



# Wilpinjong Coal Mine

## Annual Review 2025 – Surface Water Compliance

### Wilpinjong Coal Pty Ltd

1434 Ulan-Wollar Road WILPINJONG, NSW,  
2850

Prepared by:

**SLR Consulting Australia**

SLR Project No.: 665.v10014.02421

23 March 2026

Revision: 3

## Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
0.3	23 March 2026	M. Silva	A. Skorulis N. Bosworth	

## Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Wilpinjong Coal Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.



## Executive Summary

This report documents the analysis and data considered for the review of flow and water quality trends at Wilpinjong Creek, Wollar Creek and Cumbo Creek near the Wilpinjong Coal Mine (WCM) to fulfil the surface water reporting requirements for the WCM 2025 Annual Review. The report is presented in three sections:

1. An overview of the volume and quality of discharge from the site under EPL 12425 including approved operational discharge from EPL Point 24 and EPL Point 30;
2. Analysis of flow and quality data from the Wilpinjong Creek and Cumbo Creek gauging stations, considering long-term rainfall trends, and licenced discharge from WCM.
3. Assessment of electrical conductivity (EC), pH, and turbidity observations at Wilpinjong, Cumbo and Wollar Creeks during 2025 in respect to baseline data (pre-mining as defined in the Surface Water Management Plan (SWMP)) as well as Water Quality Impact Assessment Criteria for downstream monitoring sites within Cumbo and Wilpinjong Creeks, as defined in the current SWMP.

Discharge under EPL12425 from EPL Point 24 (the RO Plant) occurred within the stipulated discharge limits throughout 2025. It is noted that no discharge occurred from EPL Point 30 in 2025.

Analysis of continuous data at the WCM gauging stations in 2025 indicated generally similar flow conditions at Cumbo Creek and Wilpinjong Creek gauging sites compared to 2024 in response to above average rainfall in 2024 and slightly above average rainfall in 2025 compared to below average rainfall conditions throughout 2023.

Within the reporting period, two Wilpinjong Creek downstream monitoring locations (WIL-D and WIL-D2) recorded exceedances of water quality monitoring criteria (pH upper limit). It is noted that the pH observations exceeding the upper trigger level for downstream Wilpinjong Creek may be within the normal range for pH at these locations. The 80th percentile pH from baseline data for these downstream sites is pH 7.9, which is above the established trigger level of pH 7.7.

A submitted but not yet approved version of the SWMP (from January 2025) has indicated that pH trigger levels at Wilpinjong Creek downstream monitoring sites should be updated to reflect downstream baseline data (pH 7.4 to 7.9) consistent with findings from a previous trigger exceedance investigation. This revised SWMP also indicates that pH trigger levels downstream of RO discharge at EPL Point 24 should reflect the EPL discharge limits when RO Plant discharge is higher than background flow in Wilpinjong Creek (as measured at WILGSU).

It is recommended that future assessments of pH consider these proposed revisions to the pH trigger levels to help evaluate whether trigger exceedances are likely to be adverse effects from Wilpinjong operations.



## Table of Contents

<b>Basis of Report</b> .....	<b>i</b>
<b>Executive Summary</b> .....	<b>ii</b>
<b>Acronyms and Abbreviations</b> .....	<b>v</b>
<b>1.0 Introduction</b> .....	<b>1</b>
1.1 Background .....	1
<b>2.0 Climate</b> .....	<b>3</b>
<b>3.0 Discharge quantity and Quality</b> .....	<b>5</b>
3.1 Licensed Discharge .....	5
3.1.1 EPL Point 24 – RO Plant .....	5
3.1.2 EPL Point 30 – Pit 8 CWD dam .....	6
<b>4.0 In-Stream Monitoring Data Review</b> .....	<b>8</b>
4.1 Surface Water Flow .....	8
4.2 Water Quality .....	9
4.2.1 Electrical Conductivity .....	9
4.2.2 pH .....	10
<b>5.0 Water Quality Analysis</b> .....	<b>12</b>
5.1 Assessment with respect to SWMP (WCPL, 2017) water quality triggers .....	14
5.2 Wilpinjong Creek Upstream .....	16
5.2.1 pH .....	16
5.2.2 Electrical Conductivity .....	16
5.2.3 Turbidity .....	16
5.3 Wilpinjong Creek Downstream .....	19
5.3.1 pH .....	19
5.3.2 Electrical Conductivity .....	20
5.3.3 Turbidity .....	20
5.4 Cumbo Creek Upstream .....	22
5.4.1 pH .....	22
5.4.2 Electrical Conductivity .....	22
5.4.3 Turbidity .....	22
5.5 Cumbo Creek Downstream .....	24
5.5.1 pH .....	24
5.5.2 Electrical Conductivity .....	24
5.5.3 Turbidity .....	24
5.6 Wollar Creek .....	26



5.6.1 pH .....	26
5.6.2 Electrical Conductivity .....	26
5.6.3 Turbidity .....	26
<b>6.0 Recommendations .....</b>	<b>28</b>
<b>7.0 References.....</b>	<b>29</b>

## Tables

Table 1: BOM rainfall station 062032 - recent monthly and annual rainfall vs long term average (mm) .....	3
Table 2: Wilpinjong site rainfall data 2025.....	3
Table 3: EPL Point 24 – RO Plant Discharge Limits.....	5
Table 4: EPL Point 24 2025 Monitoring.....	6
Table 5: Calculated daily mean flow rate at Wilpinjong and Cumbo Creeks .....	8
Table 6: Summary of Baseline Water Quality Data – Local Creeks (WCPL, 2017).....	12
Table 7: Water Quality Impact Assessment Criteria (WCPL, 2017).....	13
Table 8: Exceedances of Water Quality Impact Assessment Criteria (WCPL, 2017).....	14

