

WAMBO COAL PTY LIMITED



SOUTH BATES EXTENSION UNDERGROUND MINE

EXTRACTION PLAN LONGWALLS 24 TO 26

APPENDIX G COAL RESOURCE RECOVERY PLAN

Peabody

WAMBO COAL PTY LIMITED
SOUTH BATES EXTENSION UNDERGROUND MINE

COAL RESOURCE RECOVERY PLAN
LONGWALLS 24 - 26



PREPARED BY
WAMBO COAL PTY LIMITED

November 2024
Project No. WAM-09-15
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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	M. Berry
B	November 2024	Updated to include revised mine layout of Longwalls 24-26	WCPL and Resource Strategies	

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 **ML 1873** (**Figure 2**).

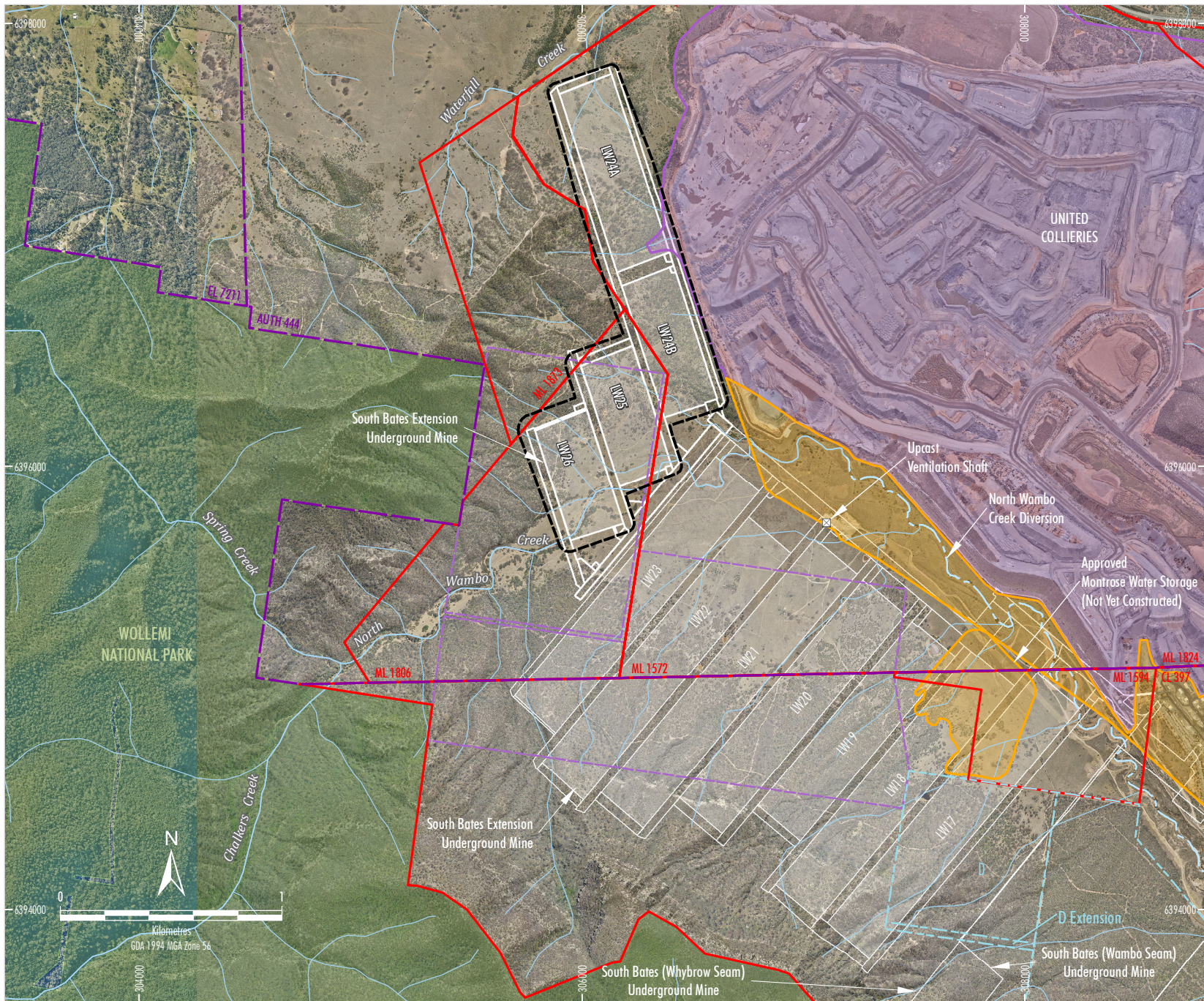
1.1 PURPOSE AND SCOPE

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.



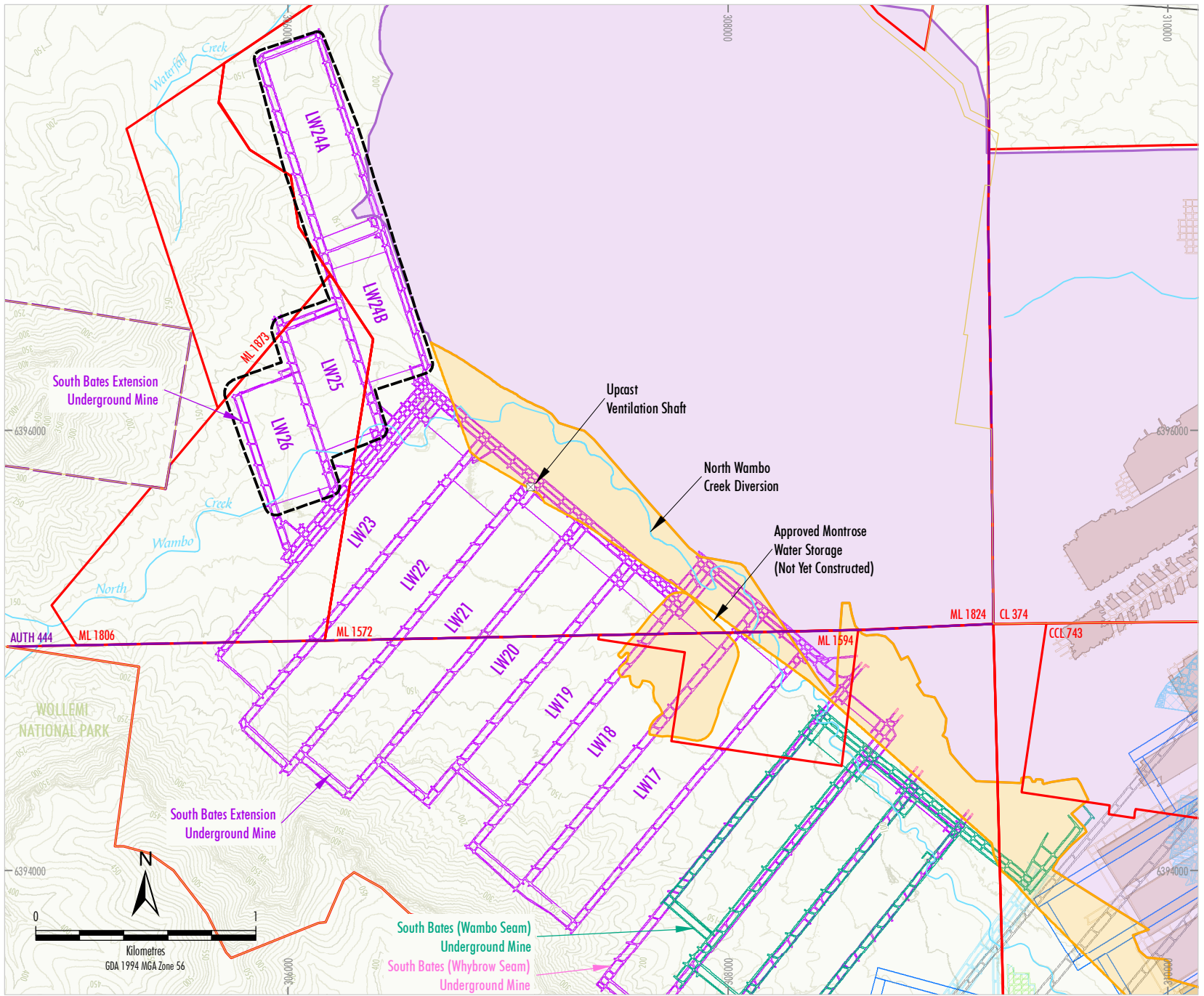
- LEGEND**
- National Park
 - SSD 7142 Operational Area #
 - Biodiversity Stewardship Site under SSD 7142
 - Wambo Coal Mine
 - Exploration Licence Boundary (AUTH, EL)
 - Mining and Coal Lease Boundary (ML, CL, CCL)
 - Remnant Woodland Enhancement Program (RWEF) Area
 - Existing/Approved Wambo Coal Mine 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 (2024); MSEC (2024); NSW Spatial Services (2024)
 Orthophoto: WCPL (Nov 2023)

