

WAMBO COAL PTY LIMITED



SOUTH BATES EXTENSION UNDERGROUND MINE

EXTRACTION PLAN LONGWALLS 24 TO 26

APPENDIX G COAL RESOURCE RECOVERY PLAN

WAMBO COAL PTY LIMITED
SOUTH BATES EXTENSION UNDERGROUND MINE

COAL RESOURCE RECOVERY PLAN
LONGWALLS 24 - 26



PREPARED BY
WAMBO COAL PTY LIMITED

June 2023
Project No. WAM-09-15
Document No. 01163366

DOCUMENT CONTROL

Document No.	CRRP LW24-26
Title	Coal Resource Recovery Plan for South Bates Extension Underground Mine Longwalls 24 to 26
General Description	A plan demonstrating the effective recovery of the available resource from the mining of Longwalls 24 to 26 at the South Bates Extension Underground Mine
Key Support Documents	Wambo Coal Extraction Plan for South Bates Extension Underground Mine Longwalls 24 to 26

Revisions

Rev No	Date	Description	By	Checked
A	June 2023	Final for Submission	WCPL and Resource Strategies	T. Chisholm

The nominated Coordinator for this document is	Technical Services Superintendent
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1 INTRODUCTION

The Wambo Coal Mine is an open cut and underground coal mining operation located approximately 15 kilometres (km) west of Singleton, near the village of Warkworth, New South Wales (NSW) (**Figure 1**). The Wambo Coal Mine is owned and operated by Wambo Coal Pty Limited (WCPL), a subsidiary of Peabody Energy Australia Pty Limited.

The potential environmental impacts of the existing Wambo Coal Mine were assessed in the *Wambo Development Project Environmental Impact Statement* (the Wambo Development Project EIS) (WCPL, 2003). Development Consent DA 305-7-2003 for the Wambo Coal Mine was granted on 4 February 2004 by the then NSW Minister for Urban Affairs and Planning under Part 4 of the NSW *Environmental Planning and Assessment Act, 1979*.

The South Bates Extension Underground Mine is a component of the approved Wambo Coal Mine. An application to modify the Development Consent (DA 305-7-2003 MOD 19) to allow for the optimisation and continued operations of the South Bates Extension Underground Mine through the reorientation of Longwalls 24 and 25, and the addition of Longwall 26 (WCPL, 2022) was approved on 25 January 2023. The application was accompanied by the *Longwall 24 to 26 Modification* (Modification 19) Modification Report (WCPL, 2022).

The South Bates Extension Underground Mine commenced in Longwall 17 in December 2018 and involves extraction of coal by longwall mining methods from the Whybrow Seam within Coal Lease (CL) 397, Mining Lease (ML) 1594, ML 1572, ML 1806 and Mining Lease Application (MLA) 632 (**Figure 2**).

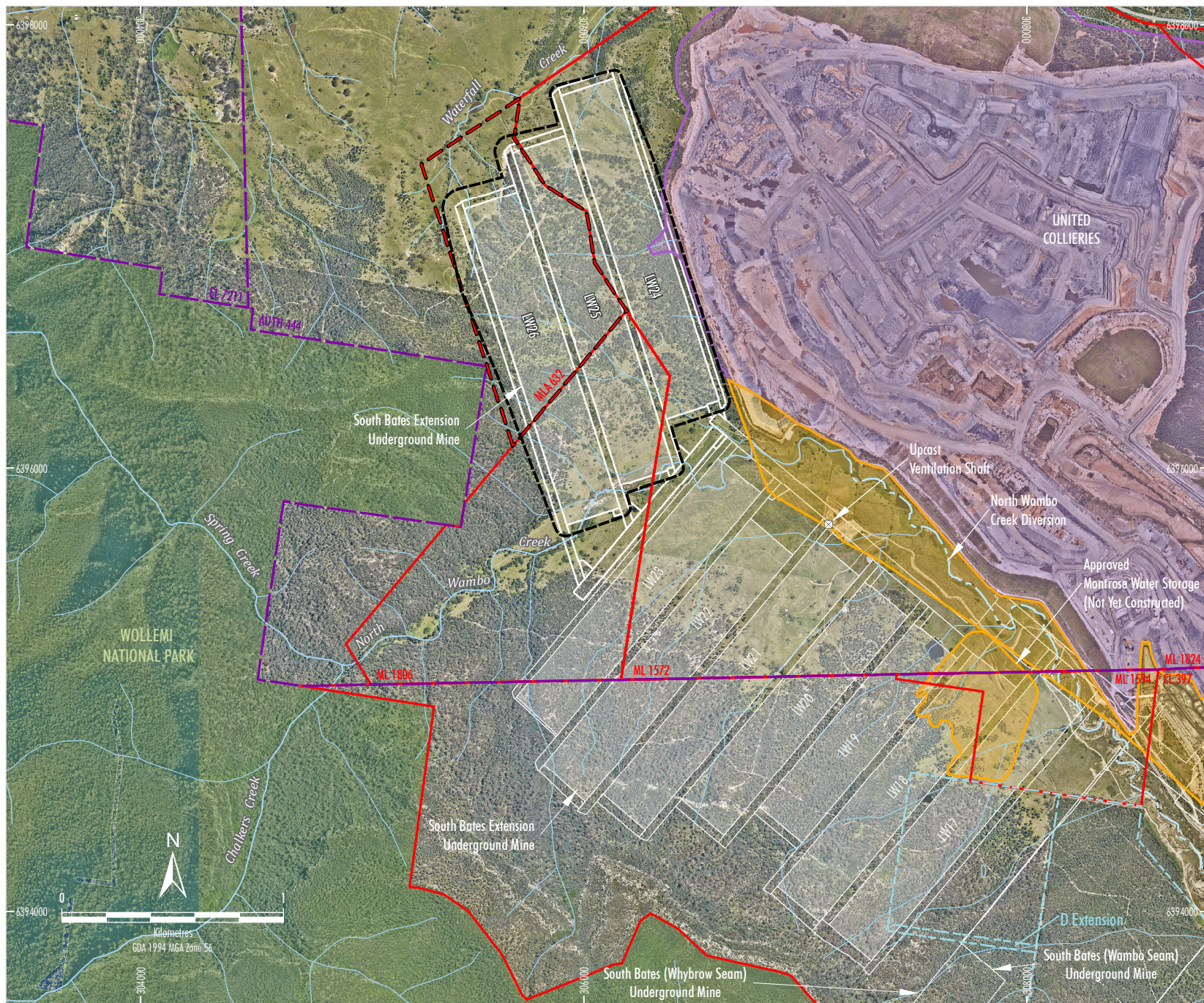
1.1 PURPOSE AND SCOPE

Purpose: This Coal Resource Recovery Plan (CRRP) for Longwalls 24 to 26 has been prepared to demonstrate the effective recovery of the available resource at the South Bates Extension Underground Mine.

Scope: This CRRP includes Longwalls 24 to 26 of the South Bates Extension Underground Mine.

This CRRP has been prepared in accordance with Condition B7(e) of Schedule 2 of the Development Consent (DA 305-7-2003) as a component of the South Bates Extension Underground Mine Longwalls 24 to 26 Extraction Plan.

Plans 1 to 7 as described in the *Extraction Plan Guideline* (Department of Planning and Environment, 2022) are provided in **Attachment 1**. **Plan 1**, **Plan 2** and **Plan 7 (Attachment 1)** present the approved mine plan, Longwalls 24 to 26 Application Area and surface features overlying Longwalls 24 to 26. **Plan 5** presents the current WCPL mining tenements and details land ownership.



- LEGEND**
- National Park
 - SSD 7142 Operational Area #
 - Wambo Coal Mine
 - Exploration Licence Boundary (AUTH, EL)
 - Mining and Coal Lease Boundary (ML, CL, CCL)
 - Mining Lease Application Boundary (MLA)
 - Remnant Woodland Enhancement Program (RWEPP) Area
 - Existing/Approved Wambo Coal Mine Surface Development Area
 - Ventilation Shaft
 - Existing/Approved Underground Development
 - Extraction Plan Application Area

Under Phase 2 of mining at Wambo Coal Mine (commenced 1 December 2020), this area is operated by United Collieries Pty Ltd under the United Wambo Joint Venture Project.