## Figures

Figure 1: Surface water monitoring and discharge sites .....	2
Figure 2: Monthly rainfall and Cumulative Rainfall Departure .....	4
Figure 3: RO Plant discharge volume and quality in 2025 .....	7
Figure 4: Continuous flow monitoring records (January 2024 – December 2025).....	9
Figure 5: Continuous EC monitoring at WCM.....	10
Figure 6: Continuous pH monitoring.....	11
Figure 7: Wilpinjong Creek pH at compliance monitoring locations .....	15
Figure 8: Time-series water quality for Wilpinjong Creek Upstream .....	18
Figure 9: Time-series water quality for Wilpinjong Creek Downstream.....	21
Figure 10: Time-series water quality for Cumbo Creek Upstream .....	23
Figure 11: Time-series water quality for Cumbo Creek Downstream.....	25
Figure 12: Time-series water quality for Wollar Creek.....	27



## Acronyms and Abbreviations

ANZECC	Australian and New Zealand Environment and Conservation Council
BOM	Bureau of Meteorology
CCGSU	Cumbo Creek upstream
CRD	cumulative rainfall departure
CWD	Clean water diversion
EC	electrical conductivity
EMW	Excess Mine Water
EPL	Environmental Protection Licence
LDP	Licensed Discharge Points
MC	Moolarben Coal
mg/L	milligrams per litre
ML	megalitres
NTU	Nephelometric Turbidity Units
pH	pH unit
RO	Reverse Osmosis
SWMP	Surface Water Management Plan
TARP	Trigger Action Response Plan
TSS	Total Suspended Solids
µS/cm	Micro-Siemens per centimetre
WCM	Wilpinjong Coal Mine
WCPL	Wilpinjong Coal Pty Limited
WILGSD	Wilpinjong Creek gauging station downstream
WILGSU	Wilpinjong Creek gauging station upstream



## 1.0 Introduction

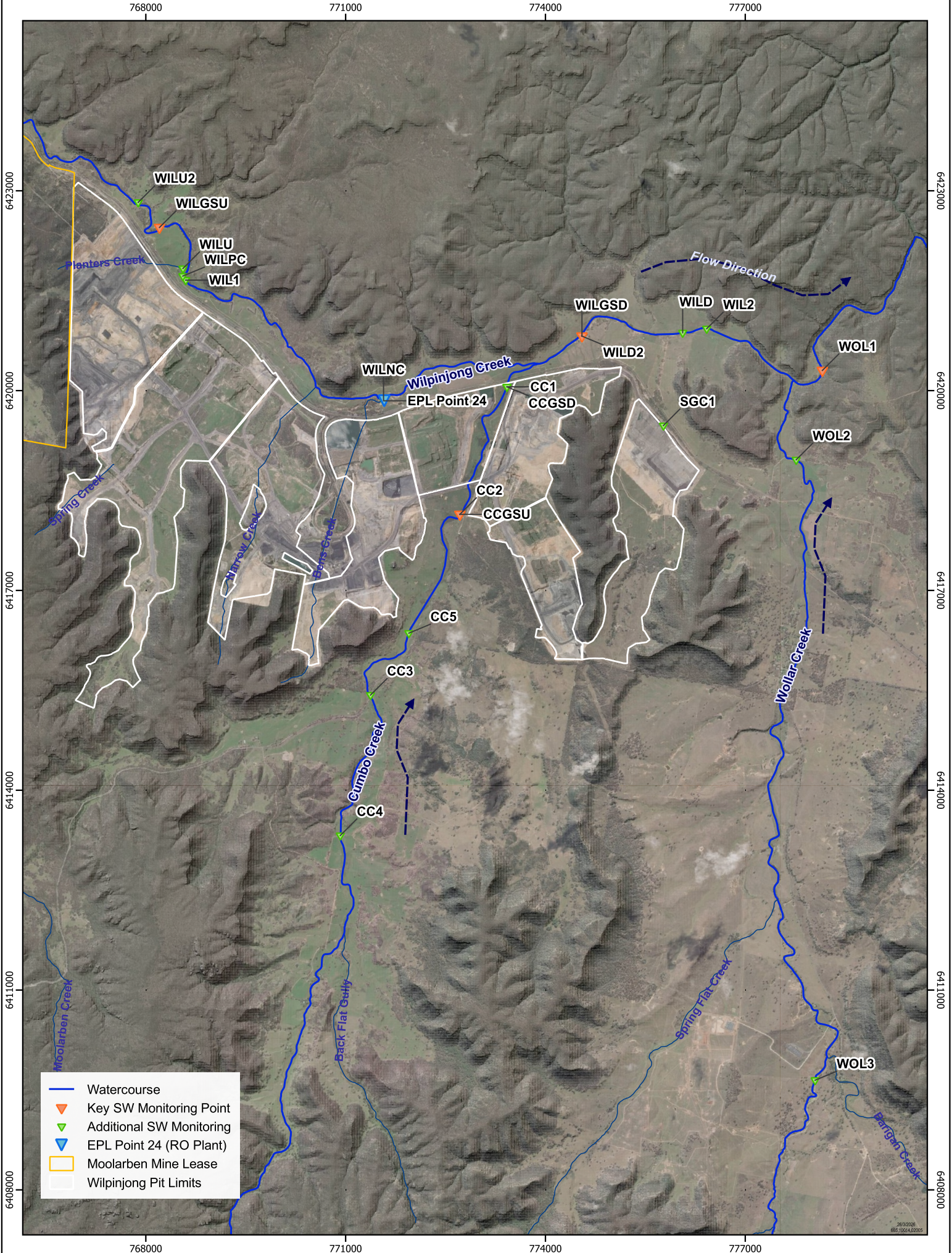
### 1.1 Background

This report contains the analysis and information required for the 2025 Annual Review of flow and water quality trends at Wilpinjong Creek, Wollar Creek and Cumbo Creek near Wilpinjong Coal Mine (WCM). It serves as a supplementary document to the review of hydrogeological data conducted by SLR Consulting Pty Ltd (SLR) for the 2025 Groundwater Annual Review and 2024-25 Water Year Licensing Audit. This report presents information on the following items:

- 1 An overview of local climatic conditions experienced during 2025.
- 2 An overview of the volume and quality of water discharged from WCM during 2025 at the Licenced Discharge Points (LDPs) permitted under the Wilpinjong Coal Pty Limited (WCPL) Environmental Protection Licence (EPL) EPL12425.
- 3 Cause-and-effect analysis of data from the Wilpinjong Creek upstream (WILGSU) and downstream (WILGSD), and Cumbo Creek upstream (CCGSU) gauging stations, compared to the long-term rainfall trend and discharge from WCM and other regional mines.
- 4 Assessment of key water quality criteria at the local creeks during the 2024-2025 water year in respect to the baseline data (pre-mining, as defined in the Surface Water Management Plan (SWMP)), as well as Water Quality Impact Assessment Criteria for downstream monitoring sites within Cumbo and Wilpinjong Creeks, also defined in the current SWMP.