Peabody
 WAMBO COAL MINE
 Aerial Photograph of Longwalls 24 - 26

Figure 1



- LEGEND**
- SSD 7142 Operational Area #
 - WCPL Owned Land
 - Natural Surface Contour (50 m Interval)
 - Natural Surface Contour (10 m Interval)
 - Wambo Coal Mine
 - Exploration Licence Boundary (AUTH, EL)
 - Mining and Coal Lease Boundary (ML, CL, CCL)
 - Existing/Approved Wambo Coal Mine Surface Development Area
 - Ventilation Shaft
 - Existing Homestead Mine Workings in Whybrow Seam
 - Existing Wollemi and Ridge Workings in Whybrow Seam
 - Existing United Mine Workings in Woodlands Hill/Arrowfield Seam
 - Existing North Wambo Underground Workings in Wambo Seam
 - Existing South Bates Underground Mine Workings in Whybrow Seam
 - Existing/Approved South Bates Underground Mine Workings in Wambo Seam
 - Approved Arrowfield and Woodlands Hill Seam Workings
 - South Bates Extension Underground Mine
 - 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 (2024); MSEC (2024); NSW Spatial Services (2024)

Figure 2

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], 2024).

SUPERGROUP	GROUP	SUBGROUP	FORMATION	SEAM		
SINGLETON SUPERGROUP	NARRABEEN GROUP	WIDDEN BROOK CONGLOMERATE				
		GLEN GALLIC SUBGROUP	Greigs Creek Coal			
	Redmanvale Creek Formation					
	Dights Creek Coal					
	NEWCASTLE COAL MEASURES ¹	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	<i>Whybrow Seam</i> ²		
			Althorpe Formation			
			Malabar Formation	<i>Redbank Creek Seam</i> ²		
				<i>Wambo Seam</i> ²		
				<i>Whynot Seam</i> ²		
				<i>Blakefield Seam</i>		
			Mount Ogilvie Formation	<i>Glen Munro Seam</i>		
				<i>Woodlands Hill Seam</i> ²		
			Milbrodale Formation			
			Mount Thorley Formation	<i>Arrowfield Seam</i> ²		
	<i>Bowfield Seam</i> ³					
	<i>Warkworth Seam</i> ³					
	Fairford Formation					
	Burnamwood Formation		<i>Mount Arthur Seam</i> ³			
			<i>Piercefield Seam</i> ³			
			<i>Vaux Seam</i> ³			
			<i>Broonie Seam</i>			
			<i>Boyswater Seam</i>			
ARCHERFIELD SANDSTONE						
VANE SUBGROUP	Bulga Formation					
	Foybrook Formation					
	Saltwater Creek Formation					

¹ Previously known as the Wollombi 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).

WAM-09-15_SBX/Mod/LW24-2.6_EP_CRRP_001A

After: DMR (1993)

Peabody

W A M B O C O A L M I N E

Stratigraphy of the
Wambo Coal Mine Area

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, 2024).

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, 2024).

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, 2024). 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, 2024).

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 between Longwalls 24a and 24b and north of Longwalls 25 and 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, 2024).

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, 2024).

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 24a	Longwall 24b	Longwall 25	Longwall 26
Gate Road Width (m)	5.40			
Gate Road Height (m)	3.0			
Maingate Chain Pillar Width (m)	25	25	25	25
Tailgate Chain Pillar Width (m)	17	17	25	25
Longwall Void Width (m) ¹	262	262	262	262
Longwall Void Length (m) ²	857	636	580	590
Extraction Height (m)	2.8 to 3.0	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 60 m above the finishing (north-eastern) ends of the longwalls, up to a maximum of 130 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 retreatting longwall mining methods for secondary extraction of panels with approximately 262 m void width (extraction face of approximately 250 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 24a	January 2024	6 months	June 2024
Longwall 24b	August 2024	4 months	November 2024
Longwall 25	December 2024	~4 months	March 2025
Longwall 26	April 2025	~4 months	July 2025

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 proposed ROM and production schedule for the approved and revised is provided in Table 5**. 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	4.10
Development ROM Coal	0.36
Longwall ROM Coal	2.90
Total ROM Coal Recovered	3.26

Table 5
ROM and Production Schedule

Year	ROM (Mt)	Production (Mt)
2025	1.23	0.71
2026	nil	nil

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 mine plan described in the Modification 19 Modification Report (WCPL, 2022) was adopted to minimise the potential for sterilisation of coal reserves at the Wambo Coal Mine.

Since Modification 19 was approved, geological factors have prevented the full development and extraction of Longwall 24. Additional geological structures aligned with the dyke zone identified at the mid-length of the approved Longwall 24 have increased in displacement. As a result, any extension of the Longwalls 25 and 26 past this structure will have nil economic value after considering the amount of development/stone drivage required.

Attachment 1 presents the revised Longwalls 24 to 26 layout which has been developed to avoid these adverse geological conditions, and 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 (2024) *South Bates Extension Underground Mine Longwalls 24a to 26 Extraction Plan Subsidence Assessment*. Report MSEC1456 prepared for Wambo Coal Pty Limited.

