

2025

Annual Review



BULGA COAL

A
GLENCORE
MANAGED OPERATION

Annual Review

1 January 2025 – 31 December 2025

Final

Prepared by
Umwelt (Australia) Pty Limited

On behalf of
Bulga Coal Pty Ltd

Project Director: Adam Williams
Project Manager: Eva Tew
Report No.: 33041/R01
Date: March 2026



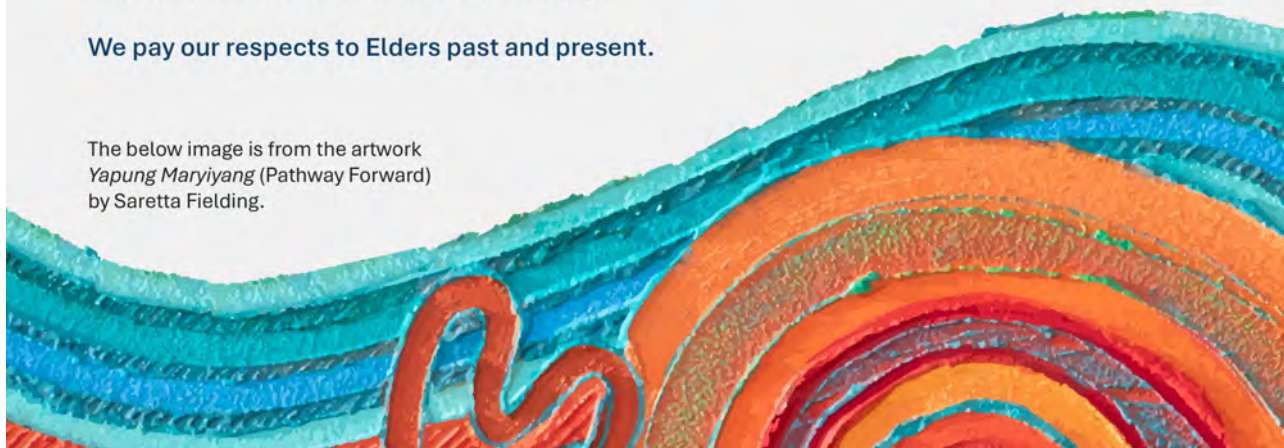
This report was prepared using
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Acknowledgement of Country

Umwelt acknowledges the Traditional Owners of Country throughout Australia and their continuing values, culture and connection to the land, waters and sky.

We pay our respects to Elders past and present.

The below image is from the artwork *Yapung Maryiyang* (Pathway Forward) by Saretta Fielding.



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Document Status

Rev No.	Reviewer Name	Date	Approved for Issue Name	Date
Draft	Adam Williams	18/03/2026	Adam Williams	18/03/2026
Final	Adam Williams	30/03/2026	Adam Williams	30/03/2026

Compliance Declaration

Name of Operation	Bulga Coal
Name of Operator	Bulga Coal Management Pty Ltd
Development consent / project approval #	Bulga Underground Operations DA 376-8-2003
Name of holder of development consent / project approval	Bulga Open Cut SSD-4960
Mining lease #	Bulga Coal Management Pty Ltd
Name of holder of mining lease	ML 1494, ML 1547, ML 1674, ML 1717, ML 1788, CL 224, sublease within Mount Thorley Operations (CL 219), AUTH 447, EL 5277, EL 5461, EL 8315, ML 1547 AMA.
Water licence #	Saxonvale Coal Pty Ltd; Saxonvale Coal Pty Ltd and Nippon Steel Australia Pty Ltd; and Bulga Coal Management Pty Ltd
Name of holder of water licences	WAL36221, WAL41543, WAL41544, WAL41545, WAL41546, WAL41687
RMP start date	1 January 2024
Annual Review start date	1 January 2025
Annual Review end date	31 December 2025

I, Ralph Northey,

certify that this audit report is a true and accurate record of the compliance status of Bulga Coal for the period 1 January 2025 to 31 December 2025 and that I am authorised to make this statement on behalf of Bulga Coal Management Pty Ltd.

Note.

- The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000.
- The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or \$22,000, or both).

Name of authorised reporting officer	Ralph Northey
Title of authorised reporting officer	Environment and Community Manager
Signature of authorised reporting officer	<i>R Northey</i>
Date	30 March 2026

Contents

1.0	Statement of Compliance	1
2.0	Introduction	5
2.1	Mine Operations	5
2.2	Mine Contacts	5
2.2.1	Mining Personnel	5
3.0	Approvals	7
3.1	Development Consents and Commonwealth Approvals	7
3.2	Mining Tenements	8
3.2.1	Rehabilitation Management Plan and Outcome Documents Status	9
3.3	Licences	9
4.0	Operations Summary	12
4.1	Exploration	12
4.2	Land Preparation	12
4.3	Mining Operations	14
4.4	Other Operations	16
4.4.1	Coal Handling and Preparation Plant	16
4.4.2	Tailings Management	16
4.4.3	Construction	16
4.4.4	Demolition	16
4.4.5	Waste Management	17
4.4.6	Hazardous Materials Management	18
4.5	Next Reporting Period	19
4.5.1	Bulga Underground Operations	19
4.5.2	Bulga Open Cut	19
5.0	Actions Required from Previous Annual Review	22
6.0	Environmental Management Performance	23
6.1	Meteorology	27
6.2	Noise	44

6.2.1	Environmental Management	44
6.2.2	Environmental Performance	44
6.2.3	Comparison Against Predictions	46
6.2.4	Long Term Analysis	46
6.2.5	Implemented/Proposed Improvements	48
6.3	Blasting	48
6.3.1	Environmental Management	48
6.3.2	Environmental Performance	49
6.3.3	Comparison Against Predictions	50
6.3.4	Implemented/Proposed Improvements	50
6.4	Air Quality	50
6.4.1	Environmental Management	50
6.4.2	Environmental Performance	51
6.4.3	Comparison Against Predictions	58
6.4.4	Long Term Analysis	58
6.4.5	Implemented/Proposed Improvements	58
6.5	Mine Subsidence	58
6.5.1	Environmental Management	58
6.5.2	Comparison Against Predictions	59
6.5.3	Implemented/Proposed Improvements	59
6.6	Biodiversity and Offsets	59
6.6.1	Remnant Vegetation	60
6.6.2	Biodiversity Offsets	64
6.7	Weeds and Pests	81
6.7.1	Environmental Management	81
6.7.2	Environmental Performance	81
6.7.3	Implemented/Proposed Improvements	81
6.8	Archaeology and Heritage	82
6.8.1	Environmental Management	82
6.8.2	Environmental Performance	82
6.8.3	Implemented/Proposed Improvements	85

6.9	Visual and Lighting	85
6.9.1	Environmental Management	85
6.9.2	Environmental Performance	85
6.10	Spontaneous Combustion	86
6.10.1	Environmental Management	86
6.10.2	Environmental Performance	86
6.11	Bushfire	86
6.11.1	Environmental Management	86
6.11.2	Environmental Performance	87
6.11.3	Implemented/Proposed Improvements	87
6.12	Greenhouse Gas Emissions	87
6.12.1	Environmental Management	87
6.12.2	Environmental Performance	88
6.12.3	Implemented/Proposed Improvements	89
6.13	Hydrocarbon Management	89
6.13.1	Environmental Management	89
6.13.2	Environmental Performance	92
6.13.3	Implemented/Proposed Improvements	93
6.14	Public Safety	93
6.14.1	Environmental Management	93
6.14.2	Environmental Performance	93
7.0	Water Management	94
7.1	Water Management	94
7.1.1	Water Balance	94
7.1.2	Licensed Water Take	95
7.1.3	Long Term Trend Analysis	96
7.2	Surface Water	96
7.2.1	Environmental Management	97
7.2.2	Environmental Performance	97
7.2.3	Comparison Against Predictions	105
7.2.4	Long Term Trend Analysis	106

7.3	Erosion and Sedimentation	108
7.3.1	Environmental Management	108
7.3.2	Environmental Performance	108
7.4	Groundwater	108
7.4.1	Environmental Management	108
7.4.2	Environmental Performance	109
7.4.3	Comparison Against Predictions	114
7.4.4	Long Term Trend Analysis	115
8.0	Rehabilitation	116
8.1	Post Mining Land Use	116
8.2	Rehabilitation Performance During the Reporting Period	116
8.2.1	Rehabilitation Summary	116
8.2.2	2025 Rehabilitation – Bulga Open Cut	117
8.2.3	2025 Rehabilitation – Bulga Underground Operations	121
8.3	Decommissioning of Infrastructure	122
8.4	Department of Regional NSW – RR Rehabilitation Sign-off	122
8.5	Variations from Proposed Forward Work Program Activities	122
8.6	Rehabilitation Monitoring, Trials and Research	123
8.6.1	Annual Rehabilitation Monitoring Program	123
8.6.2	Rehabilitation Trials and Research	126
8.7	Key Issues that may Affect Rehabilitation	126
8.7.1	Bulga Open Cut	127
8.7.2	Bulga Underground Operations	128
8.8	Actions for the Next Reporting Period	129
8.8.1	Rehabilitation Outcomes	129
8.8.2	Proposed Rehabilitation Trials, Projects and Initiatives	129
8.8.3	Rehabilitation Activities Proposed for 2026	129
9.0	Community	130
9.1	Community Engagement	130
9.1.1	Community Barbeques	130
9.1.2	Newsletters	130

9.1.3	Community Consultative Committee	131
9.1.4	Voluntary Planning Agreement	131
9.1.5	Broke to Bulga Discovery Trail Feasibility Study	132
9.1.6	Mine Tours	132
9.2	Community Sponsorship and Donations	133
9.2.1	Community Yoga Classes	133
9.2.2	Singleton Neighbourhood Centre	133
9.2.3	Singleton Soft Cogs	134
9.2.4	Hunter Food Relief	134
9.2.5	Broke Village Fair	134
9.2.6	Sponsorships	135
9.2.7	Donations	136
9.3	Community Complaints	136
9.4	Community Feedback	137
9.5	Minimbah Teaching and Keeping Place	137
9.5.1	Bushtucker Garden	138
10.0	Independent Audit	139
10.1	2024 Independent Environmental Audit	139
11.0	Incidents and Non-Compliances During the Reporting Period	143
11.1	Administrative Non-Compliance	143
11.1.1	Failure to Continuously Monitor Air Quality	143
11.1.2	Failure to Continuously Monitor Meteorological Data	143
11.2	Noise Affected Night During the Attended Noise Monitoring at BCC8	144
12.0	Activities to Be Completed in the Next Reporting Period	146
12.1	Proposed Activities	146

Figures

Figure 2.1	Bulga Coal Locality and Licences 2025	6
Figure 4.1	Bulga Open Cut Summary of Operations 2025	13
Figure 4.2	2017–2025 Waste Streams Generated	18
Figure 4.3	Bulga Open Cut Proposed Operations 2026	21
Figure 6.1	Bulga Coal Air and Meteorological Monitoring Locations 2025	24
Figure 6.2	Bulga Coal Noise and Blast Monitoring Locations 2025	25
Figure 6.3	Bulga Coal Water Monitoring Locations 2025	26
Figure 6.4	Distribution of Monthly Rainfall at Representative Monitoring Stations	29
Figure 6.5	2025 Monthly Temperature 2 m (Degrees Celsius) at Representative Monitoring Stations	32
Figure 6.6	2025 Monthly Temperature 10 m/30 m (Degrees Celsius) at Representative Monitoring Stations	33
Figure 6.7	2025 Relative Humidity (%) at Representative Monitoring Stations	35
Figure 6.8	2025 Wind Speed at Representative Monitoring Stations	37
Figure 6.9	Wind Speed and Direction Quarter 1	40
Figure 6.10	Wind Speed and Direction Quarter 2	41
Figure 6.11	Wind Speed and Direction Quarter 3	42
Figure 6.12	Wind Speed and Direction Quarter 4	43
Figure 6.13	2025 Pollution Rose for EPA Point 9, PM ₁₀ Data (Todoroski Air Sciences, 2026)	55
Figure 6.14	2025 Pollution-Rose for EPA Point 10, PM ₁₀ Data (Todoroski Air Sciences, 2026)	56
Figure 6.15	Mushroom Composting Facility (D4 Sampling Results 2025 – 13-hour PM ₁₀ Averages)	57
Figure 6.16	Bulga Coal Ecological and Rehabilitation Monitoring Locations 2025	61
Figure 6.17	Bulga Coal Biodiversity Offsets and Management Areas – Regional Context	66
Figure 6.18	Bulga Coal Biodiversity Offsets and Management Areas	67
Figure 6.19	Bulga Coal Hydrocarbon Surface and Groundwater Monitoring Locations 2025	91
Figure 7.1	Wollombi Brook Brickmans Bridge Gauging Station (210135)	100
Figure 7.2	Wollombi Brook – Bulga Gauging Station 210028 (Downstream)	100
Figure 7.3	Long Term Surface Water EC Results	106
Figure 7.4	Long Term Surface Water pH Results	107
Figure 7.5	Long Term Surface Water TSS Results	107

Tables

Table 1.1	Summary Statement of Compliance for Major Approvals	1
Table 1.2	Summary of Non-Compliances	2
Table 1.3	Compliance Status Categories	4
Table 2.1	Contacts for Bulga Coal	5
Table 3.1	Development Consents and Commonwealth Approvals	7
Table 3.2	Mining Tenements	8
Table 3.3	Bulga Coal Licences	9
Table 4.1	Equipment Fleet	14
Table 4.2	Production and Waste Summary for the Bulga Open Cut	15
Table 6.1	Distribution of Monthly Rainfall at Representative Monitoring Stations	28
Table 6.2	2025 Temperature 2 m (Degrees Celsius) at Representative Monitoring Stations	30
Table 6.3	2025 Temperature 10 m/30 m (Degrees Celsius) at Representative Monitoring Stations	31
Table 6.4	2025 Relative Humidity (%) at Representative Monitoring Stations	34
Table 6.5	2025 Wind Speed at Representative Monitoring Stations	36
Table 6.6	2025 Wind Direction at Representative Monitoring Stations	38
Table 6.7	2025 Sigma Theta at Representative Monitoring Stations	39
Table 6.8	Summary of Attended Noise Monitoring Data – 2025	45
Table 6.9	Summary of Exceedances by Noise Monitoring Location 2011–2025	47
Table 6.10	Private Property Amenity Impact Assessment Criteria	48
Table 6.11	Infrastructure Impact Assessment Criteria	49
Table 6.12	Heritage Impact Assessment Criteria	49
Table 6.13	2025 Private Property Overpressure and Vibration Monitoring Results	49
Table 6.14	2025 Infrastructure Vibration Monitoring Results	50
Table 6.15	2025 Declared Dam (Northern Tailings Facility) Vibration Monitoring Results	50
Table 6.16	Air Quality Criteria SSD-4960	51
Table 6.17	Summary of Dust Deposition Monitoring Results – 2025 Annual Average	52
Table 6.18	Summary of 2025 HVAS Annual Average Results	52
Table 6.19	Summary of TEOM 2025 Monitoring Results	53

Table 6.20	Summary of BAM 2025 Monitoring Results	53
Table 6.21	Observed Subsidence Impacts	58
Table 6.22	Bulga Coal Biodiversity Offset Areas	64
Table 6.23	Bulga Coal Greenhouse Gas Emissions (Scope 1 and 2 Direct Emissions) FY 2024/2025	88
Table 6.24	Hydrocarbon Monitoring Sites	92
Table 6.25	Ecological Investigation Levels (ANZECC) Adopted for Natural Waters (Surface and Groundwater) at Bulga Open Cut	92
Table 7.1	Bulga Coal 2025 Water Balance	94
Table 7.2	Water Take 2024–2025	95
Table 7.3	Summary of Surface Water Monitoring Results – 2025 Annual Averages	97
Table 7.4	Comparison of Surface Water Monitoring Results (2025) against Background (2013 Bulga Optimisation Project EIS)	105
Table 7.5	Summary of Groundwater Monitoring Results – 2025 Annual Averages	110
Table 8.1	Rehabilitation Status at Bulga Coal	117
Table 8.2	Maintenance Activities on Rehabilitated Land for Bulga Open Cut	120
Table 8.3	Maintenance Activities on Rehabilitated Land for Bulga Underground Operations	121
Table 8.4	Bulga Coal Rehabilitation Performance against Forecast	122
Table 9.1	Summary of Complaints by Issue 2019–2025	136
Table 10.1	Non-Compliance Findings and Action Status from 2024 IEA	140
Table 11.1	Meteorological Conditions During the Nights of 12 and 19 August 2025	144
Table 12.1	Bulga Coal Proposed Activities 2026	146

Photos

Photo 6.1	Baby Welcoming Ceremony at Minimbah Teaching Place 2025	84
Photo 6.2	Bushtucker garden planting with RAPs at Minimbah Teaching Place in April 2025	84
Photo 8.1	Rehabilitation landform Shaping at the East Pit 2025	118
Photo 8.2	Topsoil Spread at the Northern Extension 2025	119
Photo 9.1	Combined Community BBQ held at Adam’s Peak Country Estate 2025	130
Photo 9.2	CCC meeting at the Vere Biodiversity Offset in November 2025	131
Photo 9.3	West Wallsend Year 12 Earth Sciences Tour 2025	132

Photo 9.4	Mt Pleasant Primary students learning about Geology June 2025	133
Photo 9.5	Singleton Soft Cogs MS Gong Ride, Sponsored by Bulga Coal	134
Photo 9.6	Bulga Coal Marquee at the Broke Village Fair	135
Photo 9.7	Wonnarua Baby Welcoming Ceremony at Minimbah Teaching and Keeping Place 2025	137
Photo 9.8	Planting the Bushtucker Garden April 2025	138

Appendices

Appendix A	EPBC Approvals Compliance Reports
Appendix B	Air Quality Monitoring Data Review and Analysis at Bulga Complex 2025 (Todoroski, 2026)
Appendix C	Progress Against 2025 Performance Indicators – Offset Areas
Appendix D	Bulga Coal 2025 Groundwater and Surface Water Annual Review (Umwelt, 2026)
Appendix E	Annual Photographic Monitoring of Loders Creek Grinding Grooves Relocation Area

1.0 Statement of Compliance

The Bulga Coal Complex (Bulga Coal) includes the Bulga Open Cut and the Bulga Underground Operations. During the reporting period Bulga Open Cut operated under development consent SSD-4960, while Bulga Underground Operations operated under DA 376-8-2003. Both sites operate under Environment Protection Licence (EPL) 563 and several mining and exploration leases.

Table 1.1 outlines compliance against major approvals. Where non-compliances have been identified, they are listed in **Table 1.2** and detailed in later sections of this report. **Table 1.3** describes the status categories of non-compliance.

Table 1.1 Summary Statement of Compliance for Major Approvals

Licence	Were all conditions of the Licence complied with?
SSD-4960	No
DA 376-8-2003	No
EPBC 2002/773	Yes
EPBC 2012/6637	Yes
EPBC 2018/8300	Yes
EPL 563	No
ML 1494	Yes
ML 1547	Yes
ML 1674	Yes
ML 1717	Yes
ML 1788	Yes
EL 5277	Yes
EL 5461	Yes
EL 8315	Yes
AUTH 447	Yes
CL 224	Yes

Table 1.2 Summary of Non-Compliances

Approval / Licence	Condition / Legislative Reference	Condition Summary	Compliance Status	Date	Details of the Non-compliance	Corrective Action/s	Section of this Annual Review
SSD-4960	Schedule 3, Conditions 3 and 4	Noise Criteria	Non-Compliant	12/08/2025	On the night of 12 August during the attended noise monitoring at BCC8 monitoring location the night LAeq _{15 minute} (36dB) and LA1 _{1-minute} (45dB) criterion were exceeded. The immediate response included modifying operations to reduce noise levels (three excavators, associated trucks and dozers ceased operating). A follow up measurement was completed on 18 August and recorded an LAeq _{15-minute} reading of 23dB and LA1 _{1-minute} of 29dB, which were below the criteria.	Additional refresher training was carried out with dispatch and Open Cut Examiner's regarding the attended noise monitoring and response.	Section 6.2.2 and Section 11.2

Approval / Licence	Condition / Legislative Reference	Condition Summary	Compliance Status	Date	Details of the Non-compliance	Corrective Action/s	Section of this Annual Review
SSD-4960	Schedule 3, Condition 16	Air Quality Monitoring	Non-Compliant	Various	Failure to continuously monitor PM ₁₀ at air quality monitors D1, D3, D5 and D11. Yearly valid data for all four monitors was above 97.6%.	Causes of the failures were investigated and issues fixed, or power restored.	Section 11.1.1
DA 376-8-2003	Schedule 4, Condition 22						
SSD-4960	Schedule 3, Condition 16	Air Quality Monitoring	Non-Compliant	Various	Failure to continuously monitor PM _{2.5} at air quality monitors D2 and D10. Yearly valid data for both monitors was above 97.3%.	Causes of the failures were investigated and issues fixed, or power restored.	Section 11.1.1
DA 376-8-2003	Schedule 4, Condition 22						
EPL 563	Condition M2.2	Air Quality Monitoring	Non-Compliant	Various	Failure to continuously monitor PM ₁₀ at air quality monitors EPA Point 9 and EPA Point 10. Yearly valid data for both monitors was above 97.9%.	Causes of the failures were investigated and issues fixed, or power restored.	Section 11.1.1
EPL 563	Condition M5.1	Meteorological monitoring	Non-Compliant	Various	Failure to continuously monitor meteorological parameters at EPA Point 20, 21 and 23.	Causes of the failures were investigated and issues rectified.	Section 11.1.2

Table 1.3 Compliance Status Categories

Risk Level	Colour Code	Description
High	Non-Compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-Compliant	Non-compliance with potential for serious environmental consequences, but is unlikely to occur; or potential for moderate environmental consequences, but is likely to occur
Low	Non-Compliant	Non-compliance with potential for moderate environmental consequences, but is unlikely to occur; or potential for low environmental consequences, but is likely to occur
Administrative non compliance	Non-Compliant	Non-compliance which does not result in any risk of environmental harm

Section 6.0 and **Section 7.0** of this report detail the environmental management and water management performance of Bulga Coal, respectively. Non-compliances are discussed in **Section 11.0**.

Bulga Coal submitted a revision of the Bulga Coal Water Management Plan (WMP) and Bulga Coal Erosion and Sediment Control Plan (ESCP) on 21 November 2025 into the Major Project Portal and requested consultation from EPA, NSW DCCEEW Water Group, NSW DCCEEW Conservation Programs, Heritage & Regulations Group (CHPR) and Commonwealth DCCEEW.

EPA provided a response and CHPR have reviewed and found the WMP and ESCP to meet the requirements of the Open Cut (SSD 4960) and Underground (DA 376-8-2003) consent WMP and ESCP conditions.

The Commonwealth DCCEEW have requested they be notified when the WMP has been approved.

Bulga Coal received a letter response from NSW DCCEEW Water Group on the 19 December 2025 that included recommendations for the WMP. Bulga Coal is currently working through the recommendations. Any matters that may arise from these recommendations will be addressed in the 2026 Annual Review.

2.0 Introduction

2.1 Mine Operations

Bulga Coal is located approximately 12 kilometres (km) southwest of Singleton, and 2 km from the townships of Broke and Bulga in the Upper Hunter Valley of New South Wales (NSW) (refer **Figure 2.1**). Bulga Coal comprises two coal mining operations, being Bulga Open Cut and Bulga Underground Operations. The Coal Handling and Processing Plant (CHPP) and rail loading facility are on the eastern side of the site. In May 2018, Bulga Underground Operations ceased mining and the mine was sealed in July 2018.

Bulga Coal is managed by Bulga Coal Management Pty Ltd on behalf of the Bulga Joint Venture. Bulga Coal Management Pty Ltd is owned by Oakbridge Pty Ltd, which is the majority shareholder (87.5%) of the Bulga Joint Venture. Glencore is the majority shareholder of Oakbridge Pty Ltd.

This report details the environmental management performance of Bulga Coal over the period 1 January 2025 to 31 December 2025. It has been prepared in accordance with the Annual Review Guideline (DPE, 2015) and satisfies:

- Schedule 6, Condition 4 of Bulga Underground Operations Development Consent DA 376-8-2003.
- Schedule 5, Condition 4 of Bulga Optimisation Project Development Consent SSD-4960.

2.2 Mine Contacts

The contact details for the personnel responsible for environmental management and community relations at Bulga Coal are provided in **Table 2.1**.

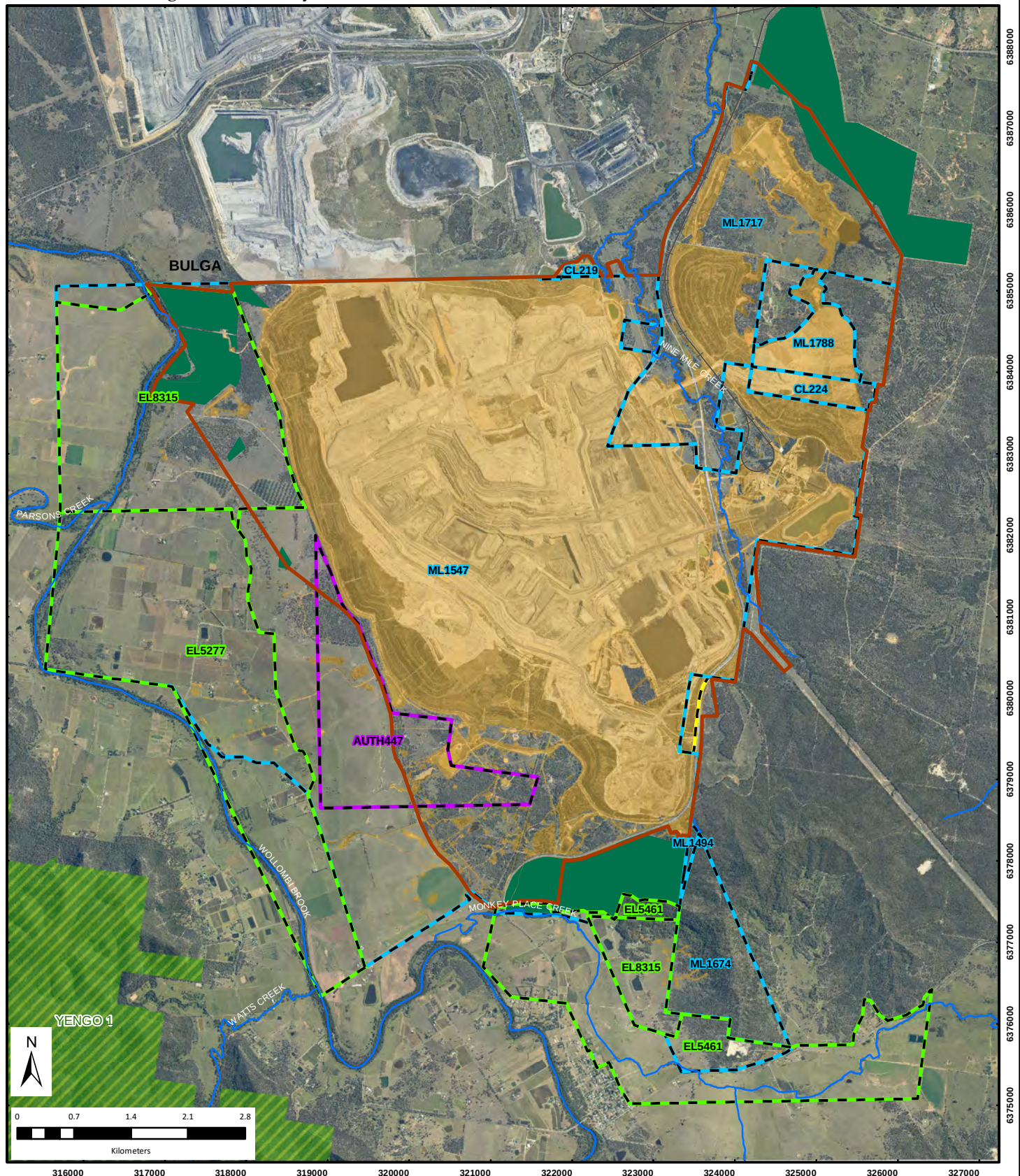
Table 2.1 **Contacts for Bulga Coal**

Contact	Position	Contact Details
Ralph Northey	Bulga Coal Environment and Community Manager	T: 02 6570 2539
		E: Ralph.Northey@glencore.com.au
Murray Gregson	Bulga Coal Operations Manager	T: 02 6570 2400
		E: Murray.Gregson@glencore.com.au

2.2.1 Mining Personnel

As at the end of the reporting period, Bulga Coal employed approximately 913 direct employees and full-time equivalent personnel.

FIGURE 2.1 - Bulga Coal Locality and Licences 2025



Legend

- Development Consent Boundary
- Exploration Licence
- Mining Lease AMA
- Mining Lease
- Exploration Authorisation
- Biodiversity Offset Areas
- Disturbance
- Main Roads
- Local Roads
- Watercourse
- + Railway
- ▨ Singleton Military Training Area
- ▨ National Park Reserve



Date Created: 24/03/2026
 Map Size: A4 Portrait
 Scale: 1:65,000
 Map Created By: rabbott
 Coordinate System:
 GDA2020 MGA Zone 56
 Projection: Transverse Mercator
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3.0 Approvals

3.1 Development Consents and Commonwealth Approvals

Bulga Coal operates under two development consents: the Bulga Underground Operations DA 376-8-2003 and Bulga Open Cut SSD-4960.

Bulga Coal also operates in accordance with three Commonwealth approvals issued by the Australian Government Department of Climate Change, Energy, the Environment and Water (Commonwealth DCCEEW) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). For more information regarding compliance with Commonwealth approval conditions refer to **Appendix A**.

Details of the current State development consents and Commonwealth approvals are provided in **Table 3.1**.

Table 3.1 Development Consents and Commonwealth Approvals

Consent	Details	Expiry Date
DA 376-8-2003	Bulga Coal Continued Underground Operations	23 February 2031
	Mod 1 – Drift relocation (11 April 2006)	
	Mod 2 – Increase CHPP throughput (25 October 2006)	
	Mod 3 – Longwall realignment (1 October 2007)	
	Mod 4 – Methane Abatement and Gas-fired Power Plant (14 July 2010)	
	Mod 5 – Blakefield North Longwall Modification and Gas Fired Power Plant (18 October 2013)	
	Mod 6 – Modification to noise criteria, flora and fauna criteria, and independent auditing (8 December 2016)	
	Mod 7 – Relocation of the 9 MW power station and associated flares (16 July 2020)	
SSD-4960	Mod 8 – Change to Annual Review reporting period and change to sigma theta method for meteorological monitoring (24 February 2022)	31 December 2039
	Bulga Optimisation Project (1 December 2014)	
	Mod 1 – Eastern Emplacement Area and Tailings Storage (17 January 2017)	
	Mod 2 – Extend the period for construction of the outer face of the Noise and Visual Bund (30 August 2018)	
	Mod 3 – Extend approval to extract additional 64 Mt from beneath tailings storage (16 July 2020)	

Consent	Details	Expiry Date
	Mod 4 – Change to Annual Review reporting period and change to sigma theta method for meteorological monitoring (24 February 2022)	
EPBC 2002/773	Commonwealth Land Consent (as varied 25 October 2015) Mod 2002/773 – Commonwealth Land Subsidence Management Plan (SMP) Submission Schedule	31 December 2034
EPBC 2012/6637	Bulga Open Cut (as varied 5 January 2016)	31 December 2036
EPBC 2018/8300	Bulga Open Cut (as varied 9 September 2021)	31 December 2049

3.2 Mining Tenements

Mining operations at Bulga Coal are undertaken within Mining Lease (ML) 1494, ML 1547, ML 1674, ML 1717, ML 1788, Coal Lease (CL) 224 and a sublease within Mount Thorley Operations (CL 219). Bulga Coal also has land area AMA1004 for ancillary mining activities annexed to ML1547. Exploration activities are undertaken in accordance with Exploration Lease (EL) 5277, EL 5461, EL 8315 and Authorisation (AUTH) 447.

In May 2025 ML 1547 was renewed by NSW Resources up to the term ending on the 4 April 2046.

Authorisation 447 was relinquished upon expiry due to the Department of Regional NSW, Mining, Exploration and Geosciences (MEG) no longer renewing veneer licences that cannot be demonstrably linked to an Open Cut exploration program or mining study, and veneer licences are no longer being renewed for the sole purpose of completing rehabilitation. In addition, AUTH 447 is located outside of Bulga Open Cut operations Noise and Visual Bund which acts as an established boundary to the current extent of active open cut mining operations within the Bulga Complex.

Mining tenements are summarised in **Table 3.2** and are shown on **Figure 2.1**.

Table 3.2 Mining Tenements

Tenement	Details	Expiry Date
ML 1494	Saxonvale Coal Pty Ltd and Nippon Steel and Sumitomo Metal Australia Pty Ltd	20 September 2027
ML 1547 & AMA 1004	Bulga Coal Management Pty Ltd	4 April 2046 ¹
ML 1674	Bulga Coal Management Pty Ltd	22 March 2033
ML 1717	Bulga Coal Management Pty Ltd	15 September 2036
ML 1788	Bulga Coal Management Pty Ltd	19 June 2040
Sublease within CL 219	Sublease to Bulga Coal within the Mount Thorley Operations CL 219	1 June 2025 ²
CL 224	Saxonvale Coal Pty Ltd	23 December 2044
EL 5277	Saxonvale Coal Pty Ltd	7 April 2026
EL 5461	Saxonvale Coal Pty Ltd and Nippon Steel and Sumitomo Metal Australia Pty Ltd	3 April 2026

Tenement	Details	Expiry Date
EL 8315	Saxonvale Coal Pty Ltd	13 October 2027
AUTH 447	Saxonvale Coal Pty Ltd	2 September 2025 ³

¹ Renewal received from the Department of Regional NSW – Mining, Exploration and Geoscience (MEG) in May 2025.

² Renewal of sublease within CL219 submitted in 2025.

³ AUTH 447 was surrendered upon expiry on the 2 September 2025.

3.2.1 Rehabilitation Management Plan and Outcome Documents Status

The Mining Amendment (Standard Conditions of Mining Leases – Rehabilitation) Regulation 2021 (the Regulation) introduced new standard rehabilitation and reporting conditions on mining leases. To meet the requirements of the Regulation, Bulga Coal developed and implemented a Rehabilitation Management Plan, Forward Program and Rehabilitation Outcome Documents. The Bulga Coal Rehabilitation Objectives Statement and Final Landform and Rehabilitation Plan were approved by the NSW Resource Regulator (NSW RR) on 18 October 2023.

3.3 Licences

The licences held by Bulga Coal are detailed in **Table 3.3**. Bulga Coal does not hold any surface water licences for mining purposes. Surface water drawn for mining purposes is supplied from the Mount Thorley Water Supply Joint Venture, operated by Singleton Council. It is also supplied by Yancoal's Mount Thorley Mine through an agreement with Bulga Coal.

Table 3.3 Bulga Coal Licences

Licence	Details
Environmental Protection Licence (EPL)	
EPL 563	For scheduled activities: • Coal works > 5,000,000 t annual handling capacity; • Crushing, grinding or separating >100,000–500,000 t annual processing capacity; • Mining for coal >5,000,000 t annual production capacity; • General chemicals storage 0-5000 kL storage capacity; and • Petroleum products storage 0-5000 kL storage capacity. Anniversary Date: 20 July.
Water Licences	
WAL41687	Mining: Volume licence limit 500 ML. Sydney Basin-North Coast Groundwater Source.
WAL41546	Mining: Volume licence limit 365 ML. Sydney Basin-North Coast Groundwater Source.
WAL41543	Mining: Volume licence limit 500 ML. Sydney Basin-North Coast Groundwater Source.

Licence	Details
WAL41544	Mining: Volume licence limit 500 ML. Sydney Basin-North Coast Groundwater Source.
WAL41545	Mining: Volume licence limit 500 ML. Sydney Basin-North Coast Groundwater Source.
WAL36221	Mining: Wollombi Brook Aquifer leakage to Permian coal measures 300 ML.
20BL166867	Monitoring (mining bore): GW1 – GW10. Total of 16 bores for monitoring purposes.
20BL167776	Monitoring: P1 – P3, P4A, P4B, P5 – P8 and V3. Licence for total of 9 bores for monitoring purposes.
20BL167777	Monitoring: V1, V2, F1 and F2.
20BL169204	Monitoring: Bore – ACARP Project.
20BL169246	Monitoring: Bore – ACARP Project.
20BL172659	Monitoring: WBR180 and WBR181.
20BL172660	Monitoring: WBR182 and WBR183.
20BL173014	Monitoring: SBD194, SBD196.
20BL173617	Monitoring: Lot 61/755264.
20BL173618	Monitoring: Lot 34/755264.
20BL173619	Monitoring: Lot 33/755264.
20BL173620	Monitoring: Lot 23/755264.
20BL173621	Monitoring: Lot 24/755264.
20BL173640	Monitoring Bore – 25//755264.
20BL173657	Monitoring Bore – 22//755264.
20BL173708	Monitoring Bore – 11//730762.
20WA211078	Surge Dam clean water diversion drain.
Radiation/Dangerous Goods Licences	
Radiation Management Licence 5061333	Radiation regulated material ID 9582 – Serial Numbers: 2173 / 0532/06
	Radiation regulated material ID 9583 – Serial Numbers: 2190 / 0528/07
	Radiation regulated material ID 9584 – Serial Number: 2187
	Radiation regulated material ID 9585 – Serial Numbers: 2188 / 0539/07
	Radiation regulated material ID 20634 – Serial Numbers: S500160113F / BC-1754
	Radiation regulated material ID 20635 – Serial Numbers: S500170113F / BC-1755
	Radiation regulated material ID 20636 – Serial Numbers: S500180113 / BC-1756
	Radiation regulated material ID 20637 – Serial Numbers: S500190113/ BC-1757
	Radiation regulated material ID 20638 – Serial Numbers: S5001A0113F/ BC-1758
	Radiation regulated material ID 20639 – Serial Numbers: S5001B0113F/ BC-1759
	Radiation regulated material ID 24186 – Serial Numbers: V900150113F/BE-9533
	Radiation regulated material ID 24187 – Serial Numbers: V900160113F/BE-9534
	Radiation regulated material ID 24188 – Serial Numbers: V900170113F/BE-9535

Licence	Details
	Radiation regulated material ID 24189 – Serial Numbers: V900180113F/BE-9536 Radiation regulated material ID 24190 – Serial Numbers: V900190113F/BE-9537 Radiation regulated material ID 24191 – Serial Numbers: V9001A0113F/BE-9538 Radiation regulated material ID 24192 – Serial Numbers: V9001B0113F/BE-9539.
HAZNOT0001098	Hazardous Chemicals Notification.
XSTR100095	Licence to Store Explosives.

4.0 Operations Summary

Bulga Open Cut mining activities undertaken in 2025 are displayed on **Figure 4.1**. There were no underground mining activities undertaken in 2025 other than operation of existing gas drainage infrastructure.

4.1 Exploration

A total of four (4) exploration holes were drilled during 2025 including two coal quality drill holes, one gas testing hole and one rotary chip (structure). All drilling was related to the Open Cut only and limited to ML1547.

No Bulga Underground prospecting exploration activities occurred in 2025.

4.2 Land Preparation

Land preparation ahead of open cut mining operations involves the construction of erosion and sediment control measures, clearing vegetation, stripping and stockpiling topsoil. These activities were undertaken in accordance with the *Bulga Coal Biodiversity Management Plan* (BMP) and the *Bulga Coal Rehabilitation Management Plan* (RMP).

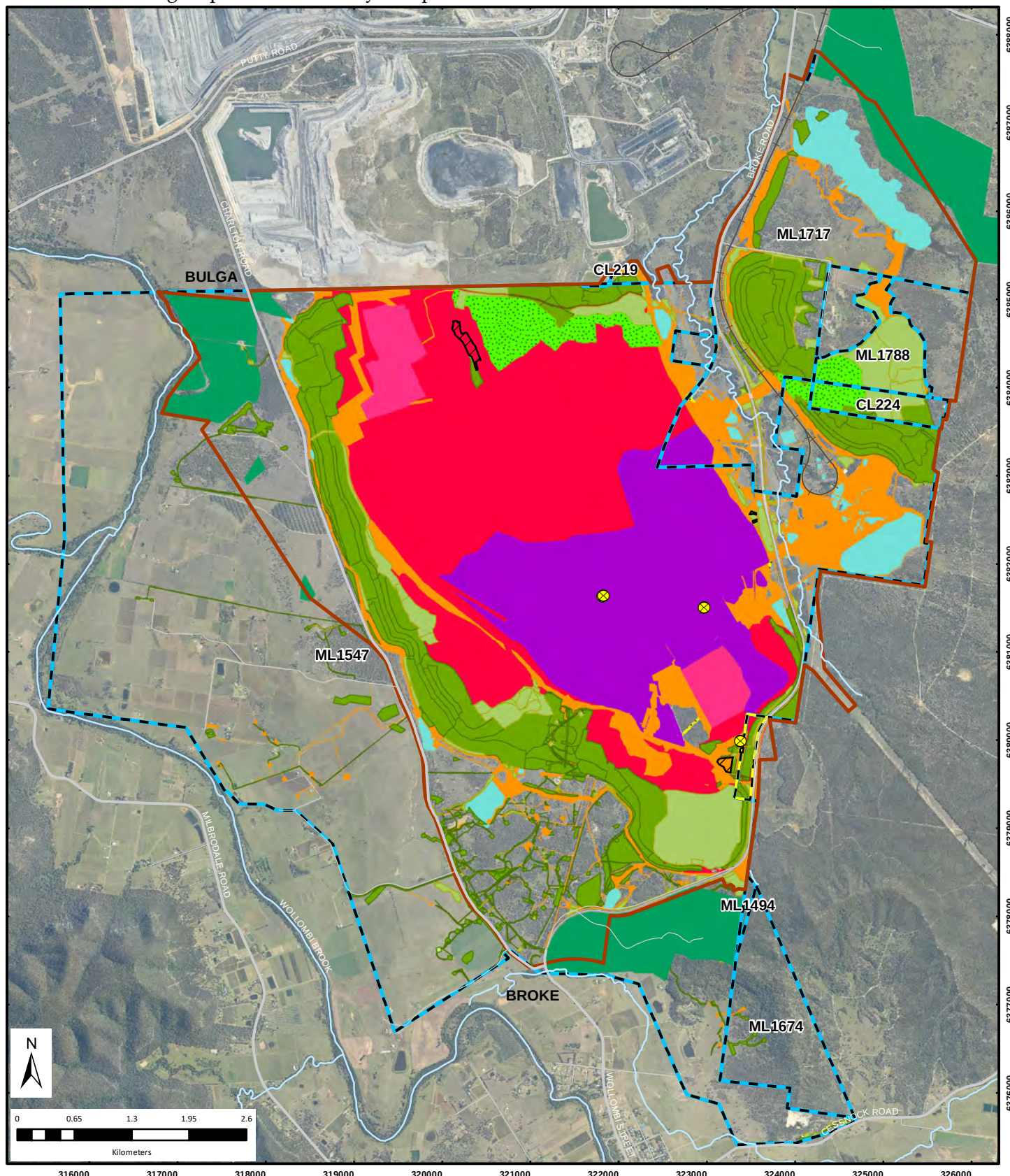
Grassland, fragmented woodland communities and previously rehabilitated land is cleared with topsoil stripped ahead of mining. Vegetation and vegetative matter is either mulched and incorporated into topsoil or stockpiled for future use in rehabilitation.