The Wilpinjong surface water quality monitoring, flow gauging stations and discharge locations are presented in **Figure 1**.

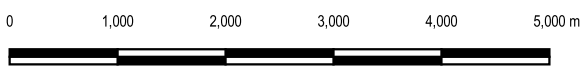




GDA 1994 MGA Zone 55  
 Sheet Size: A4  
 Scale: 1:70,000.176568



www.slrconsultingaustralia.com.au PH: 61 7 3858 4800



\\au.slr.local\corporate\Projects\SLR\660-Srv\WOL\660-WOL\665.10014\Wilpinjong\_GW\06\_SLR\_Data\01\_CAD\GIS\GIS\Workings\Emergency\Discharge\Wilpinjong\_Emergency\Discharge\Monitoring.gz

**Wilpinjong Coal Annual Review 2025**  
**Surface water monitoring and discharge sites**

**FIGURE 1**

## 2.0 Climate

**Table 1** displays the monthly and annual rainfall records from 2016-2025 compared to the long-term averages at the Wollar (Barrigan St) BOM station. The annual total rainfall recorded in 2025 was 623 mm, which equates to 104% of the long-term average of 601.4 mm, representing a slightly above average rainfall year.

**Table 2** presents the rainfall observed at the on-site rainfall gauge during 2025. Overall, rainfall recorded on-site at WCM is slightly lower than at the Wollar BOM station with a total for 2025 of 596.8 mm.

Variation in annual rainfall is a key influence on surface water flow and can influence water chemistry.

**Table 1: BOM rainfall station 062032 - recent monthly and annual rainfall vs long term average (mm)**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual +
<b>Avg</b>	<b>67.6</b>	<b>62</b>	<b>55.1</b>	<b>39.2</b>	<b>37.8</b>	<b>43.8</b>	<b>43.2</b>	<b>41.1</b>	<b>41.8</b>	<b>51.9</b>	<b>57.1</b>	<b>60.8</b>	<b>601.4</b>
<b>2016</b>	101.2	10.4	21.4	3.0	67.0	114.2	82.4	44.0	181.2	74.2	41.0	36.2	<b>776.2</b>
<b>2017</b>	13*	31.0	127.0	19.0	24.4	12.0	1.4	25.6	2.0	30.0	62.6	86.4	<b>421.4</b>
<b>2018</b>	13.4	66.2	41.4	47.0	12.6	22.0	6.5	25.5	51.0	48.5	44.4	117.6	<b>496.1</b>
<b>2019</b>	72.0	5.0	110.5	0.0	20.0	6.0	4.0	10.0	23.0	7.0	30.0	6.0	<b>293.5</b>
<b>2020</b>	37.0	151.0	110.2	118.0	35.0	31.3	86.0	36.0	75.7	128.0	21.5	149.3	<b>979.0</b>
<b>2021</b>	43.8	107.0	157.5	2.5	11.0	82.0	68.2	21.0	45.0	72.0	183.0	134.0	<b>927.0</b>
<b>2022</b>	169.0	17.0	139.5	65.0	38.0	14.5	109.0	100.5	94.5	126.0	85.0	31.0	<b>989.0</b>
<b>2023</b>	49.0	28.5	55.0	43.5	4.0	30.5	24.0	39.0	16.5	42.5	97.5	85.5	<b>515.5</b>
<b>2024</b>	88.5	39.5	71.0	73.9	63.5	81.5	60.0	42.5	36.0	52.0	103.0	68.0	<b>779.4</b>
<b>2025</b>	106.5	45.5	57.0	22.5	114.5	23.5	62	42.5	58.5	36.5	22.0	32.0	<b>623.0</b>

\*No rainfall recorded at Wollar (Barrigan St). Rainfall from Bylong (Glenview) – 062107 used.

+Orange shading represents below average rainfall years whilst blue shading represents above average rainfall years.