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

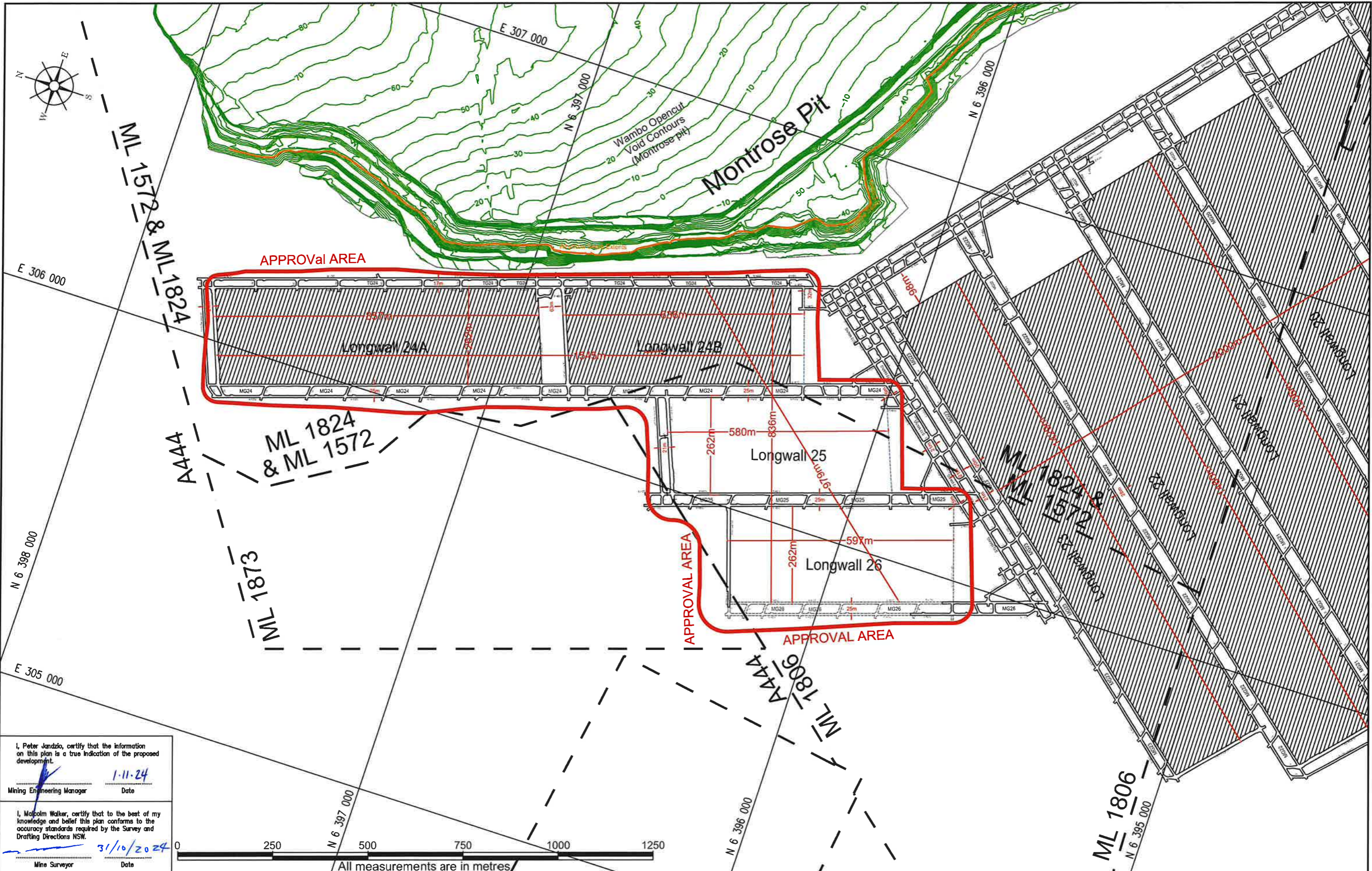
Wambo Coal Pty Limited (2016) *South Wambo Underground Mine Modification Environmental Assessment*.

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



I, Peter Jandzio, certify that the information on this plan is a true indication of the proposed development.
 Mining Engineering Manager Date 1-11-24

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 31/10/2024



- Longwall Extraction Approval Area (based on 26.5° angle of draw)
-
-
-
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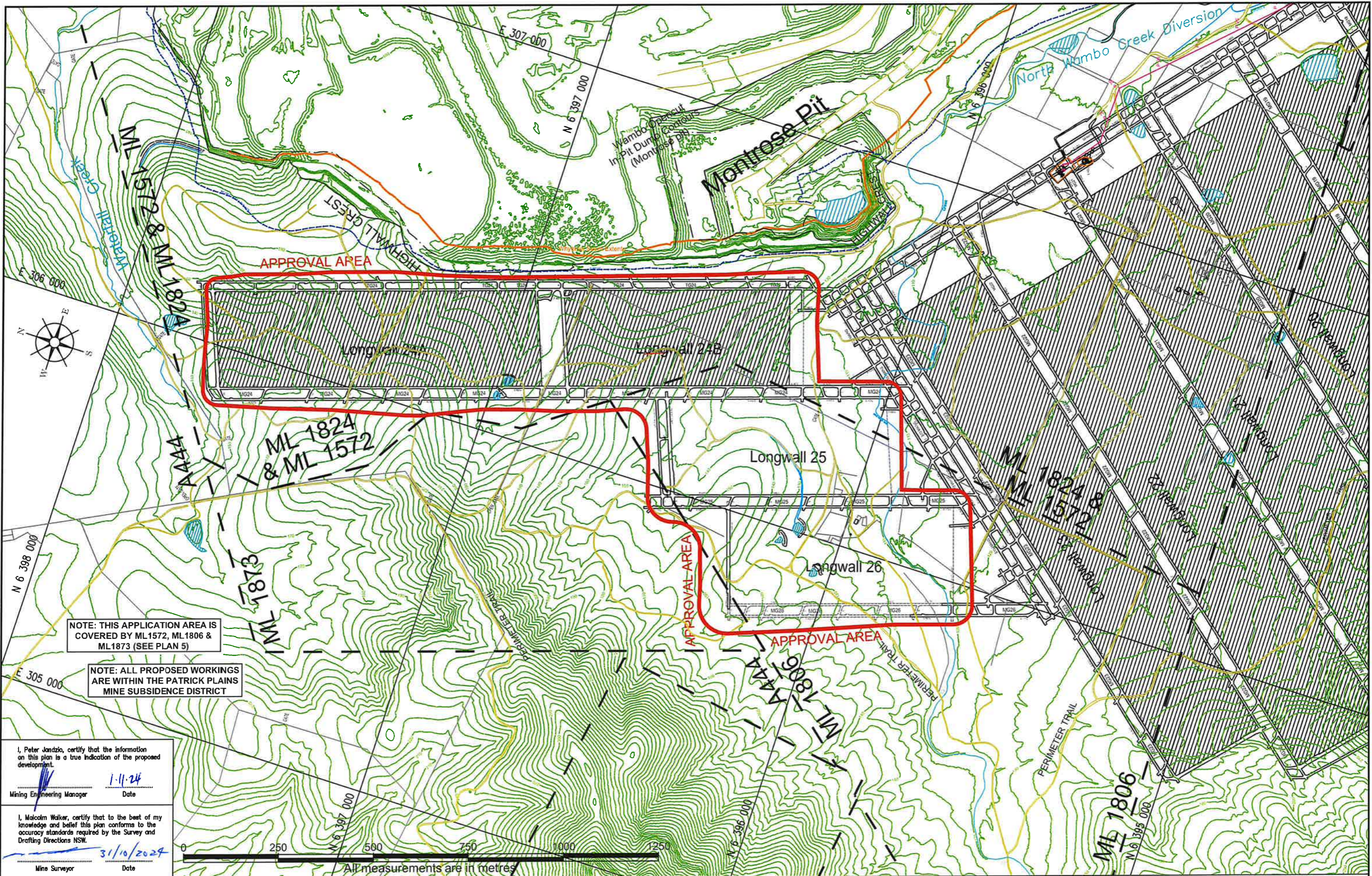
REV.	DATE	BY	DESCRIPTION	CHK.	REV.	DATE	BY	DESCRIPTION	CHK.
A	19/5/2023	MW	For Longwall 24 to 26 Submission	ND					
B	30/06/2024	MW	Mine plan reduction due to Dykes and 10m Fault	PJ					
C	29/10/2024	MW	Amended Mine plan for LW26	ND					

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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 C) Plan 1 - Proposed and Existing Workings

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

Drawing No. 2982
 Revision No. C_29/10/2024
 Sheet Size A0



NOTE: THIS APPLICATION AREA IS COVERED BY ML1572, ML1806 & ML1873 (SEE PLAN 5)

NOTE: ALL PROPOSED WORKINGS ARE WITHIN THE PATRICK PLAINS MINE SUBSIDENCE DISTRICT

I, Peter Jandzio, certify that the information on this plan is a true indication of the proposed development.
 Mining Engineering Manager 1-11-24
 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 31/10/2024
 Date



