliope ion Water Quality Objective (WQO) - https://environment.desi.qld.gov.au/_data/assets/pdf_file/0034/87775/boyne-calliope-curtis-evs-wqos.pdf

Appendix 6 –Groundwater monitoring bores

Monitoring Bore	Hydrogeological Unit	Location	
		Latitude (decimal degree, GDA2020)	Longitude (decimal degree, GDA2020)
MB01 (SRH101(P1))	Rundle Formation	-23.78625	151.13339
MB01 (SRH101(P2))	Alluvium	-23.78625	151.13339
MB02	Alluvium	-23.78294	151.13130
MB03	Alluvium	-23.78062	151.12847
MB04	Alluvium	-23.78033	151.14141
MB05	Rundle Formation	-23.77500	151.13554
SRH102 (P2)	Alluvium	-23.78625	151.13339
MB11	Alluvium	-23.79794	151.14727
NB01	Alluvium	-23.77553	151.13888
NB02 (TS1/1)	Alluvium	-23.78252	151.14257
NB02 (TS1/2)	Weathered Tertiary	-23.78252	151.14257
NB03	Rundle Formation	-23.78119	151.14454
SRH099(P1)	Rundle Formation	-23.79371	151.14014
SRH100(P1)	Rundle Formation	-23.79375	151.14430
SDD112	Rundle Formation	-23.79029	151.14796
SDD126 (A)	Alluvium	-23.79028	151.14795
SRH102(P1)	Rundle Formation	-23.78718	151.14958
SRH249 (A)	Rundle Formation	-23.78398	151.14739



Service Layer Credits: World Imagery: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

0 100 200 300 400 500
m

QUEENSLAND ENERGY RESOURCES



GDA2020, MGA Zone 56



Figure 3a
Surface water and groundwater
monitoring locations

Legend

- ML 80003
- ~~~~~ Watercourse
- GW Groundwater Monitoring Location
- SW Surface Water Monitoring Location

Date: 7/05/2025

Drawn By: Chris Schlebusch

RTPL_QER_STPRC_PRCMAP0041_C

Requested by: John Linden

Sources:
© The State of Queensland (Department of Natural Resources and
Mines, Manufacturing and Regional and Rural Development)



LEGEND

- Drainage
- ML80003

Representative monitoring bores

- Quaternary Alluvium
- Rundle Formation
- Wandilla Formation
- Weathered Tertiary

Additional monitoring bores shown in figure 9.5

- Quaternary Alluvium
- Rundle Formation
- Kerosene Creek Member

Stuart Kerogen Shale PRCP RFI (SKS5001.001)

Surface water and groundwater Monitoring locations



AGE

DATE
09/02/2024

FIGURE No:
3b

Appendix 7 – Groundwater quality values

Quality characteristic (units)	Monitoring Bore	Value*	Comment on value
pH (pH units)	All bores	6.5 – 8.5	
Electrical conductivity (µS/cm)	All bores	6,727	Site-specific for TS9/1 and TS9/2
Sulfate (mg/L)	All bores	637	Site-specific
Aluminium - dissolved (µg/L)	All bores	55	ANZG 2018
Cobalt - dissolved (µg/L)	All bores	1.4	ANZG 2018
Iron - dissolved (µg/L)	All bores	For Interpretation purposes only	
Manganese - dissolved (µg/L)	All bores	1,900	ANZG 2018
Nickel - dissolved (µg/L)	All bores	11	ANZG 2018
Zinc - dissolved (µg/L)	All bores	105	Site-specific
Major ions (mg/L) Calcium, chloride, potassium, magnesium, sodium, bicarbonate, carbonate	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 for metals and metalloids apply to dissolved results.
- ANZG (2018) Aquatic ecosystem protection for moderately disturbed system (95% protection)
- Groundwater chemistry zone 14 Bondoola Depth Shallow (5-20m) WQO - https://environment.desi.qld.gov.au/_data/assets/pdf_file/0030/87564/wq1273-ccc-groundwater.pdf and https://environment.desi.qld.gov.au/_data/assets/pdf_file/0034/87775/boyne-calliope-curtis-evs-wqos.pdf

END OF **PRCP** SCHEDULE