**Table 2: Wilpinjong site rainfall data 2025**

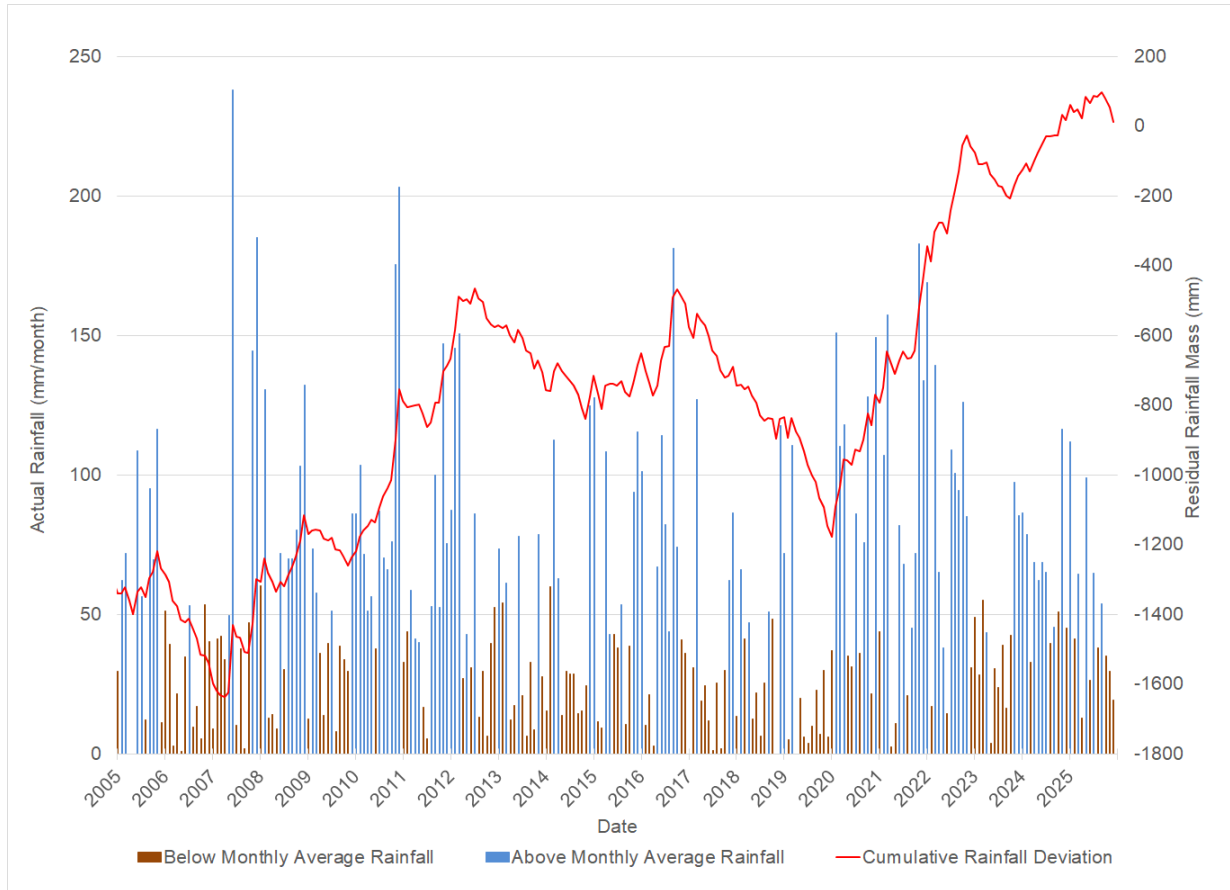
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
2025	111.8	41.2	64.4	12.8	99	26.4	64.8	38.2	53.8	35.2	29.8	19.4	596.8

The cumulative rainfall departure (CRD) shows trends in actual rainfall over time relative to the long-term average and provides a historical record of relatively wet and dry periods. A positive slope in the CRD indicates periods of above average rainfall, while a negative slope indicates periods of below average rainfall. A level trace indicates rainfall conditions are equal to average rainfall conditions.

The CRD from the Wollar (Barrigan St) BOM station **Figure 2**, shows a decline in 2023 given the lower-than-average annual rainfall conditions. The last two months in 2023 see an increase in CRD consistent with higher rainfall in November and December with the upward trend continuing for 2024 reflecting the above-average rainfall conditions. For 2025, there is a notable negative slope from September when rainfall was consistently below average.



**Figure 2: Monthly rainfall and Cumulative Rainfall Departure**



## 3.0 Discharge quantity and Quality

The following sections present a summary of the licenced discharge of water from WCM under emergency and normal EPL discharge provisions.

### 3.1 Licensed Discharge

Under EPL 12425, WCM is allowed to discharge water from site to Wilpinjong Creek from the following locations (see **Figure 1**):

- EPL Point 24 - Product water from the RO treatment plant is discharged to Wilpinjong Creek. The daily discharge limit from the RO Plant is 6.5 ML/day. The EPL stipulates required monitoring of electrical conductivity (EC), pH, oil and grease, and total suspended solids (TSS).
- EPL Point 30 – Discharge from the Pit 8 clean water diversion (CWD) dam to the downstream reach of Slate Gully Creek before it enters Wilpinjong Creek. There is no daily discharge limit and the EPL reflects Wilpinjong Coal's position that the water quality (i.e., measured as turbidity) from the Pit 8 CWD dam is generally equal to or better than the receiving water in Wilpinjong Creek.

The following sections provide further detail on the EPL conditions at these discharge points, and an overview of the quality and volume of water discharged in 2025. The quality of discharged water will contribute to water quality observations in Wilpinjong Creek and may be relevant when assessing surface water compliance for 2025.

#### 3.1.1 EPL Point 24 – RO Plant

WCM was historically approved to discharge up to 5 ML/day via the RO plant at EPL Point 24, which treats water from the on-site water retention dams. On 10 October 2022, EPL 12425 was updated to increase the discharge limit at EPL Point 24 to 6.5 ML/day. EPL 12425 specifies limits for the quality and monitoring frequency of water that may be discharged from this location (**Table 3**).

**Table 3: EPL Point 24 – RO Plant Discharge Limits**

Parameter	Unit of Measurement	Required Monitoring Frequency	Limit
EC	µS/cm	Continuous during discharge	500
Oil and Grease	mg/L	Weekly during any discharge	10.0
pH	pH unit	Continuous during discharge	6.5 – 8.5
TSS	mg/L	Weekly during any discharge	50
Discharge Vol.	ML	Continuous during discharge	6.5

The recent recorded discharge volumes and associated water quality (EC and pH) from the RO plant are presented in **Figure 3**, which presents daily mean values for discharge from continuous monitoring alongside the weekly laboratory samples (RO Discharge Lab) for EC and pH. The monitoring and reporting against EPL Point 24 limits (**Table 3**) in 2025 are summarised in **Table 4**.



**Table 4: EPL Point 24 2025 Monitoring**

EPL Reporting Freq.	Comment	
	Monitoring Freq	Water Quality Limits
12x monthly reports completed in 2025	Parameters requiring continuous monitoring were collected 100% of the time from February to December 2025. Data provided to SLR for this review indicates that Oil and Grease and TSS samples were collected at the required frequency throughout 2025.	EPL Point 24 limits are not exceeded for any analytes during 2025.