All measurements are in metres

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

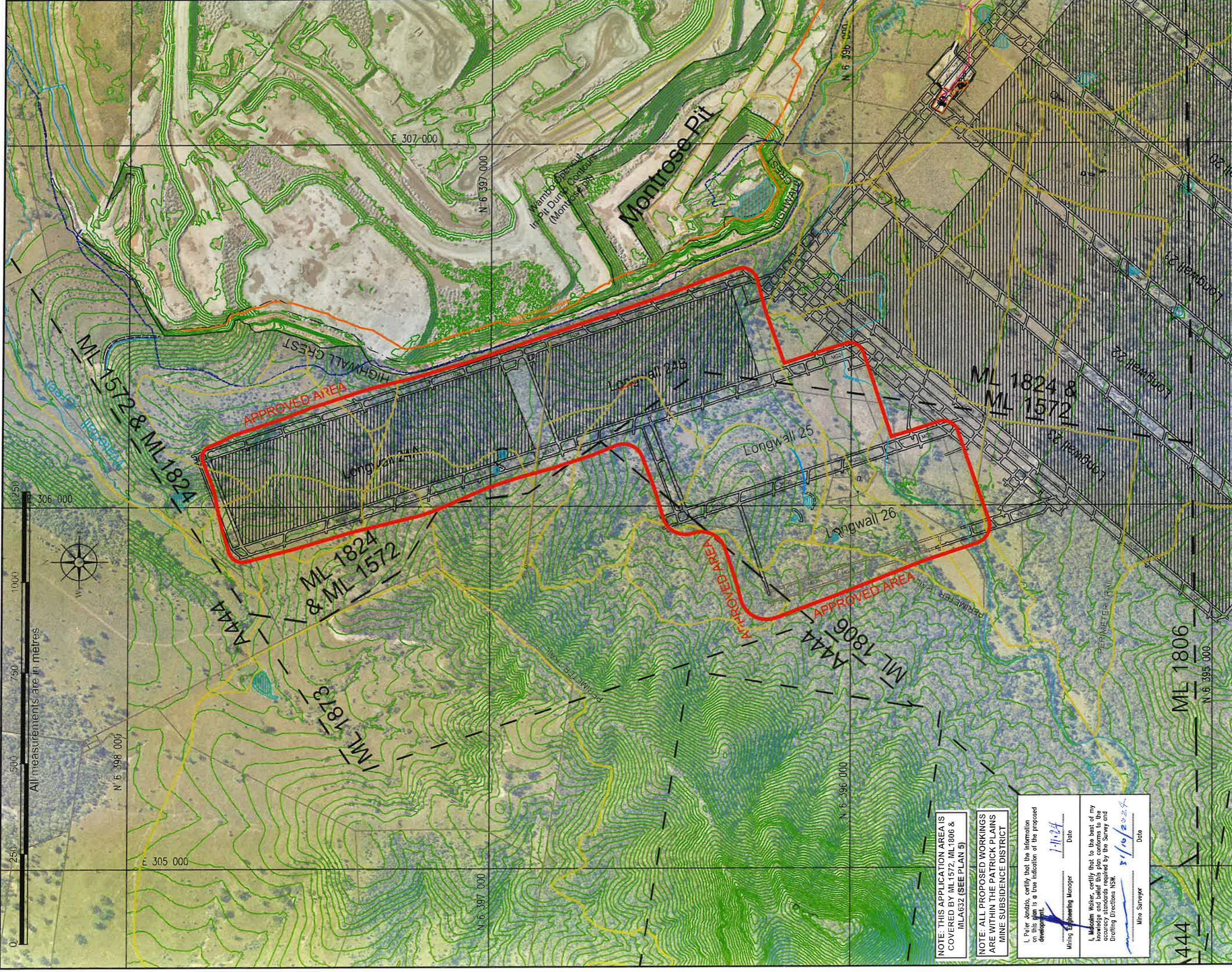
REV.	DATE	BY	DESCRIPTION	CHK.	REV.	DATE	BY	DESCRIPTION	CHK.
A	19/5/2023	MW	For Longwall 24 to 26 Submission	ND					
B	30/06/2024	MW	Mine plan reduction due to Dykes and 10m Fault	PJ					
C	29/10/2024	MW	Amended Mine plan for LW26	ND					

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**South Bates Extension Underground Mine (Whybrow Seam)
 Extraction Plan - Longwalls 24 to 26 (Revision C)
 Plan 2 - Surface Features**

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

Drawing No: 2983
 Revision No: C_29/10/2024
 Sheet Size: A0



All measurements are in metres

NOTE: THIS APPLICATION AREA IS COVERED BY ML1572, ML1806 & ML1824 (SEE PLAN 5)

NOTE: ALL PROPOSED WORKINGS ARE WITHIN THE PATRICK PLAINS MINE SUBSIDENCE DISTRICT

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

Mining Engineering Manager Date 1/11/24

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 31/10/2024

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

South Bates Extension Underground Existing Workings (Whybrow Seam)

South Bates Extension Underground Existing Workings (Whybrow Seam)

- Tracks
- Creek
- Surface Contours
- Opencut Whybrow
- Seam filled Extens
- Fences
- Powerlines
- Buildings
- Water pipelines

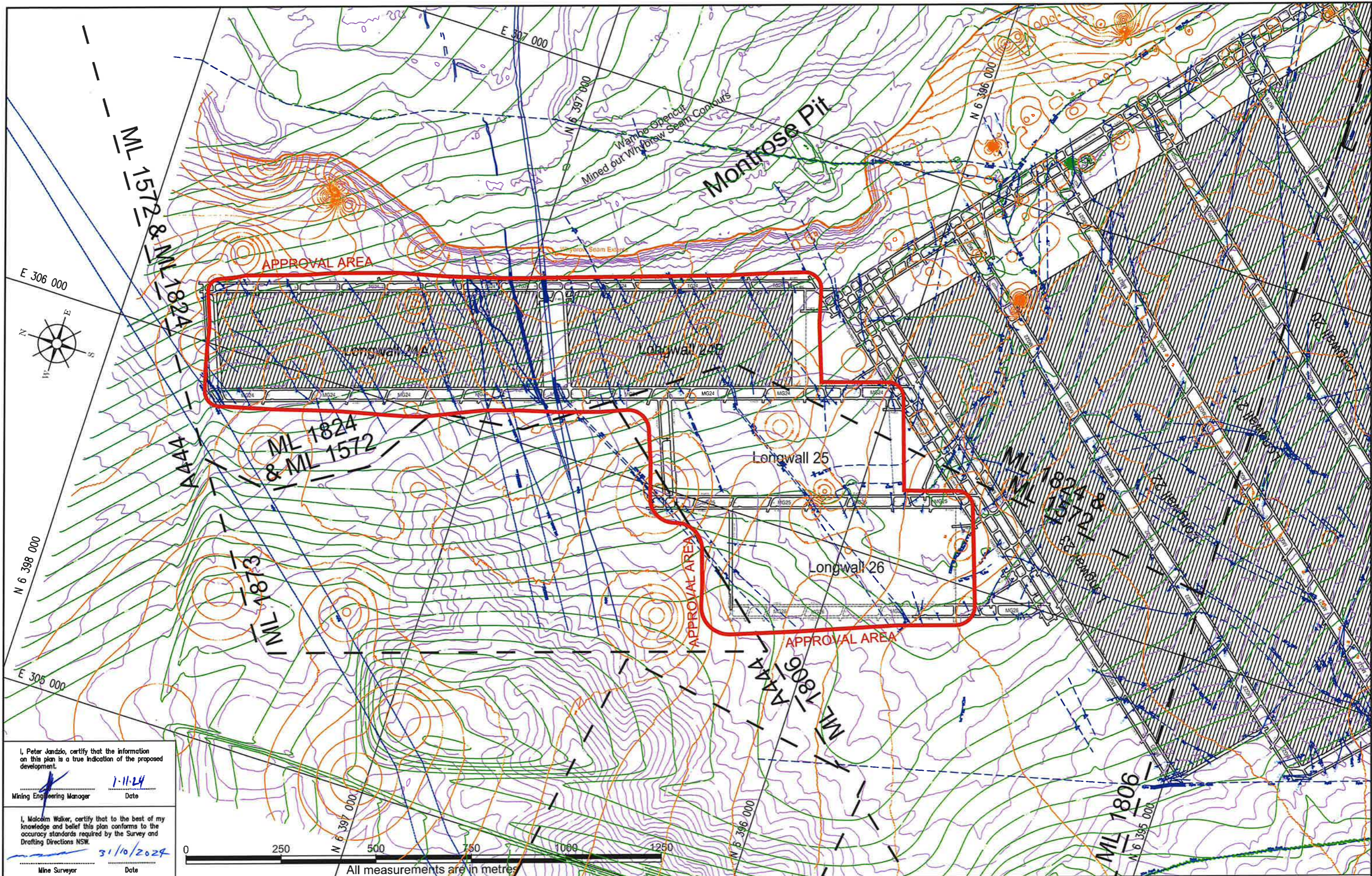
Rev.	Drawn	Description	Approved
A	MW	For Longwall 24 to 26 Submission	ND
B	MW	Mine plan reduction due to Dykes and 10m Fault	PJ
C	MW	Amended Mine plan for LW26	ND