During 2025, 1.65 ha was disturbed to allow mining, overburden dumping and construction activities (roads, drains, dams). There was also 7.2 ha of existing rehabilitation cleared to facilitate overburden dumping across the East Pit and West Pit emplacements.

Approximately 5,000 m³ of topsoil was stripped and one (1) habitat tree and 16 other large trees were salvaged from clearing areas in advance of mining.

Clearing and disturbance areas are shown in **Figure 4.1**.

FIGURE 4.1 - Bulga Open Cut Summary of Operations 2025



Legend

- | | | |
|------------------------------|--------------------------------------|------------------------------------|
| Development Consent Boundary | 2025 Rehabilitation Redisturbance | Overburden Emplacement Area |
| Mining Lease AMA | 2025 Rehabilitation | Tailings Storage Facility |
| Coal - Current Titles | 2025 Disturbance | Active Mining Area (Open cut void) |
| Biodiversity Offset Areas | Rehabilitation Phase | Water Management Area |
| Watercourse | Growth Media Development | |
| Railway | Ecosystem and Land Use Establishment | |
| Main Roads | Ecosystem and Land Use Development | |
| Local Roads | Mining Domain Type | |
| 2025 Exploration Completed | Infrastructure Area | |



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4.3 Mining Operations

Bulga Underground Operations

Bulga Underground Operations finished producing coal in May 2018 with all workings sealed in July 2018. There were no underground mining activities conducted in 2025 other than the operation of gas drainage infrastructure in support of the Bulga Open Cut.

Bulga Open Cut

Bulga Open Cut continued mining coal reserves from the East Pit and West Pit in 2025. Mining continues to progress in a southerly direction.

Bulga Open Cut placed overburden on the Eastern Emplacement Area (EEA) and Southern Extension Dump. The EEA was completed throughout 2025. In-pit dumping occurred in the West Pit and East Pit. Overburden was stripped using truck/shovel and excavator fleets with the face shovel being retired throughout the year. Coal was mined by a fleet of hydraulic excavators and trucks. Run of Mine (ROM) coal was transported by dump truck via an overpass on Broke Road to the ROM coal hopper.

Drilling of the Piercefield Surface to Inseam (SIS), undertaken to facilitate ongoing safe mining operations within the West Pit, was completed in April 2025. Surface and subsurface infrastructure was then completed with the wells first flowing gas and water into the system on 1 July. By September there was enough flow to consistently run the flares, and flaring of produced gas has continued since then.

The total mining fleet as of 31 December 2025 is listed in **Table 4.1**.

Table 4.1 Equipment Fleet

Type	Model	Units
Excavators – Hydraulic	Liebherr R9600	3
	Liebherr R9400	1
	Liebherr R9250	1
	Liebherr R9100	2
	Cat 6040	2
	Cat 6060	2
Haulage Trucks	Cat 793C XQ	5
	Cat 793D XQ	33
	Cat 789C XQ	8
	Cat 797F XQ	7
	Komatsu 930E-5	19
Water Carts	Cat 789C XQ Water Trucks	5
	Cat 777 Water Cart	1
Front End Loaders	LeTourneau L1850	2
	Cat 980M Wheel Loader	2 (hire)

Type	Model	Units
Dozers	Cat D11T	3
	Cat D10T	2
	Cat D10T2	5
	Cat D10 (MGY)	2
	Cat 854K	2
	Cat D11	8
Graders	Cat 24 series	3
	Cat 24M	2
	Cat 16M	1
	Cat 18 Series	1
Fuel Trucks	Cat 773E	1
	Cat 775G	2
Drills	Cat 6250	2
	Terex SKS-W	2
	Terex SKF	2

Note - The Electric Shovel was taken out of service in 2025, other equipment was also replaced as part of the planned fleet replacement.

A summary of coal production and waste material (overburden and reject) production for the Bulga Open Cut is provided in **Table 4.2**.

Table 4.2 Production and Waste Summary for the Bulga Open Cut

Aspect	Approved Limit SSD-4960	2024 Reporting Period (Actual)	2025 Reporting Period (Actual)	2025 Predictions (Forecast)	2026 Predictions (Forecast)
Waste Rock/ Overburden (bcm)	N/A	68,886,148	66,983,282	58,331,091	56,860,235
ROM Coal (t)	12,200,000	10,046,377	10,533,748	10,125,467	10,540,727
Coarse Reject (t)	N/A	3,459,172	3,602,637	2,607,875	2,395,086
Fine Reject (tailings) (t)	N/A	752,399	818,500	840,140	821, 077
Saleable Product (t)	N/A	6,752,866	7,090,267	7,053,742	7,047,307

4.4 Other Operations

4.4.1 Coal Handling and Preparation Plant

10.8 million tonnes (Mt) of ROM coal was washed, producing 7.09 Mt of saleable product coal. The CHPP has approval to wash up to 20 Mt of ROM coal per year. 6.03 Mt of coal was railed to the Port of Newcastle for export and 1.06 Mt of coal was railed for domestic use.

4.4.2 Tailings Management

Deposition of tailings to the Northern Tailings Storage Facility (NTSF) continued for the duration of 2025. No tailings were pumped to underground workings during 2025.

The dredging of tailings for relocation from the Deep Pit TSF to the NTSF continued in 2025. Deep Pit North was completed in November 2025 and released for continuation of mining, with the dredge relocating to Deep Pit South. A total of 2,948 kbcm of tailings was relocated to the NTSF during 2025.

4.4.3 Construction

Bulga Coal construction works included:

- construction of CHPP external ROM bin stairs
- construction of female bathhouse at the CHPP
- continued construction of the light vehicle wash bay at the East Pit
- completed construction of a new four bay maintenance workshop in the Mine Infrastructure Area (MIA)
- completed construction and commissioning of S53 dam dewatering pump station
- completed construction and commissioning of a new bulk fuel and lubricate facility
- completed construction of water transfer tank and associated infrastructure next to S6A dam
- continued upgrades to the East Pit complex carparks and electrical infrastructure.

The CHPP was upgraded to improve coal throughput and recovery, and to reduce water usage. The upgrades included:

- commissioning of Dense Medium Cyclone magnetic separators to improve magnetite recovery
- continuation of site fire water storage and systems upgrade
- replacement of Fine Coal Centrifuges and associated flooring support infrastructure.

4.4.4 Demolition

Decommissioning/demolition activities during 2025 included:

- decommissioning of three (3) exploration boreholes, along with ongoing rehabilitation of legacy exploration lease holes to meet Resources Regulator requirements.

Following the cessation of underground mining, Bulga Underground Operations infrastructure has continued to be demolished/decommissioned including:

- demolition of underground transfer and loop take-up for CV2221
- demolition of ex-underground mine infrastructure including the Ventilation Air Methane (VAM) Abatement Unit, the CV2106 overland conveyor system, underground reclaim structure and associated footings, CV2221 conveyor system and transfer tower
- continued scrapping and offsite disposal of decommissioned equipment in the laydown area.

Demolition works were carried out by a licensed demolition contractor in accordance with Australian Standard AS 2601-2001.

4.4.5 Waste Management

Waste management is undertaken in accordance with the *Bulga Complex Waste Management Plan* and EPL 563. Waste is removed by a licenced contractor and is recycled where possible. Waste removed from site includes batteries, light vehicle tyres, scrap metal, domestic waste, fuel and oil filters, solvent, radiator coolant, wooden pallets, oily rags and hydrocarbon contaminated material from maintenance workshops.

Bulga Coal produced 11,535 t of waste during 2025, which represents an increase from 2024 (3,829 t in 2024). The main cause of this variation during 2025 has been due to the completion of demolition works associated with the overland conveyors, reclaim tunnel and clean-up of redundant underground laydown areas (8,013 t in 2025). 93.68 % of the waste produced by Bulga Coal (10,806 t) in 2025 was recycled. Bulga generated 37.2 t of hazardous waste which included oily rags/absorbents, contaminated soil and medical/sanitary waste. Bulga produced 692 t of non-hazardous waste (including mixed solid waste) that was disposed to landfill.

Waste oil and grease removed from equipment is stored in bunded tanks. Wastewater generated from the workshop areas is treated through hydrocyclone oily water separators. Waste oil, grease and oily water from oil water separators are then removed by an authorised waste contractor for recycling.

The treatment and disposal of sewage at Bulga Open Cut is through an extended aeration Sewage Treatment Plant (STP). Effluent from this plant goes to two maturation ponds before it is returned to the CHPP circuit water.

Sewage from the East Pit Muster is treated by an extended aeration STP. Effluent is also treated with ultra-violet (UV) light. Treated water is transferred to a mine water dam for reuse. Deactivated sludge is transported to the Singleton Council Treatment Works Depot.

4.4.5.1 Comparison Against Predictions

The Bulga Optimisation Project – Environmental Impact Statement (Umwelt, 2013) predicted waste to be generally consistent with the current operations at the time. Operations in 2012 disposed of 507 t of waste to landfill, 1,978 t of waste (or approximately 80 per cent of waste generated by the Bulga Open Cut) was recycled or reused.

Waste disposed to landfill was 729 t during 2025 which was above the 507 t outlined/predicted. Bulga Coal recycled 10,806 t of waste (93.68 % of all waste produced at Bulga Coal). While the total volume of waste disposed to landfill was higher than predictions, the percentage of waste recycled was above predictions.

4.4.5.2 Long Term Analysis

A summary of waste disposal from 2017 to 2025 is presented in **Figure 4.2**. The figure shows non-hazardous waste recycling has fluctuated significantly between 2021 to 2025. The changes in volumes and recycled material reflect the staged decommissioning of the underground laydown areas and dragline decommissioning (8,949 t) during 2022 and overland conveyors, reclaim tunnel and clean-up of redundant underground laydown areas (8,013 t) in 2025.

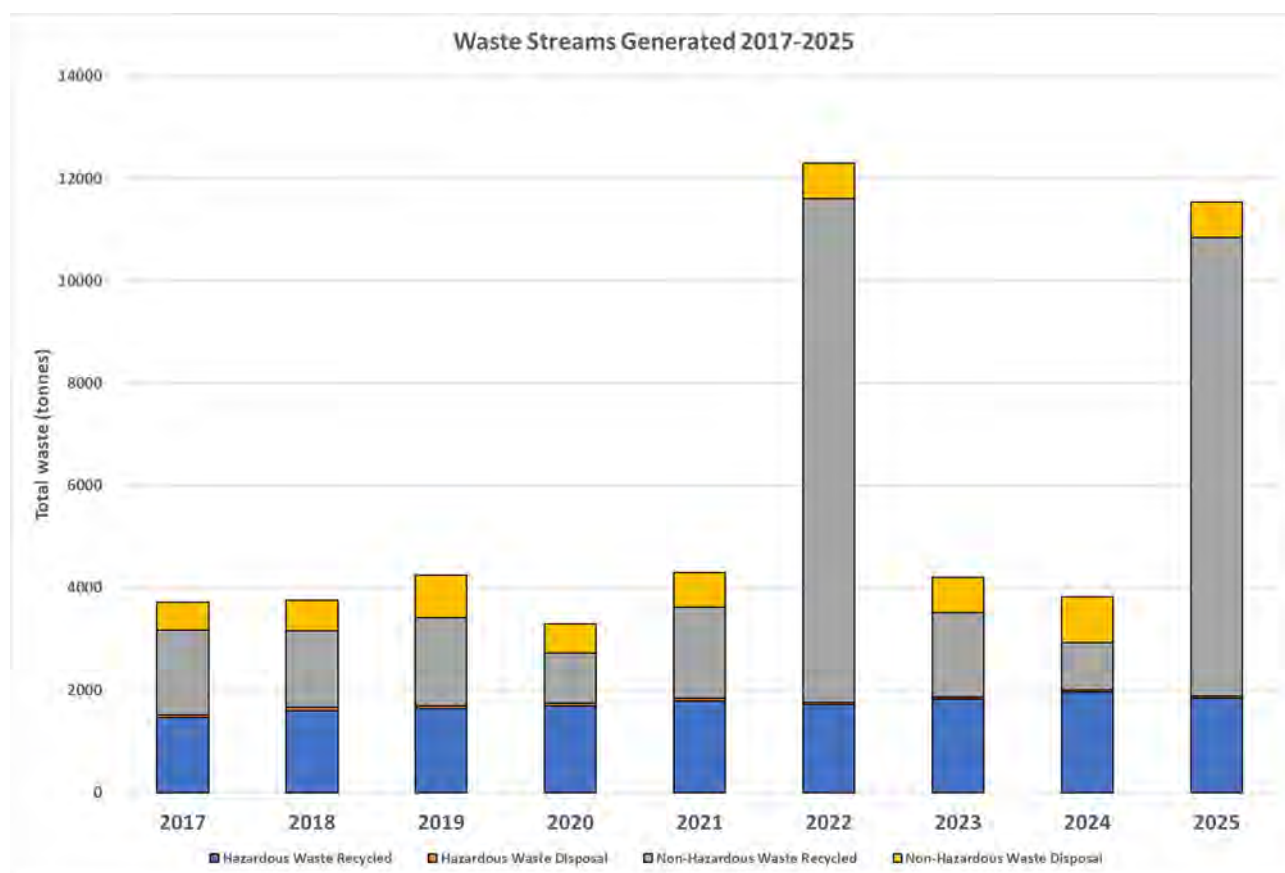


Figure 4.2 2017–2025 Waste Streams Generated

4.4.6 Hazardous Materials Management

Hazardous and dangerous goods are stored and labelled according to the relevant Australian Standard.

Hazardous materials stored at Bulga Open Cut have been notified to SafeWork NSW (Acknowledgement HAZNOT0001098).

Hazardous waste stored at Bulga Open Cut is tracked and transported by a licenced waste transporter and disposed of at a licenced facility.

Explosives are stored in a licenced explosive magazine as per SafeWork NSW requirements. Bulga Coal hold Licence No. XSTR100095 for the storage of explosives at Bulga Open Cut.

4.5 Next Reporting Period

4.5.1 Bulga Underground Operations

Activities proposed in 2026 are generally consistent with DA 376-8-2003. Underground mining activities will include:

- continued operation of the Blakefield South goaf drainage system
- continued decommissioning and demolition of Bulga Underground Operations infrastructure, including the site Power Station and Blakefield South goaf wells BLK7H and BLK7G
- rehabilitation of redundant gas drainage infrastructure, access tracks and pipelines.

4.5.2 Bulga Open Cut

Activities proposed in 2026 are generally consistent with SSD-4960. **Figure 4.3** illustrates the proposed operations.

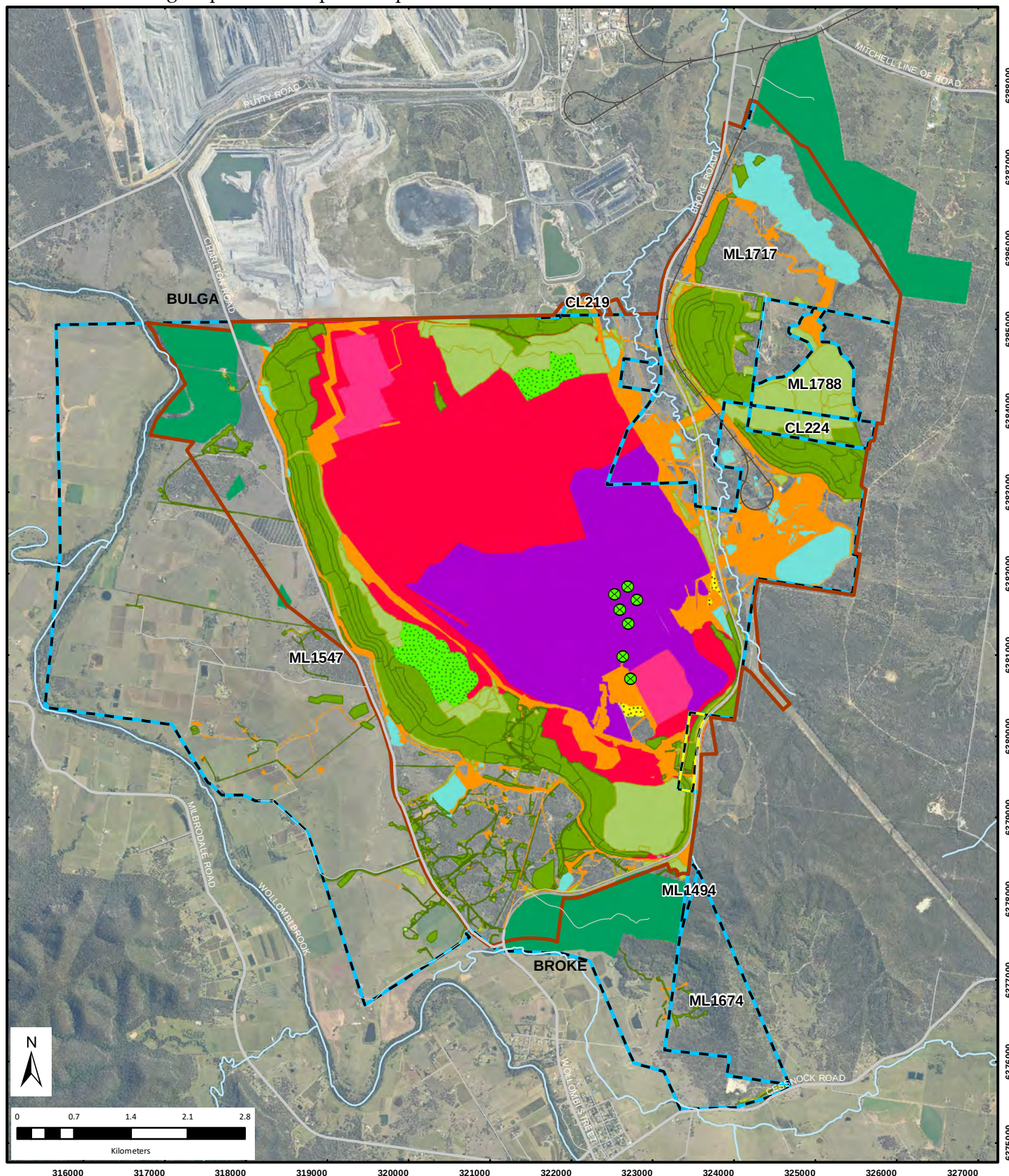
Mining operations will continue in the West Pit and East Pit with overburden emplacement continuing in the Noise and Visual Bund and in-pit dumping. Dredging (relocation) of tailings from Deep Pit to the in-pit NTSF will continue, a total of 5,703 kbcm of tailings are forecast to be relocated to the NTSF during 2026. This will enable mining of the underlying coal.

Construction and decommissioning activities will include:

- drilling of seven (7) boreholes. The exploration drilling will aim to further define coal quality, structure and gas. Drilling will be within the Open Cut boundary and limited to ML1547
- ongoing rehabilitation of exploration lease holes to meet Resources Regulator requirements
- continued Bulga Underground sealing projects to manage the underground atmosphere
- commissioning of a new sewerage treatment plant at the East Pit muster to replace the existing system
- upgrade to carpark facilities at the East Pit
- modification and upgrades to offices and bath house at the East Pit Offices
- construction of a light vehicle workshop at the East Pit Offices
- commissioning of the light vehicle wash bay facility
- commissioning of site northern water transfer system
- construction of additional fixed lighting infrastructure at the ROM stockpile
- construction and commissioning of a submersible pump and associated transfer piping in S53 Dam

- commissioning of the four bay maintenance workshop at the MIA
- decommissioning and removal of redundant heavy mining equipment
- decommissioning and removal of the 9 MW Gas Power Generator
- decommissioning and demolition of Area Station bulk fuel and hydrocarbon storage facilities
- continued scrapping and offsite disposal of decommissioned equipment in the laydown areas
- the demolition or sale of the Electric Face Shovel.

FIGURE 4.3 - Bulga Open Cut Proposed Operations 2026



Legend

- Development Consent Boundary
- Mining Lease AMA
- Coal - Current Titles
- Biodiversity Offset Areas
- Watercourse
- Railway
- Main Roads
- Local Roads
- ✕ 2026 Planned Exploration
- 2026 Planned Disturbance
- 2026 Planned Rehabilitation
- Rehabilitation Phase**
- Growth Media Development
- Ecosystem and Land Use Establishment
- Ecosystem and Land Use Development
- Mining Domain Type**
- Infrastructure Area
- Overburden Emplacement Area
- Tailings Storage Facility
- Active Mining Area (Open cut void)
- Water Management Area



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5.0 Actions Required from Previous Annual Review

The 2024 Annual Review was provided to the Department of Planning, Housing and Infrastructure (DPHI) on 28 March 2025. DPHI considered the Annual Review to generally meet the requirements of the approval in relation to reporting and the Annual Review Guideline (DPE, 2015). No additional actions were required from the 2024 Annual review.

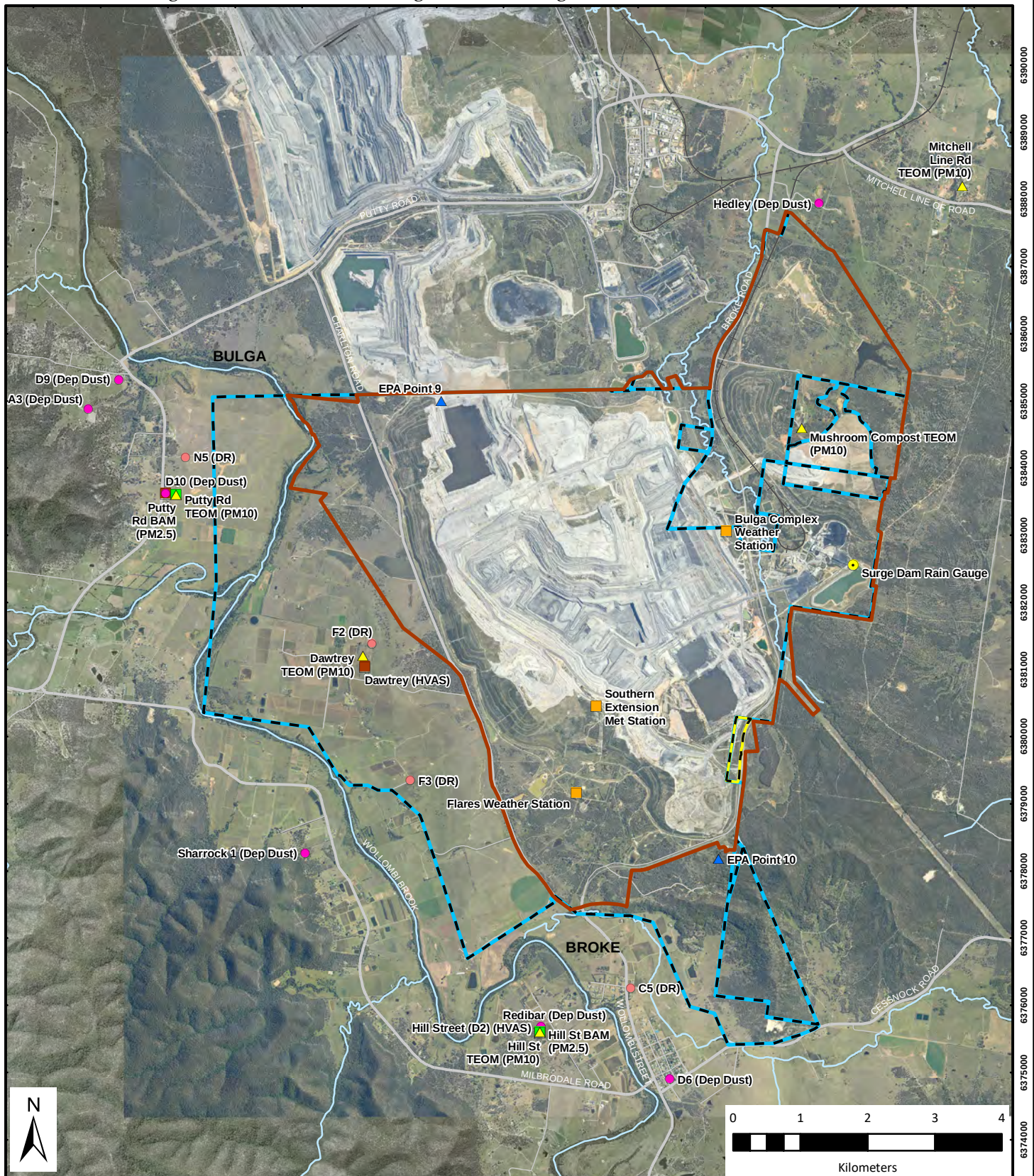
6.0 Environmental Management Performance

Bulga Coal implements a comprehensive *Environmental Management Strategy* (EMS) that provides a framework for managing environmental and community impacts. It includes management plans, procedures and standards to minimise the risks of impact to the environment and continually improve the environmental management.

An extensive environmental monitoring network is in place to monitor the environmental management performance of the site. The environmental monitoring network is shown in **Figure 6.1**, **Figure 6.2** and **Figure 6.3**.

FIGURE 6.1 - Bulga Coal Air and Meteorological Monitoring 2025

Ref: \\ausysdsv5c005\Operations\GIS\Bulga Complex\GIS\03_MapDocuments\18_Reporting\Annual_Review\2025\AR_FIGURES\Figure_6_1_Air_Met_Monitoring_A4_GDA2020_20260309.mxd



Legend

- Development Consent Boundary
- Mining Lease AMA
- Coal - Current Titles
- Main Roads
- Local Roads
- Watercourse
- Railway
- Rain Gauge

Continuous/Real-time Monitoring

- ▲ Air Quality Early Warning Unit (PM10)
- ▲ TEOM (PM10)
- BAM (PM2.5)

Air Quality Depositional Dust Monitoring

- Depositional Dust Gauge
- Directional Depositional Dust Gauge

Hi Vol Dust Monitoring

- High Volume Air Sampler (TSP)
- High Volume Air Sampler (PM10)
- Meteorological

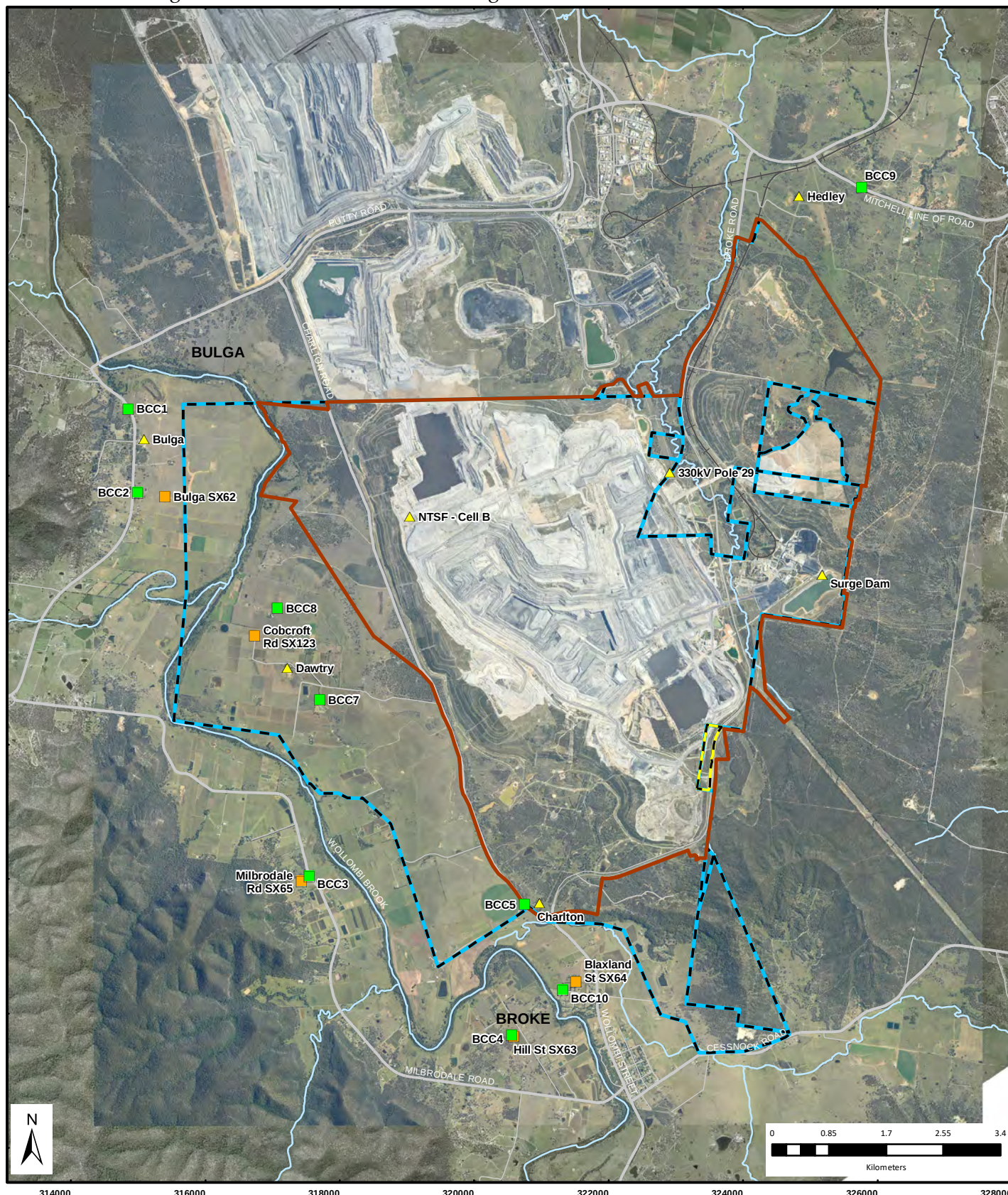


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FIGURE 6.2 - Bulga Coal Noise and Blast Monitoring 2025



Legend

- Development Consent Boundary
- Mining Lease AMA
- Coal - Current Titles
- Main Roads
- Local Roads
- Watercourse
- Railway
- Attended Noise Monitoring
- Continuous Noise Monitoring
- ▲ Blast Monitoring



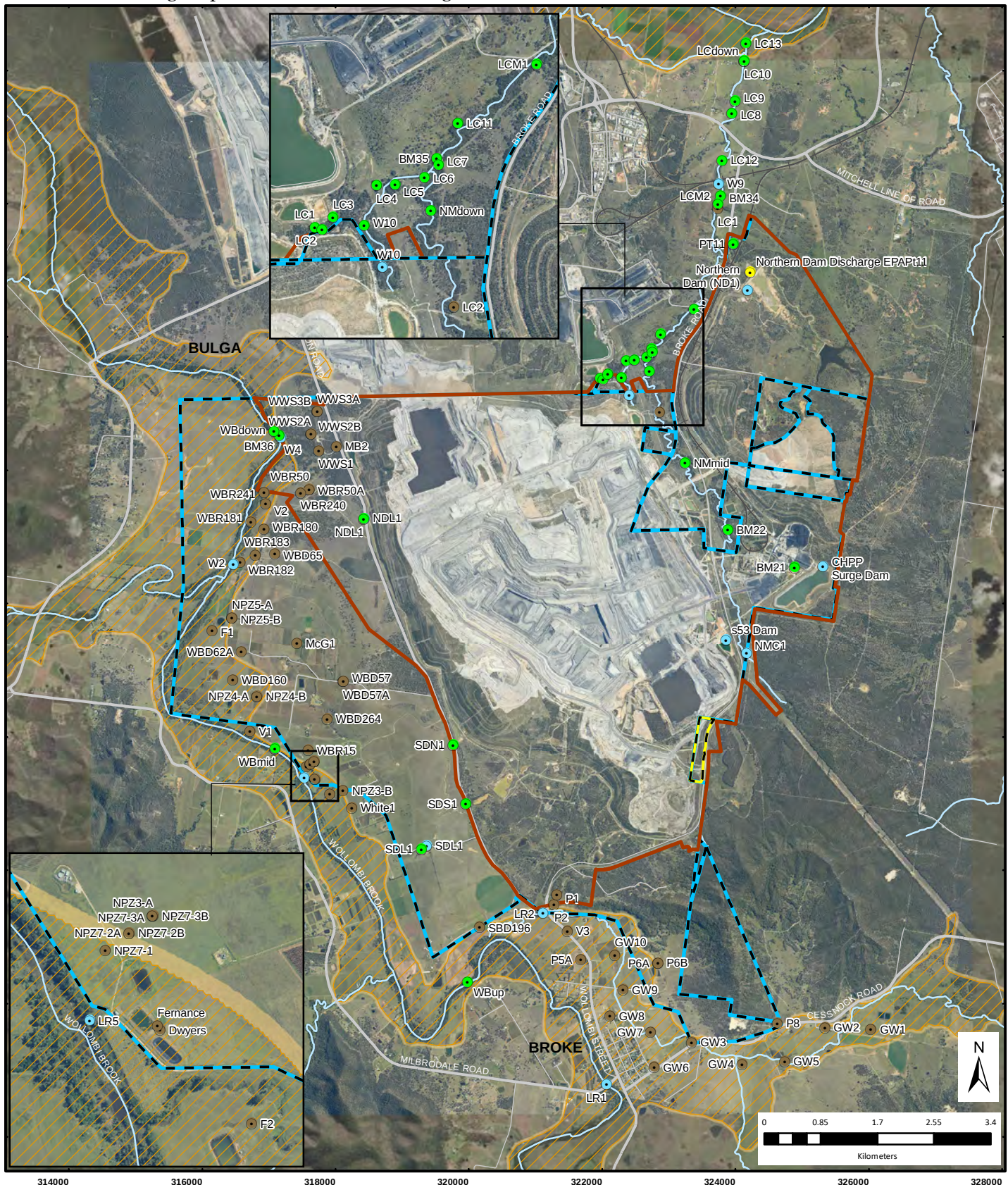
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FIGURE 6.3 - Bulga Open Cut Water Monitoring 2025



Legend

- ▬ Development Consent Boundary
- ▬ Mining Lease AMA
- ▬ Coal - Current Titles
- ▬ Main Roads
- ▬ Local Roads
- ▬ Watercourse
- ▬ Railway
- ▨ Alluvium Area
- ▭ 40m buffer zone of Alluvium
- Stream Monitoring
- Groundwater
- Surface Water
- EPL Discharge Point



Date Created: 25/03/2026
 Map Size: A4 Portrait
 Scale: 1:80,000
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6.1 Meteorology

Bulga Coal has three meteorological monitoring sites as shown in **Figure 6.1**. Meteorological data from the Bulga Complex Meteorological Station is reported in the quarterly environmental monitoring reports available on the [Bulga Coal website](#).

In accordance with Schedule 3, Condition 23 of SSD-4960, and Condition M4 of EPL 563, Bulga continued to operate the Bulga Complex Weather Station, Southern Extension Weather Station and the Flares Weather Station.

2025 saw higher than average rainfall with total annual rainfall at the Bulga Complex Weather Station being 812 mm in comparison to the 671.5 mm recorded in 2024. The average annual rainfall at Bulga is approximately 670 mm.

A summary of the annual meteorological monitoring is shown in **Table 6.1** to **Table 6.7** and **Figure 6.4** to **Figure 6.8**.

Table 6.1 Distribution of Monthly Rainfall at Representative Monitoring Stations

	January	February	March	April	May	June	July	August	September	October	November	December	Annual Total
Bulga Complex Weather Station													
Total	65.5	79.5	110.5	86.5	112.5	13.5	29.5	120	63	26.5	24.5	80.5	812
Southern Extension Weather Station													
Total	75.2	49.4	107.6	78.2	102.6	14.6	30.8	97	53.6	28.2	20.6	46	703.8
Flares Weather Station													
Total	71	44.5	124	91	119	20.5	36	125	52.5	32	23	38.5	777

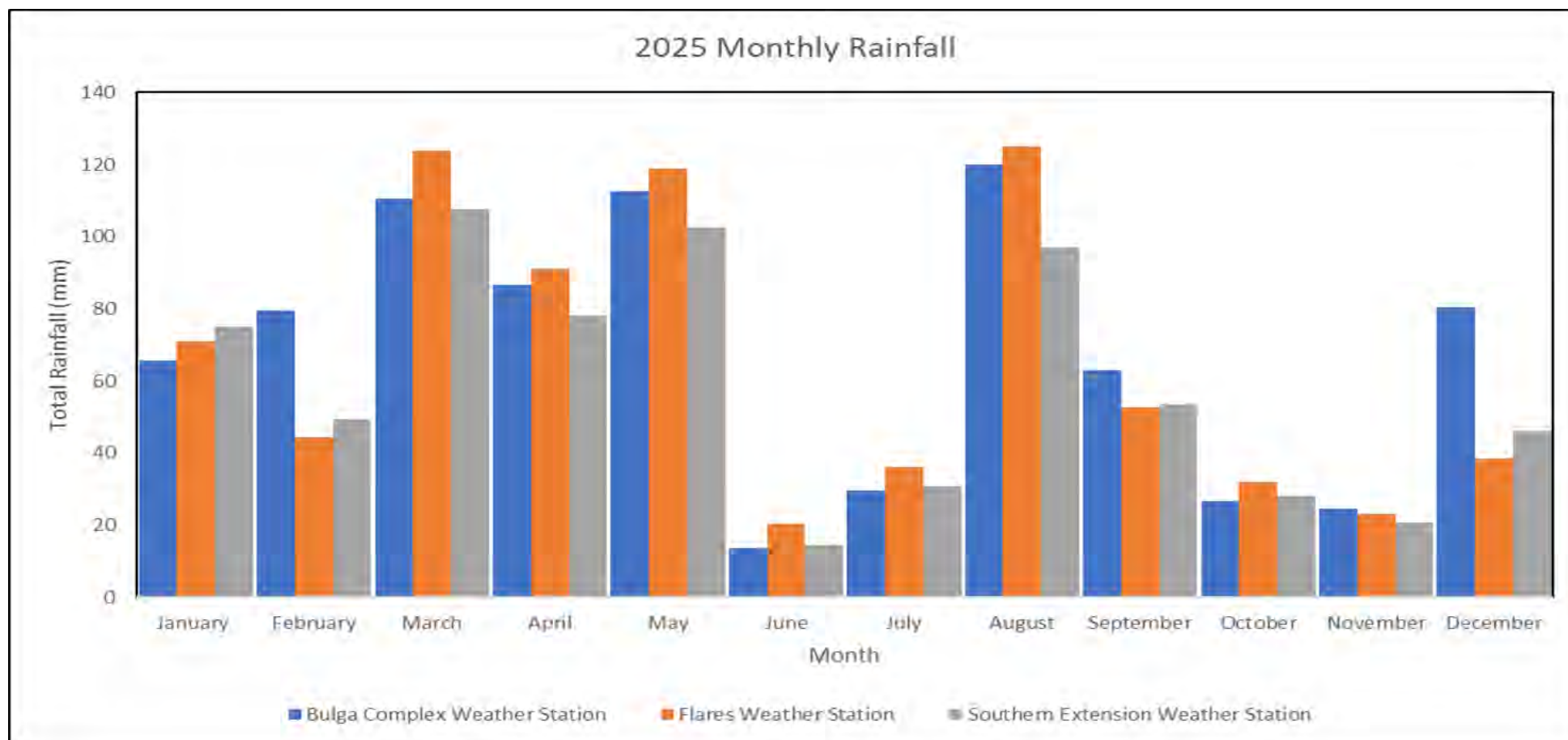


Figure 6.4 Distribution of Monthly Rainfall at Representative Monitoring Stations

As shown in **Table 6.2** and **Table 6.3**, the daily minimum and maximum surface level temperatures ranged across Bulga's three monitoring stations at 2 m and 10 m above surface level from -2.06°C to 41.84°C respectively. Refer to **Table 6.4** for humidity recorded over the reporting period.

Table 6.2 2025 Temperature 2 m (Degrees Celsius) at Representative Monitoring Stations

Temperature 2 m (degrees Celsius)	Bulga Complex			Flares			Southern Extension		
Month	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum
January	¹	¹	¹	13	23	41	14	23	42
February	21 ¹	30	40	9	23	38	12	23	38
March	17	25	40	14	22	37	14	23	37
April	12	22	33	7	18	30	10	19	30
May	10	18	28	5	15	26	8	15	25
June	4	15	26	-2	9	21	1	11	21
July	3	15	25	-2	10	21	1	12	21
August	4	15	25	0	12	24	3	13	24
September	5	17	31	2	15	30	5	17	31
October	8	21	38	4	19	37	8	20	37
November	7	23	39	5	21	38	8	22	39
December	9	24	42	8	23	41	10	23	41

¹2 m Temperature sensor data for January 2025 and 1 February 2025 – 25 February 2025 has been invalidated as it did not meet AS/NZS 3580.14:2014.