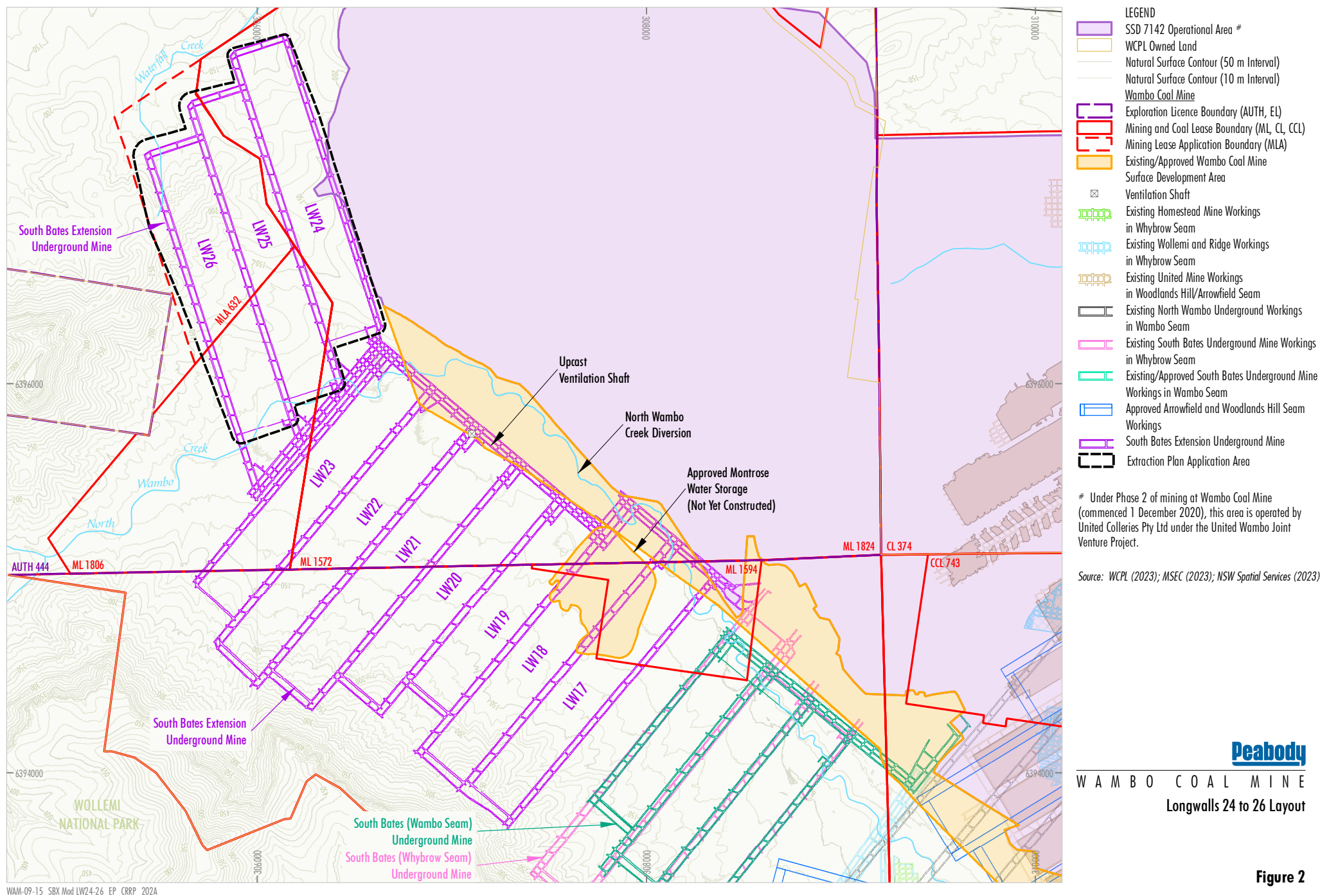
Source: WCPL (2023); MSEC (2023); NSW Spatial Services (2023)
Orthophoto: WCPL (Nov 2022)

Peabody

WAMBO COAL MINE

Aerial Photograph of Longwalls 24 - 26

Figure 1



2 RESOURCE DESCRIPTION

2.1 SITE GEOLOGY OVERVIEW

The Wambo Coal Mine is situated within the Hunter Coalfield subdivision of the Sydney Basin, which forms the southern part of the Sydney-Gunnedah-Bowen Basin (WCPL, 2003). The coal-bearing rocks of the Sydney Basin are Permian in age and are typically associated with low-lying gentle topography (WCPL, 2003). The overlying rocks of Triassic age cover large parts of the Sydney Basin and tend to form prominent escarpments where they outcrop (WCPL, 2003).

Mining activities at the Wambo Coal Mine include both open cut and underground mining of several coal seams from the Wittingham Coal Measures, which combine with the Newcastle Coal Measures to form the Singleton Supergroup (**Figure 3**). A summary of the coal measure stratigraphy underlying the Wambo Coal Mine area is provided in **Figure 3**.

The Wittingham Coal Measures are divided into the Jerrys Plains Subgroup, Vane Subgroup, Denman Formation and Archerfield Sandstone (WCPL, 2003). The Jerrys Plains Subgroup contains eight formations with 15 named coal seams (WCPL, 2003). The Jerrys Plains Subgroup is up to 800 metres (m) thick and generally consists of relatively coarse clastic sediments (Department of Mineral Resources, 1993). The sedimentary rock layers above and between coal seams are typically lithic sandstone, siltstone and conglomerate, while minor carbonaceous claystone and tuff occurs throughout the sequence (WCPL, 2003).

Coal seams previously, currently and approved to be mined at the Wambo Coal Mine include (**Figure 3**):

- Whybrow Seam;
- Redbank Creek Seam;
- Wambo Seam;
- Whynot Seam;
- Arrowfield Seam; and
- Woodlands Hill Seam.

These seams dip gently to the south-west at approximately 2 to 3 degrees, with minor local variations due to varying thicknesses of inter-seam sediments and fault zones (WCPL, 2003). Faulting usually trends north or north-east to south-west with normal throws of up to 10 m, with some low angle thrusts (i.e. reverse faults) of variable throw (MineConsult, 2001).

The South Bates Extension Underground Mine targets the Whybrow Seam, which produces a low ash thermal coal. Run-of-mine (ROM) coal will be crushed and washed at the Wambo Coal Mine Coal Handling and Preparation Plant. Product coal from the South Bates Extension Underground Mine will be considered suitable for export and domestic markets.

2.2 OVERBURDEN LITHOLOGICAL AND GEOTECHNICAL CHARACTERISTICS

The overburden of the Longwalls 24 to 26 Application Area consists predominately of interbedded sandstone and siltstone layers, with minor claystone, mudstone, shale, tuffaceous and coal layers (Mine Subsidence Engineering Consultants [MSEC], 2023).

SUPERGROUP	GROUP	SUBGROUP	FORMATION	SEAM	
SINGLETON SUPERGROUP	NARRABEEN GROUP	WIDDEN BROOK CONGLOMERATE			
	NEWCASTLE COAL MEASURES ¹	GLEN GALLIC SUBGROUP	Greigs Creek Coal		
			Redmanvale Creek Formation		
			Dights Creek Coal		
		DOYLES CREEK SUBGROUP	Waterfall Gully Formation		
			Pinegrove Formation		
		HORSESHOE CREEK SUBGROUP	Lucernia Coal		
			Strathmore Formation		
			Alcheringa Coal		
			Clifford Formation		
		APPLETREE FLAT SUBGROUP	Charlton Formation		
			Abbey Green Coal		
		WATTS SANDSTONE			
	WITTINGHAM COAL MEASURES	DENMAN FORMATION			
		JERRYS PLAINS SUBGROUP	Mount Leonard Formation	Whybrow Seam ²	
			Althorpe Formation		
			Malabar Formation	Redbank Creek Seam ²	
				Wambo Seam ²	
				Whynot Seam ²	
				Blakefield Seam	
			Mount Ogilvie Formation	Glen Munro Seam	
				Woodlands Hill Seam ²	
			Milbrodale Formation		
			Mount Thorley Formation	Arrowfield Seam ²	
				Bowfield Seam ³	
				Warkworth Seam ³	
			Fairford Formation		
			Burnamwood Formation	Mount Arthur Seam ³	
				Piercefield Seam ³	
				Vaux Seam ³	
				Broonie Seam	
				Bayswater Seam	
		ARCHERFIELD SANDSTONE			
		VANE SUBGROUP	Bulga Formation		
			Foybrook Formation		
			Saltwater Creek Formation		

¹ Previously known as the Wallambi Coal Measures.