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 Jerro's Plains Rd, Worksworth
 Via Singleton, NSW, 2330

South Bates Extension Underground Mine (Whybrow Seam) Extraction Plan - Longwalls 24 to 26 (Revision C) Plan 2b - Surface Features (with Aerial Photo)

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

Drawing No. 2984
 Revision No. C.29/10/2024
 Sheet Size A0



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

Mining Engineering Manager 1-11-24
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 31/10/2024
Date



- Longwall Extraction Approval Area (based on 26.5° angle of draw)
- South Bates Extension Underground Proposed Workings (Whybrow Seam)
- South Bates Extension Underground Existing Workings (Whybrow Seam)
- Open-cut Whybrow Seam Mined Extents
- Whybrow Seam Faults
- Whybrow Seam Dykes
- 220 Whybrow Seam Overburden Thickness Isopach
- 40 Whybrow Seam Floor Contours
- 3.0 Whybrow Seam Thickness Isopach

REV.	DATE	BY	DESCRIPTION	CHK.	REV.	DATE	BY	DESCRIPTION	CHK.
A	19/5/2023	MW	For Longwall 24 to 26 Submission	ND					
B	30/06/2024	MW	Mine plan reduction due to dykes and 10m Fault	PJ					
C	29/10/2024	MW	Amended Mine plan for LW26	ND					

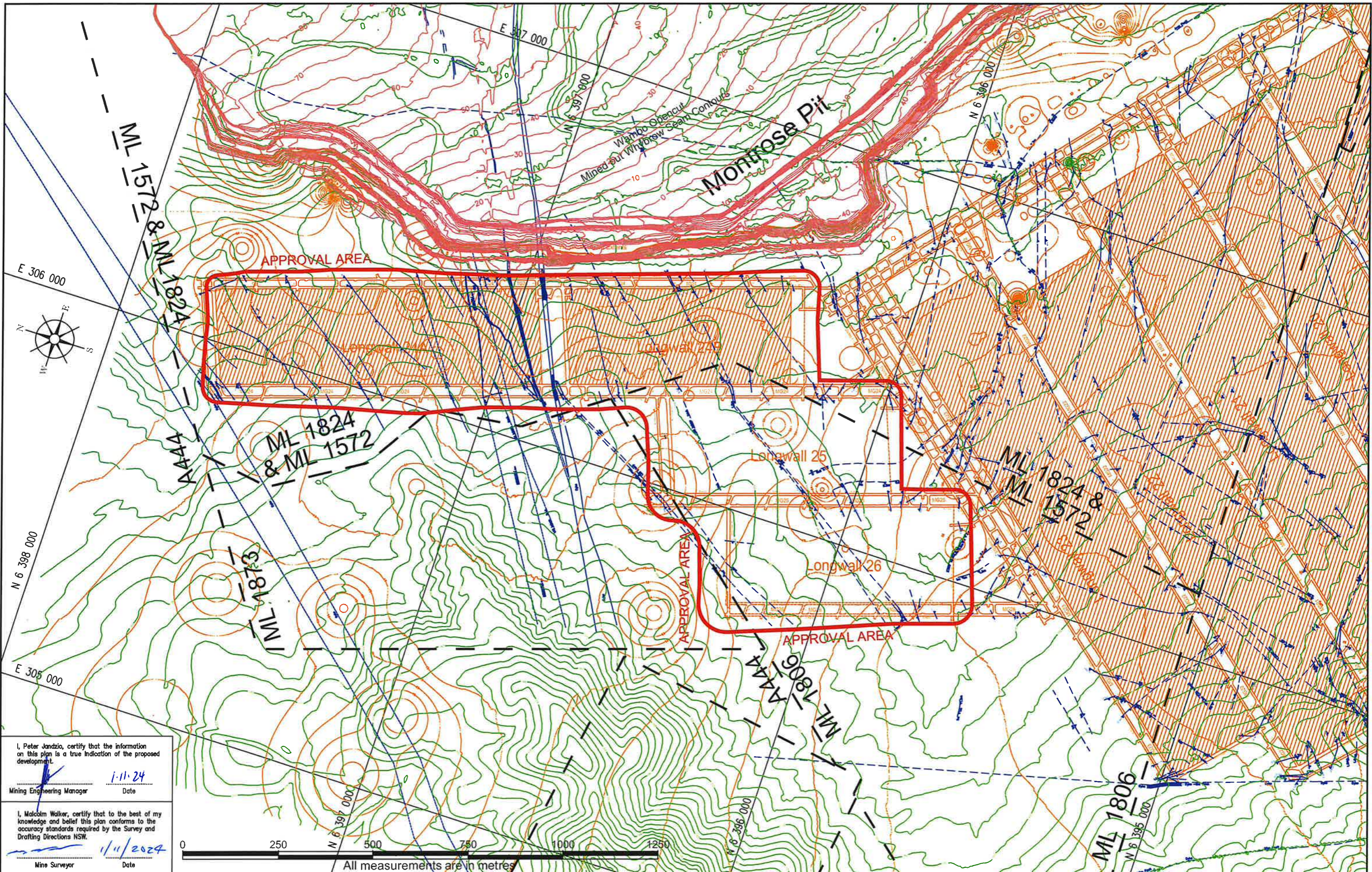
REV.	DATE	BY	DESCRIPTION	CHK.	REV.	DATE	BY	DESCRIPTION	CHK.

Peabody WAMBO COAL PTY LIMITED
 ABN 13 000 668 057
 Jerry's Plains Rd, Warkworth Phone: 02 65 702200
 Via Singleton, NSW, 2330 Fax: 02 65 702290
 Prepared by NWU Survey Ph: 02 65 702318

South Bates Extension Underground Mine (Whybrow Seam) Extraction Plan - Longwalls 24 to 26 (Revision C) Plan 3 - Whybrow Seam Structure

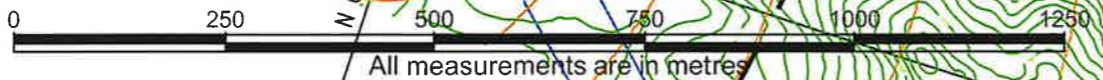
Date	Scale	Drawn	Checked	Approved
11/05/2023	1:5000	MJW	ND	PJ

Drawing No. 2985
 Revision No. C_29/10/2024
 Sheet Size A0



I, Peter Jandzio, certify that the information on this plan is a true indication of the proposed development.
 Mining Engineering Manager Date: 1/11/24

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: 1/11/2024



- Longwall Extraction Approval Area (based on 26.5° angle of draw)
- South Bates Extension Underground Proposed Workings (Whybrow Seam)
- South Bates Extension Underground Existing Workings (Whybrow Seam)
- Opencut Whybrow Seam Mined Extents
- Whybrow Seam Faults
- Whybrow Seam Dykes
- 220 Whybrow Seam Overburden Thickness Isopach
- 3.0 Whybrow Seam Thickness Isopach
- 20 Opencut Void Contours