Table 6.3 2025 Temperature 10 m/30 m (Degrees Celsius) at Representative Monitoring Stations

Temperature 10 m/30 m (degrees Celsius)	Bulga Complex (10 m)			Flares (10 m)			Southern Extension (30 m)		
Month	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum
January	16	24	42	13	23	41	14	23	39
February	15	24	38	11	23	38	13	23	37
March	15	24	37	14	22	37	14	22	35
April	12	20	30	8	18	30	13	19	29
May	10	17	26	6	15	25	9	15	25
June	4	13	24	-1	10	21	3	12	21
July	3	14	24	-1	11	21	3	12	21
August	3	13	24	1	12	24	5	13	24
September	5	16	29	3	15	30	6	17	29
October	8	20	36	5	20	37	10	20	36
November	8	21	37	6	22	38	10	22	38
December	8	22	40	9	23	41	11	23	40

Note: Temperature at Bulga Complex and Flares stations is at 10 m. Temperature at 30 m is recorded at Southern Extension.

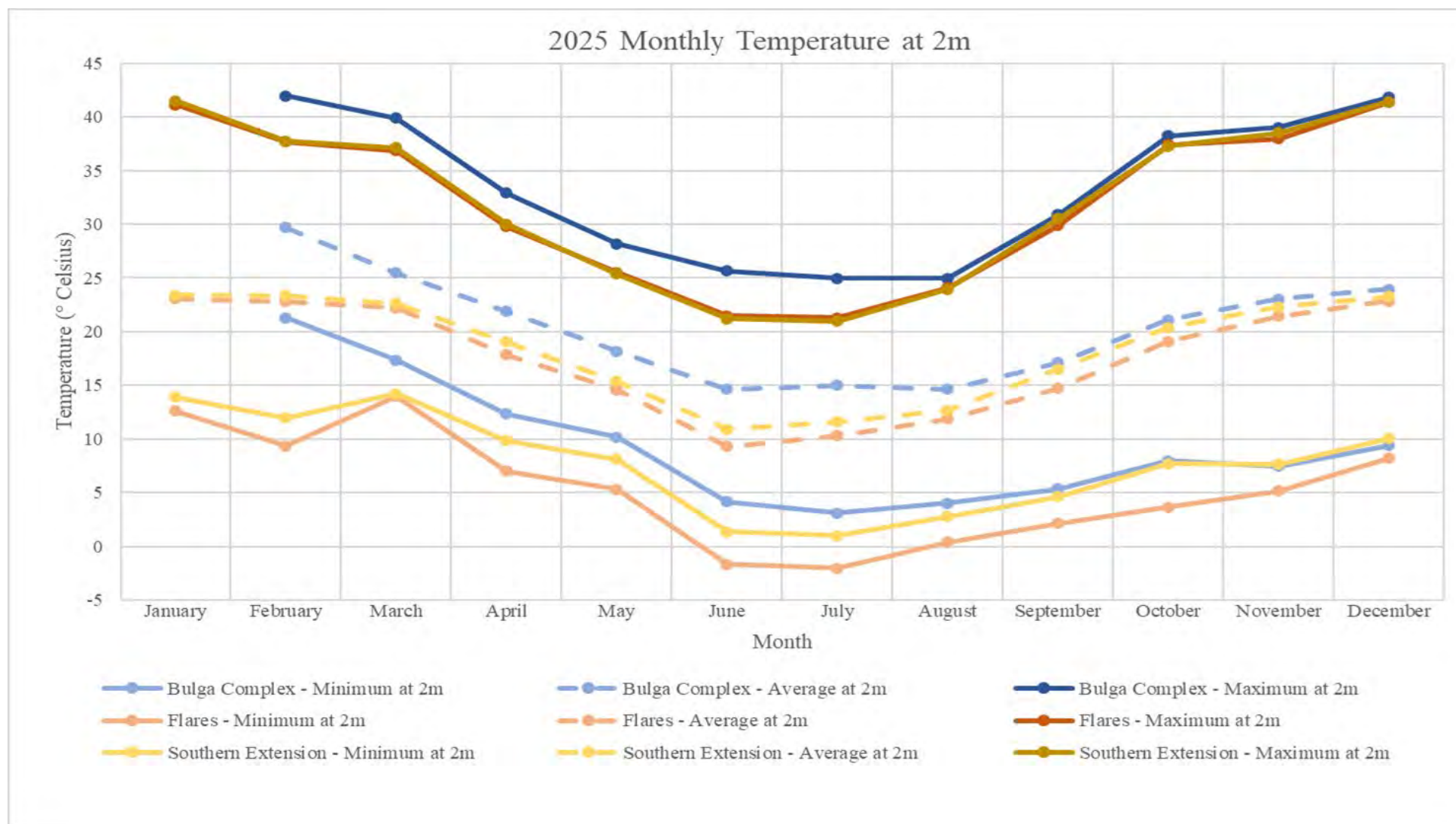


Figure 6.5 2025 Monthly Temperature 2 m (Degrees Celsius) at Representative Monitoring Stations

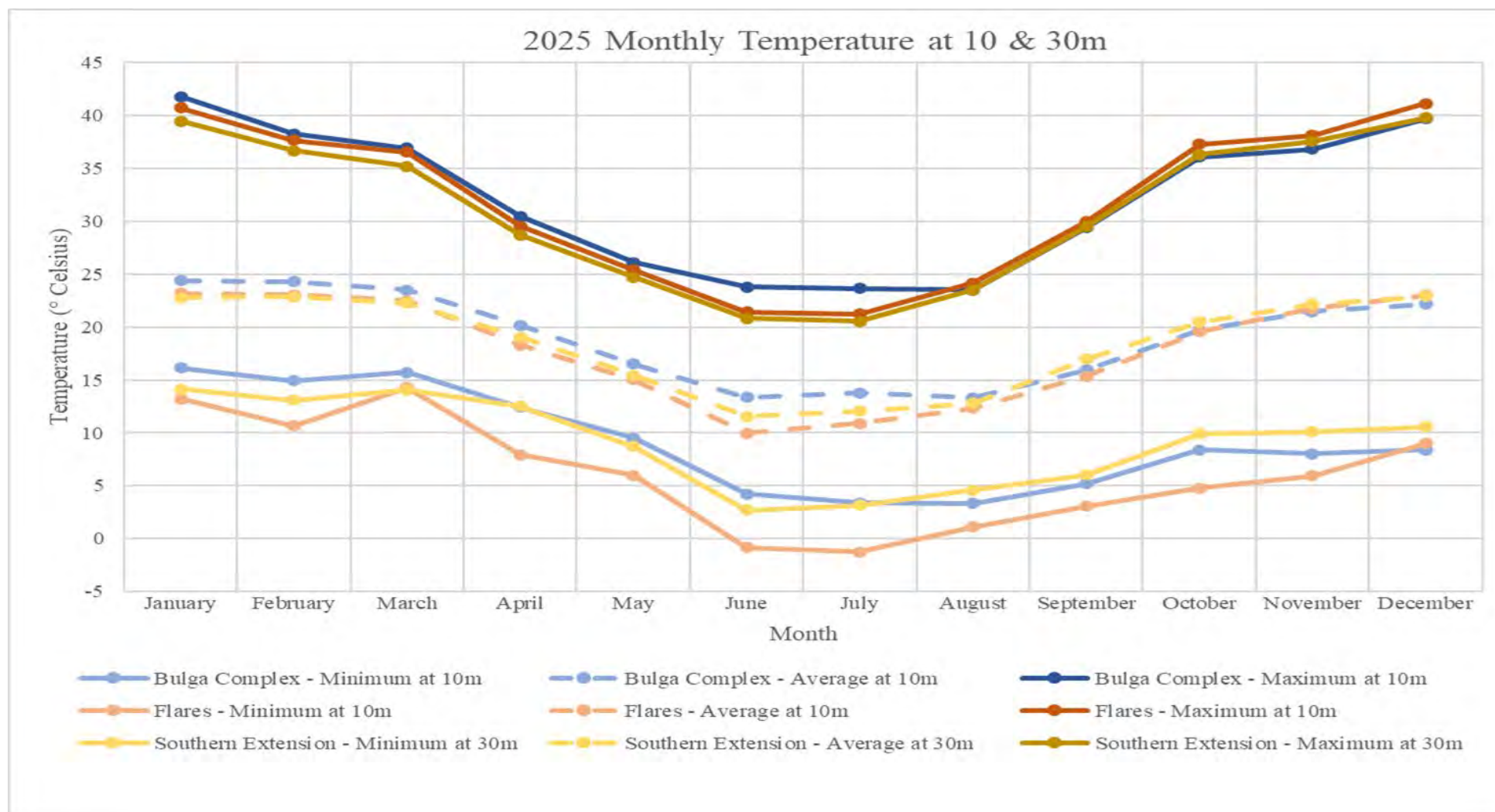


Figure 6.6 2025 Monthly Temperature 10 m/30 m (Degrees Celsius) at Representative Monitoring Stations

Table 6.4 2025 Relative Humidity (%) at Representative Monitoring Stations

Relative humidity (%)	Bulga Complex			Flares			Southern Extension		
Month	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum
January	18	70	101	15	70	98	13	67	98
February	21	71	104	18	72	98	18	69	99
March	26	77	103	25	76	99	24	74	100
April	18	73	103	16	75	99	17	71	99
May	40	84	103	39	85	99	39	82	99
June	40	76	104	38	79	99	37	73	99
July	30	71	103	30	75	99	27	69	99
August	28	75	103	30	79	99	28	74	99
September	13	59	100	15	68	99	14	59	98
October	10	55	98	11	63	99	9	55	97
November	10	52	99	11	57	98	9	51	97
December	10	56	100	11	59	98	9	55	97

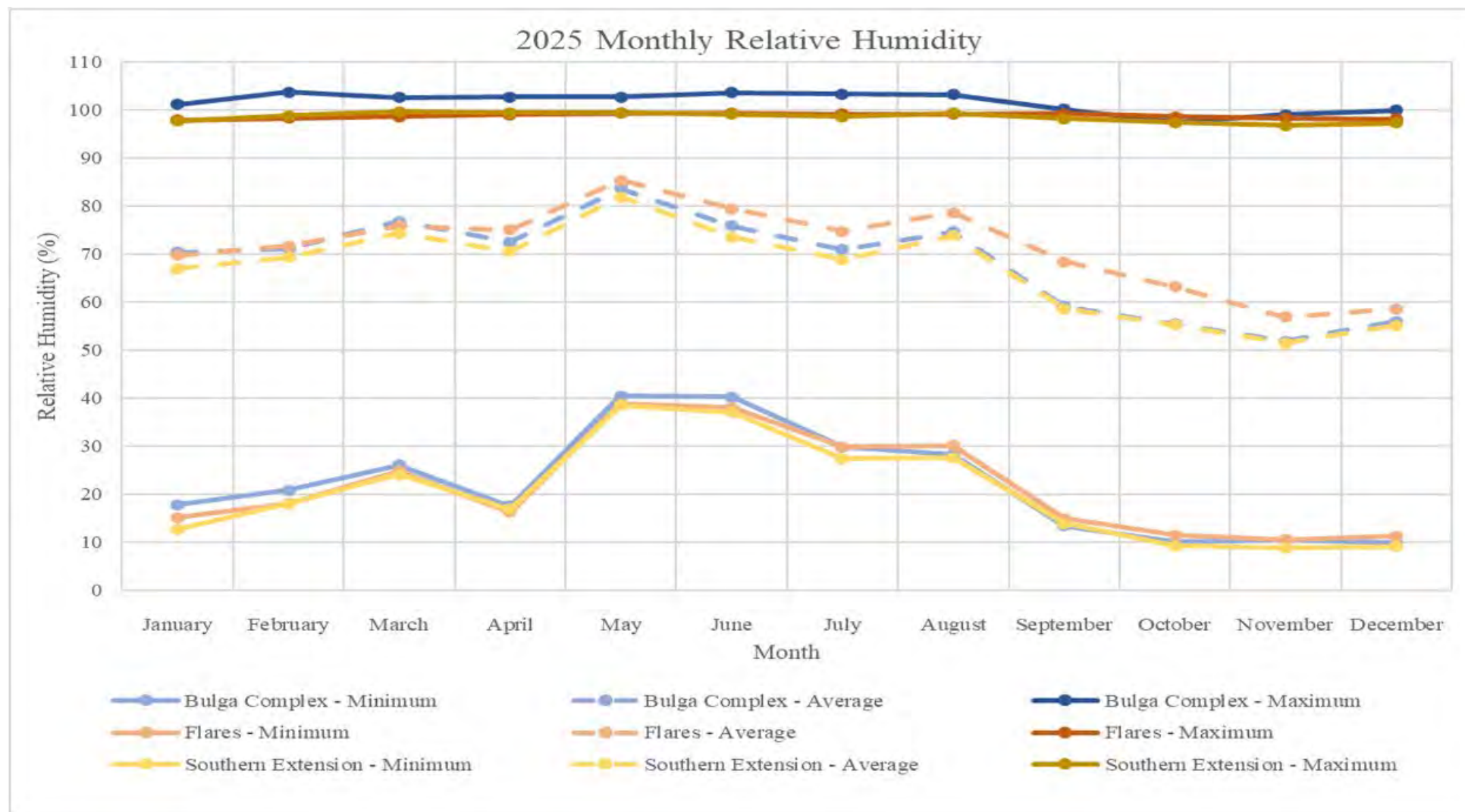


Figure 6.7 2025 Relative Humidity (%) at Representative Monitoring Stations

Table 6.5 2025 Wind Speed at Representative Monitoring Stations

Wind speed (m/s)	Bulga Complex			Flares			Southern Extension		
Month	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum
January	0.0	3.3	11.2	0.0	1.8	7.2	0.0	4.8	14.0
February	0.0	2.5	12.7	0.0	1.4	5.7	0.0	3.9	11.6
March	0.0	2.8	8.1	0.0	1.6	5.4	0.0	4.4	11.2
April	0.0	2.3	8.2	0.0	1.1	5.1	0.0	3.7	9.6
May	0.0	2.5	9.8	0.0	1.2	6.8	0.0	4.0	11.4
June	0.0	2.6	11.4	0.0	1.2	8.4	0.0	3.6	14.9
July	0.0	3.4	13.0	0.0	1.6	9.0	0.0	4.4	13.7
August	0.0	3.0	12.0	0.0	1.5	7.8	0.0	4.7	12.9
September	0.0	2.8	12.8	0.0	1.4	7.5	0.0	4.0	13.2
October	0.0	3.3	17.0	0.0	1.7	10.3	0.0	4.3	17.5
November	0.0	3.4	16.5	0.0	1.9	9.6	0.0	4.7	19.0
December	0.0	3.0	12.1	0.0	1.9	8.7	0.0	4.5	14.0

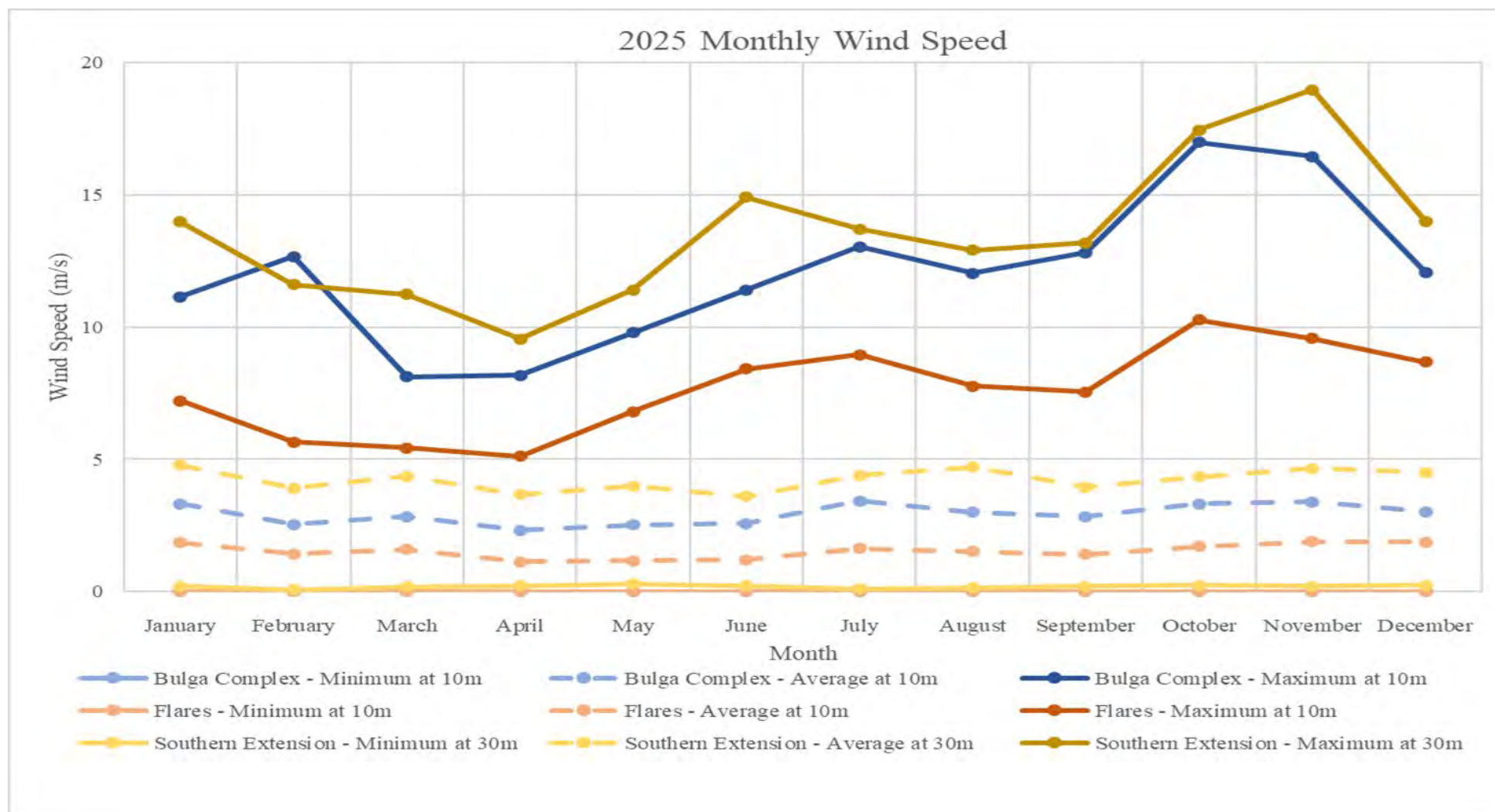


Figure 6.8 2025 Wind Speed at Representative Monitoring Stations

Table 6.6 2025 Wind Direction at Representative Monitoring Stations

Wind direction (degrees)	Bulga Complex			Flares			Southern Extension		
Month	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum
January	0	156.6	359.8	0	157.3	359.9	0	167.6	360.0
February	0	144.8	359.8	0	144.5	359.9	0	153.7	359.9
March	0	148.3	360.0	0	151.1	359.9	0	164.9	360.0
April	0	172.7	359.9	0	159.9	359.7	0	182.6	359.8
May	0	184.7	359.9	0	169.6	359.9	0	202.9	360.0
June	0	224.3	359.7	0	181.5	360.0	0	234.8	359.8
July	0	226.8	360.0	0	208.3	360.0	0	246.8	359.9
August	0	203.2	359.8	0	185.6	360.0	0	217.8	359.9
September	0	220.5	360.0	0	186.0	359.9	0	238.3	360.0
October	0	196.9	359.9	0	184.1	359.9	0	219.7	360.0
November	0	198.1	359.7	0	192.1	360.0	0	214.5	359.9
December	0	157.3	359.8	0	173.9	359.9	0	181.4	359.6

Table 6.7 2025 Sigma Theta at Representative Monitoring Stations

Sigma theta (degrees)	Bulga Complex			Flares			Southern Extension		
Month	Minimum	Average	Maximum	Minimum	Average	Maximum	Minimum	Average	Maximum
January	0	17	94	0	28	100	1	15	95
February	0	19	96	0	27	99	1	15	101
March	0	16	90	0	24	94	1	13	98
April	0	16	96	0	23	93	1	14	96
May	0	13	84	0	21	86	1	12	93
June	0	14	85	0	17	93	1	14	98
July	0	15	86	0	20	89	1	12	98
August	0	15	93	0	22	85	1	12	79
September	0	17	89	0	20	95	1	15	98
October	0	18	98	0	23	95	1	15	98
November	0	17	92	0	25	99	1	15	100
December	0	16	88	0	28	99	1	16	96

Wind Speed and Direction

Wind speed and direction at Bulga during 2025 has been summarised in **Figure 6.9** to **Figure 6.12**.

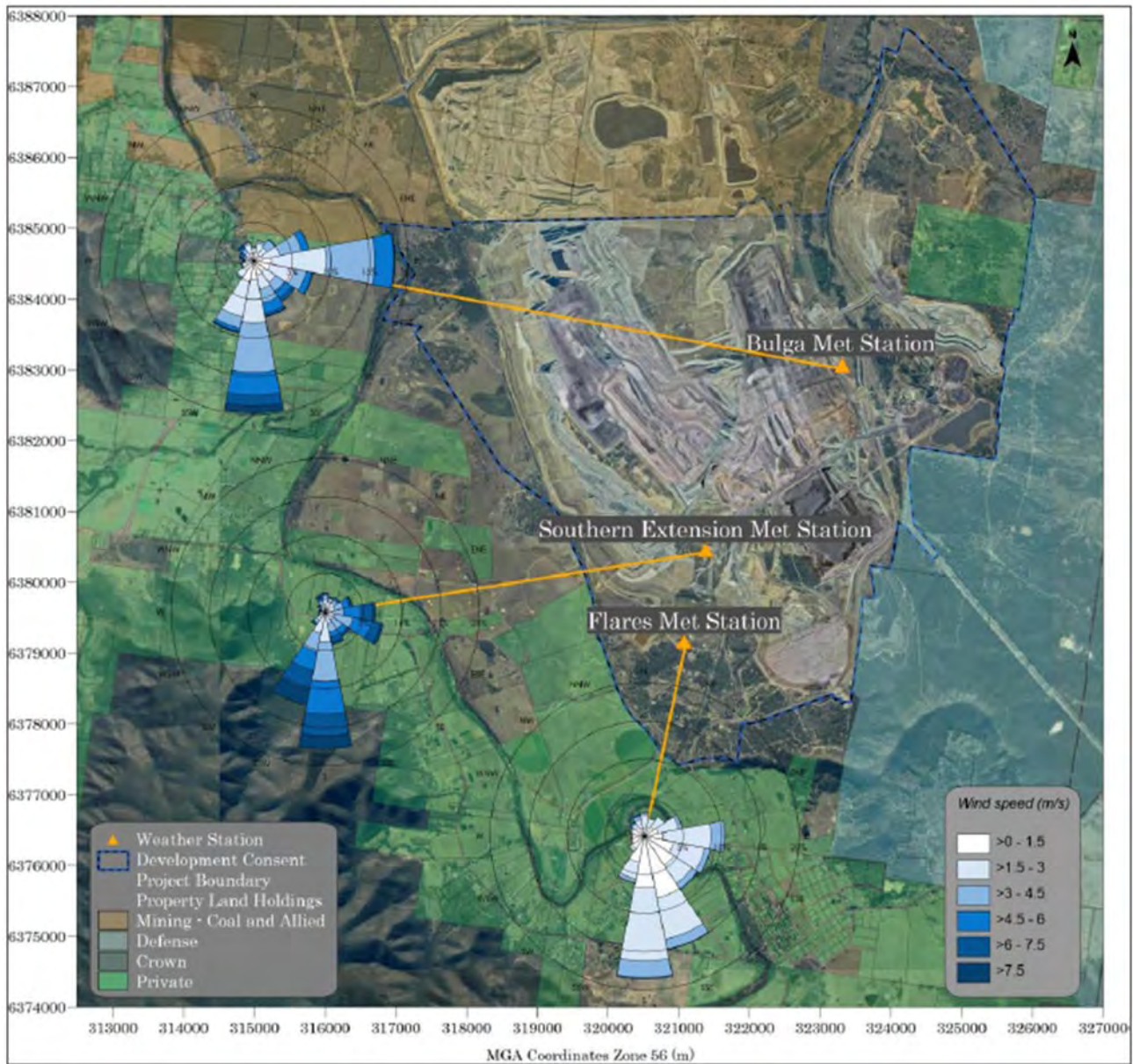


Figure 6.9 Wind Speed and Direction Quarter 1

The Bulga Complex Station, Southern Extension Station and Flares Station predominantly recorded variable wind directions predominantly from the south in Q1 2025. The calms recorded at the Flares Station were most likely due to sheltering from vegetation.

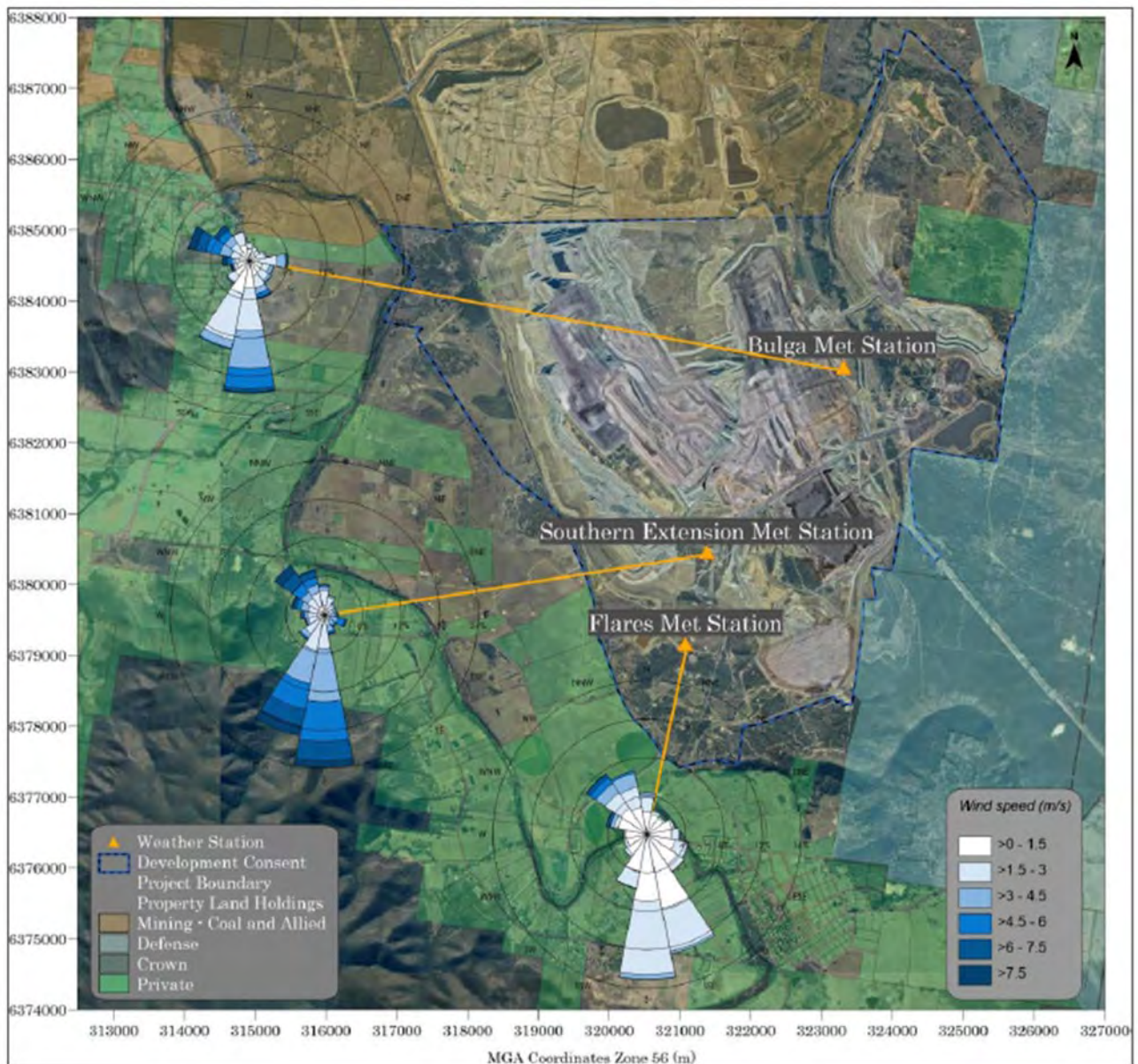


Figure 6.10 Wind Speed and Direction Quarter 2

The Bulga Complex Station, Southern Extension Station and Flares Station predominantly recorded winds from the from the south in Q2 2025. The calms recorded at the Flares Meteorological Station were most likely due to sheltering from vegetation.

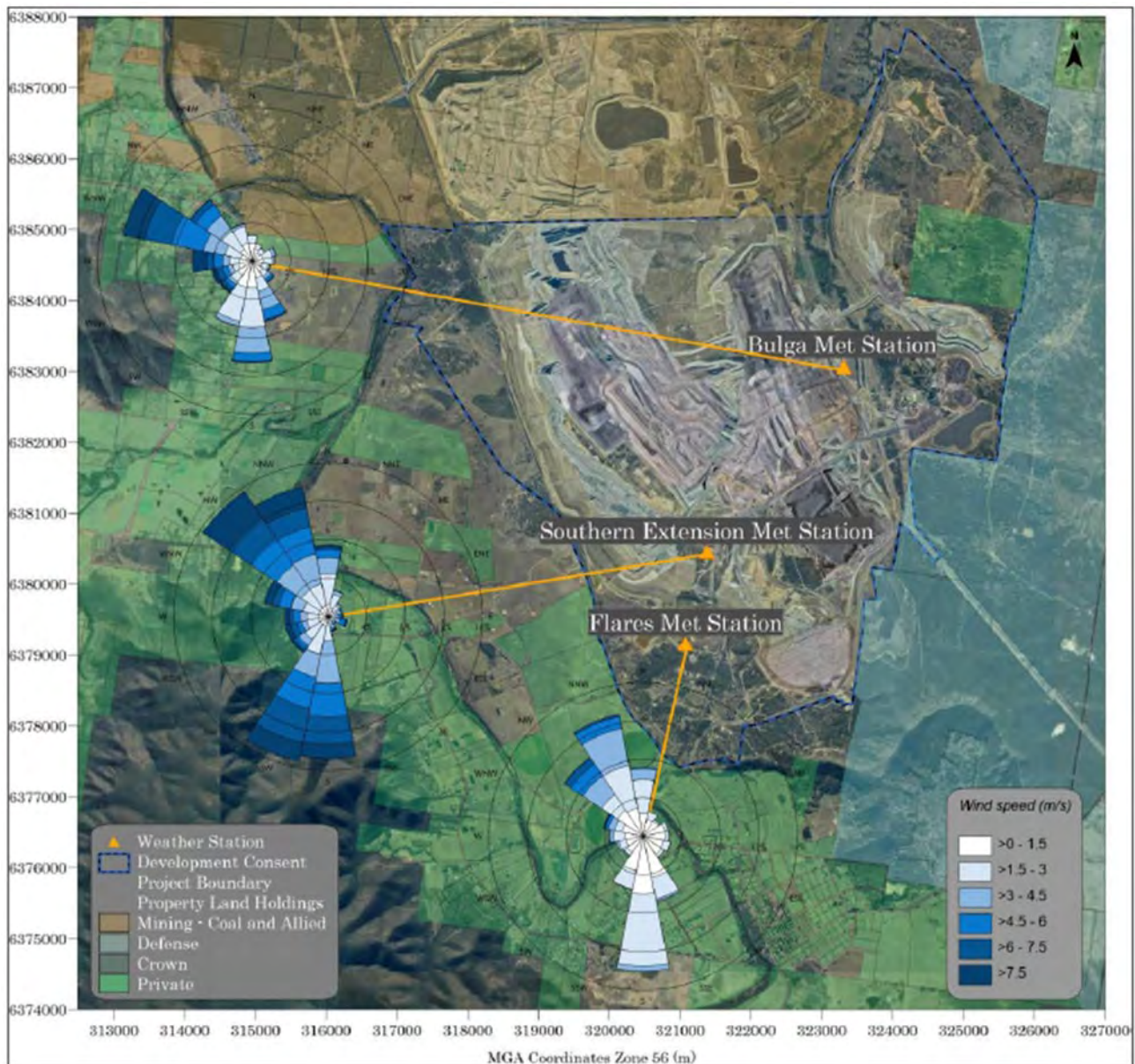


Figure 6.11 Wind Speed and Direction Quarter 3

The Bulga Complex Station, Southern Extension Station and Flares Station predominantly recorded winds from the south and northwest axis in Q3 2025. The calms recorded at the Flares Station were most likely due to sheltering from vegetation.

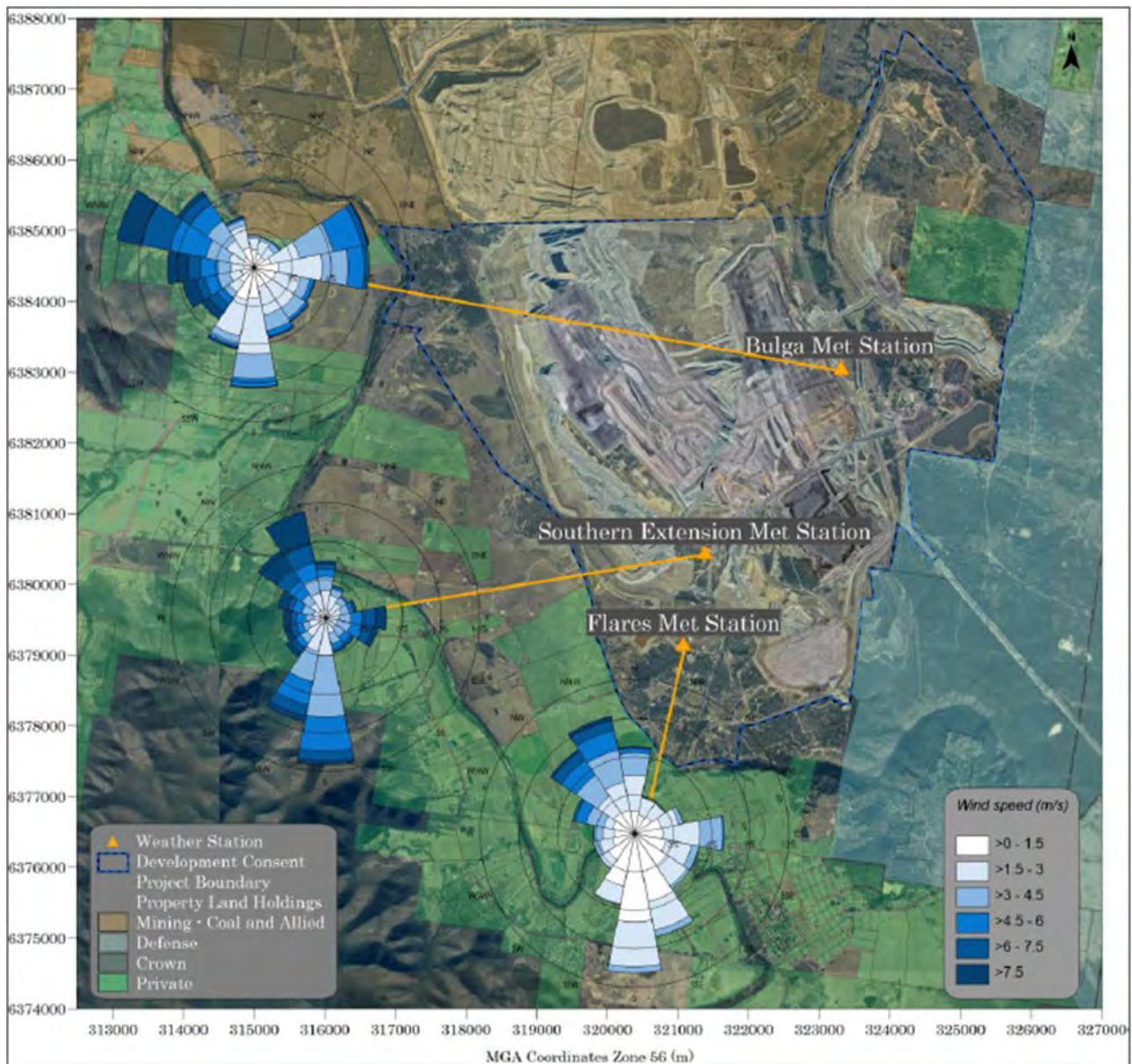


Figure 6.12 Wind Speed and Direction Quarter 4

The Bulga Complex Station, Southern Extension Station and Flares Station recorded variable wind directions with the highest proportions being from the south in Q4 2025. The calms recorded at the Flares Station were most likely due to sheltering from vegetation.

6.2 Noise

6.2.1 Environmental Management

Noise monitoring is undertaken in accordance with the *Bulga Coal Noise Management Plan*.

The location of noise monitoring sites is shown on **Figure 6.2**. The monitoring program includes:

- monthly attended night-time monitoring at nine locations
- real-time monitoring at four locations
- sound power testing of a representative sample of the open cut fleet
- additional monitoring as initiated by alarms or in response to community concerns.

The real-time monitoring network assists with the management of noise impacts from mining operations. Monitors are operated at locations representative of Broke, Fordwich, Milbrodale and Bulga. Data is recorded continuously and reported real-time to the Bulga Open Cut control room via an internal website. Dispatch is notified of noise levels that are approaching or exceeding the Development Consent noise criteria. Dispatch and Open Cut Examiners (OCE) investigate noise sources and make changes to reduce noise, where required. The noise criteria is found in Appendix 6 of SSD-4960 and shown in **Table 6.8**. Compliance with these criteria was assessed in attended monitoring during 2025.

Sound power testing is undertaken for a representative sample of the open cut fleet annually. Every item of mobile equipment is tested at least once every three years. Measured sound power levels are compared to levels included in *The Bulga Extension Project Noise Impact Assessment* (Global Acoustics, 2019) and the *Bulga Extension Project Noise Impact Assessment* (Global Acoustics, 2019b) (for Modification 3). Individual items that exceed specified levels by 3 dB or more are investigated to assess the cause of the exceedance. Defects are rectified as soon as practicable.

The total measured fleet-wide (logarithmic) averages of mobile plant for the current sound power testing campaign are calculated annually. The total measured fleet averages should remain equal to or less than 2 dB of the relevant modelled fleet averages.

6.2.2 Environmental Performance

Attended Noise Monitoring

A summary of attended noise monitoring data for each monitoring location (**Figure 6.2**) is shown in **Table 6.8**. Results are presented as the maximum noise levels from Bulga Coal at each location during 2025. A detailed discussion of monitoring results is provided in monthly noise monitoring reports available on the [Bulga Coal website](#). Bulga Coal were generally compliant with the *Noise Management Plan*; details of exceedances have been presented below and in **Section 11.2**.

Table 6.8 Summary of Attended Noise Monitoring Data – 2025

Location	Bulga Coal Noise Monitoring Results – dBA (Max)		Bulga Coal Project Specific Noise Criteria – dBA	
	LAeq _(15minute)	LA1 _(1minute)	LAeq _(15minute)	LA1 _(1minute)
BCC1 (Bulga Village)	33	36	35	
BCC2 (2241 Putty Road)	32	35	35	
BCC3 (803 Milbrodale Road)	32	42	35	
BCC4 (115 Hill Street)	33	41	35	
BCC5 (Broke Cemetery)	34	42	35	45
BCC7 (179 Cobcroft Road)	36	45	36	
BCC8 (154 Cobcroft Road)	39	50	36	
BCC9 (Mitchell Line Road)	31	35	35	
BCC10 (Blaxland Street)	32	38	35	

Noise affected nights recorded during the attended noise monitoring included:

- BCC8 – 154 Cobcroft Road
 - A 1dB exceedance of the LAeq_{15-min}, and a 2dB exceedance of the LA1_{1-minute} noise criterion was recorded 22:00 on 12 August 2025. This was mainly caused by mining continuum and dozer tracks. A remeasurement at 23:03 recorded a 3dB exceedance of the LAeq_{15-min} and a 5dB exceedance of the LA1_{1-minute}. The non-compliance was reported to the DPHI on 13 August 2025, followed by an investigation report (also refer to **Section 11.2**). During the follow-up measurement at 22:02 on 18 August, LAeq_{15-min} levels were 23dB and LA1_{1-minute} levels were 29dB.

Mobile Plant Sound Power Testing

2025 was the first year of the new three-year testing cycle (2025 – 2027), during the reporting period sound power testing was undertaken by EMM Consulting Pty Ltd (EMM, 2025). During 2025, measurements were taken for 58 items of mobile plant, which corresponds to 45% of the entire fleet.

Average sound power levels across the make/model of mobile plant tested during the three-year testing cycle was within 2 dB of the noise targets, except for the Caterpillar 789C XQ rear dump trucks, Komatsu 930W-5 rear dump trucks, Caterpillar 24H/18M3 Graders and Caterpillar 854K rubber tyred dozer.

- The CAT 789C XQ rear dump trucks were +2 dB (LW) above modelled levels and +1 dB (LWA) above modelled levels.
- The CAT 854H rubber tyred dozers were +8 dB (LW) above modelled levels and -1 dB (LWA) below modelled levels.
- The Komatsu 930E-5 rear dump trucks were +3dB (LW) above modelled levels and +2 dB (LWA) above modelled levels.

- The CAT 24H/18M3 graders were +7dB (LW) above modelled levels and -3 dB (LWA) above modelled levels.

Sound attenuation packages on trucks are inspected every three to four weeks and replaced every four years. Some variation across the fleet is expected as individual units will be at different stages of their build cycle.

Individual items of plant that did not meet the targets by more than 3 dB will be inspected and defects fixed, where required. Corrective actions for plant that exceeded the sound power targets by 3 dB or more during 2025 include:

- A number of components on the 793C and 793D haul trucks will be inspected and defects fixed, if required.
- A number of components on the 789C haul trucks will be inspected and defects fixed, if required.
- A number of components on the 930E-5 haul trucks will be inspected and defects fixed, if required.
- A number of components on the 24H/18M3 graders will be inspected and defects fixed, if required.
- A number of components on the CAT 854K rubber tyred dozer will be inspected and defects fixed, if required.