² Coal reserves currently approved to be mined at the Wambo Coal Mine.

³ Coal reserves proposed to be mined by the United Wambo Open Cut Coal Mine Project (SSD 7142).

After: DMR (1993)

Figure 3

There are no massive sandstone or conglomerate units within the overburden. The largest is a 17 m thick sandstone layer located approximately 30 m above the Whybrow Seam. Otherwise, the thicknesses of the formations within the overburden are typically less than 10 m. Other boreholes in the vicinity of the mining area indicate the presence of other larger sandstone units with thicknesses up to 20 m in the lower part of the overburden (MSEC, 2023).

No adjustment factors have been applied in the subsidence prediction model for any massive strata units or for softer floor conditions, as the longwalls are supercritical in width and therefore are predicted to achieve the maximum subsidence for single-seam mining conditions (MSEC, 2023).

Estimates of the material strength and stiffness properties present in the overburden materials are summarised in **Table 1**.

Table 1
Strength Property Estimates for Lithology in the Vicinity of the
South Bates Extension Underground Mine

Unit Lithology	Unit Thickness Average (m)	Average UCS (MPa)	Laboratory Elastic Modulus* Average (GPa)	Poisson's Ratio
Roof Material above Whybrow Seam	28.04	29.1	6.7	0.20

* Young's Modulus (E) derived from laboratory and sonic UCS data, $E = 300 \times \text{UCS}$ (units are in GPa).

Note: UCS = unconfined compressive strength. MPa = megapascal. GPa = gigapascal.

2.3 LITHOLOGICAL AND GEOTECHNICAL CHARACTERISTICS (ROOF AND FLOOR STRATA)

The overburden of the Whybrow Seam predominately comprises of interbedded sandstone and siltstone layers, with minor claystone, mudstone, shale, tuffaceous and coal layers throughout the overburden (MSEC, 2023). Longwalls 24 to 26 will mine the Whybrow Seam.

Historical workings are discussed in **Section 2.6**.

Estimates of the range of material strength and stiffness properties present in the roof of the mine workings coal seams are summarised in **Table 1**.

2.4 EXISTENCE AND CHARACTERISTICS OF GEOLOGICAL STRUCTURE

Regional geological structure in the Longwalls 24 to 26 Application Area consists of several faults. The largest structure in the area is the Redmanvale Fault which has a throw greater than 20 m and is located to the south-west of the longwalls.

The Redmanvale Fault is located more than 1 km from Longwall 26 at its closest point. At this distance, the Redmanvale Fault is not expected to affect the predicted subsidence effects or increased potential for adverse impacts (MSEC, 2023).

There are no major faults that have been identified within the extents of the proposed Longwall 24 to Longwall 26. Minor faults have been identified within the mining area with throws typically up to 1 m. A dyke crosses the mid-lengths of Longwalls 24 to 26. The faults and the dyke within the proposed mining area will be better defined through ongoing investigations and the development of first workings (MSEC, 2023).

No adjustment factors have been applied in the subsidence prediction model for any potential minor faults within the mining area, as the proposed longwalls are generally supercritical in width and, therefore, they are predicted to achieve the maximum subsidence for single-seam mining conditions (MSEC, 2023).

2.5 STABILITY OF UNDERGROUND WORKINGS

The design intent of the workings and method of extraction is such that the first workings provide long-term stable access to the longwall blocks or pillar panels, and the second workings are mined such that the overburden collapses (i.e. "goafs") in a controlled manner as the coal is removed. All of the subsidence movements that occur at the surface are generally the result of a new equilibrium being achieved (i.e. chain pillars and overlying strata compress elastically and overburden caves and eventually 're-supports' itself on bulked and broken ground).

The NSW Resources Regulator indicated that it was satisfied that WCPL would achieve the required outcomes of the first workings condition of the Development Consent (DA-305-7-2003, Condition B6 of Schedule 2) for Longwall 24 in March 2022.

On 28 February 2022, WCPL requested that the NSW Resources Regulator consider changes to the first workings of Longwall 24. The NSW Resources Regulator confirmed it was satisfied that WCPL could achieve the outcomes of the first workings condition of the Development Consent (DA-305-7-2003, Condition B6 of Schedule 2) of the varied Longwall 24 first workings.

WCPL will request confirmation that the NSW Resources Regulator is satisfied that the first workings of Longwalls 25 and 26 are designed to remain stable and non-subsiding in the long-term prior to commencing these works.

The longwall blocks are also designed with barrier pillars at the ends of the blocks to protect the adjacent first workings pillars (mains) from any abutment loading. Adequate set-back from highwall crests is also provided.

The chain pillars are designed to provide serviceable gate roads for access and ventilation and may yield or crush out after mining is completed.

2.6 HISTORICAL MINING

There are no other currently existing longwalls immediately above or below Longwalls 24 to 26. The closest extracted longwalls are Longwalls 17 to 23 in the South Bates Extension (Whybrow Seam) Underground Mine and in the adjacent South Bates (Whybrow and Wambo Seam) Underground Mine, which are to the south-east of Longwall 17. Extraction in the Whybrow Seam (Longwalls 11 to 13) was completed in June 2017. Extraction in the Wambo Seam (Longwalls 14 to 16) was completed in November 2018. Extraction in the Whybrow Seam (Longwalls 17 to 23) commenced in December 2018, and WCPL is currently extracting Longwall 23 in the Whybrow Seam.

3 RESOURCE RECOVERY

3.1 MINING GEOMETRY

The currently approved orientation and footprint of the South Bates Extension Underground Mine was assessed as part of the Modification 19 Modification Report (WCPL, 2022).

Extraction of Longwalls 21 to 23 is in progress at the South Bates Extension Underground Mine.

The layout of Longwalls 24 to 26 is presented in **Plan 1 (Attachment 1)**, and key panel dimensions for Longwalls 24 to 26 are presented in **Table 2**.

Table 2
Key Longwall Panel Dimensions

Dimension	Longwall 24	Longwall 25	Longwall 26
Gate Road Width (m)	5.40		
Gate Road Height (m)	3.0		
Maingate Chain Pillar Width (m)	25	25	25
Tailgate Chain Pillar Width (m)	17	25	25
Longwall Void Width (m) ¹	262	262	262
Longwall Void Length (m) ²	1,545	1,586	1,507
Extraction Height (m)	2.8 to 3.0	2.8 to 3.0	2.8 to 3.0

¹ Including gate roads.

² Including installation headings.

3.2 COVER DEPTH

The depth of cover above Longwalls 24 to 26 ranges from a minimum of 44 m above the finishing (north-eastern) ends of the longwalls, up to a maximum of 330 m above the commencing (south-western) ends of the longwalls.

The cover depth increases to the north-west, consistent with the seam dip and topography.

3.3 MINING METHOD

Longwalls 24 to 26 will be extracted using retreating longwall mining methods for secondary extraction of panels with approximately 262 m void width (extraction face of approximately 251 m). Construction of development main headings, maingates and tailgates will be undertaken using continuous miners.

3.4 MINING SCHEDULE

WCPL operates its mines seven days per week, 24 hours per day on a rotating shift basis. The proposed sequence of mining for Longwalls 24 to 26 at the South Bates Extension Underground Mine and anticipated/actual start and completion dates are summarised in **Table 3**.

Table 3
Proposed Mining Schedule (Secondary Extraction)

Longwall	Estimated Start Date	Estimated Duration	Estimated Completion Date
Longwall 24	December 2023	8 months	August 2024
Longwall 25	November 2024	8 months	July 2025
Longwall 26	October 2025	8 months	June 2026

3.5 FUTURE MINING

No additional Extraction Plans are currently anticipated for the currently approved South Bates Extension Underground Mine.

In addition to the approved South Bates Extension Underground Mine, the Development Consent (DA 305-7-2003) provides consent for underground mining by longwall methods in the Arrowfield and Woodlands Hill Seams (**Figure 1**). The future workings in the Arrowfield and Woodlands Hill Seams are located to the south-east of Longwalls 17 to 26 (**Figures 1 and 2**). The approved future underground longwall workings are described in the Wambo Development Project EIS (WCPL, 2003) and *South Wambo Underground Mine Modification Environmental Assessment* (WCPL, 2016) and will be the subject of a future Extraction Plan.