REV.	DATE	BY	DESCRIPTION	CHK.	REV.	DATE	BY	DESCRIPTION	CHK.
A	19/5/2023	MW	For Longwall 24 to 26 Submission	ND					
B	30/06/2024	MW	Mine plan reduction due to Dykes and 10m Fault	PJ					
C	29/10/2024	MW	Amended Mine plan for LW26	ND					

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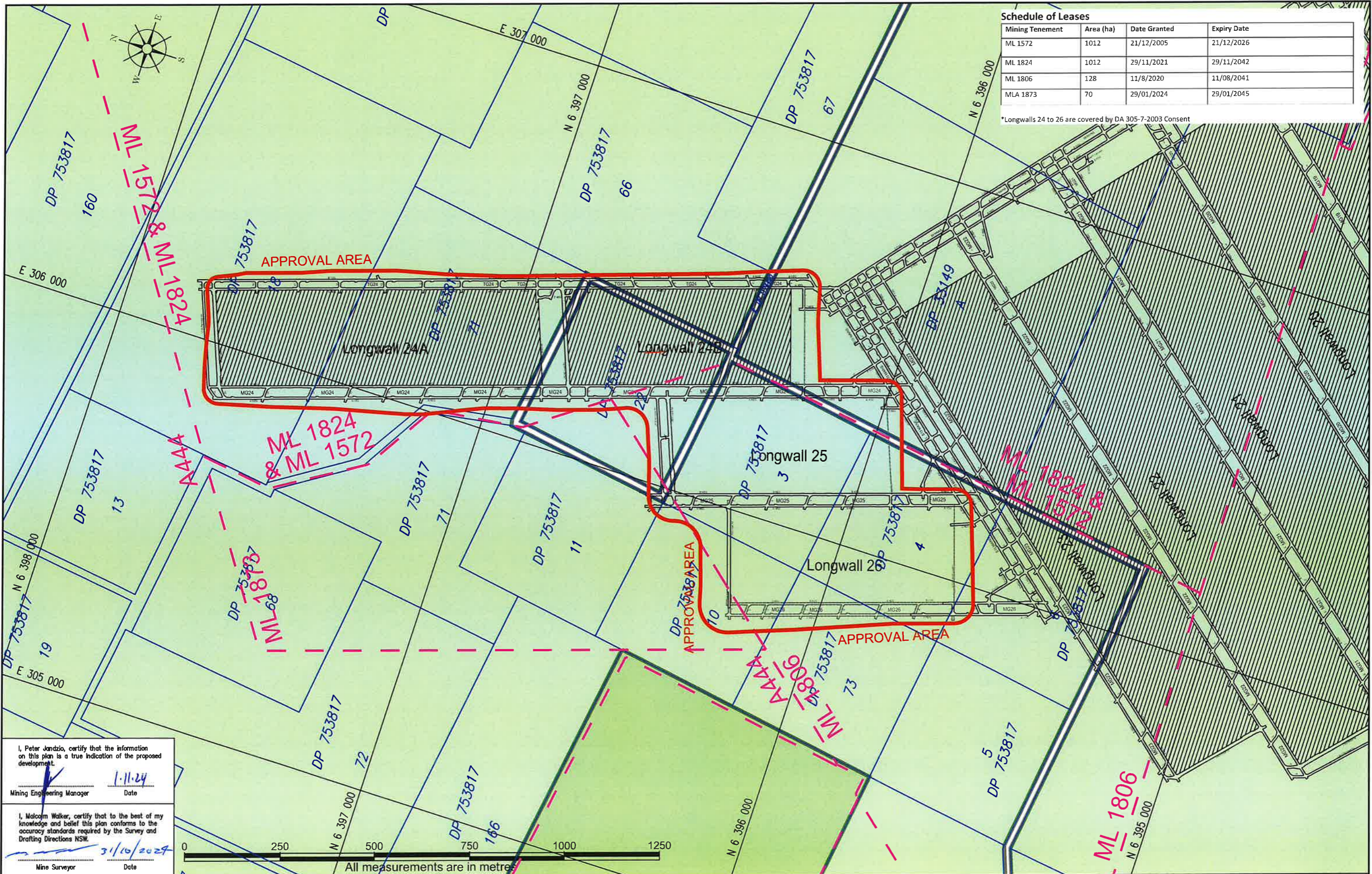
**South Bates Extension Underground Mine (Whybrow Seam)
 Extraction Plan - Longwalls 24 to 26 (Revision C)
 Plan 4 - Existing and Future Workings**

Date 11/05/2023	Scale: 1:5000	Drawn MJW	Checked ND	Approved PJ	Drawing No. 2986
					Revision No. C_29/10/2024
					Sheet Size A0

Schedule of Leases

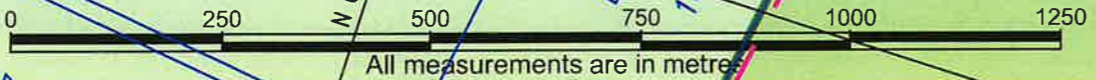
Mining Tenement	Area (ha)	Date Granted	Expiry Date
ML 1572	1012	21/12/2005	21/12/2026
ML 1824	1012	29/11/2021	29/11/2042
ML 1806	128	11/8/2020	11/08/2041
MLA 1873	70	29/01/2024	29/01/2045

*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: 1-11-24

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: 31/10/2024



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

 South Bates Extension Underground Proposed Workings (Whybrow Seam)

 South Bates Extension Underground Existing Workings (Whybrow Seam)