6.2.3 Comparison Against Predictions

The *Noise Impact Assessment for the Bulga Optimisation Project – Eastern Emplacement Area Development Consent Modification* (Global Acoustics, 2016) predicted Bulga Coal only noise levels from reasonable worst-case operating conditions throughout the life of the open cut mine. Modelling was done for Year 4 of the Bulga Optimisation Project. *The Bulga Extension Project Noise Impact Assessment* (Global Acoustics, 2019) and the *Bulga Extension Project Noise Impact Assessment* (Global Acoustics, 2019b) (for Modification 3) stated the modification would comply with approved noise limits at all receptor locations throughout the mining progression with an appropriate level of noise mitigation applied during periods of adverse meteorological conditions. Therefore, the existing predictions remain the same.

As noted in **Section 6.2.2**, attended monitoring results in 2025 recorded one non-compliance with the SSD-4960 noise criteria. No other noise affected nights occurred during 2025 (refer **Section 6.2.2**). This shows that measured noise levels were managed in accordance with the *Noise Management Plan* and generally below reasonable worst-case night-time predictions made for the Bulga Optimisation Project.

6.2.4 Long Term Analysis

Table 6.9 shows the number of noise criteria exceedances recorded by Bulga Coal during the period from 2011 to 2025.

Table 6.9 Summary of Exceedances by Noise Monitoring Location 2011–2025

Location	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
BCC1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
BCC2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BCC3	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2
BCC4	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2
BCC5	0	0	0	0	1	0	1	2	0	0	2	0	0	0	0	6
BCC6	0	0	0	0	0	1	0	¹	¹	¹	¹	¹	¹	¹	0	1
BCC7	0	1	0	0	0	4	0	1	0	0	0	0	2	0	0	8
BCC8	0	0	0	0	0	0	0	0	0	0	0	4	2	1	1	8
BCC9	¹	¹	¹	¹	¹	¹	0	0	0	0	0	1	0	0	0	1
BCC10	¹	¹	¹	¹	¹	¹	¹	1	0	0	0	0	0	0	0	1
Total	0	2	0	0	1	5	1	6	0	0	2	5	5	2	1	30

¹ Noise levels no longer monitored at this location.

As indicated in **Table 6.9**, occasional exceedances of the Bulga Coal noise criteria have been recorded during the period from 2011 to 2025.

6.2.5 Implemented/Proposed Improvements

The *Noise Management Plan* was revised in February 2022 and was approved on 9 March 2022 by DPHI.

Changes to Noise Monitoring or Management

No changes to the noise monitoring network were carried out during 2025.

Continuous Improvement

Continuous improvement to noise management during 2025 included:

- Introduction to site of 3 Liebherr R9600 excavators which have sound power levels of approximately 113 dBA which is approximately 3 dB less than the Hitachi excavators they are replacing.

6.3 Blasting

6.3.1 Environmental Management

Blasting is undertaken in accordance with the *Blast Management Plan*. In 2025 a revised version of the Blast Management Plan was submitted and approved by the DPHI in August 2025. The revised plan included mostly minor and administrative changes.

Monitoring is carried out to assess air blast overpressure and ground vibration impacts to the nearest privately owned residents.

Private property blast impact assessment criteria are provided in **Table 6.10**. The criteria compliance monitoring locations (Dawtrey, Bulga, Charlton and Hedley) are shown in **Figure 6.2**.

Table 6.10 Private Property Amenity Impact Assessment Criteria

Air blast Overpressure Level (Db(Lin Peak))	Ground Vibration Peak Particle Velocity (ppv)	Allowable Exceedance
115	5 mm/s	5% of the total number of blasts over a period of 12 months
120	10 mm/s	0%

Blasting is managed to minimise ground vibration at public infrastructure. Infrastructure impact assessment criteria are provided in **Table 6.10**. Vibration monitoring is undertaken when the predictions from the scaled distance model are greater than or equal to 80% of the criteria. During the year, monitoring was undertaken at Pole 26 of the 330 kV powerline as shown in **Figure 6.2**.

Table 6.11 Infrastructure Impact Assessment Criteria

Infrastructure	Ground Vibration peak particle velocity (ppv)	Allowable Exceedance
330 kV Suspension Towers, Private Irrigation District (PID) Pipeline and public roads	100 mm/s	0%
Declared dams	50 mm/s	0%
All other public infrastructure	50 mm/s	0%

Heritage blast vibration impact assessment criteria are listed in **Table 6.12**. The Bulga, Charlton and Dawtrey blast monitors shown in **Figure 6.2** are used to assess compliance.

Table 6.12 Heritage Impact Assessment Criteria

Heritage Site	Ground Vibration ppv	Allowable Exceedance
‘Mt Leonard Homestead’, BH14 – ‘Charlton’, B13 – Stone Wall alongside Monkey Place Creek, St Andrews Anglican Church, BH6 – Broke Cemetery, Murinbin House Group.	5 mm/s	0%

6.3.2 Environmental Performance

170 blasts from Bulga Open Cut were recorded during 2025. Monitoring data is available on the [Bulga Coal website](#), with a summary provided in **Table 6.13** to

Table 6.15. During 2025 no blast exceeded the overpressure or ground vibration exceedance criteria.

Table 6.13 2025 Private Property Overpressure and Vibration Monitoring Results

Monitoring Location	Airblast Overpressure Level dBL (Lin Peak)				Ground Vibration ppv (mm/s)			
	Average	Max	Results >115 dBL	Results >120 dBL	Average	Max	Results >10 mm/s	Results >5 mm/s
Bulga	97.0	115.0	0	0	0.14	3.66	0	0
Charlton	91.8	109.6	0	0	0.26	1.19	0	0
Dawtrey	94.2	115.8	1	0	0.24	1.22	0	0
Hedley	92.1	110.6	0	0	0.05	0.16	0	0

Table 6.14 2025 Infrastructure Vibration Monitoring Results

Monitoring Location	Ground Vibration ppv (mm/s)		
	Average	Max	Results > 100 mm/s
330 kV Pole 26	3.55	46.00	0

Table 6.15 2025 Declared Dam (Northern Tailings Facility) Vibration Monitoring Results

Monitoring Location	Ground Vibration ppv (mm/s)		
	Average	Max	Results > 50 mm/s
Portable Blast NTSF B	0.17	0.80	0
Surge Dam	0.57	2.24	0

6.3.3 Comparison Against Predictions

A *Blasting Noise and Vibration Impact Assessment* (Wilkinson Murray, 2012) was undertaken as part of the *Bulga Optimisation Project Environmental Impact Statement* (EIS). A *Blast Impact Assessment* (Enviro Strata Consulting 2019) was also undertaken as part of the *Bulga Extension Project Statement of Environmental Effects*. Both assessments noted that blasting would be managed to meet the amenity air blast and vibration criteria identified for inclusion in the Development Consent and EPL. The results are consistent with predictions.

6.3.4 Implemented/Proposed Improvements

In 2025, Bulga Open Cut implemented an SMS verification system. The SMS system will assess the blast details (size, location, design) together with current meteorological data from site to feed the blast model and provide a Yes/No output to approve or delay the blast.

6.4 Air Quality

6.4.1 Environmental Management

Bulga Coal implements controls to mitigate air quality impacts in accordance with the *Eastern Emplacement Area Management Framework* (EEAMF) and the *Air Quality and Greenhouse Gas Management Plan* (AQGHGMP).

A revised version of the AQGHGMP was submitted to the DPHI in June 2024 to address comments from the Katestone Environmental Pty Ltd (Katestone) review and to include minor amendments across several sections. In 2025 a revised version of the plan was submitted to the DPHI following recommendations received from the EPA. At the time of preparing this Annual Review, the revised AQGHGMP had not been approved.

Bulga Coal operates a monitoring network to assess air quality impacts on surrounding communities. The monitoring network (refer **Figure 6.1**) consists of:

- Air quality monitors required by the relevant consents:

- Eleven Dust Deposition Gauges (DDGs) (four of which are directional) used for monitoring of larger dust particles (typically >50 micrometres [μm]). DDGs are sampled monthly (+/- 2 days) and results include the insoluble (mineralogical) matter (IM) and ash residue (organic).
- Three High Volume Air Samplers (HVAS) that monitor Total Suspended Particulates (TSP) over a 24-hour period every sixth day, known as D10, Dawtrey and Hill Street monitors.
- Five Tapered Element Oscillating Microbalance (TEOM) continuous air quality monitors that measure the concentration of PM_{10} , located at Putty Road (D3), Dawtrey (D5), Hill Street (D1), Mitchell Line Road (D11) and the Mushroom Composting Facility (D4).
- Two Beta Attenuation Monitors (BAM) located at Hill Street (D2) and Putty Road (D10) that measure the concentration of particulate matter less than $2.5\mu\text{m}$ in diameter ($\text{PM}_{2.5}$).
- Air quality monitors required by EPL 563:
 - Two E-BAM monitors continuously measuring PM_{10} , at EPL Point 9 and EPL Point 10 at the north-west and south-east of the EPL premises, respectively.

6.4.2 Environmental Performance

The environmental performance presented below includes data from the Bulga Coal monitors including DDGs, HVAS, TEOMs, BAMs and E-BAMs.

Table 6.16 presents the SSD-4960 air quality criteria.

Table 6.16 Air Quality Criteria SSD-4960

Pollutant	Averaging Period	Criterion
Particulate Matter <10 μm (PM_{10})	Annual	^{a,c} 25 $\mu\text{g}/\text{m}^3$
	24-hour	^b 50 $\mu\text{g}/\text{m}^3$
Particulate Matter <2.5 μm ($\text{PM}_{2.5}$)	Annual	^{a,c} 8 $\mu\text{g}/\text{m}^3$
	24-hour	^b 25 $\mu\text{g}/\text{m}^3$
Total Suspended Particulates (TSP)	Annual	^{a,c} 90 $\mu\text{g}/\text{m}^3$
^d Deposited Dust	Annual	^b 2 $\text{g}/\text{m}^2/\text{month}$ ^a 4 $\text{g}/\text{m}^2/\text{month}$

^a Total impact (i.e. incremental increase in concentrations due to the development plus background concentrations due to all other sources).

^b Incremental impact (i.e. incremental increase in concentrations due to the development on its own).

^c Excludes extraordinary events such as bushfires, prescribed burning, dust storms, fire incidents or any other activity agreed to by the Planning Secretary.

^d Deposited dust is to be assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air – Determination of Particulate Matter – Deposited Matter – Gravimetric Method.

In 2025, there were no days declared as “extraordinary air quality events” by DPHI.

Depositional Dust Monitoring

Depositional dust monitoring results are summarised in **Table 6.17**. Quarterly and Annual Monitoring Reports are available on the [Bulga Coal website](#).

Table 6.17 Summary of Dust Deposition Monitoring Results – 2025 Annual Average

Offsite Gauge		IM Deposited (g/m ² /mth)	Ash Residue (g/m ² /mth)	Adopted Criteria (g/m ² /mth)
Code	General Location			
A3	Inlet Road	1.3	0.9	4.0
C5 (DR1)	Mount Eyre Vineyard	1.2	0.8	
D6	Howe Street	1.5	0.8	
D9	Inlet Road	1.5	1.0	
D10	Putty Road	2.7	2.0	
F3 (DR1)	Fordwich	2.0	1.0	
N5 (DR1)	Putty Road	1.3	0.9	
Redibar	Redibar	2.2	1.4	
Sharrock ¹	Sharrock	0.9	0.4	
Hedley	Mitchell Line Road	1.7	1.1	
F2 (DR1)	Cobcroft Rd	0.9	0.6	

¹ Indicates Directional Depositional Dust Monitor.

There were no exceedances of the depositional dust criteria during 2025. The deposited dust levels recorded in 2025 were slightly higher than 2024.

High Volume Air Sampling

Table 6.18 presents a summary of monitoring results and compares annual averages for TSP against consent criteria. Results include dust from mine (including neighbouring operations) and non-mine sources and are not attributable to Bulga Coal only.

Annual averages were below the relevant criteria at all locations in 2025.

Table 6.18 Summary of 2025 HVAS Annual Average Results

Gauge	Annual Average (µg/ m ³) (excluding extraordinary events) TSP (µg/ m ³)
Consent Criteria	90
Dawtrey	38
Putty Road (D10)	34
Hill Street (D2)	25

Continuous Monitoring – PM₁₀

A summary of the recorded PM₁₀ levels at the TEOM units is presented in **Table 6.19**.

The annual PM₁₀ averages were below the criterion of 25 µg/m³ at all monitoring locations, Hill St (D1), Putty Rd (D3), Dawtrey (D5) and Mitchell Line Road (D11).

The 24-hour average PM₁₀ levels recorded in 2025 were broadly consistent with the levels recorded during recent years and the levels prior to the end of 2019. During 2025 there were six recorded exceedances of the 24-hour average criterion. All exceedances were investigated and results indicated that Bulga contributed to less than 50 µg/m³.

Table 6.19 Summary of TEOM 2025 Monitoring Results

Gauge	Annual Average PM ₁₀ (µg/m ³)		Maximum 24-hour Average PM ₁₀ (µg/m ³)	
	PM ₁₀ (µg/m ³) ¹	Number of days exceeding criterion	PM ₁₀ (µg/m ³)	Number of days exceeding criterion
Consent Criteria	25	-	50	-
Hill Street (D1)	13.5	0	43.2	0
Putty Road (D3)	15.2	0	46.7	0
Dawtrey (D5)	16.0	0	53.1	2
Mitchell Line Road (D11)	18.5	0	63.8	4

Continuous Monitoring – PM_{2.5}

Table 6.20 presents a summary of the recorded PM_{2.5} levels at the BAM monitors.

The annual PM_{2.5} averages were below the relevant criterion of 8 µg/m³ at D2 (Hill St) and D10 (Putty Road).

The maximum 24-hour PM_{2.5} averages were below the relevant criterion of 25 µg/m³ during 2025. The annual average PM_{2.5} results recorded in 2025 were slightly lower than 2024.

Table 6.20 Summary of BAM 2025 Monitoring Results

Gauge	Annual average PM _{2.5} (µg/m ³)		Maximum 24 hour average PM _{2.5} (µg/m ³)	
	PM _{2.5} (µg/m ³)	Number of days exceeding criterion	PM _{2.5} (µg/m ³)	Number of days exceeding criterion
Consent Criteria	8	-	25	-
Putty Road (D10)	5	0	24.2	0
Hill Street (D2)	3	0	24.6	0

Onsite EPL Monitors

In accordance with the requirements of EPL 563, Bulga Coal operated two E-BAM type continuous air quality (PM₁₀) monitors close to the EPL premises boundary.

The data is analysed with wind speed and wind direction data to estimate the Bulga Coal PM₁₀ contribution at each location. The monitors are not used to assess compliance with the air quality criteria in the Development Consent; they inform the *Bulga Open Cut Air Quality Trigger Action Response Plan* (TARP). Alarms are generated in the control room when elevated PM₁₀ levels occur. Actions to minimise dust are taken in response to alarms, where required.

Figure 6.13 and **Figure 6.14** present the pollution roses for EPA Point 9 (D9) and EPA Point 10 (D8) monitors, respectively. The figures show that there is a slight effect on dust levels from the direction of Bulga Coal. Some high levels occur in the direction of Bulga Coal at the EPA Point 9 (D9) monitor given the location is close to mining activities, however the monitor recorded a greater proportion of high levels when winds were from the northwest quadrant which is upwind of Bulga Coal.

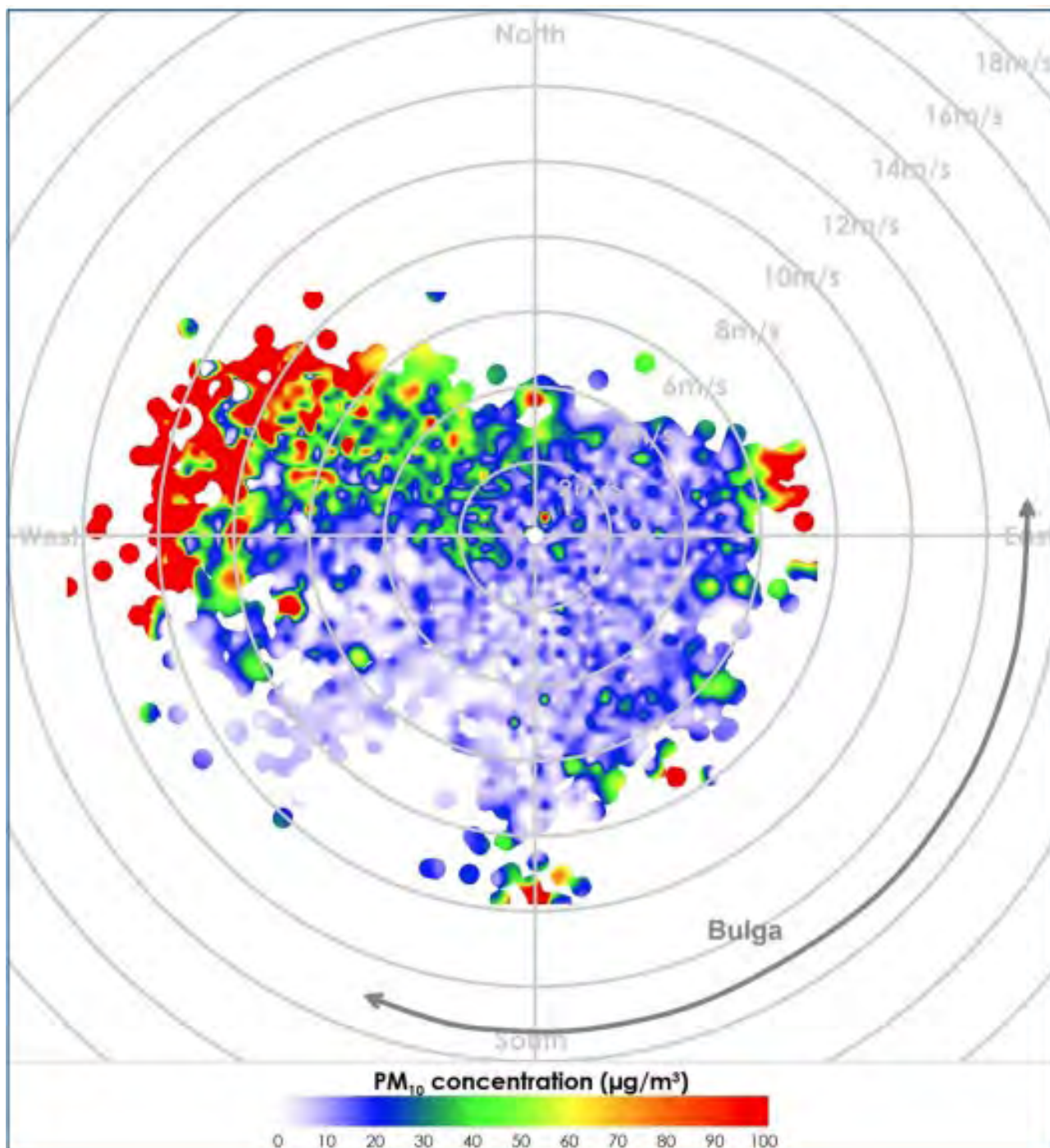


Figure 6.13 2025 Pollution Rose¹ for EPA Point 9, PM₁₀ Data (Todoroski Air Sciences, 2026)

¹ How to read a pollution rose:

The colour indicates the pollutant concentration measured at the monitor.

The position of pollutant concentration markings along the 360° axis indicates the corresponding direction from which pollutants arise from.

The position of pollutant concentration markings relative to the banded rings indicates the wind speed for the corresponding hourly concentration.

The arc labelled “Bulga” indicates the relative direction of Bulga Coal from the monitor.

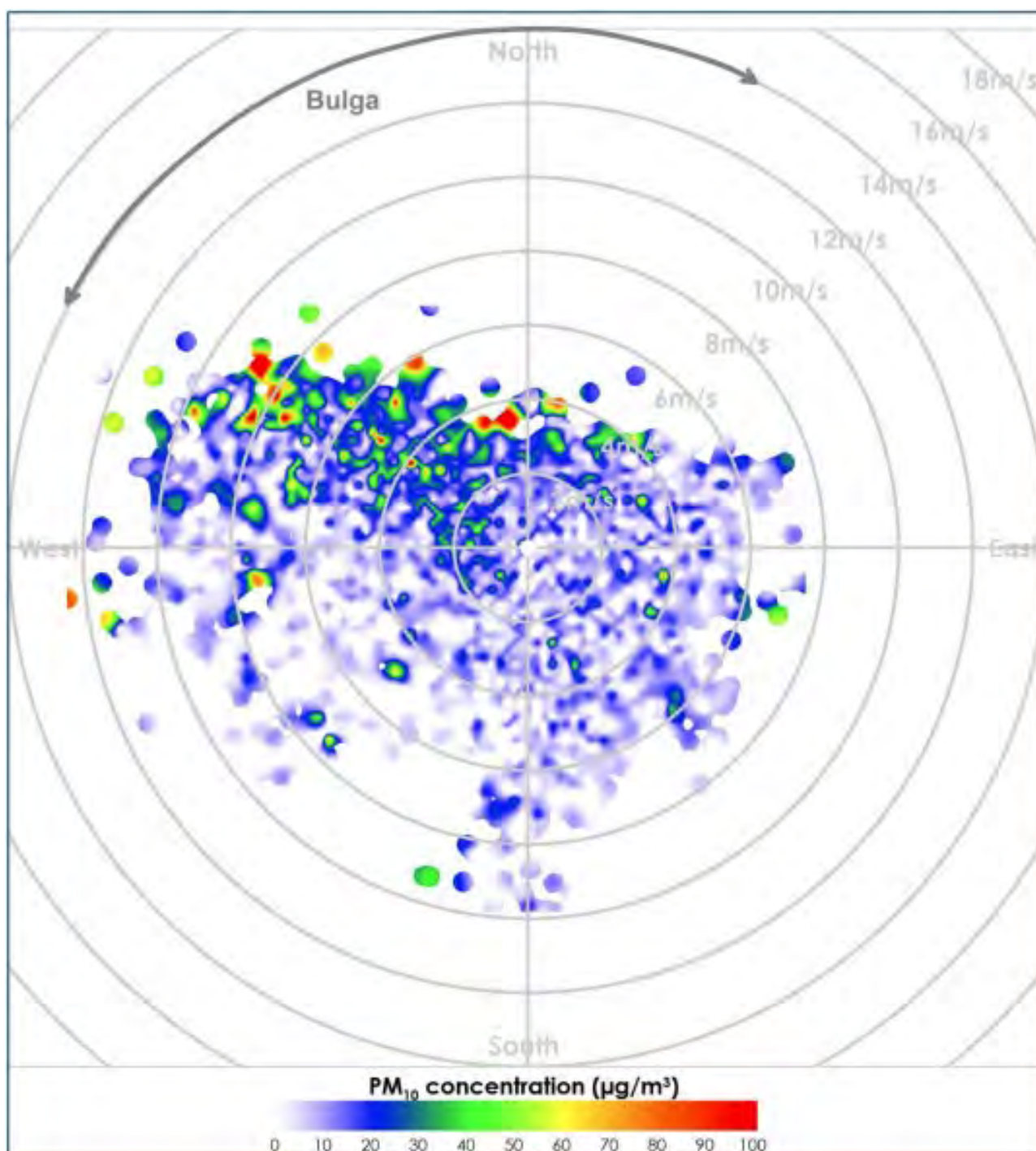


Figure 6.14 2025 Pollution-Rose² for EPA Point 10, PM₁₀ Data (Todoroski Air Sciences, 2026)

² How to read a pollution rose:

The colour indicates the pollutant concentration measured at the monitor.

The position of pollutant concentration markings along the 360° axis indicates the corresponding direction from which pollutants arise from.

The position of pollutant concentration markings relative to the banded rings indicates the wind speed for the corresponding hourly concentration.

The arc labelled “Bulga” indicates the relative direction of Bulga Coal from the monitor.

Mushroom Composting Facility

Figure 6.15 presents the PM₁₀ 13-hour average measured at the Mushroom Composting Facility (D4 TEOM monitor) against the 13-hour average Assessment Level of 91 µg/m³. The Assessment Level only applies during the approved operating hours of the Mushroom Composting Facility. These are between 6:00 am and 7:00 pm Monday to Friday, and any additional operating hours of the Mushroom Composting Facility, provided that:

- Such operating hours do not exceed 6:00 am to 12:00 pm on weekends.
- The Mushroom Composting Facility has given Bulga Coal at least one month advance notice of the intention to operate during those additional operating hours.

As shown in **Figure 6.15**, there were eight occasions where levels were above the assessment level of 91 µg/m³. These were investigated in accordance with the *Eastern Emplacement Area Air Quality Management Framework* (EEAAQMF). In accordance with the investigation and incident reporting process in the EEAAQMF, Bulga Coal and the Mushroom Composters agreed that on all occasions Bulga Coal was not the main cause of the exceedance. Therefore, these were not classified as incidents or non-compliances and no notification to DPHI was required.

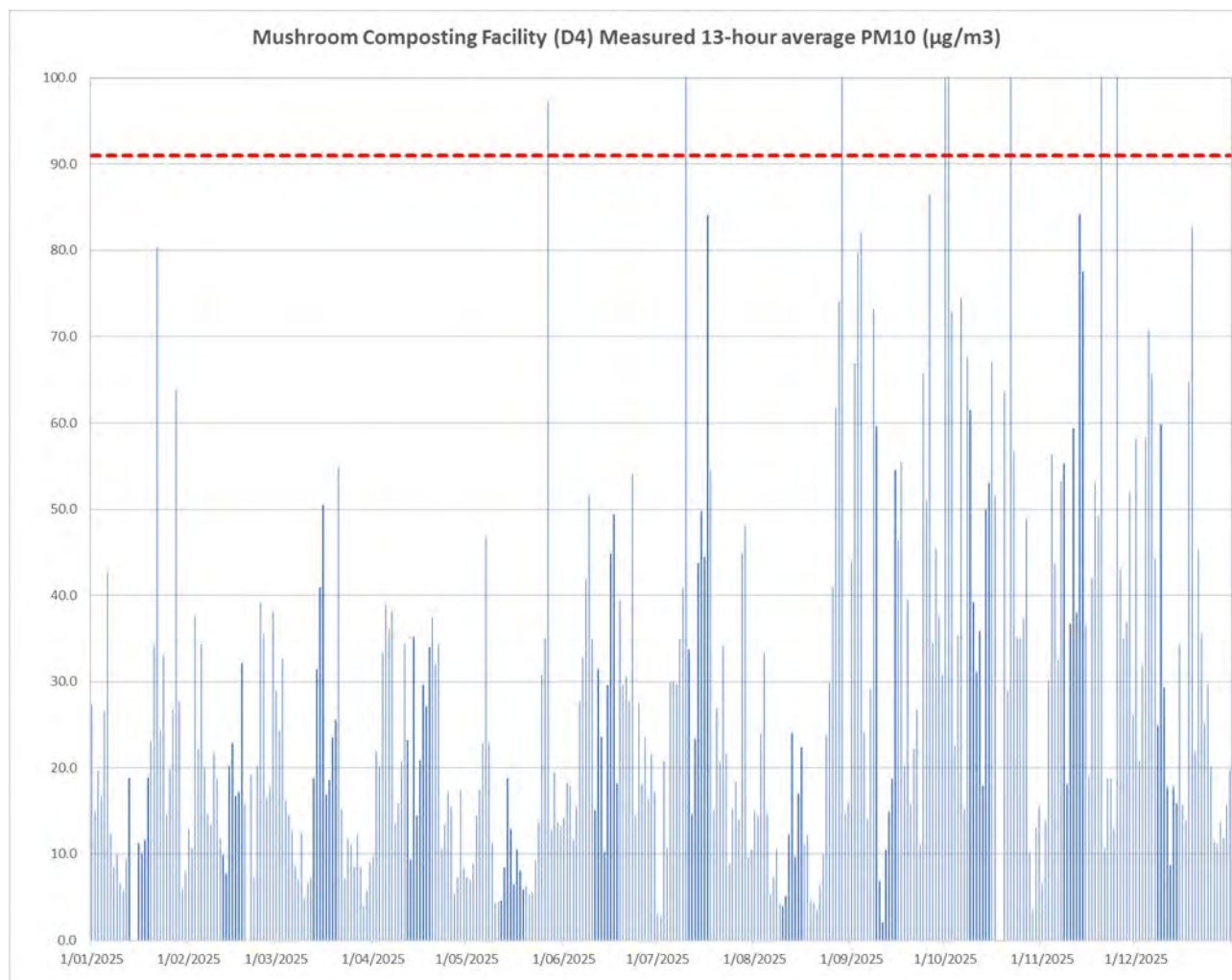


Figure 6.15 Mushroom Composting Facility (D4 Sampling Results 2025 – 13-hour PM₁₀ Averages)

6.4.3 Comparison Against Predictions

A comparison of 2025 dust monitoring data with the modelled predictions made in the *Bulga Coal Complex Modification 3 Air Quality Impact Assessment* (Jacobs, 2019) (Year 2026) was undertaken by Todoroski Air Sciences (2026) (attached as **Appendix B**). The analysis shows that the measured levels in 2025 were generally consistent with or lower than the predictions for the representative modelling scenario.

6.4.4 Long Term Analysis

An assessment of long-term trends over the life of Bulga Coal operations was undertaken by Todoroski Air Sciences (2026) (**Appendix B**). Annual average levels were broadly consistent with the previous years. The trends in air quality reflect the prevailing meteorological conditions and not the mining activity.

6.4.5 Implemented/Proposed Improvements

In December 2025 Bulga Coal upgraded the Hill Street HVAS monitor.

Hydromulching of exposed batters at the Heavy Build Pad and several sediment dams at the CHPP was completed in September and December 2025.

6.5 Mine Subsidence

6.5.1 Environmental Management

The last underground coal was mined in May 2018 and the relevant Subsidence Management Plan expired in December 2019. Subsidence impact monitoring and mitigation works are now completed in accordance with the *Bulga Underground Operations Post Mining Subsidence Management Plan*.

6.5.1.1 Monitoring Results

Repairs to surface subsidence cracking identified during monitoring activities for previously mined areas continued to be undertaken during the reporting period. The observed impacts caused by subsidence are summarised in **Table 6.21**.

Table 6.21 Observed Subsidence Impacts

Feature	Impact Performance Measures	Observed Impacts
Surface cracking	Always safe. Stable, non-polluting post mining landform.	No adverse impacts reported. Continue to monitor and repair as required.
Telecommunications and powerlines	Always safe. Serviceability should be maintained wherever practicable.	No adverse impacts identified to public or internal infrastructure.

Feature	Impact Performance Measures	Observed Impacts
Pipelines and tanks	Always safe. Serviceability should be maintained wherever practicable.	No adverse impacts identified to public or internal infrastructure.
Roads and gates	Always safe. Serviceability should be maintained wherever practicable.	No adverse impacts identified to public or internal infrastructure.
Fences	Always safe. Serviceability should be maintained wherever practicable.	No adverse impacts identified to public or internal infrastructure.
Buildings	Always safe. Serviceability should be maintained wherever practicable.	No adverse impacts identified to public or internal infrastructure.
Archaeology sites and vegetation	Stable, non-polluting post mining. Landform.	No adverse impacts reported.

6.5.2 Comparison Against Predictions

A comparison against predictions was not applicable considering underground mining did not occur during 2025.

6.5.3 Implemented/Proposed Improvements

As noted above, Bulga Underground Operations have continued to progressively complete repairs to surface subsidence cracking identified from monitoring. Monitoring of previously mined areas will continue in 2026. Any required mitigation works will be completed in accordance with the *Bulga Underground Operations Subsidence Mapping and Repair Procedure* and the *Bulga Underground Operations Post Mining Subsidence Management Plan*.

6.6 Biodiversity and Offsets

Bulga Coal implements management activities and conducts annual ecological monitoring in remnant vegetation areas located within the mine site, Biodiversity Offset Areas (BOAs) and mine rehabilitation areas. The activities and monitoring programs implemented during 2025 can be found in the following sections:

- Remnant vegetation around the mine site (**Section 6.6.1**).
- Offset areas (**Section 6.6.2**).
- Mine rehabilitation (**Section 8.6**).

During 2025, the biodiversity and offset monitoring programs were completed successfully. In general monitoring results showed a constant to slightly decreasing trend in both flora and fauna, and species diversity and abundance.

6.6.1 Remnant Vegetation

6.6.1.1 Environmental Management

Flora and fauna monitoring is conducted around the mining operations in accordance with the *Biodiversity Management Plan* (BMP). The locations of ecological monitoring sites are shown in **Figure 6.16**.

Revised versions of the Biodiversity Management Plan and its appendices have been submitted to the DPHI for approval in November 2025, after consultation with the Conservation Programs, Heritage and Regulation (CPHR) (formerly the Biodiversity Conservation Division (BCD)) and the Commonwealth DCCEEW.

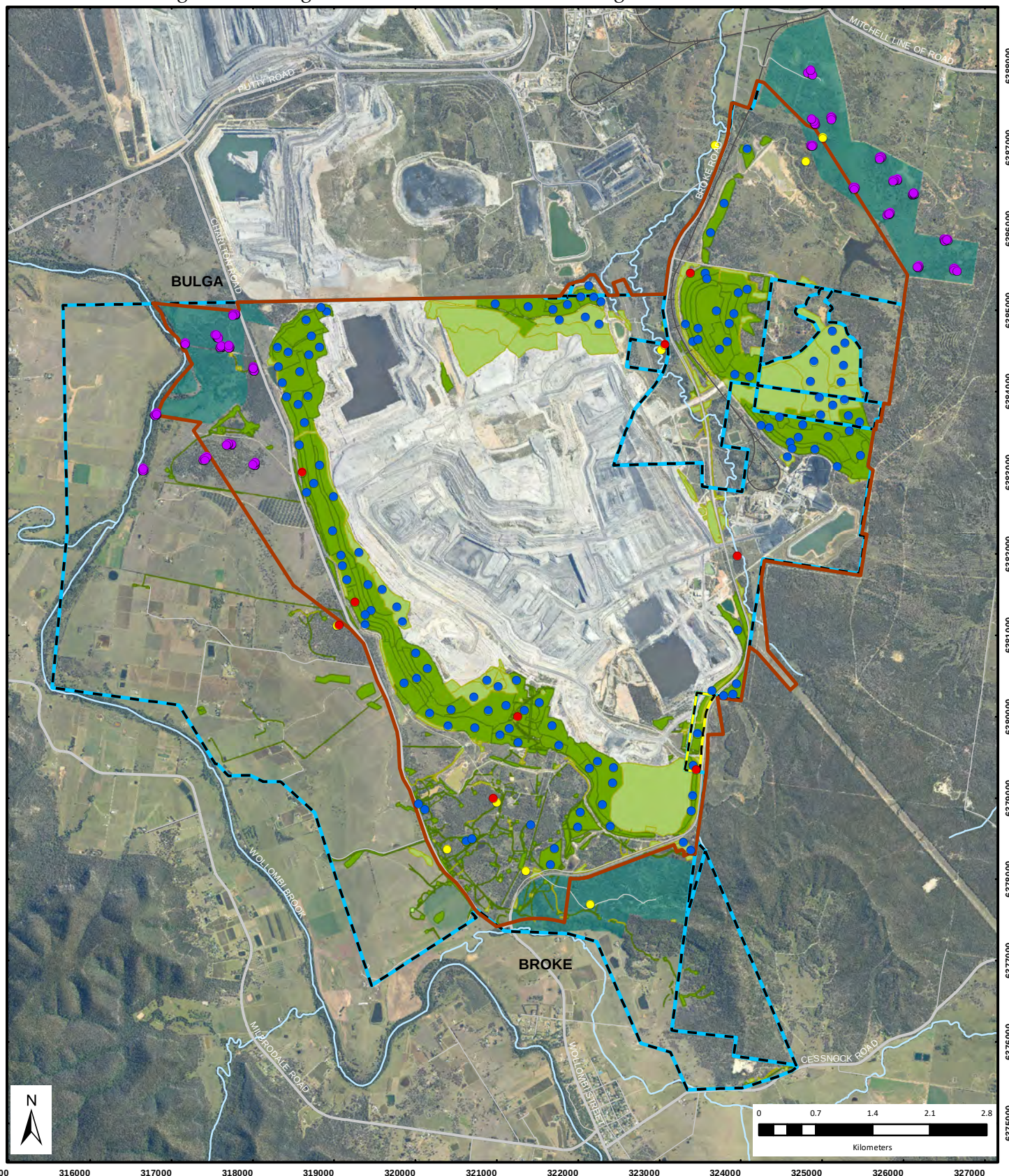
Annual Ecological Monitoring Program – Flora

The annual ecological monitoring program for remnant vegetation was undertaken in 2025 with a summary of the results presented in **Section 6.6.1.2**.

The long-term remnant vegetation monitoring program utilises the Biodiversity Assessment Methodology (BAM) to compare rehabilitation areas with biometric scores from the targeted vegetation communities.

The primary objective of the monitoring program is to assess the health and condition of remnant vegetation at Bulga Coal. The BAM was adopted during 2018 to be consistent with the CPHR (formerly the BCD) requirements and to match the methodology used at rehabilitation sites. The BAM involves assessing vegetation condition based on the compositional, structural and functional attributes of a site (OEH 2018).

FIGURE 6.16 - Bulga Coal Ecological and Rehabilitation Monitoring 2025



Legend

- Development Consent Boundary
- Mining Lease AMA
- Coal - Current Titles
- Main Roads
- Local Roads
- Watercourse
- Railway
- Offset Area Boundaries
- Rehabilitation Monitoring
- Remnant Vegetation Monitoring
- Fauna Monitoring
- Nest Box Monitoring
- Rehabilitation Phase**
- Growth Media Development
- Ecosystem and Land Use Establishment
- Ecosystem and Land Use Development



Date Created: 25/03/2026
Map Size: A4 Portrait
Scale: 1:65,000
Map Created By: rabbott
Coordinate System:
GDA2020 MGA Zone 56
Projection: Transverse Mercator
Datum: GDA2020

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Annual Ecological Monitoring Program – Fauna

Ecological monitoring for fauna was completed by Forest Fauna Surveys (2025) and results provided in the 2025 Annual Fauna Monitoring Report which is available on the [Bulga Coal website](#). A summary of results is provided in **Section 6.6.1.2**. The methodology includes targeted surveys of birds, bats, reptiles and amphibians, owl call-playback, fauna spotlighting and opportunistic fauna surveying.

The program is designed to check if there have been any impacts on the surrounding terrestrial and aquatic habitats (outside of approved disturbance areas) because of mining operations and to monitor the habitat condition of rehabilitation areas.

6.6.1.2 Environmental Performance

Flora Monitoring

In accordance with the *Bulga Complex Biodiversity Management Plan*, ecological and photographic monitoring of remnant flora was conducted at three monitoring sites in 2025 located within the following vegetation communities:

- PCT 3431 – Central Hunter Grey Box – Ironbark Woodland (two sites).
- PCT 4015 – Central Hunter Swamp Oak Forest.
- PCT 3315 – Central Hunter Ironbark-Spotted Gum Forest.

Overall, the 2025 monitoring results highlighted the ongoing good vegetation condition at three of the four monitoring sites. At the riparian Swamp Oak Forest site weed incursion remained the main issue impacting vegetation quality, with Lantana and exotic grasses being problematic and requiring management if vegetation condition and integrity scores are to be maintained or improved.

Fauna Monitoring

Fauna monitoring was undertaken at nine sites in areas of remnant vegetation and rehabilitation across the project area:

- Remnant Woodland and Riparian Vegetation Sites – BM04, BM10, BM18 and BM23.
- Mine Rehabilitation Sites – BM07a, BM18a, BM19a, BM27a and BM28.

Diurnal bird census surveys in 2025 recorded 58 native and 2 introduced bird species. No new bird species were recorded in 2025, with the cumulative total of 167 bird species recorded in the Bulga Open Cut rehabilitation monitoring areas since 2003. The value of longer-term monitoring survey data is the detection of fauna species that may frequent an area on a periodic occurrence, such as when stochastic events such as severe wildfires or drought impact other regions of the state. For highly migratory or irruptive species, their occurrence in a region may be very infrequent, such as decades between sightings.

Monitoring surveys for mammals in 2025 include use of remote cameras, echolocation call recordings for microbats and nocturnal spotlight searches. Seven native terrestrial and arboreal mammals, 13 microbat species and 4 introduced mammal species were recorded in 2025. A total of seven native and four introduced mammal species were detected, including the Common Dunnart, Bare-nosed Wombat and Common Ringtail Possum.

Thirteen microbat species were recorded in the Bulga Coal area during 2025 by echolocation call recording. A total of 822 echolocation calls were analysed to determine 13 microchiropteran bat species at Bulga Coal in 2025. All 13 species have previously been recorded at Bulga rehabilitation areas. All sites in 2025 recorded microbat activity, with higher activity recorded at rehabilitation site BM07a (off Charleton Road, Broke) and woodland sites BM04 and BM18. The remaining rehabilitation monitoring sites recorded low number of calls (<50 calls) compared to remnant woodland sites. Current rehabilitation sites support dense regrowth vegetation, limiting opportunities for microbats to forage below the canopy in areas with open space. Small microbats typically seek cleared gaps in canopy such as vehicle tracks or natural open spaces between trees to forage. The high number of calls recorded at BM07a rehabilitation may have been influenced by site selection, in that the detector was placed in a cleared vegetation gap located along a contour drain.

Six reptile species were recorded in the 2025 fauna monitoring period, all of which have previously been recorded. The Eastern Snake-necked Turtle was observed crossing an access track near monitoring site BM07a, following rainfall over several days prior to the survey in August 2025. The Red-bellied Black Snake was observed at one (1) monitoring site (BM23), but would be widespread across the Bulga Complex. The Eastern Brown Snake was observed as roadkill along Charlton Road near two rehabilitation monitoring sites (BM10 and BM27a). The Bearded Dragon and Eastern Blue-tongue skink were observed at two sites. The Lace Monitor is widespread and abundant species, with one individual recorded by field camera at BM23.