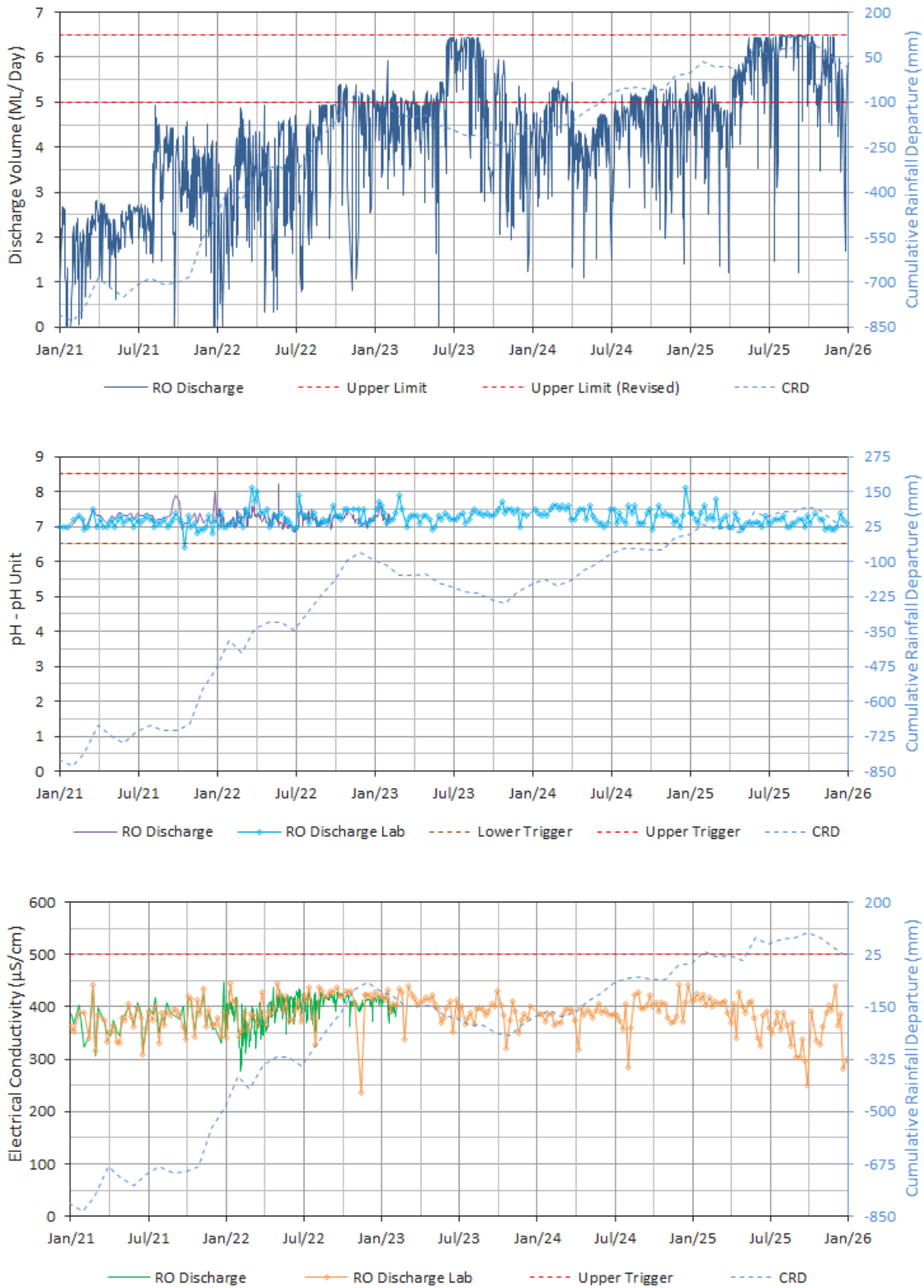
### 3.1.2 EPL Point 30 – Pit 8 CWD dam

WCM discharges surface water run-off captured above mining operations at EPL Point 30. This area above the mining operations is referred to as the Pit 8 clean water diversion (CWD) dam. The turbidity value measured in the discharge at EPL Point 30 should not exceed the turbidity value measured at the Wilpinjong Creek upstream gauging station (WILGSU). The water discharged from EPL Point 30 is captured rainwater and should therefore have a water quality (i.e. turbidity) that is equal to or better than the turbidity of the receiving water in Wilpinjong Creek. When there is no flow within Wilpinjong Creek at the upstream gauging station the value of turbidity measured at EPL Point 30 must not exceed 50 Nephelometric Turbidity Units (NTU), which is a 'limit' recommended in the 'Blue Book' (Soils and Construction Volume 1 – Managing Urban Stormwater – Landcom, 2004).

No discharge from EPL Point 30 occurred in 2025.



**Figure 3: RO Plant discharge volume and quality in 2025**



## 4.0 In-Stream Monitoring Data Review

Flow rates and water quality (pH and EC) are monitored continuously from two sites on Wilpinjong Creek (WILGSU and WILGSD) and one site on Cumbo Creek (CCGSU).

The locations of the gauging stations on Wilpinjong Creek are shown in **Figure 1**. The upstream site (WILGSU) is located northwest of WCM. The downstream site (WILGSD) is northeast of WCM, downstream of the RO Plant and downstream of the confluence of the Wilpinjong and Cumbo creeks. The Cumbo Creek upstream gauging station (CCGSU) is located approximately 400 m to the east of Pit 2 and approximately 800m upstream of Pit 4 which is now used for water storage and rehabilitation (**Figure 1**). Flow/discharge, EC, and pH are all monitored at these locations.

Real-time flow and water quality data is presented up to 31 December 2025.

### 4.1 Surface Water Flow

The following section presents and discusses daily flow data from the three continuous surface water monitoring gauges on Wilpinjong Creek (WILGSU and WILGSD) and Cumbo Creek (CCGSU). Observed flow trends are reviewed against rainfall data from the local rainfall station (Wollar, 062032) and discharge volumes throughout 2025.