An application to modify the Development Consent (DA 305-7-2003 MOD 16) was lodged in November 2016 to support the proposed United Wambo Open Cut Coal Mine Project. The Modification was approved on 28 August 2019 and allows open cut mining at the United Wambo Open Cut Coal Mine, which is managed by Glencore Australia.

Mining of the Whybrow Seam by open cut mining methods in the South Bates Extension Underground Mine area is not viable due to increasing depth of cover and the presence of Remnant Woodland Enhancement Program (RWEPP) areas.

3.6 RESOURCE RECOVERY

Resource estimates and proposed recovery for Longwalls 24 to 26 are summarised in **Table 4**. The mining layout for Longwalls 24 to 26 maximises resource recovery, which is estimated to be approximately 85%.

Table 4
Estimated Resource Recovery from Longwalls 24 to 26

Aspect	Million Tonnes
Available Resource	6.7
Development ROM Coal	0.7
Longwall ROM Coal	5.0
Total ROM Coal Recovered	5.7

The extent of Longwalls 24 to 26 is constrained by the extent of the previous longwalls (i.e. Longwalls 21 to 23) in the South Bates Extension Underground Mine to the south, the extent of the approved Montrose West open cut pit and geological structures to the east and the Wollemi National Park escarpment to the west.

3.7 MINE PLAN JUSTIFICATION

The sequence of underground mining at the Wambo Coal Mine has been adopted to minimise the potential for sterilisation of coal reserves. The **Approved Plan (Attachment 1)** presents the Longwalls 24 to 26 layout which has been developed in consideration of detailed exploration drilling and key environmental studies, as described in the Modification 19 Modification Report (WCPL, 2022).

The monitoring of subsidence impacts associated with the extraction of Longwalls 24 to 26 is described in the Subsidence Monitoring Program for Longwalls 24 to 26 (Appendix H of the Extraction Plan) and the relevant management plans summarised in Section 3 of the Extraction Plan.

4 REFERENCES

Department of Mineral Resources (1993) *Hunter Coalfield Regional Geology 1:100 000 Sheet*. New South Wales.

Department of Planning and Environment (2022) *Extraction Plan Guideline*.

MineConsult (2001) *Wambo Strategic Mine Plan Vol 1*. Report prepared for Wambo Mining Corporation Ltd.

Mine Subsidence Engineering Consultants (2023) *South Bates Extension Subsidence Assessment – Subsidence Predictions and Impact Assessments for the Natural and Built Features in Support of the Extraction Plan Application for the South Bates Extension WYLV24 to WYLV26*. Report MSEC1317 prepared for Wambo Coal Pty Limited.

Wambo Coal Pty Limited (2003) *Wambo Development Project Environmental Impact Statement*.

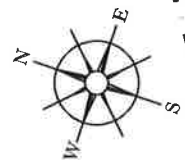
Wambo Coal Pty Limited (2016) *South Wambo Underground Mine Modification Environmental Assessment*.

Wambo Coal Pty Limited (2022) *Longwalls 24 to 26 Modification Report*.

ATTACHMENT 1

LONGWALLS 24 TO 26 PLANS 1 TO 7

- Plan 1 – Proposed and Existing Workings
- Plan 2 – Surface Features
- Plan 2b – Surface Features (Aerial Photo)
- Plan 3 – Whybrow Seam Structure
- Plan 4 – Existing and Proposed Wambo Seam Workings
- Plan 5 – Mining Titles and Land Ownership
- Plan 6 – Geological Sections (Boreholes)
- Plan 7 – Proposed and Existing Subsidence Monitoring



ML 1572 & ML 1824
A444

APPROVAL AREA

Wambo Opencut
Void Contours
(Montrose pit)

Montrose Pit

Longwall 24 ML 1824
& ML 1572

Longwall 25

Longwall 26

Longwall 23

ML 1824 &
ML 1572
ML 1806

MLA632

APPROVAL AREA

APPROVAL AREA

Approved Area

A444

ML 1806

ML 1806

I, Peter Jandzio, certify that the information
on this plan is a true indication of the proposed
development.

Mining Engineering Manager
Date 19/5/23

I, Malcolm Walker, certify that to the best of my
knowledge and belief this plan conforms to the
accuracy standards required by the Survey and
Drafting Directions NSW.

Mine Surveyor
Date 19/5/2023



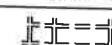
All measurements are in metres



Longwall Extraction Application Area
(based on 26.5° angle of draw)



Approved Extraction Area LW21-23



South Bates Extension Underground
Proposed Workings (Whybrow seam)



South Bates Extension Underground
Workings (Whybrow seam)



Lease Boundary
Lease Application
Boundary MLA632



Whybrow
Seam
Extents
Opencut Void
Contours (5m)

REV.	DATE	BY	DESCRIPTION	CHK.	REV.	DATE	BY	DESCRIPTION	CHK.
A	19/5/2023	MW	For Longwall 24 to 26 Submission	ND					

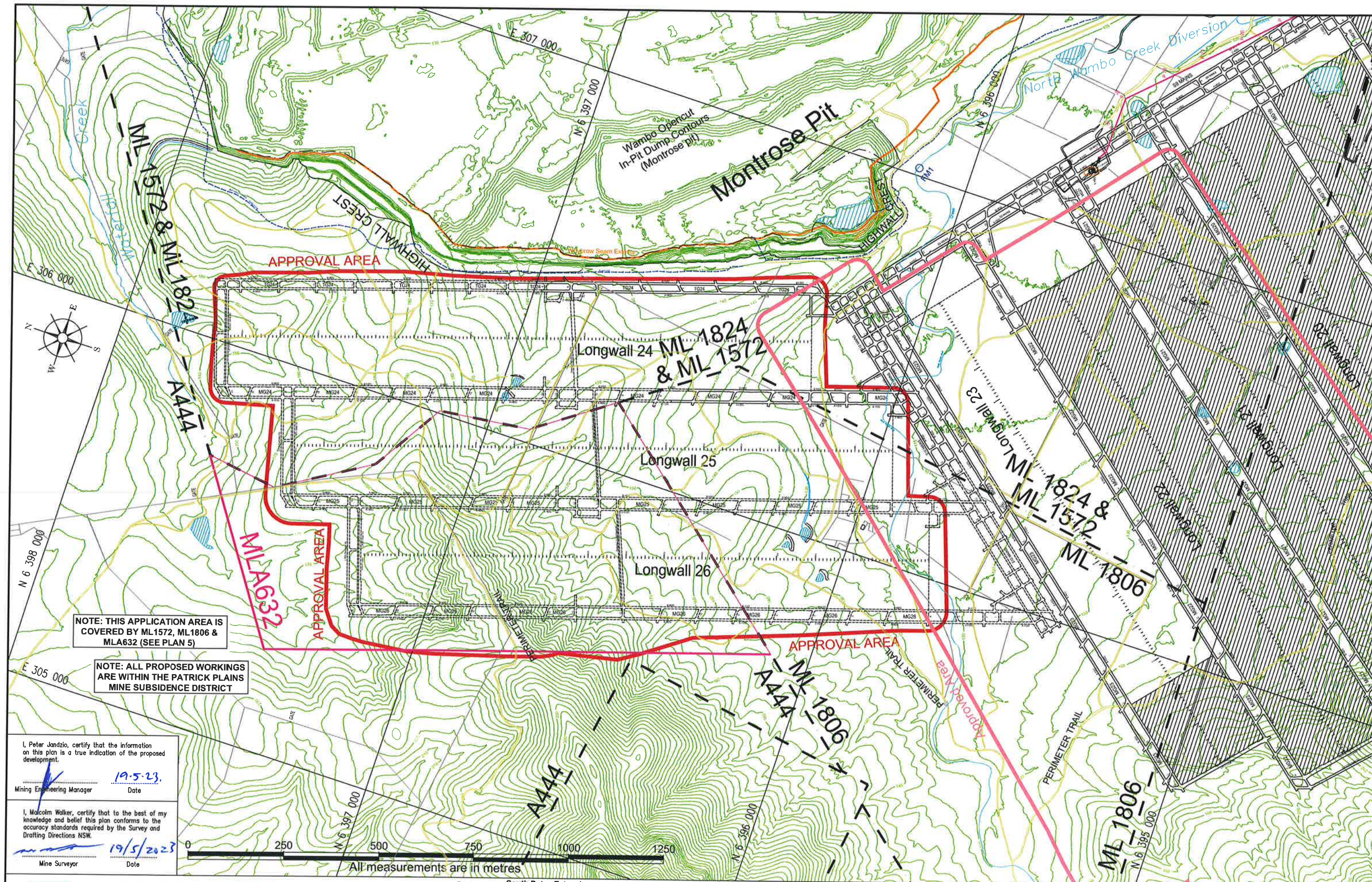


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Prepared by NWU Survey Ph: 02 65 702318