Seven frog species were detected by combination of opportunistic observations during other field tasks and nocturnal spotlight searches. Small dams and minor creek lines occur in proximity to several monitoring sites, providing aquatic habitat for a range of frog species. Weather conditions for frog surveys were good in August 2025 (diurnal search), with drier conditions during spring surveys. However, above average rainfall in the first part of the year resulted in dams being full and containing emergent aquatic vegetation for several frog species. By late spring, aquatic conditions had dried out at several monitoring sites. Most of the frog species detected are typically associated with small dam habitats, either utilising emergent aquatic vegetation, or active around the fringes of the dams and small creek lines.

Since commencement of monitoring in 2003, a total of 28 threatened fauna have been recorded at Bulga Coal and nearby offsets. In late 2024, a new species was added to the Threatened Species Schedule on both the federal EPBC Act, and *Biodiversity Conservation Act 2016 (NSW)*. The White-throated Needletail was listed in August 2024 as Vulnerable under both Acts. The species has previously been recorded within the Bulga Coal, but was not observed during surveys in 2025. The breakdown is 17 threatened birds and 11 threatened mammals. In 2025, nine (9) threatened species were recorded within the site, including four (4) birds and five (5) microbat species.

Overall abundance of pest species is considered low based on the duration of sampling period (98 consecutive nights). For instance, the detection rates of feral cat (one night) and fox (two nights) is low. However, there could be some evasive behaviour by both species to avoid detection of the field cameras.

6.6.1.3 Implemented/Proposed Improvements

Recommendations from monitoring reports, where appropriate, will be implemented in 2026. These recommendations focus on land management practices to improve the health of vegetation and quality of habitat in surrounding vegetation.

Land management activities to be implemented in 2026 across remnant vegetation areas include ongoing management of Lantana (*Lantana camara*) and priority weed grasses to minimise the risk of further spread.

As Bulga Coal continues to clear remnant vegetation to allow for the progression of mining activities, habitat resources (logs, rocks, and tree hollows) will be salvaged for re-use in rehabilitation and where feasible, remnant vegetation areas.

Due to mining progression some remnant vegetation monitoring sites will be disturbed or have become part of the Vere Biodiversity Offset Area under a Biodiversity Stewardship Agreement. The Bulga Coal *Biodiversity Management Plan* has been revised and submitted for commonwealth approval during the preparation of the Bulga 2025 Annual Review. As part of this revision, Bulga Coal have updated the *Biodiversity Management Plan* to reflect changes to the ecological monitoring program.

6.6.2 Biodiversity Offsets

Schedule 3, Condition 29 of SSD-4960 requires Bulga Coal to establish and maintain five Biodiversity Offset Areas (BOAs). Condition 9 of EPBC 2012/6637 and Condition 12 of EPBC 2018/8300 requires an annual report including implementation of the associated management plans (see **Section 6.6.2.1** to **Section 6.6.2.4**) and detailing compliance with the conditions of the approval (see **Appendix A**). The BOAs were established in agreement with the CPHR (formerly the BCD) and its performance is currently overseen by the Biodiversity Conservation Trust (BCT). Bulga Coal currently manages the BOAs presented in **Table 6.22**.

Table 6.22 Bulga Coal Biodiversity Offset Areas

Biodiversity Offset Area	Area (ha)	Conservation Agreement Date
Broke Road BOA	251	9 May 2019
Condran BOA	50	7 May 2019
Reedy Valley BOA	1,486	7 May 2019
Wollombi Brook Conservation Area (WBCA)	65 (BOA) 51 (Aboriginal heritage conservation)	7 May 2019
Vere Biodiversity BOA	154	4 December 2023

The Broke Road BOA, and WBCA are located in the north-eastern and north-western corners of Bulga Coal, respectively. The Reedy Valley and Condran BOAs are located further from Bulga Coal and are approximately 30 km north-west and 10 km south-east of Muswellbrook, respectively. In addition, Bulga Coal committed to establishing two Weeping Myall Management Areas in the Bulga Optimisation Project EIS. These were established in 2015. **Figure 6.17** shows the general location of the BOAs and Management Areas.

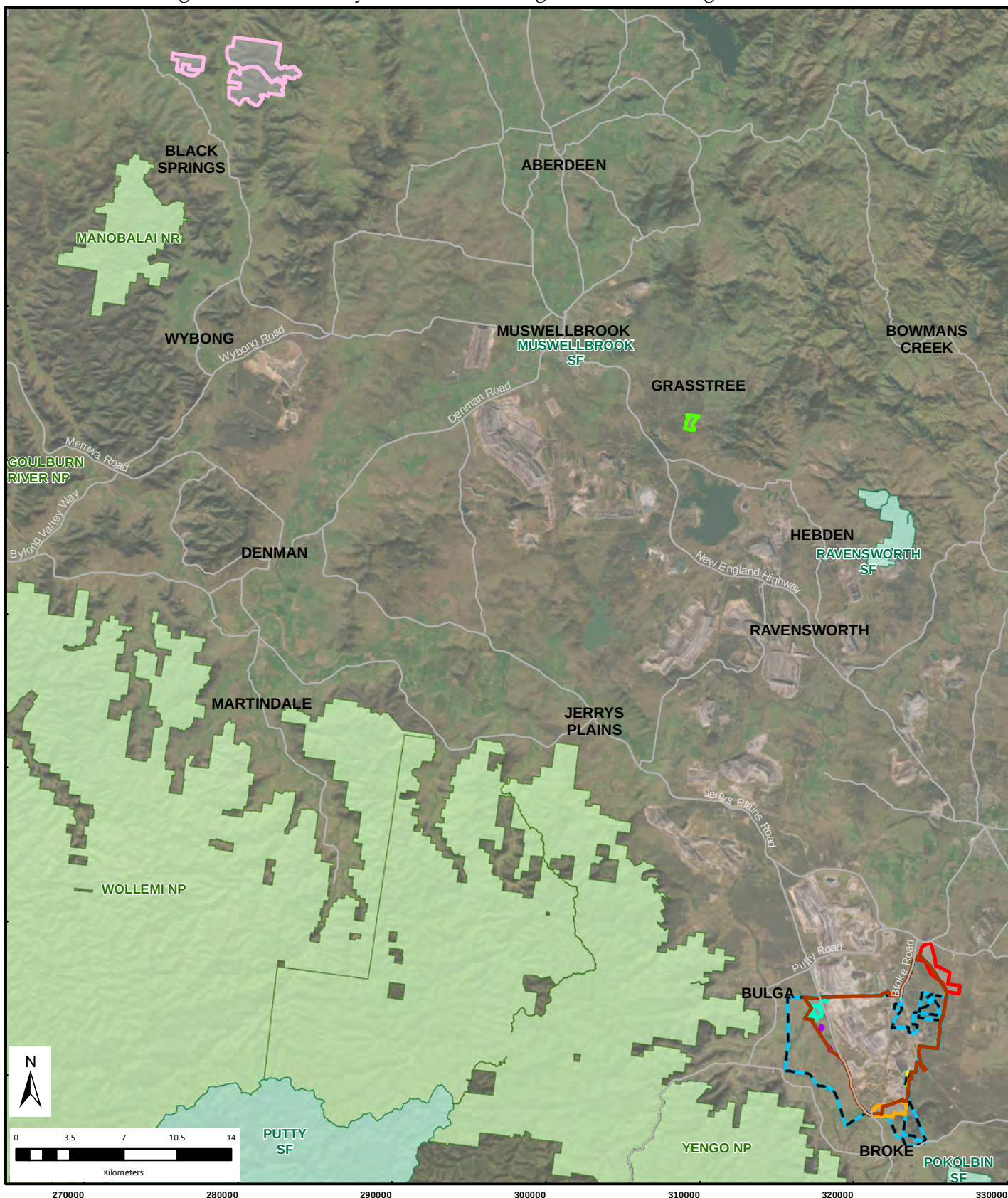
At each BOA, monitoring is undertaken to assess performance against defined indicators as specified by the conservation agreements. Monitoring transects are 50 m in length, with each comprising ten quadrats 5 m x 5 m in size, positioned along alternate sides of the centreline. Within each quadrat, data on species diversity, age and structure of the canopy, and shrub strata are collected. For comparative purposes, replicated transects within adjacent regenerating grassland areas were also established to monitor the return of woodland to these areas. In effect, pairs of 50 m transects (i.e. 100 m transects of 20 quadrats) were positioned end-to-end across grassland-woodland boundaries so that restoration progress can be tracked over successive monitoring seasons. With the change to biometric monitoring in 2017, additional data on vegetation condition and habitat is also collected within a 20 m x 20 m quadrat positioned within these transects. In addition, fauna and habitat usage monitoring is conducted annually and every three years, respectively.

The monitoring program for the Weeping Myall Management Areas involves annual ecological monitoring by a qualified ecologist. The ecological monitoring survey records an updated count of individual plants of weeping myall, assesses their health and population, and includes permanent photographic point monitoring. Additionally, floristic data is collected to identify if native species (other than weeping myall) are also responding to management activities. Information regarding any weed or pest species requiring management, along with recommendations for suitable actions is also recorded.

At the Vere BOA, ecological monitoring is also undertaken to measure the success of management and restoration strategies in meeting the approval conditions and performance against defined indicators. The ecological monitoring program involves conducting permanent flora plots in remnant woodland, Derived Native Grassland (DNG) regeneration, and DNG revegetation areas. A minimum of three plots are surveyed in each area, focusing on floristics, structure, habitat features, and ecological condition. Monitoring also includes permanent photographic point monitoring, stem count assessments, and site-based diurnal woodland bird surveys, with additional winter bird surveys undertaken annually for the first five years and then five monitoring periods over the next 15 years. Surveys undertaken in a separate monitoring event target threatened migratory species, including the Swift Parrot (*Lathamus discolorand*) and the Regent Honeyeater (*Anthochaera Phrygia*). As a minimum, two x 20-minute bird surveys are undertaken at six monitoring sites (consistent with flora monitoring sites where possible). Nocturnal microbat and megabat surveys are also undertaken, including spotlighting searches and Anabat recordings.

Progress against 2025 performance indicators for Broke Road, Condran, Reedy Valley and Wollombi Brook and the Vere BOA's, as detailed in *Biodiversity Offset Management Plan* (BOMP) is shown in **Appendix C**.

FIGURE 6.17 - Bulga Coal Biodiversity Offsets and Management Areas - Regional Context



Legend

- Development Consent Boundary
- Coal - Current Titles
- Mining Lease AMA
- State Forest
- NPWS Reserves
- Road

Offset Area

- Broke Road Conservation Offset Area
- Condran Offset Area
- Reedy Valley Offset Area
- The Vere Offset Area
- Weeping Myall Management Area
- Wollombi Brook Conservation Area

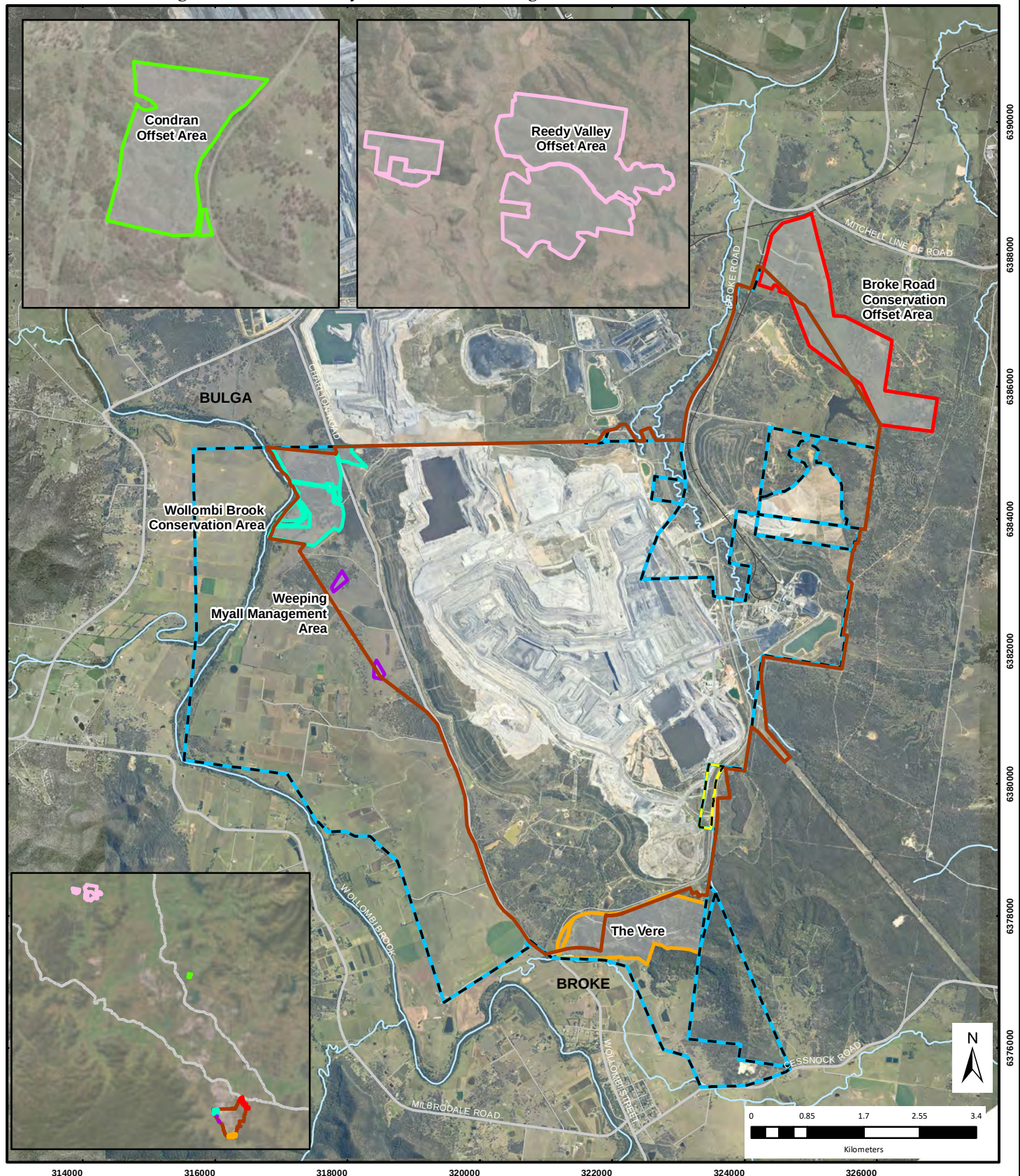


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FIGURE 6.18 - Bulga Coal Biodiversity Offsets and Management Areas



Legend

- | | |
|--|---|
| Development Consent Boundary | Offset Areas |
| Mining Lease AMA | Broke Road Conservation Offset Area |
| Coal - Current Titles | Condran Offset Area |
| Main Roads | Reedy Valley Offset Area |
| Local Roads | The Vere Offset Area |
| Watercourse | Weeping Myall Management Area |
| Railway | Wollombi Brook Conservation Area |



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6.6.2.1 Broke Road BOA

Environmental Management

Environmental management activities undertaken at the Broke Road BOA in 2025 included:

- Weed control works focussing in particular on African boxthorn (*Lycium ferocissimum*), African lovegrass (*Eragrostis curvula*), African olive (*Olea europaea subsp. cuspidate*), Bitou bush (*Chrysanthemoides monilifera subsp. Rotundata*), Blue heliotrope (*Heliotropium amplexicaule*), Coolatai grass (*Hyparrhenia hirta*), Galenia (*Galenia pubescens*), Golden wreath wattle (*Acacia saligna*), Green cestrum (*Cestrum parqui*), Kikuyu (*Cenchrus clandestinus*), Lantana (*Lantana camara*), Peppercorn tree (*Schinus molle*), Prickly pears (*Opuntia spp.*), Rhodes grass (*Chloris Gayana*), Sharp rush (*Juncus acutus*), Silky oak (*Grevillea robusta*), Sugar gum (*Eucalyptus cladocalyx*), Sweet briar (*Rosa rubiginosa*), Whisky grass (*Andropogon virginicus*) and Wild peach (*Prunus persica*).
- Firebreak slashing along tracks, fence lines and neighbouring properties to reduce bushfire risk.
- Maintenance to internal tracks deteriorated during 2025 and creek crossing repairs to ensure safe access throughout the BOA.
- Wild dog and fox baiting program during autumn and spring months resulted in four wild dogs, 47 foxes and one cat.
- Implementation of the Broke Road Operational Weed Management Action Plan 2024-2028.
- 43 feral pigs controlled.
- Planted 19.6 ha of Central Hunter Grey Box Ironbark Woodland Endangered Ecological Community (EEC) at 1000 stems/ha density.
- Six-monthly inspections.
- Ongoing ecological monitoring program.
- Regeneration assessment.

Monitoring Results

The annual monitoring program is generally completed during spring and autumn in the Broke Road BOA. The 2025 monitoring program included fauna, flora and nest boxes. Flora monitoring showed a slight decrease in native and weed species diversity across the various plots in 2025.

Flora

Below are key findings during the 2025 flora monitoring at Broke Road BOA:

- 130 plant species (79 native and 51 weeds, none of which are high threat species). This is a decrease in diversity from 2024 monitoring. Fluctuations in species numbers across the years have been largely attributed to seasonal and weather variations, such as droughts and wetter years.
- Planted canopy stock has been progressing very well in most areas.

- The single clump of the endangered *Cymbidium canaliculatum* growing on an Ironbark tree adjacent to site BRO-RMN-1691-04 continues to flourish.
- Monitoring of the vulnerable *Eucalyptus glaucina* in 2025 showed continuing persistence and regeneration within two permanent plots and across the wider landscape.
- African Olive (*Olea europea subsp. cuspidata*) appear to have been reduced considerably. There has been good control of Lantana (*Lantana camara*) and Blue Heliotrope (*Heliotrope amplexicaule*) appears to be expanding across the site.

Fauna

Below are key findings during the 2025 fauna monitoring at Broke Road BOA:

- Bird census surveys were conducted at nine (9) sites over four (4) monitoring periods in 2025. A total of 58 bird species were recorded which is an increase in diversity from 2024 monitoring.
- A number of additional species were observed whilst conducting other field duties with one new threatened species detected, the threatened Spotted Harrier.
- During the 2025 surveys, several trees were either in flower or contained high abundance of lerps in the canopy, and high bird activity was noted during each monitoring survey.
- Two (2) of the three (3) revegetation sites (BR0006R, BR007R) recorded high scores compared to previous monitoring years for each site. Site BR008R recorded lower diversity score in 2025 to the long-term average for this site. Both revegetation sites support dense growth of plantings which are well established, with saplings reaching an approximate height of 5-8m. The improvement in habitat structure and quality at each of the revegetation sites provides important resources for a range of bird species.
- No evidence of the threatened Swift Parrot or Regent Honeyeater was recorded at Broke Road BOA in 2025. Nocturnal surveys did not detect the presence of the threatened Grey-headed Flying-fox.
- Three threatened bird species were recorded at Broke Road BOA in 2025, the Spotted Harrier, Speckled Warbler and Grey-crowned Babbler.
- Thirteen microchiropteran bat species were recorded by echolocation calls. Four threatened microbats were recorded in 2025, the Eastern Coastal Freetail-bat, Eastern Bentwing-bat, Little Bentwing-bat and Large-eared Pied Bat.
- One arboreal mammal species was recorded by spotlight searches and field camera, the Common Brushtail Possum.
- Four native terrestrial species and five pest species were identified in 2025.
- Six frog species were heard calling in 2025.
- Four reptile species including the Eastern Long-necked Turtle, Robust Velvet Gecko, Bearded Dragon and Tree Skink were observed in Broke Road BOA.
- 119 nestboxes are installed at Broke Road BOA with variable usage depending upon the style of nestbox installed. The microbat and small glider boxes performed poorly. In contrast, the medium glider, small bird and larger parrot style box exhibited high rates of use by fauna. Of the 40 medium boxes installed, 24 boxes (or 60%) contained the characteristic leaf nest of the threatened squirrel glider.

A detailed list and location of fauna species recorded can be found in the Biodiversity Offset Monitoring Report which is available on the [Bulga Coal website](#).

Performance Against Criteria

During 2025, 16 of the 17 performance indicators were met and one (1) was below the specific criteria (**Appendix C**).

Implemented/Proposed Improvements

Weed Management

Although recent control of Lantana has shown good results (particularly in grassland and open woodland areas), the species remains in the landscape and there are some substantial stands within remnant vegetation. Follow up control of this species is recommended. Additionally, a general increase in the extent of Blue Heliotrope across the BOA was observed in 2025.

Pest Management

Feral animal presence, as determined by general observations and field camera monitoring recorded several species, including Dog, Cat, Fox, Brown Hare, Rabbit, Pig, Common Myna and Common Starling. Overall abundance of terrestrial feral animals was low, despite relatively high diversity of species.

Pest fauna present are contiguous with the wider landscape, and effective management for control requires a coordinated approach with neighbouring landholders (particularly the neighbouring Department of Defence) to ensure the wider source populations are controlled to reasonable levels.

In 2026 pest control activities will continue to be implemented with additional opportunistic management also undertaken in response to sightings or evidence of pest species presence.

Planned pest management activities include feral pig trapping, wild dog and fox baiting.

Habitat Augmentation and Revegetation

Habitat augmentation features are prioritised for the following threatened fauna species, the Regent Honeyeater, Swift Parrot and Large-eared Pied Bat.

The Large-eared Pied Bat is a cave roosting microbat that would forage on the Broke Road BOA site as part of its larger foraging range. This species was detected by a low number of recorded calls (n = 2 calls in 2025). No roosting habitat features occurred or were constructed on the Broke Road BOA site for the species.

For the Swift Parrot and Regent Honeyeater, existing established remnant woodland vegetation, in combination with newly planted areas and natural regeneration, will improve habitat quality which may be utilised by both species in the future.

Habitat augmentation measures were observed throughout the BOA in 2025 as result of revegetating 19.6 ha of Central Hunter Grey Box Ironbark Woodland EEC.

In 2026, previous revegetation works will be monitored to determine the success of previous plantings.

General Management

Slashing and annual weed management will be undertaken where feasible to minimise both bushfire risk and further spread of priority weeds.

Fence repairs and track maintenance will be undertaken on an as needs basis, as identified through inspection programs.

6.6.2.2 Condran BOA

Environmental Management

Activities undertaken at the Condran BOA in 2025 included:

- Firebreak slashing along tracks and fence lines.
- Track maintenance across the offset area.
- Implementation of the Condran Operational Weed Management Action Plan 2024–2028.
- Weed controls works, focusing on Crofton weed (*Ageratina Adenophora*), Coolatai grass (*Hyparrhenia hirta*), Rhodes grass (*Chloris gayana*), Whisky grass (*Andropogon virginicus*), Pampas grass (*Cortaderia species*), Sweet briar (*Rosa rubiginosa*), Blue heliotrope (*Heliotropium amplexicaule*), Kikuyu (*Cenchrus clandestinus*), Lantana (*Lantana camara*), Prickly pear (*Opuntia spp*) and Wild peach (*Prunus persica*).
- Wild dog and fox baiting program during autumn and spring months resulted in one (1) wild dog and 11 fox takes.
- Six monthly inspections.
- Continuation of the ecological monitoring program established in 2013.

Monitoring Results

The annual monitoring program is generally completed during spring and autumn in the Condran BOA. The 2025 monitoring program included fauna and flora.

Flora

Below are key findings during the 2025 flora monitoring at Condran BOA:

- During the 2025 flora monitoring period, 66 native and 29 weed species (none are high threat species) were detected. This is a reduction in species diversity seen in 2024 monitoring. Fluctuations in species numbers across the years have been largely attributed to seasonal and weather variations, such as droughts and wetter years.
- Previous control of Coolatai Grass (*Hyparrhina hirta*) has made some impact, but continual follow up spraying will be required.
- Monitoring of the threatened *Diuris tricolor* population within Condran BOA continued in 2025. No new colonies were found. Monitoring of the main population continued in 2025, with all 109 pre-tagged individuals inspected fortnightly over 16 weeks with an additional nine (9) unmarked *Diuris tricolor* emerged bringing the total individuals monitored to 118.

- As in previous years, tagged individuals of the co-occurring *Diuris sulphurea* were also monitored to enable comparisons between a common and threatened *Diuris* subject to the same threats. During 2025, an additional 12 *Diuris sulphurea* individuals were newly emerged and were marked, tagged and added to the monitoring program. In total, 53 *Diuris sulphurea* individuals are now monitored annually.
- In 2025, 59 of 118 (50%) known and tagged *Diuris tricolor* emerged, compared to 33 of 53 (62%) of tagged *Diuris sulphurea*. Although inflorescences developed in both species, just a single capsule (1.7% of emerged individuals) ultimately dehisced seed in *Diuris tricolor*, and for the third year in a row none dehisced in *Diuris sulphurea*. For those individuals that did emerge, non-flowering and grazing (by macropods, rabbits and/or invertebrates) were the greatest impact preventing successful capsule production and seed release in both *Diuris* species for 2025, following a similar pattern to that shown in previous years.

Fauna

Below are key findings during the 2025 fauna monitoring at Condran BOA:

- The fauna monitoring methodology and schedule was amended in 2025 to align with other Bulga Coal biodiversity offsets fauna monitoring.
- Several new bird species were recorded at Condran BOA in 2025, despite being widespread and abundant in the Hunter region. The new bird species include Pallid Cuckoo, Scarlet Honeyeater and Cicada bird.
- Two threatened bird species were recorded in 2025, the Speckled Warbler and Grey-crowned Babbler.
- Three arboreal and scansorial mammals were detected by spotlight search, field camera or direct observation in 2025, including Common Brushtail Possum, threatened Spotted-tail Quoll and Brush-tailed Phascogale. The Spotted-tail Quoll was recorded at the same monitoring location in 2025 as previous years, which comprise large assemblages of rocks and boulders from prior quarrying activities. This is the first recorded instance of the Brush-tailed Phascogale within Condran.
- Nestboxes are inspected at three-yearly intervals, with the next monitoring inspection to be conducted in 2026.
- The threatened Grey-headed Flying-fox and six (6) microbat species were recorded in 2025.
- Reptile species diversity was higher in 2025 than previous monitoring years, with eight (8) species recorded including the arboreal Robust Velvet Gecko.
- Five (5) frog species recorded, mainly along the unnamed creek line between sites ConFA1 and ConFA2.
- There is no significant pest animal infestation within the offset with only foxes and rabbits present in field camera monitoring.
- Cattle from the neighbouring two properties to the north entered through the railway corridor in 2025. Fencing has since been repaired to be cattle proof.

A detailed list and location of fauna species recorded can be found in the Biodiversity Offset Monitoring Report which is available on the [Bulga Coal website](#).

Performance Against Criteria

During 2025, 15 of the 16 performance indicators were met and one was below the specific criteria (**Appendix C**).

Implemented/Proposed Improvements

Weed Management

The 2026 weed management strategy for Condran BOA will focus on the management of highest and high priority species identified in the *Condran Operational Weed Management Action Plan 2024–2028*.

Pest Management

Based on long-term monitoring of the Condran BOA by field cameras, the presence of introduced pest animals is considered low. It is not considered that the pest species present are adversely affecting the quality of the existing or regenerating vegetation, or native fauna populations at the Condran BOA.

During 2026 Bulga will aim to align timing of wild dog and fox baiting programs at Condran with the Local Land Services aerial baiting program for neighbouring landholders to maximise the effectiveness of the program. Other pest species will be controlled on an as needed basis, based on inspection and monitoring outcomes.

6.6.2.3 Reedy Valley BOA

Environmental Management

The activities undertaken at the Reedy Valley BOA in 2025 included:

- Maintenance to creek crossings to ensure safe access to the BOA.
- Fence line maintenance where required.
- Firebreak slashing along tracks and fence lines.
- Implementation of the Reedy Valley Operational Weed Management Action Plan 2024–2028.
- Weed control works focusing on African boxthorn (*Lycium ferocissimum*), Prickly pear (*Opuntia species*), African olive (*Olea europaea subsp. cuspidate*), Apple tree (*Malus sp.*), Moth vine (*Araujia sericifera*), Black locust (*Robinia pseudoacacia*), Bathurst burr (*Xanthium spinosum*), Blue heliotrope (*Heliotropium amplexicaule*), Broad-leaf privet (*Ligustrum lucidum*), Common olive (*Olea europaea*), Coolatai grass (*Hyparrhenia hirta*), Cotoneaster (*Cotoneaster glaucophyllus*), Date palm (*Phoenix sp.*), Fruit tree (indeterminate), Galenia (*Galenia pubescens*), Grape vine (*Vitis vinifera*), Khaki weed (*Alternanthera pungens*), Paterson's curse (*Echium plantagineum*), Peppercorn tree (*Schinus molle*), Sweet briar (*Rosa rubiginosa*) and St John's Wort (*Hypericum perforatum*).
- Feral animal control in conjunction with the wider program being completed by Local Land Services and surrounding property owners.
- In May 2025 Bulga Coal participated in the wild dog aerial baiting program. The wild dog and fox baiting program during autumn and spring resulted in 13 wild dogs and 55 foxes.

- 93 feral pigs were controlled through trapping and ground shooting which is an increase from 2024.
- Six-monthly inspections were completed.
- Ongoing ecological monitoring program.
- Regeneration assessment.

Monitoring Results

The annual monitoring program is generally completed during winter and spring in the Reedy Valley BOA. The 2025 ecological monitoring program included fauna, flora and revegetation assessment.

Flora

Below are key findings during the 2025 flora monitoring at the Reedy Valley BOA:

- 83 native and 48 weed species were detected, a reduction in species diversity compared to 2024. Many of these weed species fluctuate dramatically depending on season, and grassland areas in particular support relatively few native species.
- Southern slope of the western block (north of the homestead) contains a mosaic of Native Olive (*Notelaea microcarpa* var *microcarpa*) and African Olive (*Olea europaea* subsp. *cuspidata*), which requires cut and paint control.

Fauna

Below are key findings during the 2025 fauna monitoring at the Reedy Valley BOA:

- The diurnal bird census recorded 77 native bird species across the twelve monitoring sites in 2025 which is a reduction in diversity compared to 2024.
- Six threatened bird species were recorded at Reedy Valley BOA in 2025, the Little Lorikeet, Speckled Warbler, Grey-crowned Babbler, Varied Sittella, Dusky Woodswallow and Diamond Firetail.
- No evidence of the nationally endangered Regent Honeyeater or Swift Parrot was recorded at Reedy Valley BOA in 2025. A sighting of Regent Honeyeater occurred in 2013, but has not been detected since, and no sightings of Swift Parrot have been recorded.
- Eight native and seven introduced mammals were detected in 2025, recorded mostly by field camera monitoring.
- Fifteen microbat species were recorded in 2025, including four (4) threatened microbat species; the Eastern Coastal Freetail-bat, Eastern Bent-wing Bat, Yellow-bellied Sheath-tail-bat and Eastern Cave Bat. This is a slight decrease in diversity observed in 2024.
- A total of six (6) reptile and six (6) frog species were recorded in 2025

A detailed list and location of fauna species recorded can be found in the Biodiversity Offset Monitoring Report which is available on the [Bulga Coal website](#).

Performance against Criteria

During 2025, 14 of the 16 performance indicators were met and two (2) were below the specific criteria (**Appendix C**).

Implemented/Proposed Improvements

Weed Management

The 2026 weed management strategy for Reedy Valley BOA will focus on the management of highest and high priority species identified in the *Reedy Valley Operational Weed Management Action Plan 2024–2028*.

Pest Management

Bulga Coal will aim to align timing of wild dog and fox baiting programs at Reedy Valley BOA with the Local Land Services aerial baiting program in 2026 to maximise the effectiveness of the program. Ongoing inspections and monitoring will determine if cattle and other pest species (feral pigs, deer, foxes and goats) persist. If conditions allow, Bulga Coal will aim to join the Local Land Services aerial cull of feral animals in March 2026 and continue to trap feral pigs.

Habitat Augmentation and Revegetation

In 2026, infill planting of unsuccessful revegetation areas will be performed at the Reedy Valley BOA.

General Management

Slashing of boundary fence lines, tracks and priority weed infestations will be undertaken where feasible to minimise both bushfire risk and further spread of weeds. An ecological burn may be implemented if conditions allow. Additionally, fence repairs will be undertaken on an as needs basis, as identified through inspections.

6.6.2.4 Wollombi Brook Conservation Area

Environmental Management

The activities undertaken at the WBCA in 2025 included:

- Implement the WBCA Operational Weed Management Action Plan 2024–2028.
- Weed control works focusing on: Turkey rhubarb (*Rumex sagittatus*), Green Cestrum (*Cestrum parqui*), Blue Heliotrope (*Heliotropium amplexicaule*), Balloon Vine (*Cardiospermum grandiflorum*), Moth Vine (*Araujia sericifera*), Passiflora caerulea (*Bluecrown Passionflower*), African Love Grass (*Eragrostis curvula*), Paterson's Curse (*Echium plantagineum*), Rhodes grass (*Chloris gayana*), Gelenium (*Gelenium pubescens*), Prickly Pear (*Opuntia sp.*).
- Thinning targeting Bull-Oak (*Allocasuarina luehmannii*) to facilitate natural regeneration.
- Monitoring of trial plots to establish the effectiveness of thinning Bull-Oak (*Allocasuarina luehmannii*) and tea-tree (*Leptospermum polyanthum*) species.
- Wild dog and fox baiting program during autumn and spring resulted in nine (9) fox and two (2) dog takes.

- Feral pig trapping program resulted in no feral pigs and very limited pig activity observed in the offset.
- Firebreak slashing/mulching along tracks and fence lines.
- Infill planting of 1,000 *Banksia integrifolia* in Warkworth Sands EEC.
- Six-monthly inspections.
- Ongoing ecological monitoring.

Monitoring Results

The annual monitoring program was completed during spring and winter in the WBCA. The 2025 monitoring program included fauna and flora monitoring.

Flora

Below are key findings during the 2025 flora monitoring at the WBCA:

- 67 native and 45 weed species were detected, this is a slight reduction in diversity from 2024 monitoring. Coolatai Grass (*Hyparrhenia hirta*), previously present in some transects, was not recorded in 2025. Fluctuations in species numbers across the years have been largely attributed to seasonal and weather variations, such as droughts and wetter years.
- No threatened plant species were recorded within monitoring transects in 2025.
- Monitoring of the Bulloak (*Allocasuarina luehmannii*) and Tea-tree (*Leptospermum polyanthem*) thinning trial plots established in 2016 continued in 2025 (112 months post-thinning). Since the prolonged dry of 2017-2019, native species diversity within Bulloak and Tea-tree plots have remained at or above pre-thinning baseline data. Good growing conditions over the past 2-3 years have facilitated germination and growth of Bulloak and Tea-tree, and manual removal of these from plots during annual monitoring events has kept these in check. However, ongoing thinning of remaining trees and new recruits within and outside of plots should be prioritised to aid recovery and colonisation by native species.

Fauna

Below are key findings during the 2025 fauna monitoring at the WBCA:

- 41 bird species were recorded by census survey in 2025 which is less than recorded in previous monitoring years. One new bird species was observed in 2025, the White-winged Triller.
- Three threatened bird species were recorded in 2025, White-bellied Sea Eagle (flying overhead), Grey-crowned Babbler and Speckled Warbler.
- Total bird species diversity for the WBCA is 127 species.
- Highest bird species diversity at *Wollombi Brook VCA* in 2025 was in remnant woodland, with a close score in rehabilitation / regeneration site (WB04). The performance target for bird species at Wollombi Brook VCA is for regeneration site WB04 to achieve comparable scores to remnant woodland sites. This is the third consecutive year (2023, 2024, 2025) the regeneration site has met or exceeded the performance target.

- Echolocation call surveys for microbats recorded 12 species in 2025, which is comparable to previous monitoring years.
- The EPBC listed Large-eared Pied Bat *Chalinolobus dwyeri* was recorded in 2025
- Reptile activity was low in 2025, with two (2) species recorded within the BOA.
- A total of 110 boxes were inspected. A total of 10 Common Brushtail Possum was observed in larger owl and possum style boxes, whilst leaf nests characteristic of smaller gliders (i.e. Squirrel Glider) were present in several smaller boxes. Overall usage across all box styles was 22.7% of total boxes installed.
- No evidence of the threatened Regent Honeyeater or Swift Parrot were recorded in 2025.

A detailed list and location of fauna species recorded can be found in the Biodiversity Offset Monitoring Report which is available on the [Bulga Coal website](#).

Performance Against Criteria

During 2025, 16 of the 17 performance indicators were met and one (1) was below the specific criteria (**Appendix C**).

Implemented/Proposed Improvements

Weed Management

The 2026 weed management strategy for WBCA will focus on the management of highest and high priority species identified in the *WBCA Operational Weed Management Action Plan 2024–2028*.

In 2026 weed management will be focused on locating and eradicating outbreaks African Love Grass (*Eragrostis curvula*) along with the control of Opuntia species and Blue Heliotrope (*Heliotropium amplexicaule*).

Pest Management

In 2026 pest control activities will continue to be implemented. Additional opportunistic management will also be undertaken in response to sightings or evidence of pest species presence.

Wild dog and fox baiting in collaboration with Local Land Services will continue in 2026.

Habitat Augmentation and Revegetation

In 2026, Bulloak and Tea-tree will continue to be removed from the trial research area and surrounds to further encourage native species recovery.

General Management

Slashing of boundary fencing, tracks and annual weed infestations will be undertaken where feasible to minimise both bushfire risk and further spread of weeds. Fence repairs will be undertaken on an as needs basis, as identified through inspection programs.

6.6.2.5 Weeping Myall Management Areas

The weeping myall (*Acacia pendula*) management areas are located on the western side of Bulga Coal, west of Charlton Road. These two stands are referred to as Weeping Myall Management Areas 1 and 2. These areas will be protected and managed by Bulga Coal, however they do not form part of a formal biodiversity offset.

Environmental Management

The activities that were undertaken within the two Weeping Myall Management Areas (WMMAs) during 2025 included:

- Six-monthly inspections.
- Ongoing ecological monitoring.
- Fence repair/maintenance.
- Weed control, largely focusing on Prickly Pear (*Opuntia species*).

Monitoring Results

Monitoring of *Acacia pendula* within the two WMMAs during 2025 has revealed few changes to either *Acacia pendula* individuals or the landscapes in which they occur, and most plants are in good health. Extensive coppice growth from root suckers is continuing to occur in both MAs, but there remains no evidence of successful flowering, fruiting or new recruitment. Attempted flowering on some plants in 2025 failed to result in seed development. During 2025 there has been an increase in height of the tallest individuals of *Acacia pendula* across the monitoring plots, although the number of stems detected fluctuate across the monitoring areas and between years.

Flora

Below are key findings from the 2025 flora monitoring:

- The maximum height of *Acacia pendula* within the monitoring plots ranged from 2.6 to 3.7 m in 2025 (mean = 3.43 m, stdev = 0.38 m), showing a continuing increasing trend from baseline data in 2018 (1.0 – 1.6 m), with the tallest *Acacia pendula* individuals within experimental plots growing an average of 2.15 m over seven years.
- The two floristic survey plots established in WMMA # 1 and WMMA # 2 and re-surveyed in 2025 recorded (in total) 62 taxa. This is a decrease in diversity from the 82 taxa recorded in 2024, but higher than the 43 taxa recorded in 2023, reflecting the influence seasonal conditions year to year. Most species recorded in 2025 have been previously detected within the plots, except for the native *Austrostipa verticillata* and the weed *Malva parviflora* in WMMA # 2. Over the eleven years of survey completed to date, species diversity has fluctuated considerably with rainfall, expected in grassy woodland environments where most diversity occurs in the ground layer.

Implemented/Proposed Improvements

Bulga Coal will continue to monitor the WMMAs to address the general health of Weeping Myall plants, together with annual survey of floristic composition within two management areas, and counts of *Acacia pendula* stems and floristic composition within the twelve growth monitoring plots.

Additionally, spot eradication of African Olive where it occurs in the Management Areas will be implemented.

6.6.2.6 Vere BOA

The Vere BOA currently supports the Central Hunter Valley Eucalypt Forest and Woodland Critically Endangered Ecological Community (CEEC), listed under the EPBC Act. Active restoration management actions are proposed that will result in a total of 153.7 ha of Central Hunter Valley Eucalypt Forest and Woodland CEEC within the Vere BOA. The Vere BOA also contains one recorded European heritage value site.

Environmental Management

The activities that were undertaken within the Vere BOA during 2025 included:

- Implementation of the Vere Operational Weed Management Action Plan 2024–2028.
- Weed controls works, focusing on Golden Wreath Wattle (*Acacia Saligna*), Lantana (*Lantana camara*), Green Cestrum (*Cestrum parqui*), African boxthorn (*Lycium ferocissimum*), Queensland Silver Wattle (*Acacia podalyriifolia*), Blackberry (*Rubus spp.*), Moth Vine (*Araujia sericifera*), Silky Oak (*Grevillea robusta*), Setaria (*Setaria sphacelata*), African Love Grass (*Eragrostis curvula*), Galenia (*Galenia pubescens*), Spiny Rush (*Juncus actus*), Prickly Pear (*Opuntia species*), Rhodes Grass (*Chloris gayana*), Blue Heliotrope (*Heliotropium amplexicaule*) and Ink Weed (*Phytolacca octandra*).
- Boundary fence repair where required.
- Removal of internal redundant fencing where identified.
- Wild dog and fox baiting program during autumn and spring months resulted in two (2) wild dog and 14 fox takes.
- Feral rabbit baiting program resulting in no rabbit or hare takes.
- Track maintenance program and bushfire slashing.
- Erosion repair program.
- Ecological burn implementation.
- Removal of rubbish where identified.
- Native seed collection for tube stock development.
- Feral pig trapping with zero sign of feral pigs now in the area.
- Six-monthly inspections.
- Ongoing ecological monitoring.

Monitoring Results

The Vere monitoring commenced in 2022 as an offset, but some parts were previously monitored as a component of the Bulga Open Cut Rehabilitation Monitoring (2013-2021). A large proportion of The Vere BOA currently comprises native vegetation and derived native grasslands (DNG) of moderate to good condition, therefore the BOMP focusses on regeneration and revegetation strategies to enhance existing communities and establish further native vegetation in degraded areas. These works will focus specifically on the CEEC Central Hunter Valley Eucalypt Forest and Woodland CEEC.