The two Wilpinjong Creek gauging stations have been recording since January 2012. The catchment area reporting to the upstream site (WILGSU) is 86 km<sup>2</sup> while the downstream site has a catchment area of 216 km<sup>2</sup>. CCGSU on Cumbo Creek has been recording data since August 2015. **Figure 4** shows the flow data at these sites from late 2022 to the end of 2025 in comparison to the RO Plant discharge rate (EPL Point 24).

During 2025, flow at CCGSU fluctuated between <0.01 and 5.2 ML/day in response to rainfall events with an average flow of 0.23 ML/day. CCGSU was observed to flow for most of the year except for three brief periods in March, May, and from November to December.

In 2025, flow at WILGSU ranged between <0.01 and 5.6 ML/day with an average of 0.04 ML/day, while WILGSD recorded flows from 0.2 to 19 ML/day at an average of 5.7 ML/day. Flow rates at WILGSD are directly influenced by RO Plant discharge volumes (**Section 3.1.1**)

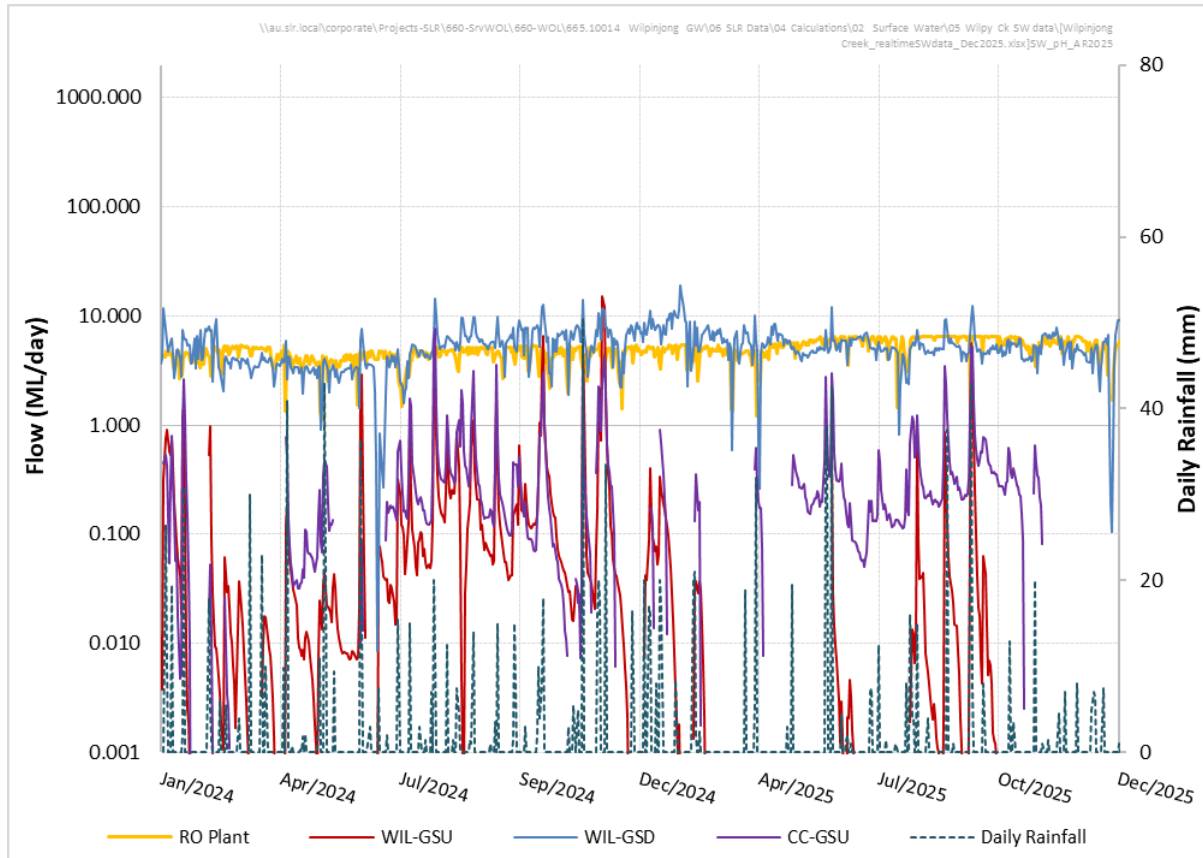
**Table 5** presents the calculated daily mean discharge rates at WILGSU, WILGSD and CCGSU for each year since 2013. The average daily flow rate of all creek monitoring points increased from 2019 through 2022, while WILGSU and CCGSU showed a reduction in daily averages from the 2023 to 2025 reporting periods, while WILGSD increased from 2024 to 2025.

**Table 5: Calculated daily mean flow rate at Wilpinjong and Cumbo Creeks**

Location ID	Average Daily Flow Rate (ML/day)												
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
WILGSU	0.16	0.03	0.24	2.8	0.002	0	0	5.2	5.1	25.8	1.1	0.3	0.04
WILGSD	0.27	0.22	0.39	5.7	5.9	0.73	0.008	6.0	10.0	70.0	6.3	5.0	5.7
CCGSU	No data		0.14	1.6	0.6	0.4	0.1	0.9	2.1	20.4	0.95	0.3	0.23



**Figure 4: Continuous flow monitoring records (January 2024 – December 2025)**



## 4.2 Water Quality

Water quality is monitored continuously at WILGSU, WILGSD and CCGSU, with a multi parameter water meter (sonde) measuring EC, pH (and temperature, which is not provided or assessed here).