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

 Reserve

 Wambo Coal Pty. Ltd

 Wambo Mining Lease

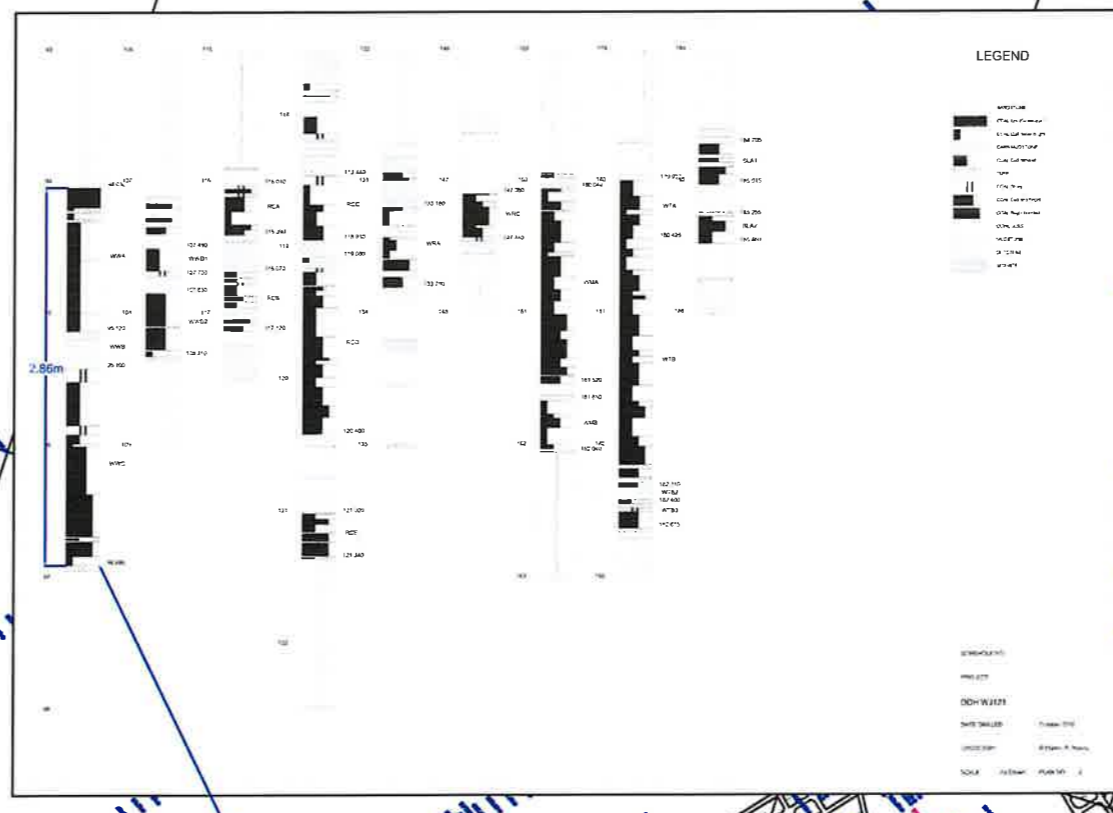
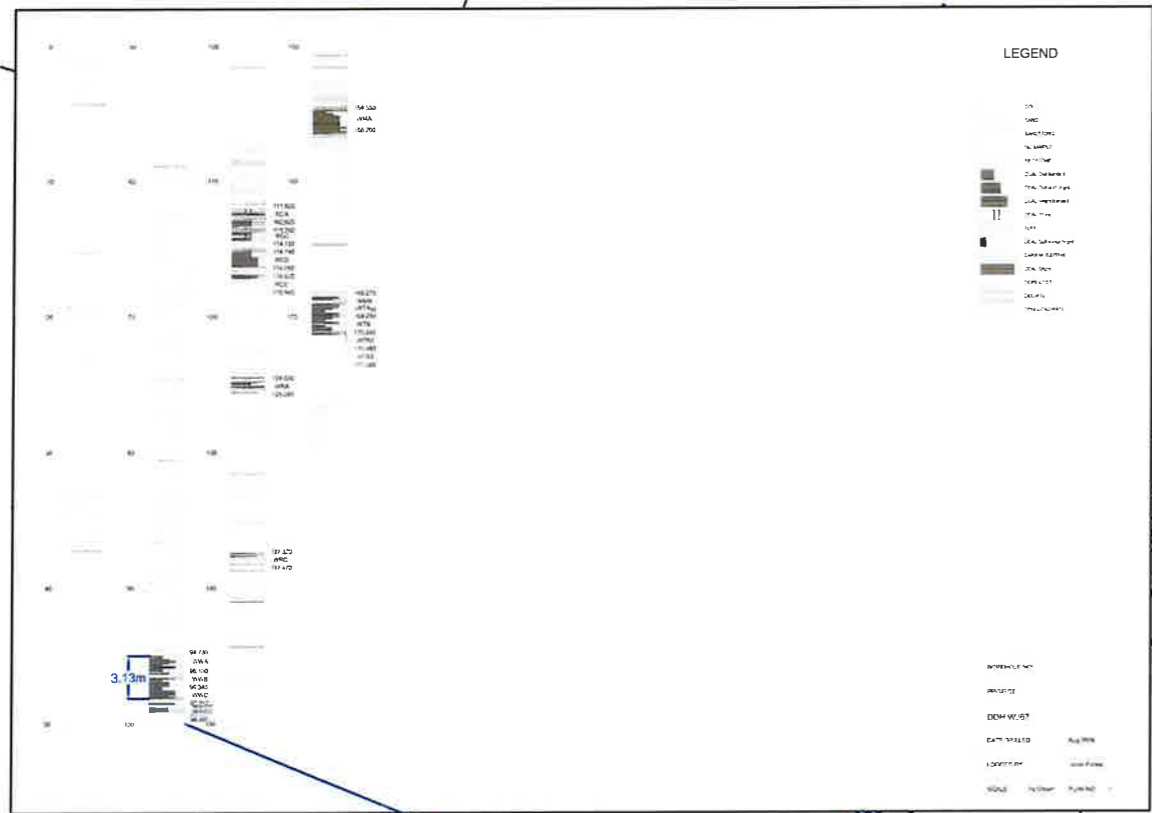
REV.	DATE	BY	DESCRIPTION	CHK.	REV.	DATE	BY	DESCRIPTION	CHK.
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B	30/06/2024	MW	Mine plan reduction due to Dykes and 10m Fault	PJ					
C	29/10/2024	MW	Amended Mine plan for LW26	ND					

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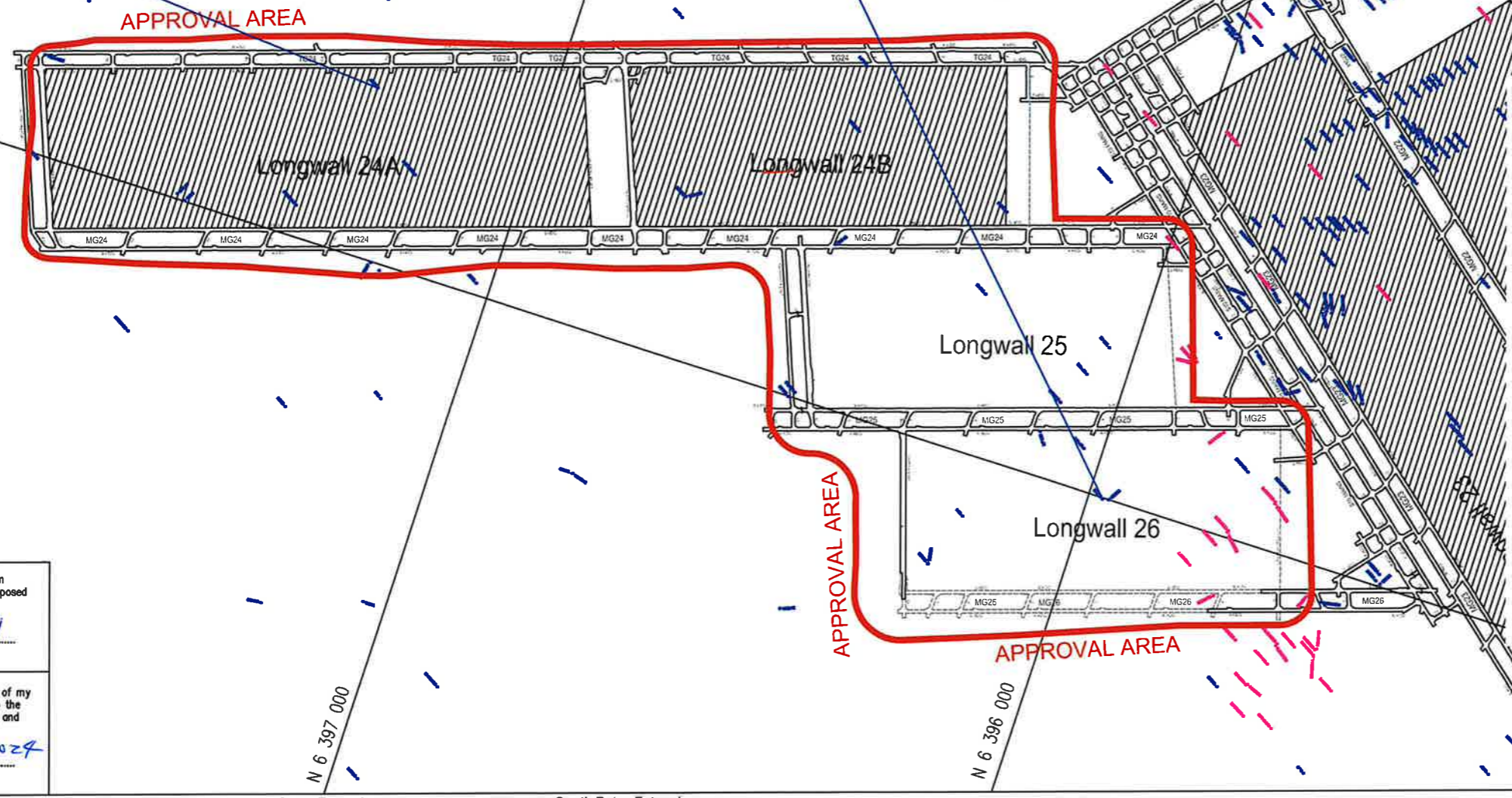
South Bates Extension Underground Mine (Whybrow Seam)
Extraction Plan - Longwalls 24 to 25 (Revision C)
Plan 5 - Mining Titles and Land Ownership