Flora

Key findings from the 2025 flora monitoring include:

- No new records of threatened plant species were recorded in 2025.
- From the 2025 monitoring, 108 native plant species and 25 weed species (19%) were recorded.
- Photographic point monitoring was undertaken at 17 pre-determined locations within the Vere BOA in 2025, following the Biodiversity Stewardship Site Assessment Report (Umwelt 2023).

Fauna

Key findings during the 2025 fauna monitoring include:

- The diurnal bird census recorded 80 bird species across nine (9) monitoring sites in 2025, a significant increase from the previous monitoring period. Seven new bird species were added to the overall diversity of the Vere BOA in 2025, including Australian Brush-turkey, Scaly-breasted Lorikeet, Variegated Fairy-wren, Yellow-tufted Honeyeater, Fuscous Honeyeater, Scarlet Robin, and White-bellied Cuckoo-shrike.
- Five threatened bird species were recorded in 2025: the Little Lorikeet, Speckled Warbler, Scarlet Robin, Grey-crowned Babbler and Varied Sitella. This is the first time the Scarlet Robin has been recorded within the Vere BOA.
- Nestboxes have been installed to provide shelter and nesting sites for tree-hollow dependent fauna. Inspections of installed nestboxes are conducted every 3 years. No inspections were conducted in 2025, with the next inspection scheduled in 2027.
- No evidence of the threatened Grey-headed Flying-fox was observed during nocturnal surveys in 2025. No evidence of the nationally endangered Swift Parrot or Regent Honeyeater was recorded in the Vere BOA in 2025.
- Fifteen microchiropteran bat species were recorded at the Vere BOA in 2025 by echolocation call, five (5) of which are threatened.

Performance Against Criteria

During 2025, 14 of the 16 performance indicators were met and 2 were below the specific criteria. **(Appendix C).**

Implemented/Proposed Improvements

Weed Management

The 2026 weed management strategy for Vere BOA Area will focus on the management of highest and high priority species identified in the *Vere BOA Operational Weed Management Action Plan 2024–2028*. Lantana (*Lantana camara*) is widespread on the north facing hillside of the BOA. Targeted management of Lantana (*Lantana camara*) will be undertaken at Vere BOA.

Pest Management

In 2026, pest control activities will continue to be implemented with additional opportunistic management also undertaken in response to sightings or evidence of pest species presence. Planned pest management activities include wild dog and fox baiting in collaboration with Local Land Services to maximise the effectiveness of the program and pig trapping.

6.7 Weeds and Pests

6.7.1 Environmental Management

An ongoing weed control program was carried out by licenced contractors. Annual buffer land inspections monitor success of any previous weed control and identify areas which will require additional treatment. Major efforts were implemented in 2025 to conduct weed management by prioritising the significance, timing and treatment method.

Land management contractors were engaged by Bulga Coal to undertake vertebrate pest control programs in autumn, winter, spring and summer in conjunction with the coordinated program being organised by Local Land Services, where possible. As part of the program, 1080 baiting was conducted, targeting wild dog and fox populations within the landholdings. Pig trapping targeted populations travelling through buffer lands and BOAs.

6.7.2 Environmental Performance

Annual buffer land inspections generally indicate that weed management is successful, but ongoing monitoring and treatment is required to prevent further infestations.

The 1080 baiting program was undertaken in autumn and spring across Bulga Coal and its buffer lands. The autumn program included a total of 192 baits laid with a total of 19 baits taken, which is a decrease on the 2024 results. The spring baiting program included a total of 192 baits laid with a total of eight (8) target species taken. This was in general lower than 2024 results.

6.7.3 Implemented/Proposed Improvements

Weed management in 2026 will be conducted as per prioritisation and the schedule defined in the *Buffer Land and Biodiversity Offset Operational Weed Management Action Plan 2024–2028*.

6.8 Archaeology and Heritage

6.8.1 Environmental Management

Bulga Coal continues to work with the Registered Aboriginal Parties (RAPs) regarding aspects of Aboriginal heritage and the implementation of the *Bulga Coal Aboriginal Cultural Heritage Management Plan* (ACHMP). A revised version of the ACHMP, and appendices (including the Wollombi Brook Conservation Area Plan of Management and the Loders Creek Grinding Grooves Conservation Area Management Plan) was approved by the DPHI in October 2025 after consultation with the RAPs, Heritage NSW and CPHR. The revised plans included mostly minor and administrative changes.

Bulga Coal manages European (historical) heritage through the implementation of the *Historic Heritage Management Plan* (HHMP).

6.8.2 Environmental Performance

6.8.2.1 2025 Quarterly Monitoring

A program for quarterly monitoring of Aboriginal heritage sites began in 2013 at Bulga Coal. Monitoring of Aboriginal heritage sites in conjunction with (up to) four RAPs and an OzArk archaeologist was continued in 2025. Quarterly monitoring reports are available on the [Bulga Coal website](#) and the results are summarised as:

- Quarter 1 monitoring was undertaken on 18 March 2025. The inspection included a review of sites at the Loders Creek Grinding Grooves Relocation Area (LCGGRA) and several sites at the sites at the WBCA.
- Quarter 2 monitoring was undertaken on 24 June 2025, this primarily included a review of sites to the west of Charlton Road. A new site was recorded during the monitoring; details are included in **Section 6.8.2.2.**
- Quarter 3 monitoring was undertaken on 12 August 2025, which included a review of sites along Nine Mile Creek on the north boundary of the site, as well as sites located near the CHPP, rail loop and sites within the Vere BOA.
- Quarter 4 monitoring occurred on 4 November 2025. This monitoring was focused on sites located within the Broke Road BOA and northeast areas of the operations. Two new sites were recorded in the Broke Road BOA, and one new site at the Hedley West Property, details are included in **Section 6.8.2.2.**

6.8.2.2 New Aboriginal Heritage Sites

On 24 June 2025, during the Quarter 2 monitoring program, an isolated mudstone core was recorded. Bulga IF6 (37-6-4572) is located in an area that has recorded other low-density sites. The landform has very thin soils in a regenerating woodland. Upper/middle slope overlooking (at a distance) a tributary to the Wollombi Brook. Bulga IF6 is very likely part of a site disturbed by agricultural activities.

On 4 November 2025, during the Quarter 4 monitoring program, two additional isolated finds, 37-6-4653 (Bulga IF7) and 37-6-4654 (Bulga IF8) were recorded in the Broke Road BOA. Bulga IF7 is a mudstone flake located on a gentle slope leading to a dam in the northern drainage. The site is within Casuarina regrowth with low ground surface visibility. Bulga IF8 is a proximal fragment of a mudstone blade located near a farm track leading to a dam in the northern drainage. The site is within Casuarina regrowth on a slight slope with visibility afforded by a nearby ant mound.

In addition to the above, a new artefact scatter site 37-6-4652 (Hedley West OS-1) was also recorded at the Hedley West property. The site is situated between the break of slope on the ridge to the west of Loders Creek and a farm track. The site is located in an erosion scald in an upper slope landform with moderate gradient.

All new sites were registered in the Aboriginal Heritage Information Management System (AHIMS) and included in Bulga Coals geodatabase.

6.8.2.3 Salvages During 2025

No salvages occurred during 2025.

6.8.2.4 Wollombi Brook Conservation Area

The WBCA is both a BOA and an Aboriginal and Cultural Heritage Offset Area. Heritage is managed in accordance with the *Wollombi Brook Conservation Area Plan of Management* (WBCAPoM) (Appendix J of the ACHMP). Land management is undertaken in accordance with the BOMP. A revised version of the WBCAPoM was approved in 2025. The updates included changes to account for the finalised Conservation Agreement, the construction of Minimbah, and new sites found within the WBCA.

The Minimbah Teaching Place was built in December 2021 and is in the WBCA. The facilities were used throughout 2025 by various local Aboriginal organisations, schools and businesses for educational and cultural events (refer to **Photo 6.1** and **Photo 6.2**).

On 4 December 2025 the Annual Aboriginal Stakeholder meeting was also held at the Minimbah Teaching Place.



Photo 6.1 Baby Welcoming Ceremony at Minimbah Teaching Place 2025



Photo 6.2 Bushtucker garden planting with RAPs at Minimbah Teaching Place in April 2025

6.8.2.5 Loders Creek Grinding Grooves Conservation Area

On 3 November 2022 the Loders Creek Grinding Grooves Conservation Area (LCGGCA) Agreement was executed by Heritage NSW. The LCGGCA is an Aboriginal and cultural heritage conservation area. Heritage is managed in accordance with the *LCGGCA Plan of Management* (Appendix K of the ACHMP). Land management is undertaken in accordance with the BOMP. A revised version of the LCGGCA Management Plan was approved in 2025. The revision was done to include the executed Conservation Agreement and updates on completed actions within the Conservation Area.

Photographic monitoring of the LCGGCA occurs annually, and the site is monitored once a year as part of the quarterly monitoring program. In March 2025, the four fixed points were photographed to monitor the condition of the Loders Creek Grinding Grooves. There are five main groups of grooves within the site (Groups A to E). The site was originally photographed in September 2015 following the relocation, and annually between 2017 and 2025. In summary, the 2025 monitoring showed that natural weathering is occurring to the Group A and Group D grooves. Group A has a layer of sandstone starting to exfoliate and Group D grooves are weathering and becoming less obvious. Despite weathering, the grooves remain in good condition and no further management is required. All results from the monitoring are presented in **Appendix E**.

6.8.2.6 Incidents

No heritage related incidents occurred during 2025.

6.8.3 Implemented/Proposed Improvements

Quarterly monitoring of Aboriginal sites in consultation with RAPs will continue in 2026. Bulga Coal will also continue to work with the Aboriginal community on Minimbah Teaching Place projects including the bushtucker garden, walking trails, signage and educational resources.

The ACHMP has been updated in 2025 to reflect current site conditions, new sites recorded, updates on completed actions, approved Conservation Agreements and Care Agreements.

6.9 Visual and Lighting

6.9.1 Environmental Management

Control strategies are implemented to reduce potential visual and light related impacts associated with mining operations. Management is undertaken in accordance with the *Bulga Lighting Plant Procedure* and the *Visual Impact Management Plan* (VIMP).

Visual and lighting impacts are assessed through monitoring and inspection regimes. Onsite monitoring includes assessments of lighting impacts, compliance with development consent conditions and the angle at which light is emitted from lamps and luminaries, glare, spill and sky glow.

6.9.2 Environmental Performance

Potential lighting impacts are assessed as part of the overburden dump design process. Dumps are orientated, where practicable, and windrows or bunds are designed and constructed to mitigate lighting impacts.

A sensitive lighting receiver map is updated and communicated to mining personnel prior to commencing exposed dumps that have the potential to cause lighting impacts offsite.

An independent visual and lighting review of Bulga Coal was completed in 2024 to assess compliance against the lighting and visual amenity requirements. The assessment confirmed there were no non-compliances in the management of lighting and visual impacts by the mining operations and that operations are generally being undertaken to minimise external visual and lighting impacts, in accordance with the relevant obligations of SSD-4960 and DA 376-8-203. A recommendation was made to consider additional screening of a section along Broke Road to reduce direct views of underground infrastructure. This recommendation was implemented in 2025 with a tree screen planted in April.

6.10 Spontaneous Combustion

6.10.1 Environmental Management

Spontaneous combustion is managed in accordance with the *Spontaneous Combustion Principal Hazard Management Plan*. Inspections of potentially affected areas are conducted during each shift. Spontaneous combustion incidents at Bulga Coal are predominantly associated with coal stockpiles.

Portable gas monitoring units are used by units working in areas of spontaneous combustion or where toxic gases are suspected of being present. This is for the purpose of identifying the presence of spontaneous combustion and any potential increase in risk.

6.10.2 Environmental Performance

No incidences of spontaneous combustion occurred in 2025.

6.11 Bushfire

6.11.1 Environmental Management

Bushfire management strategies and monitoring are undertaken at Bulga Coal in accordance with the *Bushfire Management Plan*. The revisions included updates to mining and operational areas, contact details for neighbours/lessees contact numbers were updated on the *Bushfire Operations Plan* and personnel details were updated on the Rural Fire Service (RFS) Communication Plan. The revised documents were provided to the RFS.

The following activities were undertaken during the reporting period:

- Consultation with RFS to provide the latest version of the Bushfire Operations Plan and RFS Communication Plan.
- Annual fire season review completed including currency of contacts and refuge points, GIS database and works required prior to the bushfire season.
- Monitoring of fuel loads in areas that adjoin Charlton Road and the former Broke Road, private property boundaries, tenanted properties and mine owned assets.

- Monitoring of tracks and trails within the Bulga Coal colliery holding to ensure these remain accessible by checking for fallen logs, erosion or other signs of trail degradation.
- Monitoring of weather conditions.
- Hazard reduction measures were implemented including slashing powerline easements, ecological burn within the Vere BOA, slashing access tracks and boundaries of adjoining land holdings.

6.11.2 Environmental Performance

No bushfires were recorded on the site, however, an ecological burn was conducted within the Vere BOA as per the Vere Biodiversity Offset Management Plan and was approved by the RFS.

6.11.3 Implemented/Proposed Improvements

Bulga Coal continued to maintain existing fire breaks and monitor fuel loads. Further ecological burns are anticipated to occur in 2026 within the Wollombi Brook, Broke Road, Reedy Valley and Condran BOAs.

6.12 Greenhouse Gas Emissions

6.12.1 Environmental Management

Bulga Coal implements controls to mitigate air quality impacts in accordance with the *Air Quality and Greenhouse Gas Management Plan*. The *Air Quality and Greenhouse Gas Management Plan* was revised in 2020 to reflect SSD-4960 Modification 3 and DA 376-8-2003 Modification 7, and was approved by DPHI in May 2022. A revised version of the AQGHGMP was submitted to the DPHI in June 2025 following feedback received from the DPHI and EPA.

The underground goaf atmosphere is managed with post-mining gas drainage infrastructure. This helps reduce the potential for spontaneous combusting within the sealed underground workings and potential leakage of methane from the sealed workings intercepted by open cut mining.

Post-mining drainage methane and carbon dioxide is extracted from the mined-out goaf and is sent to the Post-drainage Flaring Facility for combustion of the methane.

Methane and carbon dioxide levels are measured in the gas drainage operations. The gas drainage operations have monitoring at the gas wells and the flaring facilities. The gas composition and flow rate are trended in the site's continuous monitoring system, and long-term data stored offsite in a database.

6.12.2 Environmental Performance

6.12.2.1 Reported Greenhouse Gas Emissions

Bulga Coal reports greenhouse gas emissions (GHG) in accordance with National Energy and Greenhouse Gases (NGER) legislation. Each financial year Bulga Coal is required to submit to the federal government the emissions from their NGERs registered facility. Also, because Bulga Coal emits over 100 kt of CO_{2-e} each year, Bulga Coal is registered as a Safeguard facility and therefore also had a Safeguard baseline. Emissions above the baseline for that year need to be offset by retiring Australian Carbon Credit Units (ACCUs).

The NGERs reporting year is based on a financial year, not a calendar year such as this Annual Review. To prevent incompatible public reporting, the values in this report also cover a financial year.

Table 6.23 contains the Scope 1 (direct emissions from the mining activities during the year), and Scope 2 emissions (electricity consumption by the mine during the year).

Table 6.23 Bulga Coal Greenhouse Gas Emissions (Scope 1 and 2 Direct Emissions) FY 2024/2025

Emissions	Bulga Coal (t CO _{2-e})				Predicted maximum annual totals
	2021/2022	2022/2023	2023/2024	2024/2025	
Total Scope 1 Emissions	474,479	512,403	527,889	585,235	1,011,888
Total Scope 2 Emissions	46,126	68,916	82,415	78,353	55,042
Total Emissions (Scope 1 and 2)	520,605	581,319	610,304	663,588	1,066,930

Note – The predicted maximum annual total includes 1,066,930 t CO_{2-e} (1,011,888 t CO_{2-e} Scope 1 and 55,042 t CO_{2-e} Scope 2) from the Greenhouse Gas and Energy Assessment for the Bulga Optimisation Project EIS and excludes the Bulga Underground Operations and the additional emissions associate with SSD-4960 Modification 3. The annual emissions included in **Table 6.23** also include the emissions from the remnant underground gas drainage.

Overall, there was an increase in Bulga Coal emissions of approximately 8.7% when compared to the 2023/2024 reporting period. The increase is attributable to increased fugitive emissions from ROM coal.

6.12.2.2 Comparison Against Predictions

A Greenhouse Gas and Energy Assessment was prepared for Bulga Coal by Umwelt (2012) as a component of the Bulga Optimisation Project EIS. The assessment does not include the emissions associated with the Bulga Underground Operations or the additional emissions associated with SSD-4960 Modification 3, which includes the relocation of approximately 30M m³ of tailings with electric pumps which generate considerable additional Scope 2 emissions. A comparison against the predictions of the Greenhouse Gas and Energy Assessments is included in **Table 6.23**.

Predictions represent the maximum annual greenhouse gas emissions for Bulga Coal during operations. The Total Emissions (Scope 1 and 2) are approximately half (62%) of the predicted maximum total included in the Bulga Optimisation Project EIS prediction for the Open Cut operations. The lower than predicted emissions are primarily due to the deeper coal (which is higher in emissions) not being mined yet. The Scope 1 emissions have slightly increased largely due to longer hauls increasing fuel consumption and increased fugitive emissions from ROM coal during the financial year.

6.12.3 Implemented/Proposed Improvements

Bulga Coal is a part of the wider coal assets held by Glencore across Australia. Glencore Coal Assets Australia (GCAA) are themselves a part of the global Glencore mining portfolio. In line with the ambitions of the 1.5°C scenarios set out by the Intergovernmental Panel on Climate Change (IPCC), Glencore targets a short-term reduction of 15% by 2026 and a medium-term 50% reduction of our total (Scope 1, 2 and 3) emissions by 2035 on 2019 levels. Post 2035, Glencore's ambition is to achieve, with a supportive policy environment, net zero total emissions by 2050. As published in Glencore's 2025 Annual Report, Glencore is on track to meet the 2026 Group industrial emissions reduction target of 15%, against a 2019 baseline.

Glencore incorporates energy costs and our carbon footprint into our annual planning process. Commodity departments, such as GCAA, are required to provide energy and GHG emissions forecasts for each asset over the forward planning period and provide details of emissions reduction projects. In the case of Bulga Coal this includes involvement with GCAA when considering available GHG abatement technology and mine planning to optimise efficiency (which usually translates into reduced fuel consumption).

Glencore open cut and underground sites minimise emissions from diesel and electricity consumption by:

- Optimisation of mining practices e.g. haulage planning, blast design, conveying arrangements.
- Optimisation of engine performance e.g. studies undertaken in collaboration with OEMs to enhance fuel efficiency and emissions reduction.
- New fleet is purchased with the most fuel-efficient engines available.
- Ongoing monitoring of potential biofuel and fuel additive opportunities.
- Ongoing monitoring and assessment of emerging technologies.

6.13 Hydrocarbon Management

6.13.1 Environmental Management

Controls implemented to manage the risk of hydrocarbon related impacts are conducted under the:

- *Bulga Coal Hydrocarbon Management Plan*, incorporating spill response procedure and Bulga Open Cut Hydrocarbon TARP.
- Bioremediation Area Management Plan.

- Bulga Coal Pollution Incident Response Management Plan.

Hydrocarbon storage facilities have been designed generally in accordance with AS 1940-2017 – ‘*The Storage and Handling of Flammable and Combustible Liquids*’. The storage system includes computerised controls for the purpose of monitoring and identification of faults.

Bulga Coal monitor for petroleum hydrocarbons at dirty water dams, EPL discharge points and groundwater bores surrounding hydrocarbon storage and natural watercourses, in accordance with *the Bulga Open Cut Remediation Action Plan* and the *Bulga Coal Hydrocarbon Management Plan*. The monitoring program involves:

- Regular inspections of hydrocarbon infrastructure to identify losses or leakages.
- Monthly oil and grease analysis at the surface water monitoring sites shown on **Figure 6.19**.
- Hydrocarbon monitoring at the locations listed in **Table 6.24**. Surface water sites are monitored quarterly, following rain. Groundwater sites are monitored six-monthly (refer **Figure 6.19**).

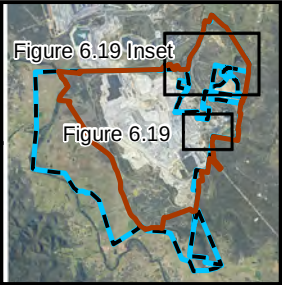
Bulga Coal

FIGURE 6.19 - Bulga Coal Hydrocarbon Surface and Groundwater Monitoring 2025



Legend

- Development Consent Boundary
- Coal - Current Titles
- Hydrocarbon Groundwater
- Hydrocarbon Surface Water
- Local Roads
- Railway
- Watercourse



Date Created: 10/03/2026
Map Size: A4 Landscape
Scale: 1:10,000
Map Created By: rabbott
Coordinate System:
GDA2020 MGA Zone 56
Projection: Transverse Mercator
Datum: GDA2020

File Path Ref: \\ausydsrv5c005\Operations\GIS\Bulga Complex\GIS\03_MapDocuments\18_Reporting\Annual_Review\2025\AR FIGURES\Figure_6_19_AR_Hydrocarbon_Surface_Groundwater_Monitoring_A4_GDA2020_20260220.mxd

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6.13.2 Environmental Performance

Surface water and groundwater monitoring was conducted at the locations listed in **Table 6.24** and shown on **Figure 6.19**. Results were assessed against the *Hydrocarbon Trigger Action Response Plan* (TARP) triggers in **Table 6.25**.

Table 6.24 Hydrocarbon Monitoring Sites

Type	Monitoring Location
Groundwater	ASMW02
	ASMW07
	C2MW03
	C3MW01
Surface Water	NMC4
	NMC5
	NMC6
	NMC Culvert
Licenced Discharge Point (LDP)	Northern Dam (ND1)
Onsite Dirty/Mine Water Dam	AS Dam 2
	AS Dam 3
	C2 Dam
	C3 Dam

Table 6.25 Ecological Investigation Levels (ANZECC) Adopted for Natural Waters (Surface and Groundwater) at Bulga Open Cut

Sampling Location	Contaminant	Trigger (µg/L)
Surface Water NMC4, NMC5, NMC6, Nine Mile Creek Culvert, ND1.	TRH C6-C10	20 (LOR)
	TRH >C10-C16	100 (LOR)
	TRH >C16-C34	100 (LOR)
Groundwater ASMW02, C2MW03, C2MW04, C3MW01.	TRH >C34-C40	100 (LOR)
	TRH >C10-C40	300 (LOR)
	Naphthalene	16
	Phenanthrene	0.6
	Anthracene	0.01
	Fluoranthene	1
	Benzo(a) pyrene	0.1

Groundwater monitoring results in 2025 were below the ecological investigation levels.

Surface water monitoring results from the Nine Mile Creek monitoring sites and the Northern Dam were also below the ecological investigation levels.

Hydrocarbon spills were contained, cleaned-up and bioremediated or transported offsite as hazardous waste by a licensed waste contractor.

6.13.3 Implemented/Proposed Improvements

A new ultra-class workshop is being constructed and is being commissioned in 2026 within the maintenance workshop area.

Decommissioning of the Area Station bulk fuel and hydrocarbon storage facilities will be undertaken in 2026 to allow for mining progression.

6.14 Public Safety

6.14.1 Environmental Management

Controls implemented to minimise the potential for public safety incidents include:

- Implementation of a security system. These systems and procedures have been established in accordance with the relevant requirements under the *Work Health and Safety Act 2011*, *Mining Act 1992* and conditions stipulated in the relevant mining tenements.
- Using sentries to prevent unauthorised entry into the blast exclusion zone.
- Using traffic control when working near public roads.
- Maintaining a fence around the perimeter of mining operations.

6.14.2 Environmental Performance

There were no public safety incidents recorded at Bulga Coal during the reporting period. Management measures and control strategies implemented at Bulga Coal have been effective in the prevention of incidents regarding public safety during the reporting period.

There were no changes to public safety management in 2025.

7.0 Water Management

7.1 Water Management

During the 2025 reporting period the Bulga Complex Weather Station recorded a total of 812 mm of rain which is above the yearly average rainfall at Bulga, this is higher than the 671.5 mm recorded during 2024. The surface and groundwater monitoring data reflects the natural response to an above average rainfall year.

7.1.1 Water Balance

Bulga Coal uses a water balance model to assist in the management of water onsite. The model is used to review performance and undertake short term projections (12 months) of water requirements. The model is also used to predict water needs for the life of the mine. Major water transfers are monitored via flow meters. Water storage volumes are monitored with level sensors or measured fortnightly.

The water balance for the Bulga Coal 2025 calendar year is presented in **Table 7.1**. The discrepancy between inflows, outflows and change in storage is due to the limitations of the accuracy of the surface and groundwater storage measurements, and water balance model predictions.

Table 7.1 Bulga Coal 2025 Water Balance

Bulga Coal 2025 Water Balance	Volume (ML)
Water Inventory and Capacity	
Total estimated water stored on site 1 January 2025 (10,611 ML predicted to be in the underground goaf)	18,417
Total estimated water stored on site 31 December 2025 (9,002 ML predicted to be in the underground goaf)	19,446
Change in water inventory (ML)	1,030
Inflows (ML)	
Water extracted from Hunter River (monitored)	2,901
Rainfall and runoff intercepted from mine areas	6,460
Groundwater inflow (groundwater model prediction for the Open Cut and Underground water balance)	1,681
Pumped from dewatering bores (water drawn from the underground goaf and transferred to surface storage)	2,760 ¹
Water entrained in CHPP feed material	652
Potable supply	21
Mt Thorley Mine water supply	1,195
Total Inflows	12,444

Bulga Coal 2025 Water Balance	Volume (ML)
Outflows	
Evaporation	2,999
Discharge to Hunter River under Hunter River Salinity Trading Scheme	0
Discharge via spill	0
Water entrained in product coal, coarse rejects and tailings (including Deep Pit tailings relocation)	6,532
Open Cut Dust suppression	1,063
Bulga Underground Operations Water Consumption	0
Potable water consumption	21
Other losses	5
Total Outflows	10,599

¹Total Inflow doesn't include the water pumped from dewatering bores as it is water transferred from the underground to surface water storage.

7.1.2 Licensed Water Take

Water taken by Bulga Coal during the previous water year (1 July 2024 to 30 June 2025) is summarised in **Table 7.2**.

Table 7.2 Water Take 2024–2025

Water Licence #	Water Sharing Plan, Source and Management Zone	Entitlement (ML)	Total entitlement under Source	Passive take/ inflows	Active Pumping	Total
Groundwater						
WAL41687	Mining: Sydney Basin-North Coast Groundwater Source	500	2,365	1,589 ²	11 ³	1,600
WAL41546	Mining: Sydney Basin-North Coast Groundwater Source	365				
WAL41543	Mining: Sydney Basin-North Coast Groundwater Source	500				

Water Licence #	Water Sharing Plan, Source and Management Zone	Entitlement (ML)	Total entitlement under Source	Passive take/ inflows	Active Pumping	Total
WAL41544	Mining: Sydney Basin-North Coast Groundwater Source	500				
WAL41545	Mining: Sydney Basin-North Coast Groundwater Source	500				
WAL36221	Mining: Wollombi Brook Aquifer leakage to Permian coal measures	300	300	0	0	0
Surface Water						
Singleton Council Agreement	Hunter River	3,367 ¹	-	0	2,951	2,951

¹This is the annual Singleton Council agreement allocation (867 ML) along with an additional 1,500 ML temporary transfer from Resource Pacific Pty Ltd (Ravensworth Mine) under licence 20AL203244, and 750 ML, 218.8 ML and 31.2 ML from Mangoola Coal Operations Pty Ltd, under licences 20AL201869, 20AL200915 and 20AL200112, respectively Bulga did not transfer water to other mines in 2024/2025.

²Passive inflow for each individual licence is not metered individually as they are passive inflow into the Open Cut and Underground from the Sydney Basin North Coast Groundwater Source.

³ Drawn from a detention basin immediately downstream of the Northern Dam. This water leaks from the dam impoundment through the Permian strata that the dam has been cut into. This water is pumped back into the Northern Dam. This take is also allocated to the site Sydney Basin North Coast Groundwater Source WALs.

7.1.3 Long Term Trend Analysis

In 2025 there was an increase in the total site water inventory, driven by the continuation of the Deep Pit dredging operations transferring tailings and water to the Northern Tailings Storage Facility. Overall total site water storage remained slightly higher than the EIS modelled estimates due to the dredging operational demand.

7.2 Surface Water

Bulga Coal implements surface water management measures in accordance with the WMP. This Plan outlines procedures for the detection of significant offsite impacts. The Plan also outlines trigger levels to identify and manage potentially adverse impacts. Trigger levels are included in the site Environmental Monitoring Database (EMD), which generates an alarm if a trigger level is reached. The WMP further outlines the methods for monitoring the quantities of water extracted, imported or discharged under groundwater extraction licences, surface water extraction licences and the EPL.

Monthly surface water quality monitoring is undertaken at dams, streams and creeks in and around Bulga Coal mining operations. Monitoring locations were selected to obtain representative samples. Water quality parameters including temperature and depth are tested onsite, whilst pH, electrical conductivity (EC), and total suspended solids (TSS) are undertaken by a National Association of Testing Authorities (NATA) accredited laboratory.

Surface water quality monitoring is conducted in accordance with:

- AS 5667.4 – 1998 *Water Quality Sampling – Guidance on Sampling from Lakes, Natural and Man-made*.
- AS 5667.6 – 1998 *Water Quality Sampling-Guidance on Sampling of Rivers and Streams*.
- The Bulga Coal WMP.

A revised version of the WMP was submitted to relevant regulatory agencies for consultation in November 2025. Revisions included updates to trigger values as well as minor administrative changes.

7.2.1 Environmental Management

A summary of surface water monitoring results against relevant criteria from the WMP is provided in **Table 7.3**. The location of surface water monitoring sites is shown on **Figure 6.3**. Monitoring data is available on the [Bulga Coal website](#). Umwelt have produced the *Bulga Coal Complex 2026 Groundwater and Surface Water Annual Review* (Umwelt, 2026) which is attached as **Appendix D**.

7.2.2 Environmental Performance

Table 7.3 Summary of Surface Water Monitoring Results – 2025 Annual Averages

Sample Point	pH (range Min-Max)	pH Criteria		EC (µS/cm)	EC Criteria (µS/cm)	TSS (mg/L)	TSS Criteria (mg/L)
		Lower 20 th percentiles	Upper 80 th percentile				
LR1 ¹	7.04-7.72	7.12	7.81	371	944	13	12
LR2	7.24-7.64	7.39	7.91	1,390	4,924	22	40
LR5	7.11-7.94	7.41	7.98	481	1,350	9	12
W2	7.06-7.48	7.13	7.67	435	836	9	12
W4	7.02-8.02	7.33	7.87	488	947	8	10
SDL1	7.16-7.42	6.70	7.24	214	285	25	39
NDL1	7.54-7.68	7.14	7.26	441	399	42	70
W9 ³	7.86-8.63	7.36	7.92	7,459	1,970	16	157
W10	7.43-8.1	7.00	7.64	14,666	691	39	102
NMC1 ²	7.29-8.42	-	-	534	-	161	-

¹ Site is upstream of the operations and is used as a reference site.

² Insufficient data to establish criteria.

³ W9 replaced W8 as it was mined through.

7.2.2.1 Surface Water pH

In 2025 pH tended to follow historical trends across the watercourses. Measured pH ranged from a minimum of 7.02 at W4 in Wollombi Brook downstream of the confluence with Northern Drainage Line in August and maximum of 8.63 at W9 in August at Loders Creek upstream of the New England highway.

Many of the monitored watercourses were dry or unable to be sampled at various times throughout 2025. Watercourses were more likely to be able to be sampled during the autumn to spring months when the CRD was average to above average.

Surface water pH has been compared to trigger values from the WMP. Trigger values for pH have been determined using the 20th and 80th percentile of previously recorded values and are summarised in **Table 7.3**. Nine of the ten sample locations recorded levels outside of respective surface water pH trigger values throughout the year with the tenth sample location not having trigger values due to previous insufficient data. Surface water pH in all waterways varied slightly from acceptable ranges at some point during 2025.

The exceedances are outlined in Table 7.2 of **Appendix D** along with site specific surface water pH triggers from the WMP and measured surface water pH from respective waterway sites.

Most sites exceeded trigger values for the majority of 2025; however, they are within historical ranges. Deviance from the trigger ranges is attributed to natural variations in watercourse conditions throughout the year, many of which dried up at some point in 2025.

7.2.2.2 Surface Water EC

Historic surface water EC trends mostly continued into 2025 with all sites showing significant variability in EC over the 2025 monitoring period. Measured EC ranged from a minimum of 157 $\mu\text{S}/\text{cm}$ at SDL1 on the Southern Drainage line west of BOC, to a maximum of 21,200 $\mu\text{S}/\text{cm}$ at W10 at Loders Creek upstream of confluence with Nine Mile Creek and just upstream of mining lease boundary. Graphs of EC trends to the end of the reporting period are included in the *Bulga Coal Complex 2025 Groundwater and Surface Water Annual Review* (Umwelt, 2026) (**Appendix D**).

Many of the monitored watercourses were dry or too low to sample throughout 2025. Rainfall conditions in early 2025 were generally below the long-term average, followed by a sustained period of above-average rainfall from March to May. Rainfall conditions were briefly below average in June before returning to above-average conditions through late winter, with the CRD becoming positive in August–September. Rainfall during spring was generally below average, resulting in a declining CRD, before returning to approximately average conditions overall by mid-December 2025. EC for Wollombi Brook tended to match this trend. EC increased during the drier months when salts concentrate in water due to evaporation and then dropping again during wetter months. EC within the other watercourses was typically not able to be sampled during the drier months, with flows returning during autumn and spring.

Surface water EC has been compared to trigger values from the WMP (refer to **Table 7.3**). Four of the ten monitored sites exceeded the adopted trigger level during sampling events in 2025.

EC levels at most sites tended to peak in March, then decrease across the autumn and winter months before increasing again from October through December. This likely reflects an increase in salt concentrations through evaporation at the start and end of the year due to drier than average conditions. The drier than average conditions resulted in all six of the waterways drying up or being too low to sample for at least one location in January and then again in the second half of the year towards October through December.

Generally, the surface water locations with exceedances are likely attributed to the climate and the elevated levels are unlikely to be due to mining impacts. Notwithstanding this, the EC results for Loders Creek (W9 and W10), from April to October are elevated. W9 is located upstream of the New England Highway and W10 is located on a refugial pool in Loders Creek upstream of the confluence with Nine Mile Creek and just upstream of the mining lease boundary. W10 can become saline quickly after flow has stopped due to evaporation and salts deposited in the associated sediments. Monitoring along Loders Creek at both locations was often unable to be completed with the creek too low to sample or dry.

7.2.2.3 Surface Water TSS

In 2025 TSS typically followed historical trends with all sites showing similar variability in TSS values.

TSS in Wollombi Brook was typically low except for two events, one in May (at LR1 and LR5) and one in September (at LR1). These elevated results were preceded by significant rainfall events, and in the case of the May results, rainfall was also recorded on the day of sampling. TSS tended to be higher in autumn and spring when rainfall was average to above average and lower in summer and winter. Many of the monitored watercourses were dry or unable to be sampled throughout 2025. Following historic trends, TSS measurements at most other sites were higher than Wollombi Brook, which likely corresponds with lower flow depths in the other watercourses relating to their ephemeral nature and as evidenced by them only being able to be sampled during periods of average to above-average rainfall.

TSS tended to range from below the limit of reading (<5 mg/L) along Wollombi Brook, Loders Creek, Nine Mile Creek and Monkey Place Creek to a maximum of 254 mg/L at NMC1 located on Nine Mile Creek in May 2025.

Surface water TSS has been compared to trigger values from the WMP (refer **Table 7.3**). All monitoring locations remained within trigger ranges and historical ranges during the year, except for May (at LR1, LR5, and SDL1) and September (at LR1). The nearby SILO rainfall gauge recorded 14.2 mm of rainfall in the four (4) days before the sampling event in May, including 12.1 mm on the day of sampling, and the elevated measurements could reflect that sampling was affected by recent rainfall. Additionally, ten days prior to the sampling event in September the site received 66 mm of rain on the 10 and 11 of September. It is noted that the TSS reduced in subsequent months, below the assigned trigger value.

7.2.2.4 Stream Flow in Wollombi Brook

Stream flow impacts in Wollombi Brook from Bulga Coal are determined by comparing the Water NSW gauging station records, upstream and downstream of the site. The upstream site is the Wollombi Brook – Brickmans Bridge (Paynes Crossing) gauging station (210135), which is located approximately 20 km upstream of Bulga Coal. The downstream site is the Wollombi Brook – Bulga gauging station (210028), located approximately 5 km downstream of Bulga Coal. **Figure 7.1** and **Figure 7.2** show the gauging station records for 2020 to 2025 for the upstream and downstream sites, respectively.

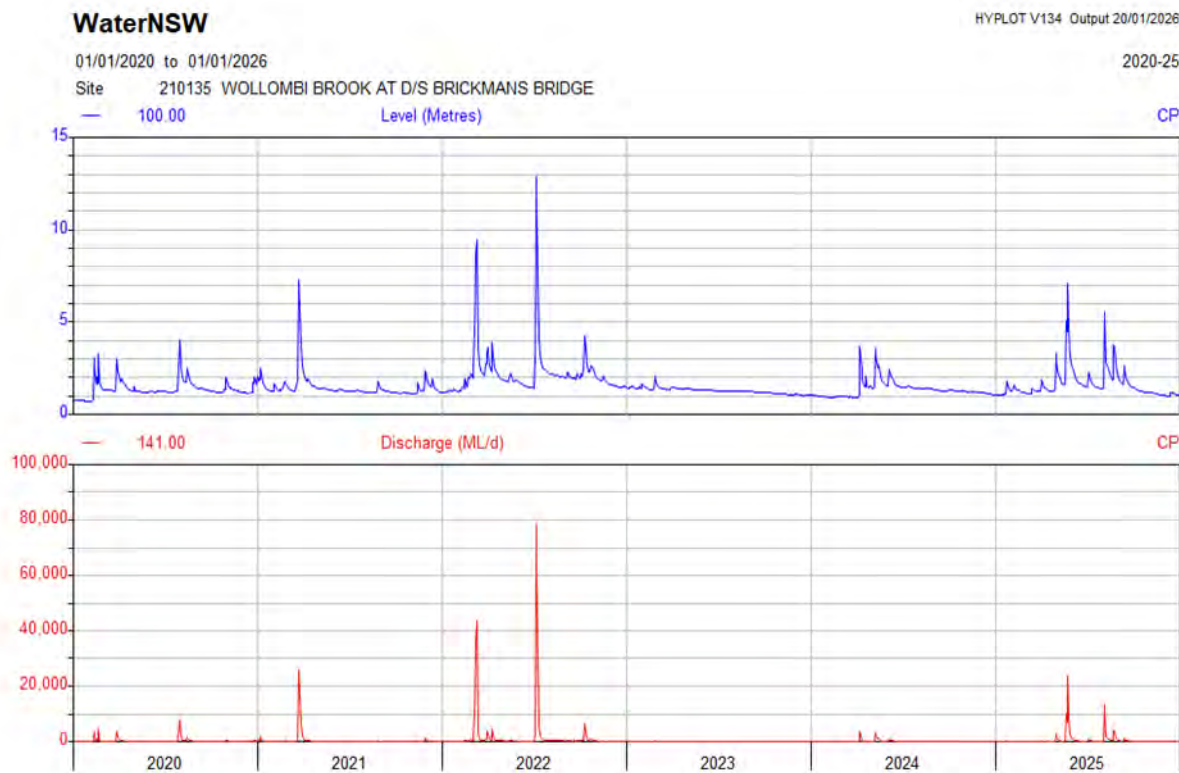


Figure 7.1 Wollombi Brook Brickmans Bridge Gauging Station (210135)

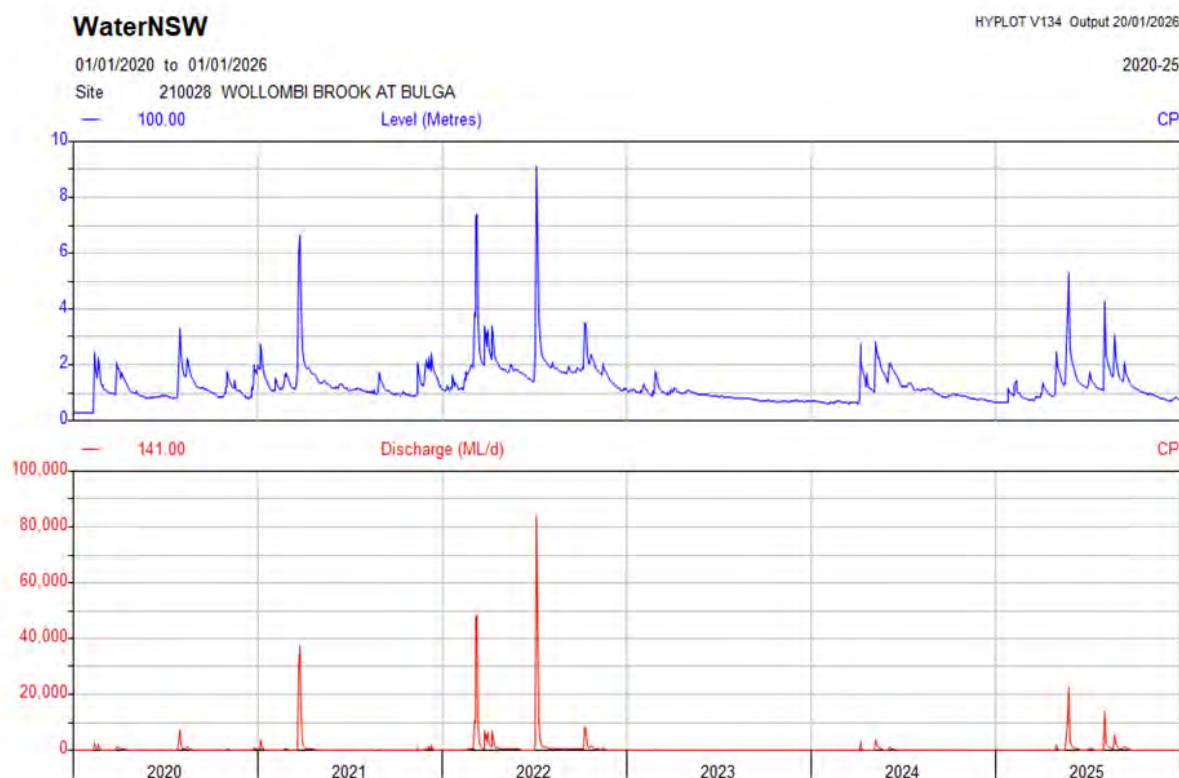


Figure 7.2 Wollombi Brook – Bulga Gauging Station 210028 (Downstream)

The data presented in **Figure 7.1** and **Figure 7.2** indicates that the water level in Wollombi Brook increased over the 2020–2022 period due to consistent rain. During 2025 flow and levels increased and align with above average rainfall.