### 4.2.1 Electrical Conductivity

EC monitoring data at WILGSU, WILGSD and CCGSU are provided in **Figure 5** and are generally influenced by the following factors:

- WILGSU is most strongly influenced by the rainfall trend, with limited contribution identified from groundwater (baseflow). EC at WILGSU is therefore generally low (~1,000 to 2,000  $\mu\text{S}/\text{cm}$ ) and relatively consistent, with a minor inverse response to the rainfall trend (lower rainfall results in an increase in EC) likely resulting from increased evaporation and lower contribution of fresh water in periods of low rainfall.
- Flow at WILGSD is influenced by upstream flow from both Wilpinjong and Cumbo Creeks as well as the RO Plant discharge, which all have different EC values. EC at WILGSD is therefore variable and related to the primary source of flow at any point in time.
- Flow at CCGSU is likely to have a persistent groundwater contribution that is sourced from weathered Permian Coal Measures. In 2025, observations of EC are in the range between 3,000  $\mu\text{S}/\text{cm}$  and 6,000  $\mu\text{S}/\text{cm}$  but historically have been observed

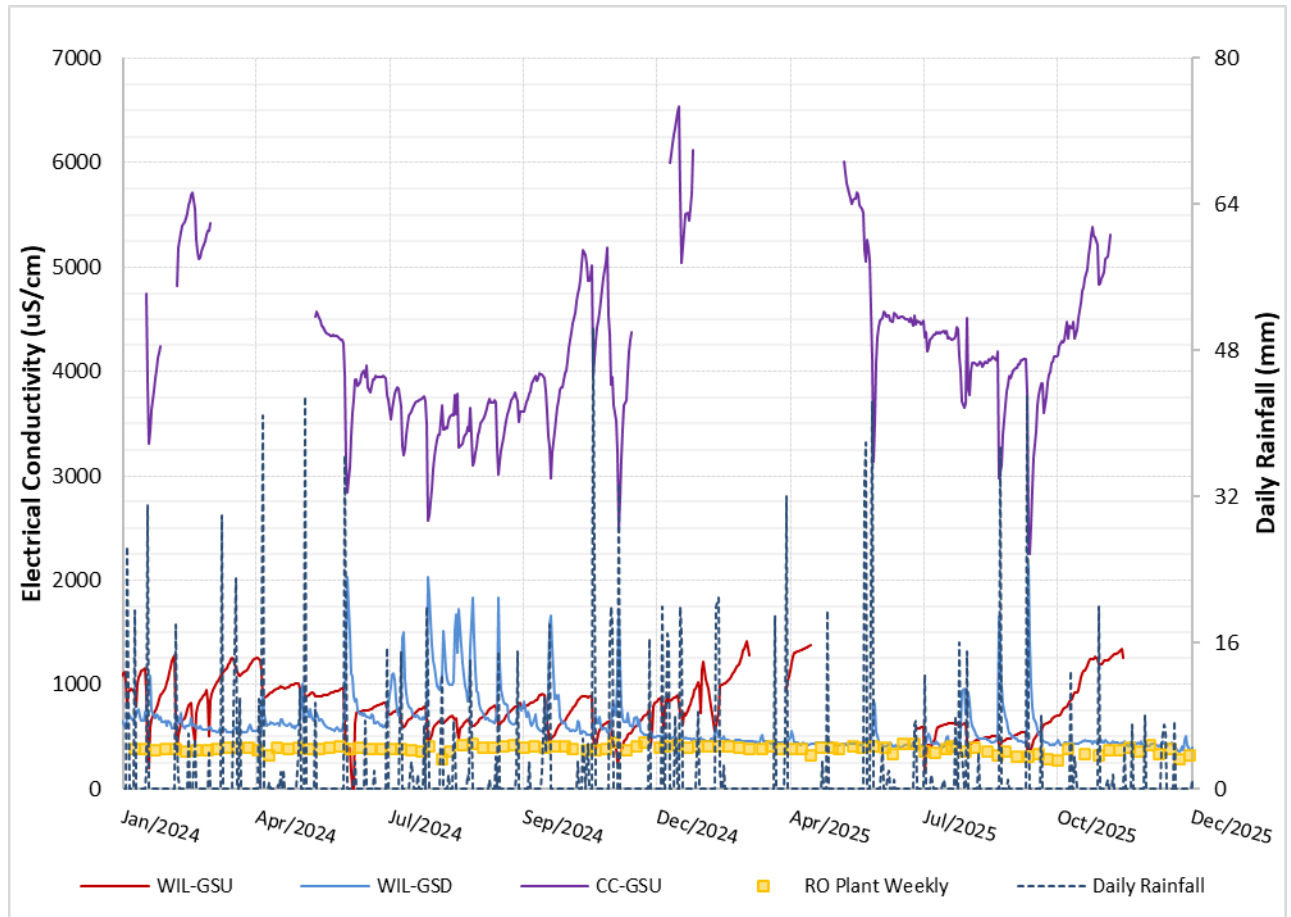


higher than 8,000  $\mu\text{S}/\text{cm}$ . Declines in EC are observed following large rainfall events, due to dilution effects.

In 2025 continuous monitoring at Cumbo Creek (CCGSU) shows generally stable EC in June (~4,500  $\mu\text{S}/\text{cm}$ ), with a slight decrease from July to September (~4,500-4,000  $\mu\text{S}/\text{cm}$ ) before increasing EC to ~5,000  $\mu\text{S}/\text{cm}$  later in 2025. EC trends in 2025 are consistent with responses observed historically in CCGSU.

Both WILGSU and WILGSD displayed generally stable EC levels across 2025 of around 750  $\mu\text{S}/\text{cm}$  upstream and 1,000  $\mu\text{S}/\text{cm}$  downstream, with short-term fluctuations linked to changing flow conditions and inputs.