**South Bates Extension Underground Mine (Whybrow Seam)
Extraction Plan - Longwalls 24 to 26 (Revision A)
Plan 1 - Proposed and Existing Workings**

Date 11/05/2023
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Drawn MJW
Checked ND
Approved PJ

Drawing No.
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Revision No.
A_19/05/2023
Sheet Size
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I, Peter Jandzio, certify that the information on this plan is a true indication of the proposed development.
Mining Engineering Manager 19/5/23, Date

I, Malcolm Walker, certify that to the best of my knowledge and belief this plan conforms to the accuracy standards required by the Survey and Drafting Directions NSW.
Mine Surveyor 19/5/2023 Date

Longwall Extraction Application Area (based on 26.5° angle of draw)

Approved Extraction Area LW21-23

South Bates Extension Underground Proposed Workings (Whybrow Seam)

South Bates Extension Underground Existing Workings (Whybrow Seam)

85 Surface Contours

Opencut Whybrow Seam Mined Extents

Buildings

Water pipelines

Tracks

Fences

11kV Powerlines

Creek

REV.	DATE	BY	DESCRIPTION	CHK.	REV.	DATE	BY	DESCRIPTION	CHK.
A	19/5/2023	MW	For Longwall 24 to 26 Submission	ND					

Peabody

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South Bates Extension Underground Mine (Whybrow Seam)

Extraction Plan - Longwalls 24 to 26 (Revision A)

Plan 2 - Surface Features

Date

11/05/2023

Scale

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Drawn

MJW

Checked

ND

Approved

PJ

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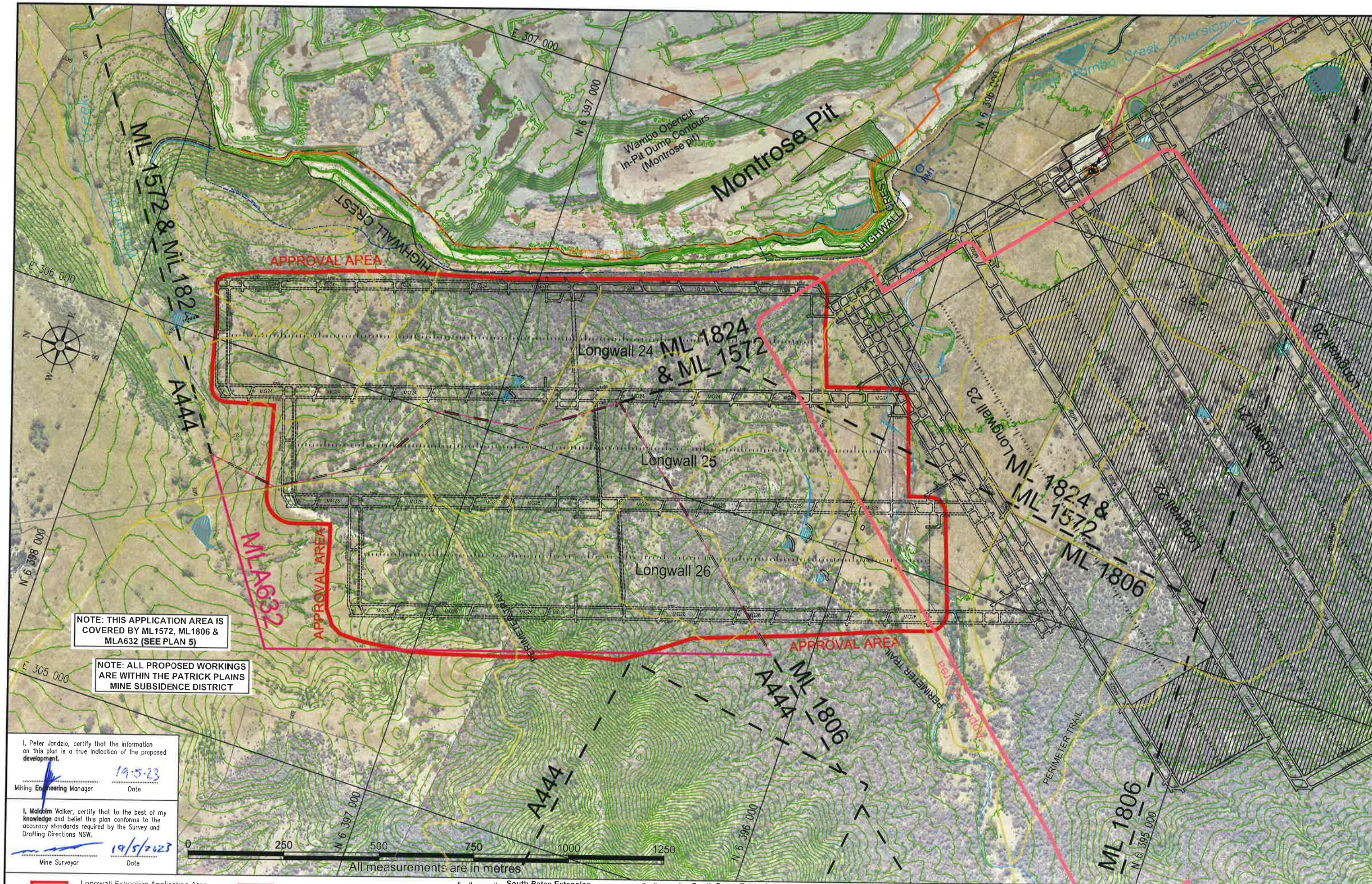
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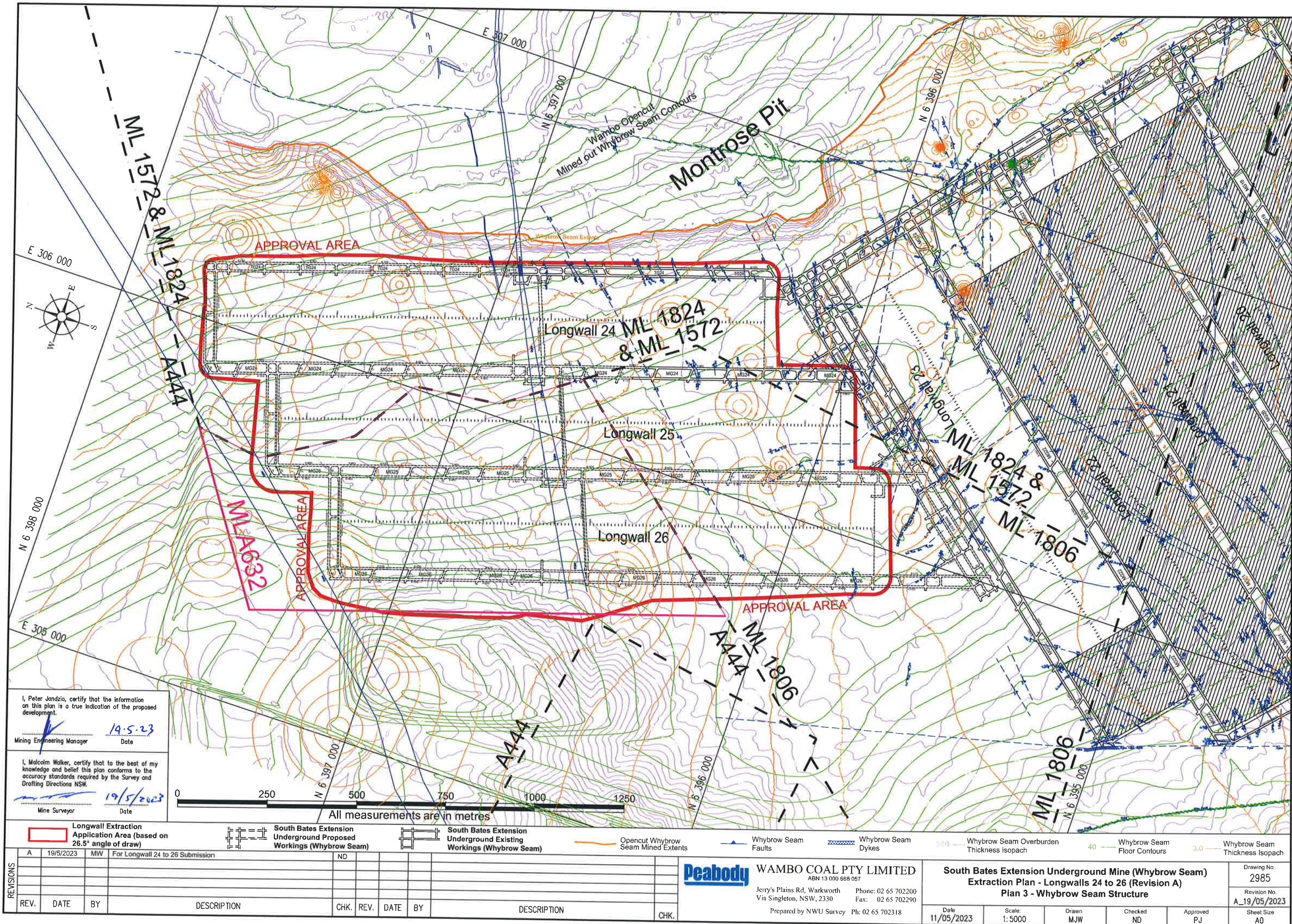
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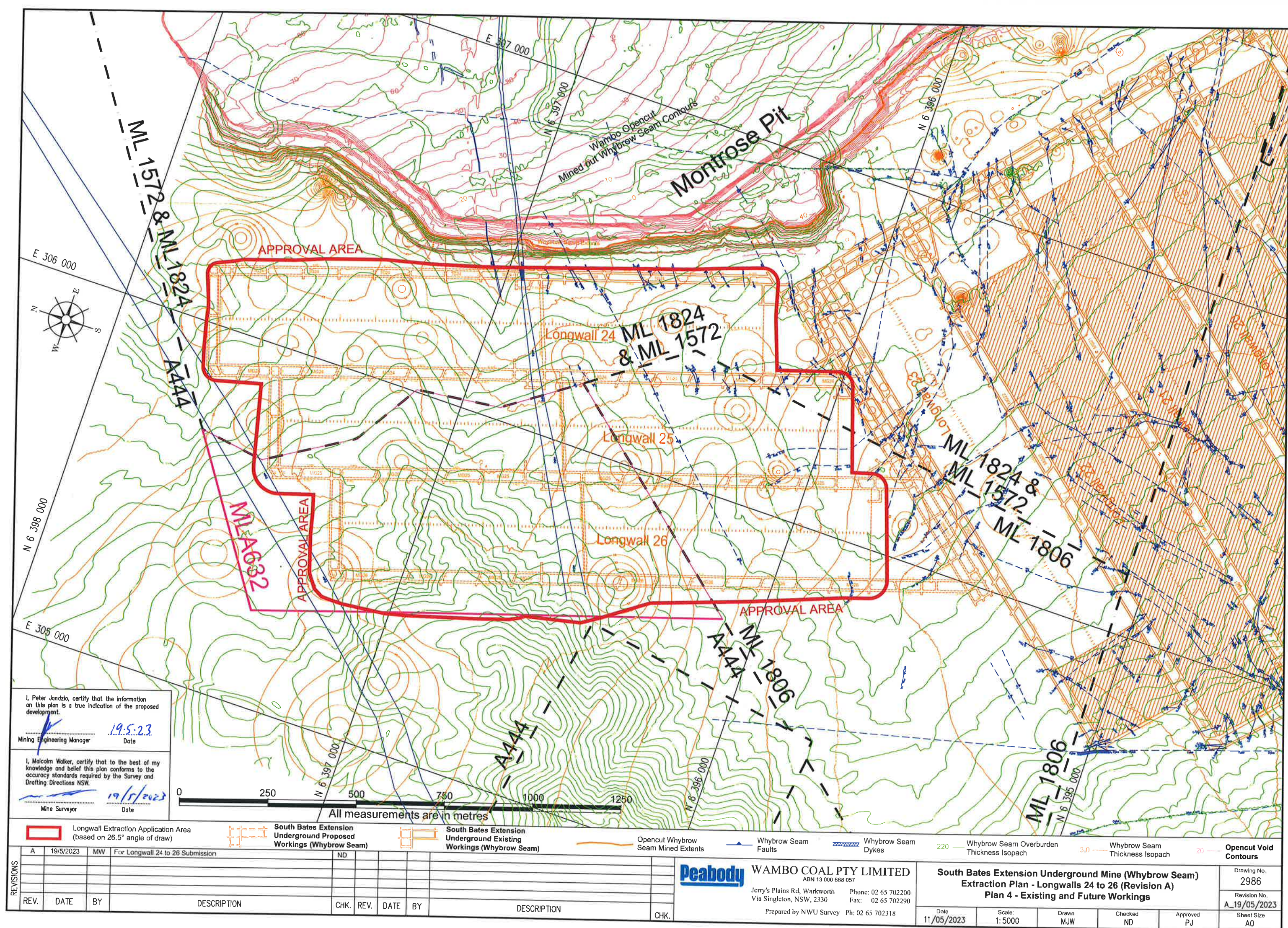