7.2.2.5 Hunter River Salinity Trading Scheme

The site has one Hunter River Salinity Trading Scheme (HRSTS) discharge point, EPL ID 11 – Northern Dam.

EPL 563 requires the discharge volume, pH, TSS and turbidity to be monitored during discharge events. There were no discharges from any licenced discharge points during 2025.

7.2.2.6 Channel Stability Monitoring Results

The Commonwealth Scientific and Industrial Research Organisation (CSIRO) Ephemeral Stream Assessment (ESA) Methodology was used to assess the channel stability of Nine Mile Creek, Loders Creek and Wollombi Brook. The assessment uses indicators (vegetation presence, shape and profile, type of materials, nature of walls etc.) to produce a rating which ranges from ‘Very Stable’ to ‘Very Active’.

Minor variations in individual CSIRO category scores were recorded at two Loders Creek sites, primarily associated with minor reductions in vegetation cover on the drainage line floor (LC12) or localised responses by groundcover in and around erosion scars (LC3). The changes resulted in a shift in CSIRO classification rating at LC12 from Potentially Stabilising to Active, and LC3 changing from Very Active to Active. The shift in scores can be attributed to the vegetation changes due to flow event scouring (LC12) or increased growth in response to favourable climatic conditions throughout the year (LC3).

7.2.2.7 Stream Health

The Rapid Appraisal of Riparian Condition (RARC) is an assessment method incorporating indicators of geophysical, and biological properties and processes which are likely to provide reliable estimate of ecological condition in riverine ecosystems (Jansen et al, 2005). Each indicator is given a score which combine to provide an overall creek health score, ranging from Very Poor (<25) to Excellent (>40).

The Stream Health Monitoring RARC assessments showed little change with the overall riparian condition ratings remaining stable across all assessed sites. The Loders Creek and Wollombi Brook site riparian corridors comprise swamp-oak or river-oak woodland with dense canopy coverage provided in areas of exclusive occupation, with site specific differences driven by weed pressure, animal access (livestock, wild pigs and kangaroos), erosion features and macrophyte distribution. While active erosion features persisted at several sites, particularly where animal access or historical bank instability was present, these were generally limited in extent and in many cases showed evidence of natural stabilisation through vegetation colonisation.

7.2.2.8 Aquatic Ecology

Bi-annual aquatic ecology monitoring was undertaken in autumn (June) and spring (October) 2025. The aquatic ecology monitoring included sampling of aquatic macroinvertebrates using the AusRivAS sampling, sorting and identification protocols, field water quality metering and baited fish trapping.

Weather conditions during 2025 were variable, with easing wet conditions prior to the autumn 2025 survey, following several high rainfall periods. Despite some above average rainfall in winter, conditions became progressively drier toward spring with dry weather established and intensifying during the spring survey period. Evidence of recent high flow events was evident immediately prior to the autumn survey, with drainage channels showing clear signs of scouring and mobilisation of sediments in some Loders Creek sites and within Wollombi Brook. In contrast, conditions leading into the spring survey were comparatively stable, with an absence of major flow events, allowing for macrophyte regrowth and partial accumulation of detritus across several sites. Ten sites were sampled during both the autumn and spring surveys. While water availability was not limiting during the autumn survey, surface water during the spring survey was restricted at some locations, particularly at Nine Mile Creek (NMDn) and the Southern Drainage Line (SDL1) where water was confined to isolated pools.

Aquatic Habitat Condition

There were increases in the macrophyte taxa richness (diversity) results recorded for successive surveys over the post drought wet year surveys between 2021 and 2023 (from 15 to 21 taxa). This has been followed by a period of general stability since (between 19 and 21 taxa), which includes the observed occurrences of macrophyte species over the current survey year (21 and 20 taxa for autumn and spring 2025 respectively). Aquatic habitat availability across sites in 2025 remained broadly similar to patterns observed in 2024, reflecting comparable rainfall and flow conditions. The aquatic habitat availability at Nine Mile Creek (NMDn) was consistently poor, with limited detrital material present during autumn and spring, comprising coarse particulate detritus within isolated pools (mostly casuarina needles). In contrast, Loders Creek sites supported greater habitat availability due to higher densities of submerged macrophytes and more substantial detrital accumulations. Wollombi Brook sites displayed a contrasting pattern, largely driven by recent high flow events. Autumn 2025 sampling coincided with reduced habitat availability following channel scouring, whereas spring 2025 surveys recorded a marked increase in both the abundance and complexity of aquatic habitats as flows receded and channel conditions stabilised. This recovery was most pronounced at site WBDn. Conversely, Southern Drainage Line site SDL1 supported adequate edge habitat during autumn but experienced a substantial decline in habitat complexity in spring 2025 due to the recession of water levels and exposure of edge bank vegetation, with sampling largely constrained to bare muddy substrates.

The Riparian, Channel and Environment (RCE) Inventory is a standardised description of site condition which is used to compile a stream site condition index based on physical and biological attributes, with higher scores indicating better overall condition of the riparian and channel environments. Variations in site RCE score in 2025 were attributed to changes in category scores for 'stream bottom', 'stream detritus' or 'aquatic vegetation'. All of the Wollombi Brook sites recorded improved category scores in spring 2025 owing to reduced quantities of finer silts (including orange precipitate along some edge bank areas) on the stream bottom. Whereas improvements in detrital composition resulted in increased 'stream detritus' category scores at NMDn, Pt11 and WBMd, there were score reductions at LCDn, NDL1 and WBUd, due mostly to the effects of scouring and loss. The RCE scores at SDL1 have gradually declined over recent seasonal surveys, whereby the absence of fluvial processes has limited the influx of detrital reservoirs and exacerbated within pool fluctuations of algae. The variations in 'aquatic vegetation' category scores between surveys resulted mostly from reductions in the relative levels of filamentous green algae and macrophyte growth in Loders Creek sites LCM1 and LCDn and Drainage Line sites SDL1 and NDL1. For the most part, the changes in the 2025 RCE results were generally minor (<2%) compared to recent monitoring rounds.

Aquatic Ecology Site Water Quality

The water quality results are provided in seasonal monitoring reports, providing a snapshot of conditions encountered during each survey. Surface water quality results in 2025 were largely driven by prevailing weather conditions and associated flow regimes, where sites experiencing reduced or intermittent flows (where surface water was confined to isolated refuge pools), showed greater variability in water quality due to localised in-situ processes such as diurnal oxygen production and consumption or layering.

Nine Mile Creek and Loders Creek generally supported lower salinity (as represented by conductivity) during periods of higher flow, with the highest readings observed when stream flows cease or are very low. These patterns were broadly consistent with those observed during previous survey periods. Nine Mile Creek conductivity at its downstream limits (NMDn) was lower than the Loders Creek upstream from Nine Mile Creek (LC6) in spring 2025, and for both surveys the salinity levels decreased with distance downstream in Loders Creek towards the Hunter River. Differences between the surface conductivity reading (766 $\mu\text{S}/\text{cm}$) and bottom reading (2092 $\mu\text{S}/\text{cm}$) at LCDn-d below the causeway in autumn 2025 represented a mixing zone of backed up flood waters (with low conductivity) with more saline creek water from just upstream at Loders Creek site LCDn (7440 $\mu\text{S}/\text{cm}$). There were increases in conductivity with depth under low flow conditions for Loders Creek sites in spring 2025. Readings were particularly pronounced between LC8 surface reading (7728 $\mu\text{S}/\text{cm}$) and bottom (10980 $\mu\text{S}/\text{cm}$), and LCDn surface (5055 $\mu\text{S}/\text{cm}$) and bottom (9230 $\mu\text{S}/\text{cm}$). There were similar proportional reductions in Dissolved Oxygen (DO) observed at both sites. These variations in readings likely represent layering formed in the absence of flows capable of mixing low conductivity runoff from upstream catchment sources and saline groundwater expressions. There were reductions in DO with depth at LC8 (44% reduction) and LCDn (48%). This is associated with in-situ oxygen consumption by decomposers (bacterial and macroinvertebrate communities) in an isolated refuge pool devoid of flow. There was a reduction in DO of 26% saturation at Pt11 between the surface (78.3% sat) and bottom reading (51.9% sat) in autumn 2025. Temperatures can vary greatly daily among the Loders Creek catchment sites in summer, particularly during low flow scenarios, however the spring survey was undertaken in late October and therefore water temperatures were relatively mild (14.7 to 16.3°C).

The Wollombi Brook sites maintain more consistent water quality however during periods of lesser flow, DO levels can become depleted among isolated backwaters. Water temperatures were consistent among Wollombi Creek sites in autumn, however were higher for the downstream site WBDn during spring (23.4°C) compared to the WBUUp (18.2°C) and WBMd (19.1°C). These observed differences highlight how shallow edge backwaters can respond to warming, having likely been influenced by air temperatures which were much higher over the early spring monitoring period. Conductivity levels were mostly low in 2025, ranging between 355 and 597 $\mu\text{S}/\text{cm}$, with the higher values recorded during the lower flow survey in spring 2025. There was a trend of increasing conductivity from WBUUp to WBMd for both surveys. Dissolved oxygen levels were higher in autumn 2025 (84% sat to 93% sat) compared to spring (66% sat to 75% sat). The drainage line sites sustained the overall lowest conductivity for both surveys. As both sites are contained within the most ephemeral waterways, both sites recorded the highest variation in temperature and DO levels between surveys, with very high turbidity levels.

Aquatic Macroinvertebrate Results

There were 53 macroinvertebrate taxa recorded from the ten aquatic ecology monitoring sites in autumn 2025 and 58 taxa recorded from the ten sites sampled in spring 2025, from a total pool of 82 macroinvertebrate taxa recorded from the study area since the commencement of bi-annual aquatic ecology monitoring in spring 2021. Over the nine surveys to date, there have been 44 taxa recorded from the Nine Mile Creek site NMDn (from 8 samples), 57 taxa recorded from the three Loders Creek sites (26 samples) and 68 taxa recorded from the three Wollombi Brook sites (27 samples).

The macroinvertebrate indices results (taxa diversity (richness), SIGNAL and EPT index) have over the course of the monitoring program to date, provided an assessment of the aquatic ecosystems within each drainage. The differences in results are owing mostly to habitat availability and water quality, which have been largely influenced by stream flows. The Nine Mile and Loders Creek catchment area is much smaller than Wollombi Brook and is subjected to outcropping coal measures in the upper catchment areas, which mediates water quality, especially during low flow periods when dilution from catchment runoff is low. When surface flows cease and water levels recede, the complexity and distribution of aquatic habitats declines, as does water quality (DO and conductivity) which is influential on the resident macroinvertebrate community. The impact of wild pigs on channel and instream aquatic habitat availability throughout the Loders Creek study area, and livestock within the downstream limits of the creek (at LCDn) have also been documented over recent years. The Nine Mile and Loders Creek channel types (incised and steep with a U-shaped channel) are amenable to scouring of aquatic habitats from even small flood events, however notwithstanding, they do support diverse macroinvertebrate communities following extended wet periods.

The 2025 results show that the macroinvertebrate community in Nine Mile and Loders Creek were dominated by tolerant taxa with relatively few sensitive macroinvertebrates such as caddis-flies, stoneflies or mayflies (EPT taxa). Site NMDn recorded relatively low macroinvertebrate metrics which was attributed to periodic drying, and it's likely that the site was sampled shortly after flooding (in autumn) or filling (spring). While habitat availability and water quality in Wollombi Brook can occasionally vary in response to catchment runoff and stochastic events, the Wollombi Brook sites record the overall highest macroinvertebrate indices results on a survey-to-survey basis, being the most permanent watercourse within the study area. Each of the Wollombi Brook sites recorded macroinvertebrate indices results consistent with previous recent surveys, with good representation of sensitive taxa, including all three mayflies at all sites, stoneflies (family Gripopterygidae) and five caddis-fly taxa.

The aquatic habitats among drainage line sites (SDL1 and NDL1) are generally poor as the sites are located in an agricultural setting. The riparian and edge bank areas are devoid of established plant communities and the services that they provide (e.g., retention of runoff, bank stabilisation, shading, detritus contributions) and while the water quality sourced from upstream is considered of good quality (with low conductivity), it is generally variable within the site lengths given that site pools are subjected to water level fluctuation and periodic drying. As a result, both sites have in the past recorded highly variable results, however during prolonged wet conditions they can sustain diversity and SIGNAL values consistent with the other sub-catchment drainage sites. The 2025 results show that both sites continue to support viable macroinvertebrate communities, with very high diversity results recorded at SDL1 (31 taxa) and NDL1 (28 taxa) in spring 2025, comprising tolerant taxa generally affiliated with standing water bodies.

Fish Sample Results

There were two confirmed species recorded from the study area sites during the autumn and spring 2025 surveys. Firetail gudgeons (*Hypseleotris galii*) and the introduced pest species plague minnow (*Gambusia holbrooki*) were relatively well represented among the study sites. The Flathead gudgeon (*Philypnodon grandiceps* and *Philypnodon* sp), were also recorded during the spring and autumn surveys, respectively. The small native Firetail gudgeon was the most widespread species collected from all but two of the 20 samples in 2025, and plague minnow were recorded from 14 of 20 site samples. As mentioned in previous reports, species occurrences among study sites appears to be higher for wet years (2022) when fish passage among habitats in the ephemeral creeks would be continuous and where pool longevity is greater.

When the channel areas at SDL1 and NDL1 dry completely, it is likely that the more permanent waterbodies within the Southern and Northern Drainage Lines (e.g., farm dams) act as a fish refuge, and source of fish at SDL1 and NDL1 during subsequent periods of connecting flows. Both of these sites provide suitable habitat for small natives when inundated and both sites supported populations of firetail gudgeons and plague minnow in 2025, and given the macroinvertebrate results recorded in spring 2025 it is considered likely that aquatic habitats at both sites would have been persistent throughout 2025.

7.2.3 Comparison Against Predictions

A Surface Water Assessment was undertaken by Umwelt (2013) as part of the Bulga Optimisation Project EIS. The assessment concluded that with the implementation of the water management system and the proposed controls there was only a low risk of impacting on the water quality of the downstream watercourses, and that results would be comparable to background levels. A comparison of the background water quality against the 2025 data has been made in **Table 7.4**. *The Bulga Coal Complex 2025 Groundwater and Surface Water Annual Review* (Umwelt, 2026) (refer to **Appendix D**) reviews surface water performance against criteria.

Table 7.4 Comparison of Surface Water Monitoring Results (2025) against Background (2013 Bulga Optimisation Project EIS)

Sample Point	pH		EC (µS/cm)		TSS (mg/L)	
	2025 Range	EIS Range	2025 Average	EIS Range	2025 Average	EIS Range
LR1	7.04-7.72	6.6–8.8	371	4–9,470	13	1–72
LR2	7.24-7.64	6.3–8.8	1,390	130–6,230	22	3–440
LR5	7.11-7.94	6.7–8.4	481	196–3,470	9	2–144
W2	7.06-7.48	6.6–8.2	435	195–1,470	9	1–114
W4	7.02-8.02	6.5–8.2	488	200–1,760	8	2–42

7.2.4 Long Term Trend Analysis

Historical surface water quality monitoring results (as a rolling 12 month average) are presented in **Figure 7.3** to **Figure 7.5**. Historically, water quality in Wollombi Brook is generally good with low salinity and neutral pH (Jacobs, 2024). Monkey Place Creek, Loders Creek, Nine Mile Creek and the minor ephemeral drainage lines within the mining lease typically have poorer water quality, which is alkaline and saline, except during high rainfall events (Jacobs, 2024).

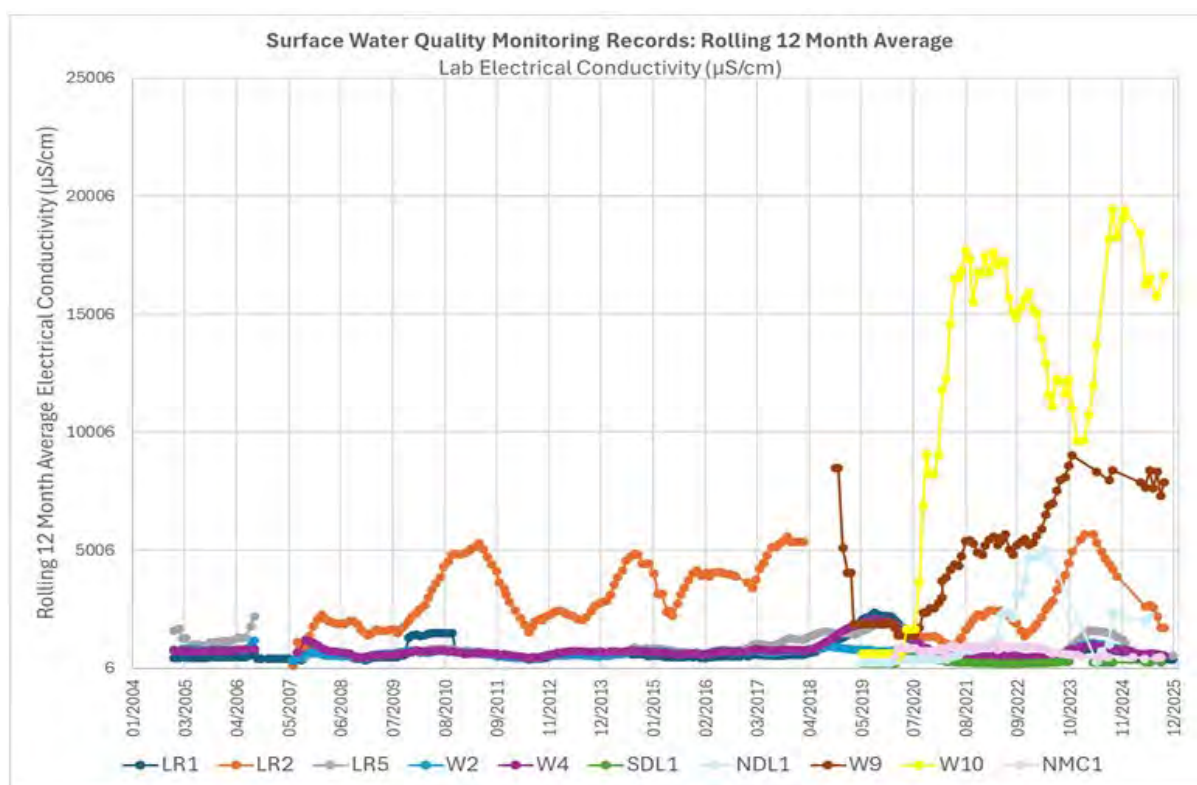


Figure 7.3 Long Term Surface Water EC Results

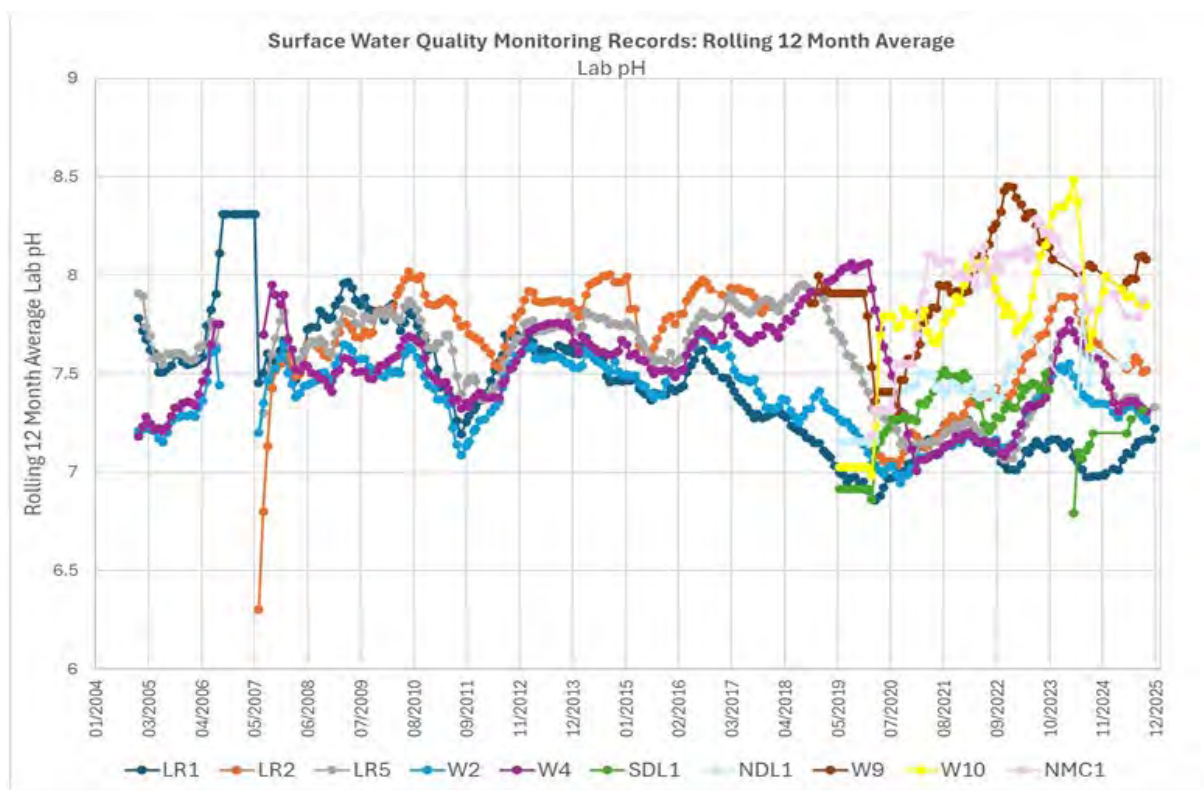


Figure 7.4 Long Term Surface Water pH Results

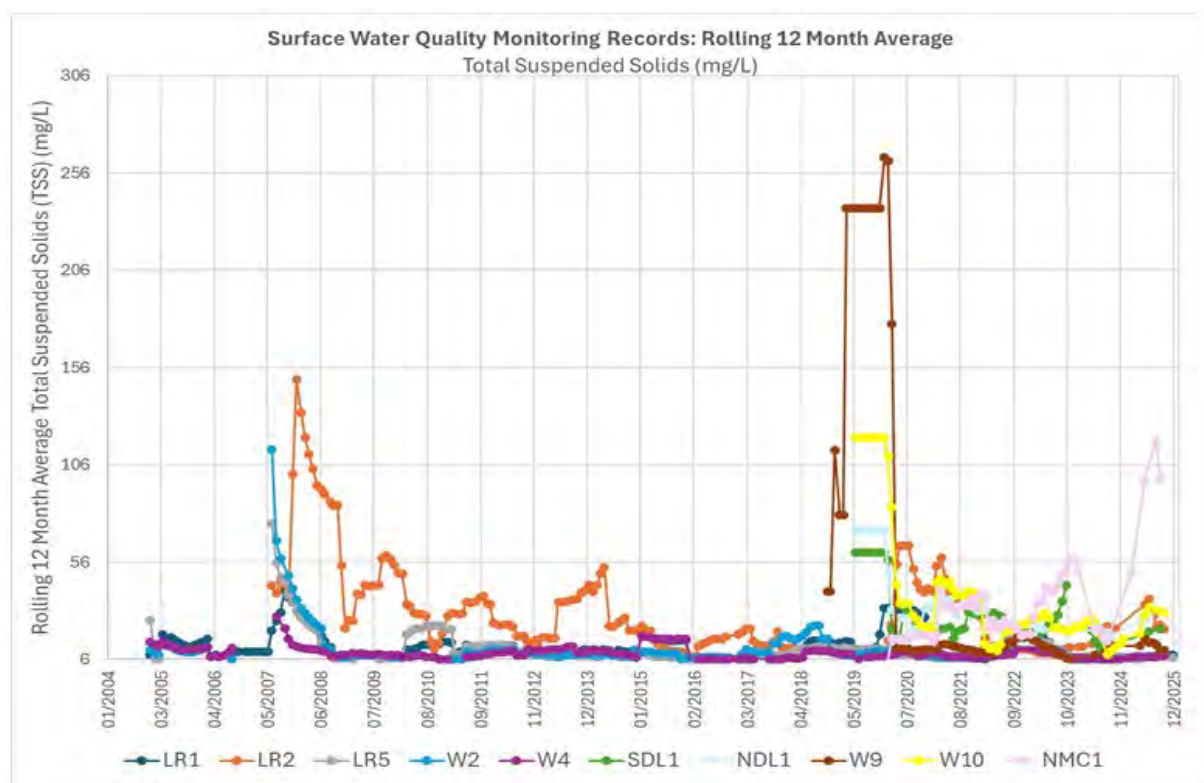


Figure 7.5 Long Term Surface Water TSS Results

7.3 Erosion and Sedimentation

7.3.1 Environmental Management

A variety of controls are implemented at Bulga Coal to mitigate operational risks associated with erosion and sedimentation. During and following ground disturbance, structures such as sediment ponds, sediment fences, spoon drains, sediment catches and site catch sumps are used where appropriate to manage runoff and minimise erosion and sedimentation. Inspections are undertaken following heavy rainfall events to evaluate the effectiveness of erosion and sediment control structures and any maintenance or dewatering requirements. Additional stabilisation works for these areas may include reshaping, amelioration of dispersive soil, revegetation, fencing and weed control.

High risk sediment dams have been incorporated into an automatic management system which continuously monitors dam water levels and commences dewatering when the water level reaches set trigger levels. Other sediment dams are monitored weekly and following rainfall events to determine pumping requirements.

Monitoring and inspections at Bulga Coal are completed in accordance with the ESCP approved in 2021. A revised version of the ESCP was submitted for regulatory approval and consultation in November 2025.

This monitoring system is designed to comply with EPL 563 and the erosion and sediment control conditions stipulated within the Bulga Underground Operations and Bulga Open Cut Development Consents.

7.3.2 Environmental Performance

There were no erosion and sediment related incidents recorded at Bulga Coal during the reporting period.

7.4 Groundwater

7.4.1 Environmental Management

Groundwater is managed in accordance with the approved WMP.

Mapping of the deep and shallow depressurisation of the hard rock (coal measures) strata is undertaken. This identifies the potential for any adverse impacts on the shallow alluvial aquifer systems associated with Wollombi Brook and Monkey Place Creek. Depressurisation is predicted within the coal measures on a regional scale; however, it is not expected to produce any measurable impact in the overlying alluvial aquifer.

The monitoring program provides early warning for potential changes in groundwater levels and quality.

Bulga has a comprehensive groundwater monitoring network within and outside of the mine footprint area with groundwater monitoring points shown in **Figure 6.3**. The monitoring network comprises both standpipe piezometers and multilevel vibrating wire piezometers installed in all hydrostratigraphic units.

As part of the EPBC Act approval EPBC 2018/8300 (as varied on the 9 September 2021), an ecohydrological conceptual model was submitted to the Commonwealth DCCEEW 20 December 2021 and approved in March 2023.

7.4.2 Environmental Performance

A summary of groundwater monitoring results and relevant criteria from the WMP is provided in **Table 7.5**, with detailed groundwater monitoring results available on the [Bulga Coal website](#).

Table 7.5 Summary of Groundwater Monitoring Results – 2025 Annual Averages

Piezometer	Water Elevation (mAHD)	Baseline Water Level (mAHD)	Field pH	pH		Field EC (µS/cm)	EC (µS/cm)
				20th Percentile Trigger Value	80th Percentile Trigger Value		80th Percentile Trigger Value
Broke Area Alluvials							
GW1	89.4	84.37	7.1	6.7	7.3	1,327	3,634
GW2	85.3	NA ¹	7.1	NA ¹	NA ¹	4,450	NA ¹
GW3	– ²	74.48	– ²	6.7	7.2	– ²	6,010
GW4	79.7	NA ¹	7.4	NA ¹	NA ¹	1,623	NA ¹
GW5	81.2	NA ¹	7.2	NA ¹	NA ¹	2,961	NA ¹
GW6	75.2	72.21	7.4	7.3	7.8	7,713	7,900
GW7	74.4	63.21	7.2	6.7	7.4	3,653	3,946
GW8	72.5	66.86	7.1	6.6	7	3,891	5,936
GW9	72.6	70.83	7.5	6.7	7.2	2,054	4,458
GW10	72.6	69.76	7.5	7.1	7.6	4,397	10,252
V3	69.6	65.49	6.9	7.1	7.6	2,616	1,744
Broke Area Wollombi Seam							
P2	68.9	67.1	7.2	7.4	8	10,850	12,834
P5A	69.8	67.84	7.8	7.5	8.2	5,103	6,242
P6A	68.7	63.4	7.0	7	8.1	2,472	2,740
Northern Area Shallow Alluvials							
F1	65.3	61.26	7.3	7.2	7.6	1,138	1,025
F2	66.0	63.3	7.3	7.1	7.4	1,820	1,720

Piezometer	Water Elevation (mAHD)	Baseline Water Level (mAHD)	Field pH	pH		Field EC (µS/cm)	EC (µS/cm)
				20th Percentile Trigger Value	80th Percentile Trigger Value		
V1	65.7	56.98	7.8	7.3	7.7	1,210	1,570
V2	61.1	63.14	6.5	6.4	7.1	127	922
WBR50A	59.9	58.56	7.5	7.1	7.7	2,449	14,000
SBC/Broke Area Lower Whybrow Seam							
P6B	-24.7	-24.84	8.5	6.7	7.3	4,943	1,353
P8	76.4	63.3	7.1	7.3	9.3	348	5,076
Northern Area Lower Whybrow Seam							
WBR50	29.8	24.3	6.7	6.7	8	1,041	8,382
Northern Alcheringa Seam							
WBD62A	67.0	24.3	7.4	NA ¹	NA ¹	557	NA ¹
Beltana Area Miscellaneous Bores and Wells							
WBR15	66.2	59.32	7.6	6.8	7.3	736	924
Dwyers	64.2	60.9	7.7	7.3	7.6	1,586	1,476
Fernance	65.7	59.74	7.9	7.3	8	1,269	1,473
McG1	92.6	89.86	7.9	7.5	8	387	918
White 1	66.4	63.36	7.5	7	7.4	2,785	2,444
Beltana Area NPZ							
NPZ3-A	- ³	56.01	- ³	6.5	8.1	- ³	1,362
NPZ3-B	66.4	59.63	7.5	7.3	7.5	804	921
NPZ4-A	66.5	58.54	7.2	6.9	7.3	663	729

Piezometer	Water Elevation (mAHD)	Baseline Water Level (mAHD)	Field pH	pH		Field EC (µS/cm)	EC (µS/cm)
				20th Percentile Trigger Value	80th Percentile Trigger Value		
NPZ4-B	52.4	45.32	7.2	7.3	7.8	1,440	1,342
NPZ5-A	65.3	60.9	6.9	6.9	7.3	834	886
NPZ5-B	50.2	41.16	7.4	7.1	7.6	2,637	2,760
NPZ7-1	65.6	53.47	7.7	6.7	7.7	1,217	1,240
NP27-2A	65.5	62.04	7.3	7.1	7.6	1,988	2,250
NPZ7-2B	63.3	45.36	7.6	6.8	7.8	1,293	1,307
NPZ7-3A	65.6	62	7.5	7	7.5	1,703	2,540
NPZ7-3B	66.5	53.7	7.7	7.4	7.8	1,238	1,316
Wollombi Alluvials and Shallow Coal Measures¹							
SBD196	69.1	NA ¹	6.98	NA ¹	NA ¹	4,281	NA ¹
WBD160	66.3	63.83	6.9	6.9	7.3	244	1,310
WBR180	36.1	34.3	7.2	7.1	7.5	20,567	20,850
WBR181	61.5	59.41	7.2	7.2	7.5	2,993	2,670
WBR182	63.7	61.7	7.1	7.3	8.3	1,740	1,512
WBR183	62.4	58.96	7.0	7.0	7.4	3,550	3,484
WBR240	60.8	58.36	7.5	7	7.5	7,094	26,800
WBR241	61.4	59.63	6.6	6.4	6.9	338	435
Loders Creek Alluvials							
LC1	Dry	NA ¹	Dry	NA ¹	NA ¹	Dry	NA ¹
LC2	43.0	NA ¹	7.4	NA ¹	NA ¹	3,780	NA ¹

Piezometer	Water Elevation (mAHD)	Baseline Water Level (mAHD)	Field pH	pH		Field EC (µS/cm)	EC (µS/cm)
				20th Percentile Trigger Value	80th Percentile Trigger Value		80th Percentile Trigger Value
Northern Tailings emplacement facility piezometers ⁴							
MB1a	64.83	NA ¹	– ⁴	NA ¹	NA ¹	– ⁴	NA ¹
MB1b	-4.3	NA ¹	– ⁴	NA ¹	NA ¹	– ⁴	NA ¹
MB2	65.6	NA ¹	– ⁴	NA ¹	NA ¹	– ⁴	NA ¹
MB3a	53.4	NA ¹	– ⁴	NA ¹	NA ¹	– ⁴	NA ¹
MB3b	-11.8	NA ¹	– ⁴	NA ¹	NA ¹	– ⁴	NA ¹
Warkworth Sands monitoring bores							
WWS1	94.0	NA ¹	Dry	NA ¹	NA ¹	Dry	NA ¹
WWS2a	Dry	NA ¹	Dry	NA ¹	NA ¹	Dry	NA ¹
WWS2b	93.9	NA ¹	Dry	NA ¹	NA ¹	Dry	NA ¹
WWS3a	83.8	NA ¹	Dry	NA ¹	NA ¹	Dry	NA ¹
WWS3b	83.3	NA ¹	Dry	NA ¹	NA ¹	Dry	NA ¹

¹ No trigger values have been established.

² No results available for 2025. SWL at GW3 was unable to be measured due to a deformed bore.

³ NPZ3-A no longer monitored since 2015.

⁴ The Northern Tailings emplacement facility piezometers sites are grouted vibrating wire piezometers and do not have access to water quality.

Umwelt produced the *Bulga Coal Complex 2025 Groundwater and Surface Water Annual Review* (Umwelt, 2026) which is attached as **Appendix D**. The following is a summary of the groundwater monitoring review.

The groundwater monitoring network covers the area along the Wollombi Brook and Monkey Place Creek to the west and south and extends 5 km to the north and northwest of the Blakefield South footprint. The current groundwater monitoring network is comprehensive and includes 50 monitoring locations in the alluvium, overburden strata (sandstone and coal seams), Whybrow Seam, Blakefield Seam and underlying and overlying strata.

Review of groundwater level trends indicates that, where bores were saturated, groundwater levels within the alluvium remained relatively stable, with slight increases observed in response to rainfall and streamflow trends. Above-average rainfall occurred over the reporting period. No groundwater level exceedances were recorded during 2025.

Groundwater levels in paired bores and VWP monitoring the interburden (sandstone), shallow Permian coal measures and coal seams indicate that a downward vertical hydraulic gradient is generally present. Groundwater levels in the Alcheringa Seam continue to recover following the completion of Beltana underground mining in 2011 and the above-average rainfall recorded between 2020 and 2022, and 2025.

Review of water quality data and comparison against trigger values for EC and pH identified several EC exceedances and widespread pH exceedances across the monitoring network. However, the 2025 results are generally consistent with historical trends for the respective bores. Bores where pH or EC levels were outside the trigger value are summarised in Table 5.10 of **Appendix D**. Trigger exceedances have been reviewed by comparing the data to groundwater levels and climate indicated by the CRD plot. Given that most of the monitoring bores have exceeded the pH trigger values over 2025, irrespective of lithology or location. It is noted that Bulga Coal submitted a draft WMP for consultation in November 2025 with updated trigger values.

7.4.3 Comparison Against Predictions

The Bulga Optimisation Project 2013 EIS, Bulga Underground Operations 2003 EIS and *Bulga Optimisation Project Modification 3 and Bulga Underground Modification 7 – Statement of Environmental Effects* (Umwelt, 2019) all include groundwater impact assessments. The groundwater impact assessments include all the approved Underground mining out to the end of the life of the Underground in 2031. These groundwater impact assessments essentially conclude that the approved Underground and Open Cut Operations will depressurise the mined Permian strata inducing minor leakage from the adjacent alluvial aquifers with minimal to no observable impact on the alluvial aquifer water levels or quality. Additionally, there is not predicted to be any measurable impact on flows in Wollombi Brook.

Given Underground mining ceased in 2018, the predictions included in the groundwater impact assessments are overly conservative.

The *Bulga Coal Complex 2025 Groundwater and Surface Water Annual Review* (Umwelt, 2026) concludes that the groundwater inflows are consistent with the groundwater model predictions and based on the groundwater level and water quality data, there is no evidence of measurable impact to the alluvial aquifers attributable to mining activities during 2025. Similarly, there is no observable impact on the flow in Wollombi Brook.

7.4.4 Long Term Trend Analysis

Bulga Coal has an extensive groundwater monitoring network which covers Wollombi Brook and Monkey Place Creek alluvium, overburden, sandstone, and deep coal seam hydrostratigraphic units. A long-term monitoring record (over 20 years) now exists and it enables interpretation of groundwater trends.

Review of groundwater level trends indicates that, where bores were saturated, groundwater levels within the alluvium remained relatively stable, with slight increases observed in response to rainfall and streamflow trends. No groundwater level exceedances were recorded during 2025.

Review of water quality data and comparison against trigger values for EC and pH identified several EC exceedances and widespread pH exceedances across the monitoring network. However, the 2025 results are generally consistent with historical trends for the respective bores.

Comparison of major ion chemistry (water type) for December 2025 with the full historical dataset indicates that water types have remained broadly consistent across all bores with available data.

Detailed historic groundwater monitoring trend graphs are presented in Appendix C of the *Bulga Coal Complex 2025 Groundwater and Surface Water Annual Review* (Umwelt, 2026) (refer **Appendix D**).

Based on the groundwater level and water quality data, there is no evidence of measurable impact to the alluvial aquifers attributable to mining activities during 2025.

8.0 Rehabilitation

Progressive rehabilitation of disturbed areas is an important aspect of the mining operations at Bulga Coal. The objective of rehabilitation is to restore the land to a condition that is equal or greater than that prior to disturbance. Ongoing rehabilitation of areas disturbed by operations has continued throughout the reporting period. Annual rehabilitation inspections and scientific plot-based monitoring is undertaken by experienced rehabilitation consultants to monitor the success of rehabilitation works.

8.1 Post Mining Land Use

In accordance with SSD-4960 and the *Biodiversity Management Plan*, rehabilitation has continued to focus on the goal of establishing EECs.

The post-mining land use goal is the combination of objectives contained in the Bulga Optimisation Project approval (for the Bulga Open Cut), the Bulga Underground Operations 2003 EIS and *Bulga Optimisation Project Modification 3 and Bulga Underground Modification 7 – Statement of Environmental Effects* (Umwelt, 2019). Following closure of Bulga Coal and the subsequent rehabilitation activities, the areas disturbed by mining activities will be predominantly native vegetation (woodlands on spoil dumps and riparian communities along established drainage lines) with a minimum of 260 ha being returned to land suitable for agricultural uses. In summary, the land associated with Bulga Underground Operations to the east of Charlton Road is either contained within the footprint of the Bulga Open Cut final land use or is regenerating woodland above underground workings; whilst the land to the west of Charlton Road is principally agricultural land used for grazing, viticulture or olive groves. Apart from an ecological and archaeological conservation area in the north-west of the colliery holding, the goal is to retain the agricultural productivity of the land to the west of Charlton Road and above the underground mine.

The areas disturbed by mining will be predominantly returned to native vegetation with 2,621 hectares required to be secured as a Biodiversity Offset within 10 years of the cessation of mining. Based upon current approvals, mining operations at Bulga Coal will cease mining in 2039.

8.2 Rehabilitation Performance During the Reporting Period

8.2.1 Rehabilitation Summary

Rehabilitation activities have been completed in accordance with the approved *Forward Work Program* and *Bulga Coal Rehabilitation Management Plan* (RMP). Rehabilitation activities undertaken in 2025 included:

- shaping of overburden dumps
- installation of geomorphic drainage structures
- deep ripping
- rock raking
- installation of habitat features (e.g. stag trees, woody debris, rock piles)

- spreading of topsoil/suitable growth medium
- application of ameliorants
- re-ripping of prepared surface
- seeding with target ecological communities.

Further details regarding these steps are provided in the RMP which is available on the [Bulga Coal website](#). A summary of rehabilitation at Bulga Coal as at the end of 2025 is presented in **Table 8.1**.

Table 8.1 Rehabilitation Status at Bulga Coal

Mine Area Type	Previous Reporting Period (Actual) 2024 ¹	This Reporting Period (Actual) 2025	Next Reporting Period (Forecast) 2026
Total mine footprint	3,506.98	3,508.56	3,514.02
Total active disturbance	2,507.73	2,396.43	2,321.79
Land being prepared for rehabilitation	0	0	0
Land under active rehabilitation	999.24	1,112.13	1,192.23
Completed rehabilitation*	0	0	0

¹Note: 2024 values align with the submitted 2024 Annual Rehabilitation Report.

* Denotes land that has been signed off by RR as completed rehabilitation.

8.2.2 2025 Rehabilitation – Bulga Open Cut

During 2025, Bulga Coal completed 120.11 ha of rehabilitation at the EEA, East Pit and Northern Extension, with maintenance of previously established rehabilitation also occurring throughout the year. Seven hectares of existing rehabilitation was disturbed. The rehabilitation establishment methodology is outlined in the RMP.