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

Drawing No. 2987
 Revision No. C_29/10/2024
 Sheet Size A0



SUPERGROUP	GROUP	SUBGROUP	FORMATION	SEAM
WAMBO COAL MEASURES	WAMBO COAL MEASURES	WAMBO COAL MEASURES	WAMBO COAL MEASURES	Whybrow Seam
			WAMBO COAL MEASURES	Redbank Seam
			WAMBO COAL MEASURES	Wambo Seam
			WAMBO COAL MEASURES	Whynot Seam
			WAMBO COAL MEASURES	Blakelid Seam
			WAMBO COAL MEASURES	Glen Munro Seam
			WAMBO COAL MEASURES	Woodlands Hill Seam
			WAMBO COAL MEASURES	Arrowfield Seam
			WAMBO COAL MEASURES	Bowfield Seam
			WAMBO COAL MEASURES	Barkworth Seam
LEMINGTON COAL MEASURES	LEMINGTON COAL MEASURES	LEMINGTON COAL MEASURES	LEMINGTON COAL MEASURES	Whybrow Seam
			LEMINGTON COAL MEASURES	Redbank Seam
			LEMINGTON COAL MEASURES	Wambo Seam
			LEMINGTON COAL MEASURES	Whynot Seam
			LEMINGTON COAL MEASURES	Blakelid Seam
			LEMINGTON COAL MEASURES	Glen Munro Seam
			LEMINGTON COAL MEASURES	Woodlands Hill Seam
			LEMINGTON COAL MEASURES	Arrowfield Seam
			LEMINGTON COAL MEASURES	Bowfield Seam
			LEMINGTON COAL MEASURES	Barkworth Seam
H. VALLEY COAL MEASURES	H. VALLEY COAL MEASURES	H. VALLEY COAL MEASURES	H. VALLEY COAL MEASURES	Whybrow Seam
			H. VALLEY COAL MEASURES	Redbank Seam
			H. VALLEY COAL MEASURES	Wambo Seam
			H. VALLEY COAL MEASURES	Whynot Seam
			H. VALLEY COAL MEASURES	Blakelid Seam
			H. VALLEY COAL MEASURES	Glen Munro Seam
			H. VALLEY COAL MEASURES	Woodlands Hill Seam
			H. VALLEY COAL MEASURES	Arrowfield Seam
			H. VALLEY COAL MEASURES	Bowfield Seam
			H. VALLEY COAL MEASURES	Barkworth 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
Blakelid			Blakelid
Glen Munro	Blakelid	Blakelid	Woodlands Hill
Woodlands Hill	Glen Munro	Glen Munro	Arrowfield
Arrowfield	Woodlands Hill	Woodlands Hill	Bowfield
Bowfield			
Warkworth	Warkworth	Warkworth	Warkworth
Mt Arthur	Mt Arthur	Mt Arthur	Mt Arthur
Piercedfield	Piercedfield	Piercedfield	Piercedfield
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.
 Mining Engineering Manager Date 1-11-24

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 31/10/2024

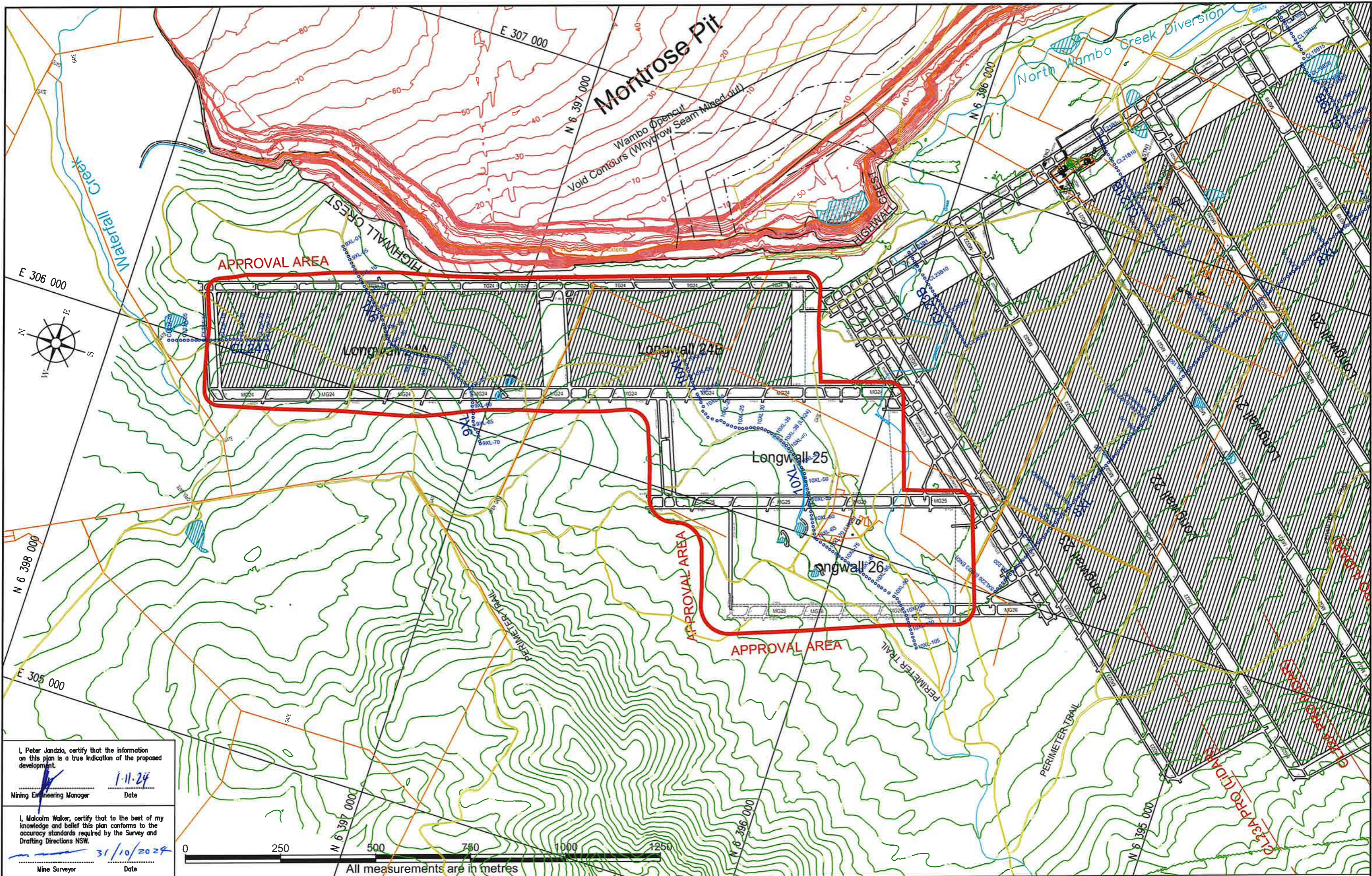
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**South Bates Extension Underground Mine (Whybrow Seam)
 Extraction Plan - Longwalls 24 to 25 (Revision C)
 Plan 6 - Geological Sections (Boreholes)**

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

Drawing No. 2988
 Revision No. C_29/10/2024
 Sheet Size A0



I, Peter Jandzio, certify that the information on this plan is a true indication of the proposed development.
 Mining Engineering Manager Date 1-11-24

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 31/10/2024



- Longwall Extraction Approval Area (based on 26.5° angle of draw)
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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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**South Bates Extension Underground Mine (Whybrow Seam)
 Extraction Plan - Longwalls 24-26 (Revision C)
 Plan 7 - Proposed and Existing Subsidence Monitoring**

Date 15/05/2023	Scale 1:5000	Drawn MJW	Checked PJ	Approved PJ
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Drawing No. 2989	Revision No. C_29/10/2024	Sheet Size AO
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