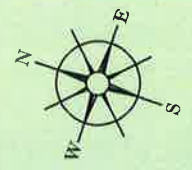
I, Peter Jandzio, certify that the information on this plan is a true indication of the proposed development.
Mining Engineering Manager
19/5/23
Date

I, Malcolm Walker, certify that to the best of my knowledge and belief this plan conforms to the accuracy standards required by the Survey and Drafting Directions NSW.
Mine Surveyor
19/5/2023
Date

Longwall Extraction Application Area (based on 26.5° angle of draw)										Approved Extraction Area LW21-23										South Bates Extension Underground Proposed Workings (Whybrow Seam)										South Bates Extension Underground Existing Workings (Whybrow Seam)										85 Surface Contours Opencut Whybrow Seam Mined Extents										Buildings Water pipelines										Tracks Fences										Creek 11kV Powerlines																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
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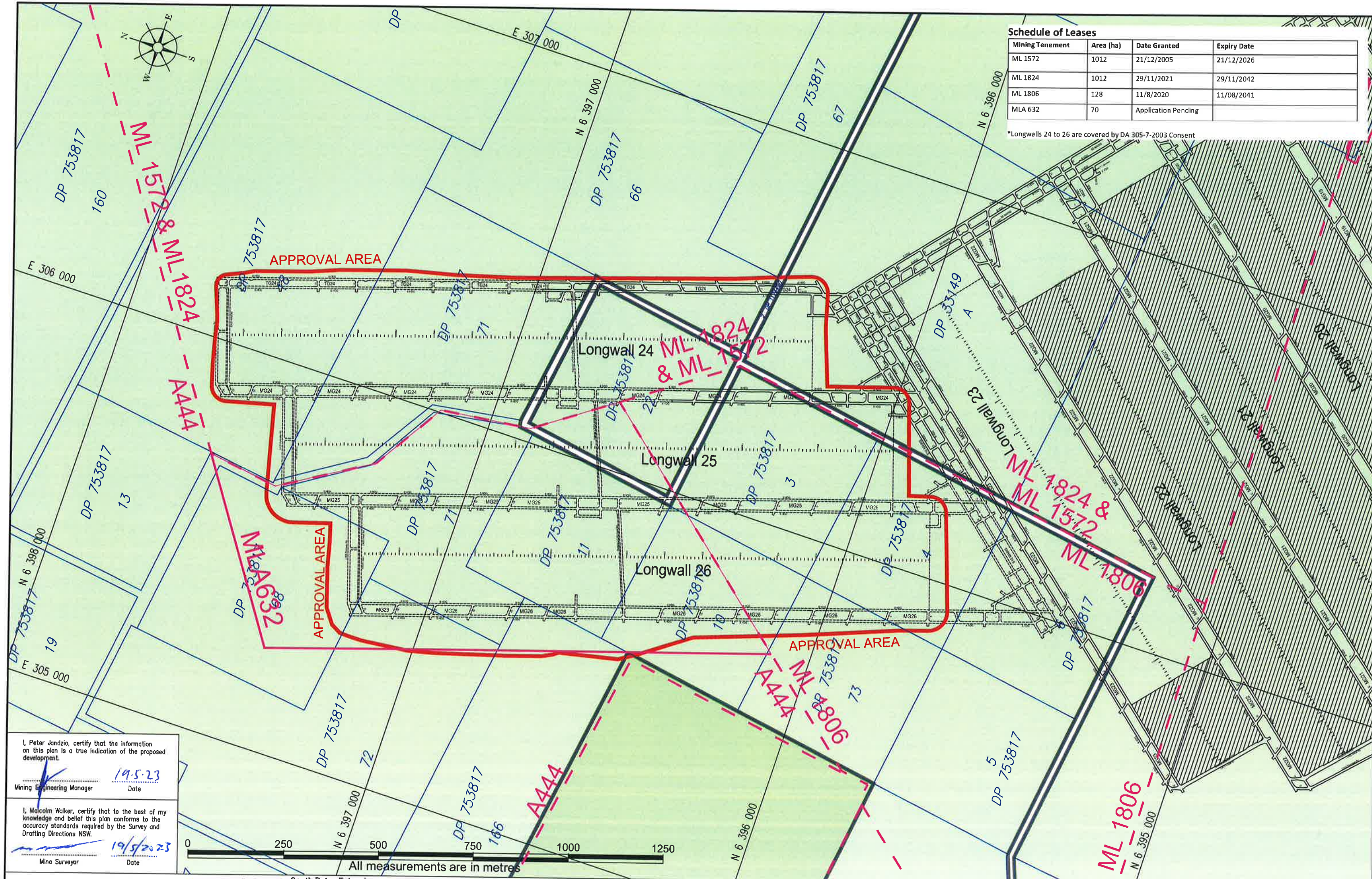