8.2.2.1 Landform Details

During 2025, Bulga Open Cut continued to implement a geomorphic natural landform design, as shown in **Photo 8.1**. Bulga Open Cut continued to progressively rehabilitate all available overburden emplacement areas which have reached final landform extents.



Photo 8.1 **Rehabilitation landform Shaping at the East Pit 2025**

8.2.2.2 Topsoil

Stockpiled topsoil was spread at a nominal thickness of 100 mm on the slope of the shaped landform, with approximately 50 mm applied on the flatter areas (refer **Section 8.6.2**). Topsoil was sourced directly from topsoil stripping activities and topsoil stockpiles stored onsite. Gypsum was applied immediately after topsoil application at varying rates depending on the topsoil origin and then deep ripped to a depth of 450 mm to incorporate the topsoil into overburden material to create a suitable seed bed, as shown in **Photo 8.2**.



Photo 8.2 Topsoil Spread at the Northern Extension 2025

8.2.2.3 Physical and Chemical Characteristics

Bulga Open Cut has identified some coal seams and interburdens which are potentially acid forming and contain elevated sulphur levels and or contain carbonaceous materials. These seams and interburdens have been analysed and are separated and handled/dumped to reduce the long-term potential to form acids and or generate heating. Further detail on this material and its management is provided in the RMP.

8.2.2.4 Vegetation Species

Revegetation activities in 2025 focused on the establishment of the Central Hunter Grey Box – Ironbark Woodland EEC. The seed mix for these areas included the key canopy, understory and groundcover species for the community (as outlined in the RMP and *Biodiversity Management Plan*). Outcomes from the Hunter Ironbark Research Program were used to guide the species selected to establish the target ecological communities.

8.2.2.5 Habitat Resources and Potential

The *Biodiversity Management Plan* outlines the requirement for incorporating habitat features into rehabilitated landscapes.

In 2025 several methods were used to increase the habitat potential of rehabilitated areas, including the incorporation of:

- woody debris
- drains and water structures
- rock piles
- stag trees.

As rehabilitation matures, other habitat enhancement methods such as installing nest boxes may be utilised, if required.

8.2.2.6 Temporary Rehabilitation and Visual Mitigation

No temporary rehabilitation was carried out during 2025.

8.2.2.7 Rehabilitation Maintenance

Rehabilitated areas at Bulga Open Cut are subject to an ongoing monitoring and maintenance program to ensure that rehabilitation objectives and completion criteria are achieved or are on trajectory to be achieved. Inspections are conducted annually by an external consulting rehabilitation specialist. A summary of care and maintenance activities undertaken during 2025 is provided in the following sections and in **Table 8.2**.

Table 8.2 Maintenance Activities on Rehabilitated Land for Bulga Open Cut

Nature of Treatment	Area Treated (ha)		Comment/control Strategies/Treatment Details
	2025 (actual)	2026 (planned)	
Additional erosion control works (drains, recontouring, rock protection, erosion repairs)	<1	<1	A landform stability inspection has been conducted annually by an engineering consultant since 2021 to identify all erosion features across rehabilitated areas. During 2025 repairs were undertaken on localised erosion features identified across the Noise and Visual Bund, East Pit emplacement area and the EEA. In 2026 a follow up landform stability inspection will be undertaken with continued erosion remediation works undertaken on rehabilitation areas, as required.
Re-seeding / replanting (species density, season etc.)	1.4	2	Bare areas lacking vegetation growth or topsoil cover will be remediated in 2026. Infill tube stock planting may also occur in 2026.

Nature of Treatment	Area Treated (ha)		Comment/control Strategies/Treatment Details
	2025 (actual)	2026 (planned)	
Adversely affected by weeds (type and treatment)	~122	~80	Weed control works in 2025 were carried out across all rehabilitation areas. Weed control works will continue in 2026 with new rehabilitation areas being added to the program as they are completed. The main weeds being controlled are Lantana, Galenia, Blue Heliotrope, Acacia Saligna and various exotic grass species.
Feral animal control (additional fencing, trapping, baiting etc.)	N/A	N/A	Feral animal control will concentrate on wild dog, kangaroo and pig control within rehabilitation areas as required.

8.2.3 2025 Rehabilitation – Bulga Underground Operations

No rehabilitation of Bulga Underground Operations infrastructure was undertaken during 2025, however work continued on decommissioning redundant infrastructure to allow for the progression of open cut mining as described in **Section 4.4.4**.

No maintenance or rehabilitation activities were required at the Flood Exclusion Levee.

8.2.3.1 Rehabilitation Maintenance

Rehabilitated areas at Bulga Underground Operations are subject to an ongoing monitoring and maintenance program to ensure that the rehabilitation objectives and completion criteria are achieved or on trajectory to be achieved. A summary of rehabilitation maintenance activities undertaken during 2025 are outlined in **Table 8.3**.

Table 8.3 Maintenance Activities on Rehabilitated Land for Bulga Underground Operations

Nature of Treatment	Area Treated (ha)		Comment/control Strategies/Treatment Details
	2025 (actual)	2026 (planned)	
Additional erosion control works (drains re contouring, rock protection)	0	As required	Maintaining temporary controls around active rehabilitation areas as identified in routine and scheduled inspections.
Subsidence Repairs	As required	As required	Subsidence inspections are undertaken on an annual basis or after high rainfall events. Repairs are undertaken on an as needs basis as described in Section 6.5 .
Soil treatment (fertiliser, lime, gypsum etc.)	0	0	Ameliorants applied to rehabilitation areas as required.

Nature of Treatment	Area Treated (ha)		Comment/control Strategies/Treatment Details
	2025 (actual)	2026 (planned)	
Re-seeding/replanting (species density, season etc.)	0	0	Supplementary seeding of rehabilitation maintenance and repairs identified in annual rehabilitation inspection.
Adversely affected by weeds (type and treatment)	As required	As required	Weed management activities were ongoing in 2025 and focused mainly on the Vere and Bulga Underground rehabilitation areas. Target areas are identified during monthly inspections, annual rehabilitation inspections and buffer land inspections.
Feral animal control (additional fencing, trapping, baiting etc.)	As required	As required	Feral animal control concentrating on wild dog, fox and pig control, as required.

8.3 Decommissioning of Infrastructure

There was no decommissioning of infrastructure in 2025 that required rehabilitation. Refer to **Section 4.4.4** for a summary of other demolition and decommissioning of infrastructure that occurred in 2025.

8.4 Department of Regional NSW – RR Rehabilitation Sign-off

In 2025, no areas of rehabilitation received formal sign-off from RR that land use objectives and completion criteria had been met.

8.5 Variations from Proposed Forward Work Program Activities

Table 8.4 summarises the rehabilitation progress at Bulga Coal (including Bulga Open Cut and Bulga Underground Operations) during 2025 against the Forward Work Program (FWP) forecast.

A copy of the 2025 Annual Rehabilitation Report and 2026 FWP is provided on the [Bulga Coal website](#).

Table 8.4 Bulga Coal Rehabilitation Performance against Forecast

Mine Area Type	2025 Actual Data	2025 FWP Forecast	2026 FWP Forecast
Rehabilitation (ha)	120.11	120.07	80.1
Disturbance (ha)	1.65	3.45	5.46
Rehabilitation Re-disturbance (ha)	7.2	80.47	0

Rehabilitation in 2025 was generally as per the FWP forecast. Rehabilitation was as per the forecast and new disturbance was 1.8 ha less than forecast. Small amounts of rehabilitation were re-disturbed to allow for dumping and rehabilitation activities.

8.6 Rehabilitation Monitoring, Trials and Research

Bulga Coal has an extensive rehabilitation monitoring program to track the establishment and progress of rehabilitated areas towards the completion criteria. The objectives of the rehabilitation monitoring program are to:

- assess the long-term stability and functioning of re-established ecosystems on mine affected land
- assess rehabilitation performance against the completion criteria
- facilitate continuous improvement in rehabilitation practices.

The monitoring program will continue within rehabilitated and non-mined areas (reference sites) until it can be demonstrated that rehabilitation has satisfied the closure criteria. The rehabilitation monitoring criteria for each domain have been developed to demonstrate that select indicators (or criteria) have been reached or that a satisfactory successional trajectory has been established that will result in a self-sustainable ecosystem.

Based on the outcomes of the rehabilitation monitoring program, a care and maintenance program is implemented. The scope of the care and maintenance program may include weed and feral animal control, fertilising, re-seeding or planting (where required), and erosion and sediment control works.

8.6.1 Annual Rehabilitation Monitoring Program

The annual rehabilitation monitoring program includes Initial Establishment Monitoring (IEM) and Long-Term Monitoring (LTM). In summary, the IEM is a rapid style assessment of young (≤ 3 years old) rehabilitated areas, principally to determine germination success, landform stability and other management issues such as establishment of weeds. The LTM procedure is applied to rehabilitation that is a minimum of four years since establishment. The objective of the LTM program (areas > 3 years old) is to evaluate progress of rehabilitation towards fulfilling completion criteria, including additional statutory requirements that may apply to the operation and ultimately the targeted post-mining land use.

The methods described for LTM apply to both rehabilitation and reference monitoring sites. For further details on methodology and timing refer to the *GCAA Completion Criteria and Rehabilitation Monitoring Procedure*.

8.6.1.1 General Observations

A total of 14 rehabilitation blocks and 54 transects/plots were assessed across the Noise and Visual Bund (NVB), EEA and East Pit Dump (EPD) rehabilitation areas; including six (6) blocks monitored for IEM, and eight (8) blocks monitored for LTM. All rehabilitation blocks assessed were being returned to a native woodland/forest land use and covered a cumulative area of approximately 407.9 ha.

Ecological monitoring included the assessment of four of the seven permanent monitoring sites established in remnant native vegetation within the buffer zones surrounding Bulga Coal, including one site within riparian vegetation and three sites in areas of native woodland. This monitoring is implemented to identify potential deteriorations (or lack thereof) in vegetation health or habitat quality resulting from mining operations.

Field surveys were undertaken during May 2025 and followed a year of (very slightly) below average annual rainfall but two months of seasonally wet weather.

Based on collected results and observations, management recommendations have been suggested to improve the condition of rehabilitation areas and ensure they are on a trajectory towards the defined final land use objectives.

Rehabilitation IEM Blocks Summary Findings

Surface drainage was assessed as satisfactory across all 2025 IEM blocks, with no evidence of ponding or major settlement issues that could threaten to cause long-term rehabilitation failure, however three drains in areas of natural landform design need to be repaired to remediate scouring / channelling impacts (two blocks affected).

Four of the six IEM blocks monitored were identified as requiring erosion repair works. Two blocks require repair works to remediate extensive gully impacts on several slopes, while another two blocks require localised repairs of isolated gully channels or small-scale tunnelling impacts.

Ground cover protection was satisfactory in five of the six IEM blocks, with an average cover estimated between ~85.0-97.7%, which is well above the 70% minimum target benchmark. One block remained poorly vegetated as a function of its (very) young age (<6 months) and pending germination of native species.

Establishing native species richness was variable and ranged between 15.0-30.0 species/400 m². Relative to the age of the rehabilitation, average native richness levels were low in two blocks (<16 species/400 m²), moderate in two blocks (22-24 species/400 m²) and high in two block (27.5-30 species/400 m²).

In all IEM blocks exotic species contributed to a relatively large proportion of the total species richness (i.e. ~44.1-60.4%). Levels and abundance of invasive weeds were low and acceptable in five blocks (<9.0% cumulative cover), but high in one block (36.6% cover) due to an infestation of invasive grasses. However, potential weed threats were present in all blocks which will require ongoing and pro-active management inputs.

Establishing tree densities were satisfactory in two blocks but below minimum IEM benchmark levels in four blocks. In these, the potential for further tree germination to occur was assessed as likely in two blocks, but unlikely in the other two blocks (i.e. intervention may be required in germination does not rapidly occur).

Rehabilitation LTM Blocks Summary Findings

LTM blocks assessed in 2025 were well-established and landforms and slopes are mostly (i.e. on large scale considerations) very stable with limited to no active erosion processes. All blocks that previously needed (and received) erosion remediation works during the IEM stage (mainly in the EEA) have successfully stabilised. One block requires localised earthworks to remediate localised tunnel erosion and associated severe gully channel (to ~80 cm deep).

Surface drainage was satisfactory in all blocks (with no evidence of ponding or major settlement issues that could threaten to cause long-term rehabilitation failure), and all water management structures were assessed as stable and well-functioning.

Total native species richness was highly variable and ranged from a low 18.7 species/400 m² to a very high 45.0 species/400 m². Six of the eight blocks exceeded the minimum richness benchmark (i.e. >50% of reference sites) but two blocks were insufficiently diverse mainly because invasive grasses displacing native species in the ground layer. Regardless of richness levels, established native species in all four main growth form groups were adequately aligned with the target community with similarity levels generally exceeding 80% in all blocks – for a satisfactory performance against defined criteria.

Weed levels were low and acceptable in four blocks (<7% cumulative cover), moderate in two blocks (10-25%) and very high in two blocks (>45%), with invasive grasses continuing to represent the biggest issue across the site and the greatest threat to rehabilitation success (i.e. most difficult to manage). However, potential weed threats were present in all blocks which will require ongoing and proactive management inputs.

Despite highly variable stem counts, tree densities were assessed as satisfactory in six blocks, while selective tree thinning has been recommended for sections of two blocks to enable the development of adequate community structure and function over time.

Vegetation structure (assessed through the BAM structural score) was meeting the defined criteria in three blocks and was slightly below criteria in one block, but remained well short of target levels in four blocks – mainly because of an insufficient native grass layer. However, The BAM structure score is expected to stay volatile during the successional process and until the rehabilitated communities reach a more mature stage.

Vegetation function (assessed through the BAM functional score) was below defined targets in all blocks monitored. However, the function score reflects the maturity of the vegetation and all blocks remained ecologically young at the time (≤10 years old).

Natural regeneration assessments did not flag any concerns in any of the blocks monitored that could impede the establishing communities from self-regenerating and become self-sustainable over time.

8.6.1.2 Reference Site Monitoring

Monitoring was conducted at four reference sites in 2025 located within each of the following vegetation communities:

- PCT 3315 – Central Hunter Ironbark – Spotted Gum – Grey Box Forest.
- PCT 3431 – Central Hunter Grey Box – Ironbark Woodland (two sites).
- PCT 4015 – Central Hunter Swamp Oak Forest.

Overall, the 2025 monitoring results highlighted the ongoing good vegetation condition at the grassy woodland/forest ecological monitoring sites. However, the riparian Swamp Oak Forest site along Loders Creek has severely deteriorated in condition over the past several years following weed incursion and established infestations of Lantana and exotic grasses. As required under the BMP, weed control will be required at this location (and in the broader riparian vegetation patch) to improve vegetation quality.

8.6.2 Rehabilitation Trials and Research

8.6.2.1 Growth Medium Trial

A growth medium trial commenced in 2024 on a section of the EEA rehabilitation. Topsoil was spread to a depth of 50 mm on the flatter areas of the 2024 rehabilitation as opposed to the typical depth of 100 mm. This trial is a part of the life of mine topsoil strategy and will help inform future methodologies for maximising re-use of growth medium. This method continued in 2025.

Further topsoil trials are planned in 2026. These may include areas in which alternative growth mediums are used or topsoil depths are adjusted. Future monitoring events will assess the performance of these areas.

8.7 Key Issues that may Affect Rehabilitation

A review of the rehabilitation risk assessment was undertaken in 2022 in accordance with *RR Guideline: Rehabilitation Risk Assessment*. Risks and controls identified through this process have been incorporated in the RMP.

The key risks to rehabilitation at Bulga Coal are:

- potential contamination of disturbance areas
- spontaneous combustion of exposed coal seams in highwalls
- spontaneous combustion impeding rehabilitation
- tailings does not consolidate sufficiently to allow capping to progress as planned
- adverse surface and groundwater quality and quantity
- lack of habitat structures for colonisation or use
- softwall instability
- erosion within rehabilitation areas
- extended water ponding or redirection of creek and river flows.

Key risks to rehabilitation are included in a rehabilitation TARP within the RMP and to identify required management actions in the event of impacts to rehabilitation, or where rehabilitation outcomes are not achieved in an acceptable timeframe.

Ongoing works will be undertaken throughout the life of the operation to ensure rehabilitation areas meet completion criteria and rehabilitation objectives. These works will mostly include weed control, erosion repairs and planting/seeding to meet the requirements of target vegetation communities.

Identification of these works will be through the rehabilitation monitoring program and annual walkover inspections.

The rehabilitation risk assessment was reviewed and updated in January 2026.

8.7.1 Bulga Open Cut

8.7.1.1 Weed and Pest Species

Weed management in rehabilitation areas is an ongoing challenge for all mining operations. Considerable planning is undertaken at Bulga Open Cut to prevent weeds entering rehabilitation areas in the first instance, primarily through topsoil management. Despite this, several weed species are present throughout most historical rehabilitation areas and significant resources are dedicated to their removal. The methods employed at Bulga Open Cut include:

- Appropriate topsoil management, including scalping of topsoil stockpiles prior to spreading and weed control in areas prior to stripping.
- Seeding with quick establishing cover crops and acacia species to out-compete weed species.
- Ongoing weed spraying and removal.
- Seeding with a eucalypt and acacia heavy native woodland seed mix to shade-out introduced weed species such as Rhodes grass (*Chloris gayana*) and Galenia (*Galenia pubescens*).

The key weed species targeted in 2025 were Lantana (*Lantana camara*), Rhodes Grass (*Chloris Gayana*), Pampas Grass (*Cortaderia selloana*), Galenia (*Galenia pubescens*), African Boxthorn (*Lycium ferocissimum*), Golden Wreath Wattle (*Acacia Saligna*), Bitou Bush (*Osteospermum moniliferum*), Guinea Grass (*Megathyrus maximus*), Blue Heliotrope (*Heliotropium arboescens/amplexicaule*), Spiny Rush (*Juncus acutus*), Setaria Grass (*Setaria species*), Coolatai Grass (*Hyparrhenia hirta*), African Love Grass (*Eragrostis curvula*), Firewood (*Senecio madagascariensis*), Narrow-leaf Cotton Bush (*Gomphocarpus fruticosus*) and Castor Oil (*Ricinus communis*).

The 2026 rehabilitation weed management program will continue to implement controls for the above-mentioned weed species plus any additional weeds identified during inspections and previous monitoring programs. Control of weeds will be undertaken in order of priority according to biosecurity duties and actions required to achieve target vegetation communities.

As part of the wild dog and fox baiting program, 1080 baits were placed in rehabilitation areas where the presence of wild dogs has previously been identified.

8.7.1.2 Erosion and Water Quality

Drainage structures such as contour banks and drop structures at Bulga Open Cut are largely functioning as designed and require little to no maintenance.

During 2025 Bulga continued to implement the annual landform stability and drainage inspections across all rehabilitation areas and associated drainage structures. The inspection was undertaken by a consulting engineer to identify erosion features such as rills, tunnelling, silt accumulation and overtopping drains. Spatial data was collected for all erosion and drainage maintenance features identified across rehabilitation areas. The inspection noted a marked improvement in landform stability from previous inspections with a reduced number of erosion and maintenance issues identified.

Spatial data from previous inspections was used to develop a maintenance program which was implemented in 2025. Maintenance works undertaken included contour banks, repairing rilling and gully erosion and tunnelling. Coir logs were also successfully used to prevent and stabilise minor rill erosion across natural landform areas.

In 2026 a subsequent landform stability and drainage inspection will be conducted to identify any new erosion features or maintenance issues and assess the success of the 2025 maintenance program. Budget has been allocated to rehabilitation maintenance to allow for works to be conducted throughout the year and in response to new erosion identified following high rainfall events.

Monthly water quality sampling is undertaken on all sediment dams downstream of rehabilitated areas. Biannual water quality analysis is also undertaken on the sediment dams. This monitoring will be used to assess when surface water runoff can be diverted back into clean water catchments.

8.7.1.3 Safety Risks

There are currently no rehabilitation areas that present safety risks to the public or employees. At the time of mine closure (in year 2039 based upon current approvals), the proposed final void and highwalls will be rehabilitated in accordance with the Bulga Coal RMP and appropriate safety controls will be implemented.

8.7.2 Bulga Underground Operations

8.7.2.1 Weed and Pest Species

Due to the small and isolated nature of rehabilitation and the maintenance of buffer land at Bulga Underground Operations, weed and pest management activities are not isolated to rehabilitation areas. Weed and pest management, inclusive of rehabilitation was undertaken throughout 2025 as outlined in **Section 6.7**.

8.7.2.2 Erosion and Water Quality

Maintenance of erosion controls identified during scheduled and routine inspections was undertaken during 2025.

8.7.2.3 Safety Risks

There are currently no Bulga Underground rehabilitation areas that present safety risks to the public or employees.

8.8 Actions for the Next Reporting Period

8.8.1 Rehabilitation Outcomes

The rehabilitation outcomes have been agreed with stakeholders and documented in the RMP which is available on the [Bulga Coal website](#). The Bulga Coal RMP and associated works include rehabilitation outcomes documents.

The *Bulga Coal Rehabilitation Objectives Statement* (ROBJs) and *Final Landform Rehabilitation Plan* (FLRP) were approved by the NSW RR on 18 October 2023. Completion criteria are currently being reviewed and will be submitted to the Resources Regulator.

8.8.2 Proposed Rehabilitation Trials, Projects and Initiatives

Bulga plans to continue and expand on a topsoil trial in 2026 to help assess the best strategy to manage the topsoil deficit whilst meeting our rehabilitation objectives.

8.8.3 Rehabilitation Activities Proposed for 2026

Bulga Coal plans to undertake the following rehabilitation and disturbance works during 2026:

- 5.46 ha of disturbance
- 80.1 ha of rehabilitation (levelled/re-contoured, topsoiled and seeded)
- maintenance works as required on existing rehabilitation areas
- subsidence repairs as required.

The proposed 2026 operations for Bulga Open Cut have been presented in **Figure 4.3**.

9.0 Community

9.1 Community Engagement

Bulga Coal engaged with the community through meetings, newsletters, local event participation and community barbeques in 2025.

9.1.1 Community Barbeques

Community barbecues were held in May and November 2025. May saw approximately 90 attendees at each barbecue, held in the Broke and Bulga community halls, with presentations by Bulga staff updating the community on operations. In November, Bulga hosted a combined community barbecue, held at Adam's Peak Country Estate, with almost 200 members of Broke Fordwich, Milbrodale and Bulga villages attending the event (**Photo 9.1**).



Photo 9.1 Combined Community BBQ held at Adam's Peak Country Estate 2025

9.1.2 Newsletters

A community newsletter was distributed in May 2025, with an update on operations, rehabilitation and community projects.

9.1.3 Community Consultative Committee

Bulga Coal enjoys an open and honest dialogue with community representatives and Singleton Council through our CCC. In 2025, one of our long-serving members retired from the committee. Advertising was completed to find new members to continue operating the committee according to the guidelines. In total, six applications were received, and five new members plus an alternative member have been appointed as of December 2025.

Bulga hosted two meetings in 2025, one held at Minimbah Teaching Place in May, and in November a tour of operations was held. During the tour members were shown around the active mining areas and some rehabilitation areas, following the tour a short meeting and lunch was held at the Vere BOA (**Photo 9.2**). The minutes from these meetings can be found on the [Bulga Coal website](#).



Photo 9.2 CCC meeting at the Vere Biodiversity Offset in November 2025

9.1.4 Voluntary Planning Agreement

Payments of Voluntary Planning Agreement (VPA) Part C: contributions to local events, continued throughout 2025, funding the Broke Village Fair and the annual Broke vs Bulga Cricket Match.

Bulga Coal made payments for VPA Part B: Broke Road maintenance in 2025.

The VPA Part A funding for an upgrade to Bulga Community Hall was completed this year, with the hall installing all weather blinds on their outdoor area to better utilise the space in the colder months.

9.1.5 Broke to Bulga Discovery Trail Feasibility Study

Common Ground completed the Trail Development Plan in September of 2025 and sent through an opinion of probable costs. Valuation reports were requested to assess property impact along the proposed route and consultation continued with the Broke Residents Community Association.

9.1.6 Mine Tours

Bulga hosted several school tours throughout 2025, notably the Environment and Community team led groups of year 12 students from Sydney's Trinity College, Newcastle Grammar and West Wallsend studying Earth Sciences (**Photo 9.3**). These groups were given a presentation on the history of coal mining at Bulga, then led through to dispatch and tech services offices before heading to a lookout at the pit, then to see some rehabilitation and biodiversity offset areas.

Bulga also hosted St Catherine's Catholic College year 9 Science Class in August, and the Upper Hunter Mining Dialogue organised a visit with Mt Pleasant primary school students in June (**Photo 9.4**).



Photo 9.3 West Wallsend Year 12 Earth Sciences Tour 2025



Photo 9.4 Mt Pleasant Primary Students Learning About Geology June 2025

9.2 Community Sponsorship and Donations

Bulga Coal contributed approximately \$58,000 towards community sponsorships throughout 2025.

9.2.1 Community Yoga Classes

Bulga Coal continued to fund weekly yoga classes in Bulga during 2025. The classes were well attended and appreciated by the community.

9.2.2 Singleton Neighbourhood Centre

In 2025, Bulga Coal signed a three-year partnership contract with the Singleton Neighbourhood Centre, along with four other operations and GCAA. This guaranteed funding will allow the Neighbourhood Centre to continuously run initiatives such as their OpenDoor@SNC support activities and programs, provide consistent volunteer and staff training, and expand their school breakfast program.

9.2.3 Singleton Soft Cogs

Bulga Coal was a platinum sponsor of the Singleton Soft Cogs' MS Gong Charity ride, supporting their efforts to raise money to go towards further research and support of people affected by MS. 2025 marked the 45th year of the event, and the Singleton team has raised over \$1.6 million in the past 20 years of participation. The team rode 82 kms from Sydney to Wollongong and were the second highest fundraisers of over 440 teams (**Photo 9.5**).



Photo 9.5 Singleton Soft Cogs MS Gong Ride, Sponsored by Bulga Coal

9.2.4 Hunter Food Relief

Based in Cessnock, Hunter Food Relief provides hot meals, toiletries and basic essentials to vulnerable populations living in the Cessnock LGA. In 2025, more than 130 families relied on their services, as well as elderly, homeless and the recently incarcerated.

9.2.5 Broke Village Fair

As the major sponsor of the annual Broke Village Fair, Bulga Coal works in partnership with the Fair Committee, participating in committee meetings, planning and marketing the event. Bulga Coal hosts an information marquee at the event and has a native tree and shrub giveaway, approximately 1,300 native trees and shrubs were handed out and six bus tours to the mine were hosted throughout the day (**Photo 9.6**).



Photo 9.6 **Bulga Coal Marquee at the Broke Village Fair**

9.2.6 Sponsorships

Organisations and events sponsored by Bulga Coal during 2025 included:

- Singleton Tidy Towns Adopt a Spot Broke Road clean up
- Broke Community Hall refit
- Milbrodale Mountain Classic
- Hunter Food Relief Program
- Broke Fordwich Wine and Tourism Association website and marketing
- Broke Public School Bushtucker Garden irrigation and yarning circle cleanup
- Bulga Progress Association Annual Bulga vs Broke Cricket Match
- Kiray Putjung Naidoc Family fun day
- Paxton Public School Aboriginal Art Mural
- Hunter River Community School Wheels of Joy

- Soft Cogs MS Gong Ride
- Broke Public School P&C iPad
- Singleton Library: Summer Reading Program
- Community Yoga classes.

9.2.7 Donations

Donations were made to these recipients in 2025:

- Mystery Box Rally employee team
- Singleton Woodworkers Club test & tag equipment.

9.3 Community Complaints

During 2025, Bulga Coal logged six community complaints from four stakeholders, with one stakeholder lodging all three air quality complaints. Three noise complaints were received and recorded as per the Bulga Coal Community Complaint Procedure, and responses are publicly available in the complaints register on the Bulga Coal Website.

Table 9.1 shows a comparison of complaints received by Bulga Coal over the past six years.

Table 9.1 Summary of Complaints by Issue 2019–2025

Complaint Type	2019	2020	2021	2022	2023	2024	2025
Blast vibration/ overpressure	1	2	1	1	0	0	0
Lighting	5	2	0	1	3	1	0
Dust	4	1	2	0	0	4	3
Noise	11	12	10	15	4	3	3
Traffic	0	0	0	0	0	0	0
Visual Amenity	2	0	0	0	0	0	0
Odour	0	0	0	0	0	0	0
Fume	0	0	0	0	0	0	0
Other	1	0	1	0	1	1	0
Total	24	17	14	17	8	9	6

Each of these complaints followed the *Bulga Coal Community Complaint Procedure* and the response is available in the complaints register on the [Bulga Coal website](#).

9.4 Community Feedback

Community Consultation took place as planned in 2025, with two community barbecues, CCC meetings in May and November, hosting an information marquee at the Broke Village Fair and producing a newsletter in June. Regular meetings were held with the Broke Residents Community Association and the Broke Fordwich Wine and Tourism Association. No concerns were raised by the community throughout consultation in 2025.

There has continued to be strong support for the Broke to Bulga Discovery Trail, and the future opening of Biodiversity offset areas for recreational opportunities.

9.5 Minimbah Teaching and Keeping Place

Minimbah Teaching and Keeping Place was well used throughout 2025, for cultural events and camps, as well as meetings and cultural training days.

Minimbah was booked out for a total of 113 days in 2025, with seventeen overnight camps of two or more days. Nineteen of the events were specifically aimed at youth activities, with school groups and youth leadership camps making up a large number of bookings (**Photo 9.7**).



Photo 9.7 Wonnarua Baby Welcoming Ceremony at Minimbah Teaching and Keeping Place 2025

9.5.1 Bushtucker Garden

The bushtucker garden, in the shape of a freshwater turtle, was planted in April 2025 in collaboration with local Wonnarua community. After several working bees to form the base of the garden, tubestock was planted in April 2025 and has made a welcome addition to the surrounds of the Minimbah building (**Photo 9.8**).



Photo 9.8 Planting the Bushtucker Garden April 2025

10.0 Independent Audit

10.1 2024 Independent Environmental Audit

In accordance with the requirements of Schedule 5, Conditions 9 and 10 of SSD-4960, Condition 8.4 of DA 41-03-99 (now surrendered) and Schedule 6, Conditions 6 and 7 of DA 376-8-2003, an Independent Environmental Audit (IEA) was undertaken for Bulga Coal in 2024. The audit was conducted in November 2024 and was submitted to the DPHI on the 24 January 2025.

A summary of the status of the proposed actions is presented in **Table 10.1**. Actions that are ongoing, required no action or were completed prior to this Annual Review period have been excluded. The next IEA is planned for November 2027.

Table 10.1 Non-Compliance Findings and Action Status from 2024 IEA

Condition Reference	Context	Recommended / Action from IEA	Action Proposed by Bulga Coal	By When
EPL 563 M9.3	The licensee must mark monitoring Point 11 with a sign which clearly indicates the name of the licensee, whether the monitoring point is up or down stream of the discharge point and that it is a monitoring point for the Hunter River Salinity Trading Scheme.	Licence Discharge Point 11 signage to indicate whether the monitoring point is up or downstream of the discharge point.	The Licence Discharge Point sign is immediately adjacent to the discharge monitoring point. Bulga Coal will review the signage requirement and replace signage, if required.	Completed.
DA 376-8-2003 Schedule 3, Condition 10	The End of Project report sighted in this audit does not specifically refer to AS2601.	The End of Project report should include details of relevant information and status updated.	All demolition completion reports will reference the adherence to AS2601. Bulga Coal will review the report and include the relevant information.	Completed.
DA376-8-2003 Schedule 4, Condition 11	No details of maintenance and rehabilitation of the levee is found in the approved Annual Review reports.	Update of details of maintenance and rehabilitation of the levee should be included in the Annual Review reports.	Bulga Coal will include maintenance and rehabilitation updates in the Annual Review. Action will be created in the HSEC system to ensure this is included in future Annual Reviews.	Completed.
SSD 4960 Schedule 3, Condition 8	Blast monitoring reports in general should identify criteria applicable to each location.	Blast Monitoring Compliance Reports (Attachments to annual returns) would benefit from identifying which criteria are applicable to each location, the type of each location (house, land, etc.), highlighting results which	Bulga Coal will include criteria in the Blast Monitoring Compliance Reports for each location in future reports.	Completed.

Condition Reference	Context	Recommended / Action from IEA	Action Proposed by Bulga Coal	By When
		exceed criteria and highlighting any blasts which occurred outside of the specified hours or on Sundays, if any.		
SSD 4960 Schedule 3, Condition 18 (a) (iv) EPL 563 O3.1 CL 224 – Condition 17	During the audit site walkover, large plumes of dust were seen to escape from the western sections of the development where parts of the Noise and Visual Bund was yet to be landscaped.	Make sure surfaces are covered or dust suppressed to avoid dust / particulate matter being disturbed and carried by wind.	Bulga Coal will continue to carry out progressive rehabilitation on site to ensure that exposed surfaces are covered in a timely manner. Bulga Coal will review exposed areas across site and assess the potential to implement temporary rehabilitation or dust suppression.	Completed.
SSD 4960 Schedule 3, Condition 18 (e)	Appendix A - Air Quality Statutory Requirements of the AQGGMP gives Section 7.4.3 of the Air Quality and Greenhouse Gas Management Plan as the relevant section of the Plan in response to this requirement. However, this section does not exist.	Review and update the Appendix A of AQGGMP with correct referencing for requirements and compliance.	Bulga Coal has submitted a revised version of the AQGHGMP. Bulga Coal will review the Appendix A table and ensure the sections referenced align with the sections of the document.	Awaiting feedback on management plan
SSD 4960 Schedule 3, Condition 39	Wollombi Brook Plan of Management is overdue for review (Jan 2021) as per the document version control details. The Bulga Coal website has the 2018 version.	The WBPM is due for review on 11 Jan 2021. The Bulga Coal website has the 2018 version. This need to be reviewed and updated on the Bulga Coal website .	The WBPM is currently being reviewed. This plan is an appendix of the Aboriginal and Cultural Heritage Management Plan (ACHMP) which is also being reviewed. The revised ACHMP will be submitted for approval.	Completed.

Condition Reference	Context	Recommended / Action from IEA	Action Proposed by Bulga Coal	By When
SSD 4960 Schedule 3, Condition 56	Rehabilitation Strategy has not been prepared as required by the condition.	There is no rehabilitation strategy - request any evidence of an exemption from the department and that the RMP from the mining lease can be used, rather than the RMP from the SSD conditions. If this document is required by DPHI, seek a specific timeline to prepare it.	Bulga Coal will seek to remove these conditions in the next project modification as it duplicated the requirements of Schedule 3 condition 55. Rehabilitation Management Plan. This will be submitted along with other minor administrative changes to modify the SSD.	Ongoing

11.0 Incidents and Non-Compliances

During the Reporting Period

Incidents and non-compliances which are considered as low risk of environmental harm are detailed in this section.

11.1 Administrative Non-Compliance

11.1.1 Failure to Continuously Monitor Air Quality

PM₁₀ air quality data was not monitored continuously at EPA Point 9 and Point 10 due to the equipment failure, power outages or planned maintenance at various times during 2025. For the reporting period 97.9% of valid data was captured for EPA Point 9, and 98.4% of valid data was captured for EPA Point 10.

The cause of the breakdowns were investigated promptly, and the monitors were fixed. Details were reported to the EPA in the 2024–2025 EPL 563 Annual Return, and are included in the *Annual Air Quality Report* in **Appendix B**.

PM_{2.5} air quality data was not monitored continuously at air quality monitors D2 and D10 due to equipment failure, power outages and planned maintenance at various times during the reporting period. Valid data was recorded for 97.3% and 99.2% of 24-hour events during the reporting period for D2 and D10 respectively.

PM₁₀ air quality data was not monitored continuously at air quality monitors D1, D3, D5 and D11 due to equipment failure, power outages and planned maintenance at various times during the reporting period. Valid data was recorded for 97.9%, 98.3%, 98.3% and 99.2% of 24-hour events during the reporting period respectively.

The cause/s of the breakdowns were investigated promptly, and the monitors were fixed. Further details are included in the *Annual Air Quality Report* in **Appendix B**.

11.1.2 Failure to Continuously Monitor Meteorological Data

Meteorological data was not monitored continuously at EPA Point 20, 21, and 23 due to planned maintenance, power outages or equipment failure at various times during 2025. For the reporting period all data recorded for all parameters across all three meteorological stations recoded valid data of 99.6% or above, with the exemption of air temperature at EPA Point 21 (Bulga Coal Complex), which recorded invalid data from January to 25 February 2025, due to a damaged temperature sensor guard. Upon review, the data was invalidated as it did not meet the AS/NZS 3580.14:2014 and the temperature sensor guard was replaced.

Details have been included in the EPA Annual Return and further details are included in the *Annual Air Quality Report* in **Appendix B**.

11.2 Noise Affected Night During the Attended Noise Monitoring at BCC8

On the night of 12 August 2025, during the attended noise monitoring at the BCC8 Monitoring location (154 Cobcroft Road), the night $L_{Aeq,15\text{-minute}}$ criterion of 36 dB and $L_{A1,1\text{-minute}}$ criterion of 45 dB were exceeded.

During the initial measurement at BCC8 starting at 22:00 on 12 August 2025, a mining continuum from Bulga Coal was audible throughout the measurement, generating a site-only L_{Aeq} of 37 dB, which exceeded the limit by 1 dB. Dozer tracks generated the site-only $L_{A1,1\text{minute}}$ of 47 dB, which exceeded the relevant limit by 2 dB.

In accordance with Section 5.6.4 of Bulga's Noise Management Plan (NMP), a remeasure was completed at BCC8 at 23:03 on 12 August 2025. A mining continuum from Bulga Coal was audible throughout this measurement, generating a site-only L_{Aeq} of 39 dB, which exceeded the limit by 3 dB. Dozer tracks generated the site-only $L_{A1,1\text{minute}}$ of 50 dB, which exceeded the relevant limit by 5 dB.

In accordance with the NMP, a follow-up measurement was scheduled to occur within one week of the initial exceedance at BCC8. During the follow-up measurement at BCC8 starting at 22:02 on the 18 August 2025, a mining continuum from Bulga Coal was audible throughout the measurement, generating a site-only L_{Aeq} of 23 dB. Surges in the continuum generated the site-only $L_{A1,1\text{minute}}$ of 29 dB. Noise levels complied with limits during the follow-up measurement.

Upon review of the meteorological data, both readings on 12 August 2025 were deemed valid and no enhancing conditions were applicable. Noise enhancing meteorological conditions were applicable on the night of the follow up measurement completed on 18 August 2025. Noise limits were adjusted by +5 dB during 'very noise-enhancing meteorological conditions' in accordance with the *Noise Policy for Industry*.

The meteorological conditions during the monitoring nights are presented in **Table 11.1**.

Table 11.1 Meteorological Conditions During the Nights of 12 and 19 August 2025

Location	Start Date and Time	Wind		Stability Class	Very Enhancing
		Speed	Direction		
BCC1	12/08/2025 22:53	1.3	187	D	No
BCC2	12/08/2025 23:45	0.9	191	F	No
BCC3	13/08/2025 00:15	2.1	196	D	No
BCC4	13/08/2025 01:15	0.8	321	D	No
BCC5	12/08/2025 23:41	1.4	180	E	No
BCC7	12/08/2025 22:34	1.4	181	D	No
BCC8	12/08/2025 22:00	1.4	178	E	No
BCC8	12/08/2025 23:03	1.6	180	E	No
BCC8	18/08/2025 22:02	3.4	193	D	Yes
BCC9	13/08/2025 00:48	1.0	196	E	No
BCC10	13/08/2025 01:29	1.0	308	F	No

Actions taken during the night:

Before the exceedance Bulga Coal had pre-emptively modified its operations to reduce noise levels by shutting down three excavators and a number of associated trucks. In addition, alternative dumps and hauls were used; which included relocating trucks from elevated dumps to lower dumps and shutting down the Skyline Haul Road.

Further equipment was shut down following the exceedance, which included one excavator, four bulldozers and 22 haul trucks.

Given the reported noise level during the BCC8 22:00 measurement only exceeded the LAeq,15-min by 1dB (37dB) and the LA1,1-min by 2 dB (47dB), and the fact the weather conditions appeared to have remained fairly stable, Bulga Coal formed the view that shutting down 27 of the most exposed pieces of mining equipment would have reduced the noise levels below the criteria and certainly not to have increased the noise levels.

EMM Consulting conducted a re-measure at BCC8 commencing at 23:03 and recorded an increase in noise levels for both the LAeq,15-min 39 dB and the LA1,1-min 50 dB. EMM Consulting notified Bulga Coal of the re-measure exceedance at 23:21. Bulga Coal then shut down additional equipment (Excavators 27 and 41, two bulldozers and 10 haul trucks).

Action taken following the noise affected night:

- Follow up measurement completed on 18 August 2025 recorded a site-only L_{Aeq} of 23 dB and a site-only L_{A1,1minute} of 29 dB from Bulga Coal, which were below criteria.
- Bulga Coal has also completed noise management refresher training for Dispatch and Open Cut Examiners (OCEs), reinforcing the need to act early and verify with in field measurements where elevated noise levels are away from the real time noise monitors.

12.0 Activities to Be Completed in the Next Reporting Period

12.1 Proposed Activities

The works listed in **Table 12.1** will be completed in 2026 at Bulga Coal to improve the environmental and/or community performance of the operation.

Table 12.1 Bulga Coal Proposed Activities 2026

Topic	Proposed Activity	By When
Rehabilitation and decommissioning	Completion of 80 ha of Rehabilitation. Rehabilitation will be completed at the Noise and Visual Bund and East Pit. Decommissioning and demolition of Bulga Underground Operations infrastructure, including the site Power Station and Blakefield South goaf wells (BLK7H and BLK7G)	December 2026
Noise	Commence silent horns system trial	March 2026
Offsets	Continue the active management actions at The Vere Offset for Year 2 and 3	December 2026
Community	Continue engagement with RAPs and other community members to enhance and promote local projects	December 2026