Schedule of Leases			
Mining Tenement	Area (ha)	Date Granted	Expiry Date
ML 1572	1012	21/12/2005	21/12/2026
ML 1824	1012	29/11/2021	29/11/2042
ML 1806	128	11/8/2020	11/08/2041
MLA 632	70	Application Pending	

*Longwalls 24 to 26 are covered by DA 305-7-2003 Consent



I, Peter Jandzio, certify that the information on this plan is a true indication of the proposed development.
Mining Engineering Manager
Date 19/5/23

I, Malcolm Walker, certify that to the best of my knowledge and belief this plan conforms to the accuracy standards required by the Survey and Drafting Directions NSW.
Mine Surveyor
Date 19/5/23

Longwall Extraction Application Area
(based on 26.5° angle of draw)

South Bates Extension
Underground Proposed
Workings (Whybrow Seam)

South Bates Extension
Underground Existing
Workings (Whybrow Seam)

DP 73823

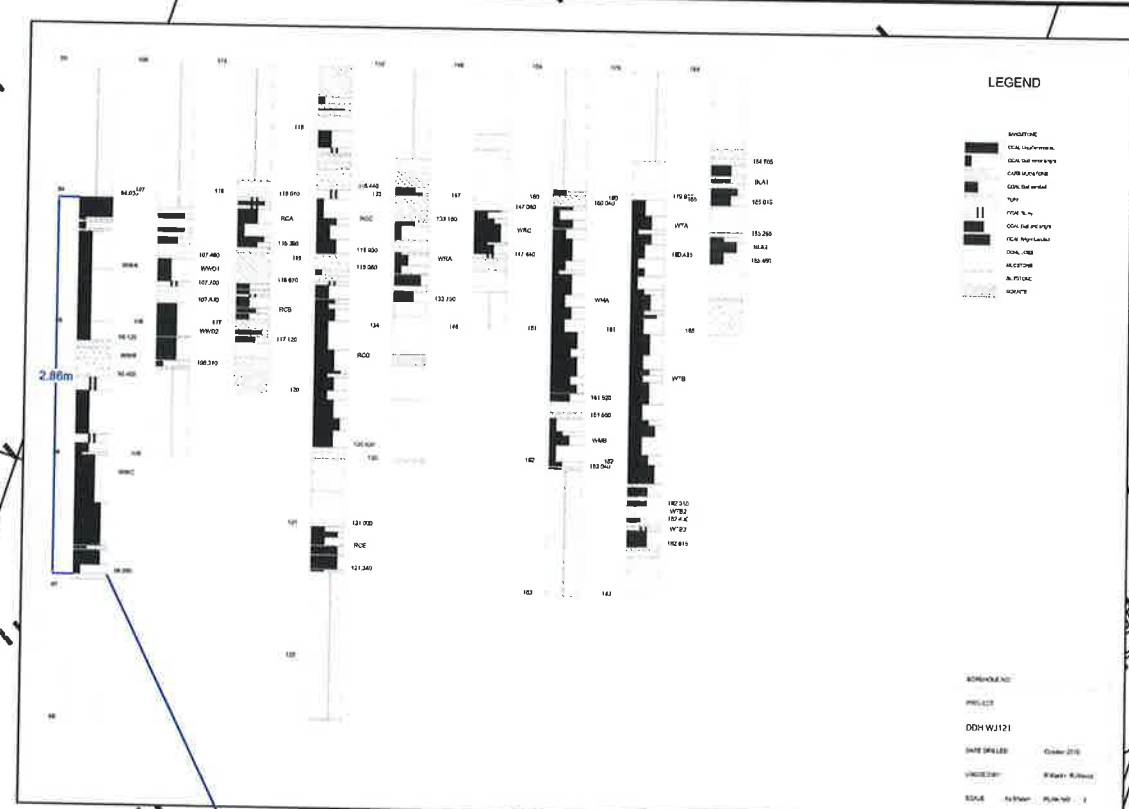
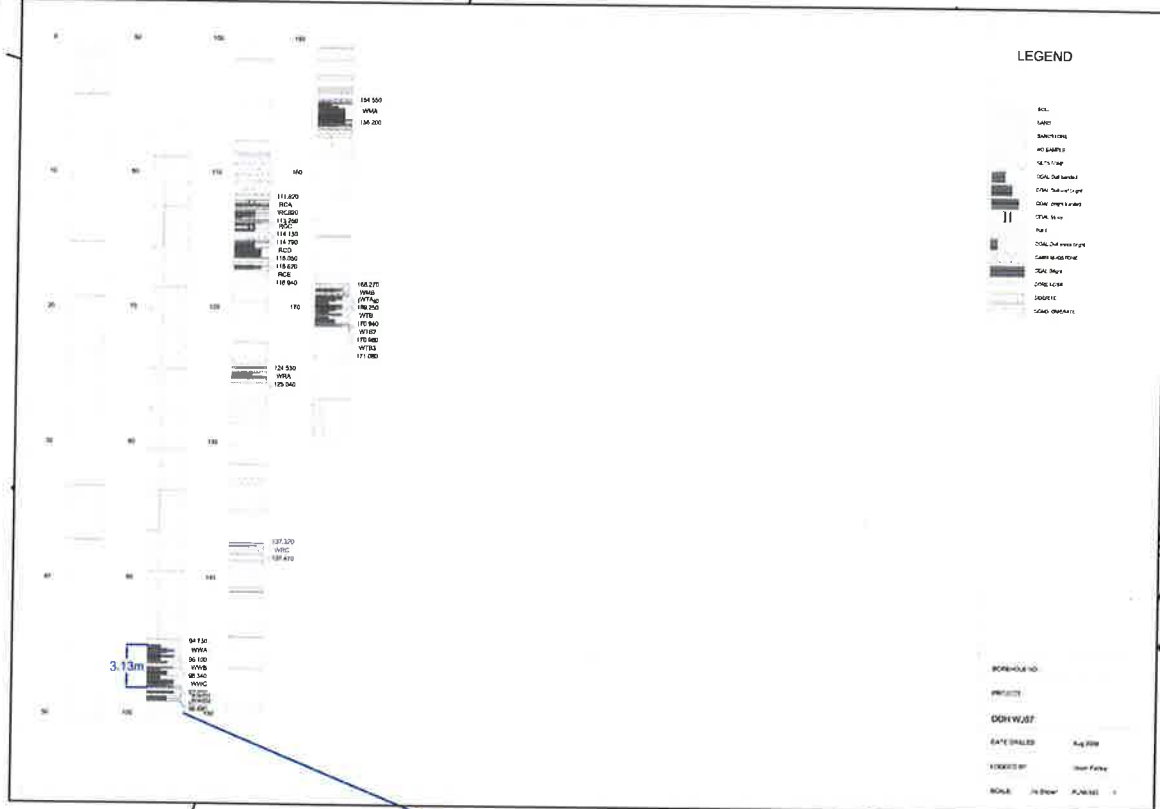
Digital Cadastral Database (DCDB)
(data provided has limited accuracy)

Reserve

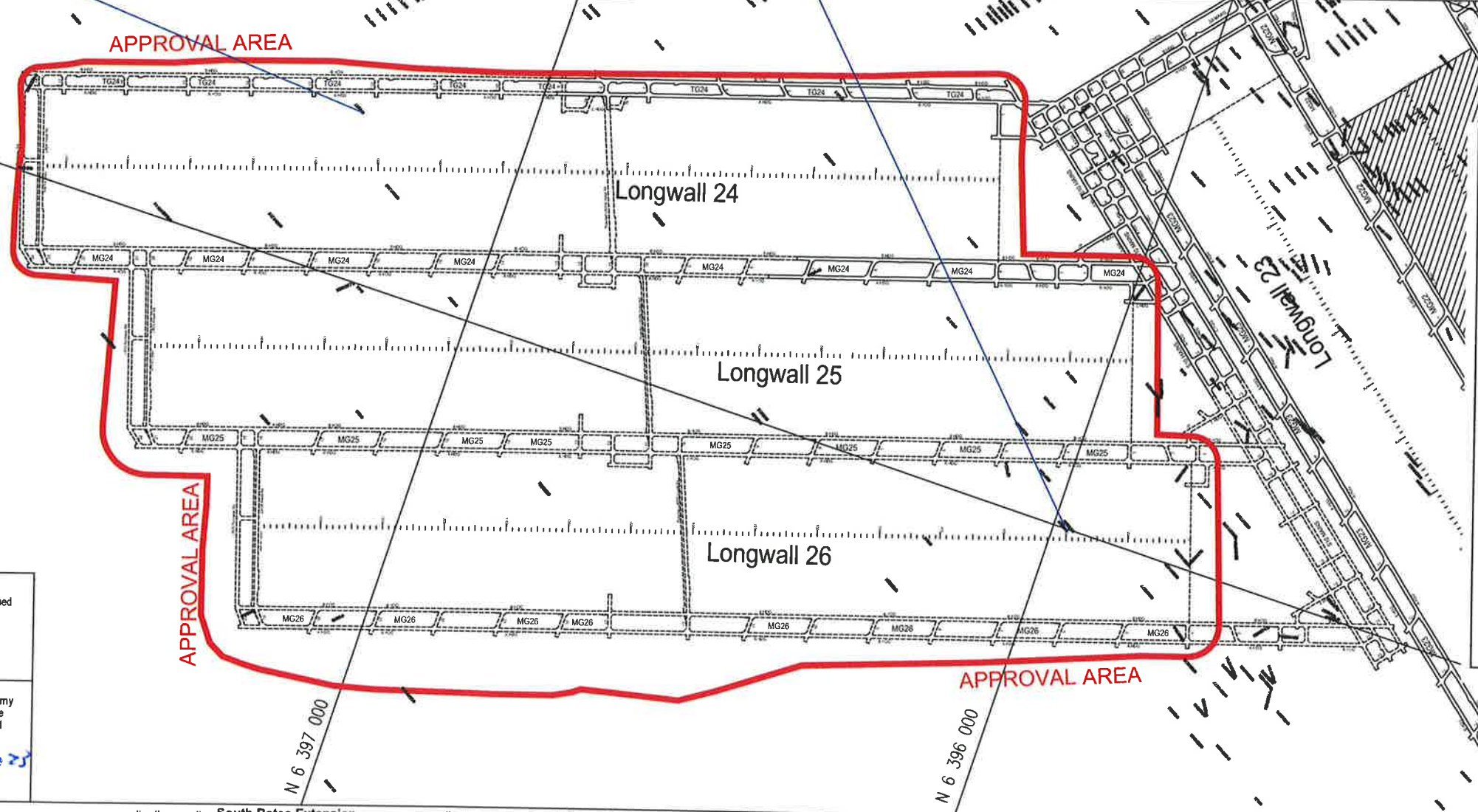
Wambo Coal Pty. Ltd

Wambo Mining Lease

A	19/5/2023	MW	For Longwall 24 to 26 Submission	ND																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
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SUPERGROUP	SUBGROUP	FORMATION	SEAM
WAMBO COAL MEASURES	WHYBROW SUBGROUP	Whybrow Coal Formation	Whybrow Coal Seam
		Whybrow Coal Formation	Whybrow Coal Seam
		Whybrow Coal Formation	Whybrow Coal Seam
		Whybrow Coal Formation	Whybrow Coal Seam
		Whybrow Coal Formation	Whybrow Coal Seam
	WHYBROW SUBGROUP	Whybrow Coal Formation	Whybrow Coal Seam
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WAMBO COAL MEASURES	WHYBROW SUBGROUP	Whybrow Coal Formation	Whybrow Coal Seam
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		Whybrow Coal Formation	Whybrow Coal Seam
	WHYBROW SUBGROUP	Whybrow Coal Formation	Whybrow Coal Seam
		Whybrow Coal Formation	Whybrow Coal Seam
		Whybrow Coal Formation	Whybrow Coal Seam
		Whybrow Coal Formation	Whybrow Coal Seam
		Whybrow Coal Formation	Whybrow Coal Seam



COAL SEAM DEVELOPMENT AND NOMENCLATURE APPLICATION IN WAMBO, UNITED, LEMINGTON & HUNTER VALLEY COLLIERIES

WAMBO	UNITED	LEMINGTON	H. VALLEY
Whybrow	Whybrow	Whybrow	Whybrow
Redbank Ck	Redbank Ck	Redbank Ck	Redbank Ck
Wambo	Wambo	Wambo	Wambo
Whynot	Whynot	Whynot	Whynot
Blakefield	Blakefield	Blakefield	Blakefield
Glen Munro	Blakefield	Blakefield	Glen Munro
Woodlands Hill	Glen Munro	Glen Munro	Woodlands Hill
Arrowfield	Woodlands Hill	Woodlands Hill	Arrowfield
Bowfield	Warkworth	Warkworth	Bowfield
Warkworth	Warkworth	Warkworth	Warkworth
Mt Arthur	Mt Arthur	Mt Arthur	Mt Arthur
Piercelfield	Piercelfield	Piercelfield	Piercelfield
Vaux	Vaux	Vaux	Vaux
Broonie	Broonie	Broonie	Broonie
Bayswater	Bayswater	Bayswater	Bayswater

I, Peter Jandzio, certify that the information on this plan is a true indication of the proposed development.

19/5/23
Mining Engineering Manager

I, Malcolm Walker, certify that to the best of my knowledge and belief this plan conforms to the accuracy standards required by the Survey and Drafting Directions NSW.

19/5/2023
Mine Surveyor

REV.	DATE	BY	DESCRIPTION	CHK.	REV.	DATE	BY	DESCRIPTION	CHK.
A	19/5/2023	MW	For Longwall 24 to 26 Submission	ND					

South Bates Extension Underground Proposed Workings (Whybrow Seam)

South Bates Extension Underground Existing Workings (Whybrow Seam)

Peabody WAMBO COAL PTY LIMITED
ABN 13 000 668 057

Jerry's Plains Rd, Warkworth
Via Singleton, NSW, 2330
Phone: 02 65 702200
Fax: 02 65 702290
Prepared by NWU Survey Ph: 02 65 702318

**South Bates Extension Underground Mine (Whybrow Seam)
Extraction Plan - Longwalls 24 to 25 (Revision A)
Plan 6 - Geological Sections (Boreholes)**

Date: 11/05/2023
Scale: 1:5000
Drawn: MJW
Checked: ND
Approved: PJ

Drawing No. 2988
Revision No. A_19/05/2023
Sheet Size A0