**Figure 5: Continuous EC monitoring at WCM**



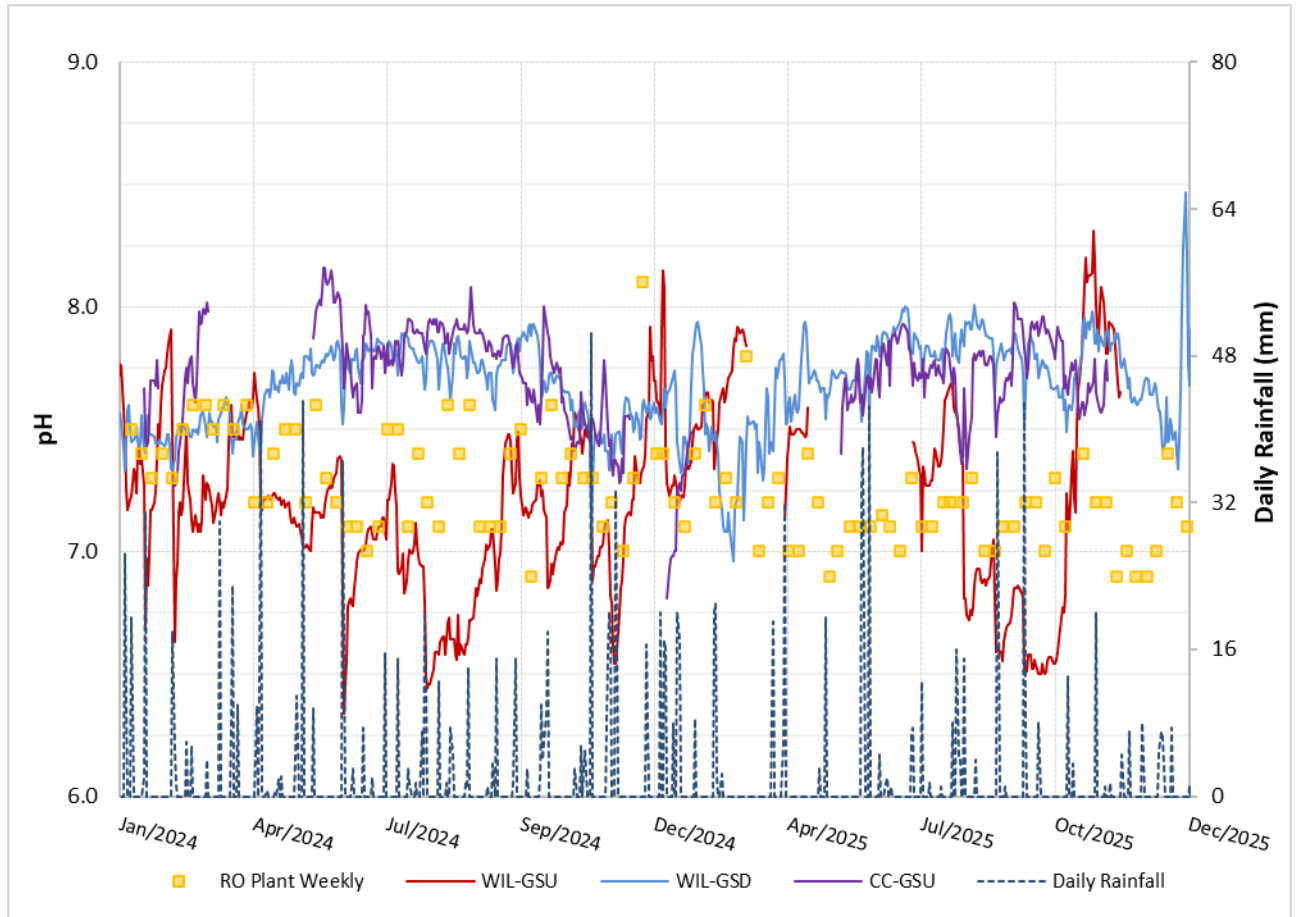
#### 4.2.2 pH

pH at CCGSU is generally consistent throughout 2025, with pH ranging from pH 7 to 8.0, showing minor decreases following periods of higher rainfall, which has lower pH (**Figure 6**).

pH at both gauging stations on Wilpinjong Creek are different by about 1 pH unit and show some correlation to periods of rainfall (declining with higher rainfall periods). For most of 2025 the pH levels in Wilpinjong Creek show some variability that appears linked with periods of high rainfall. WILGSD varies from pH 6.9 to 8.4 and WILGSU varies from pH 6.5 to 8.3.



Figure 6: Continuous pH monitoring



## 5.0 Water Quality Analysis

The following sections review surface water quality data from monitoring sites specified in Section 8 of the Surface Water Management Plan (WCPL, 2017). This review has been conducted with respect to the 20th and 80th percentile values from baseline monitoring data (**Table 6**) (which was collected from 2004 to 2009, prior to the commencement of mining) and water quality impact assessment criteria (trigger levels), where defined (**Table 7**).

Section 5.1 provides an assessment of the 2025 water quality observations with respect to the impact assessment criteria, while **Sections 5.2 to 5.6** comment on the 2025 observations with respect to the baseline water quality data.

**Table 6: Summary of Baseline Water Quality Data – Local Creeks (WCPL, 2017)**

Monitoring Site/Guideline		pH	EC (µS/cm)	Turbidity (NTU)
ANZECC (2000) Guideline Trigger Value	<b>Protection of Aquatic Ecosystems</b>	6.5-8.0	30-350	2-25
	<b>Primary Industries (Livestock Drinking Water)</b>	6-9	950	-
Wilpinjong Creek Upstream (Sites WIL-U2, WIL-U, WIL 1, WIL-PC)	Average	7	2,435	20
	Minimum	5.7	450	6
	Maximum	9	12,190	41
	No. Samples	49	49	5
	<b>80<sup>th</sup> percentile</b>	<b>7.7</b>	<b>4,066</b>	<b>24</b>
	<b>20<sup>th</sup> percentile</b>	<b>6.9</b>	-	-
Wilpinjong Creek Downstream (Sites WIL-NC, WIL-D2, WIL 2, WIL-D)	Average	8	3,531	22
	Minimum	6.7	680	4
	Maximum	9	7,450	70
	No. Samples	55	55	9
	<b>80<sup>th</sup> percentile</b>	<b>7.9</b>	<b>5,166</b>	<b>28</b>
	<b>20<sup>th</sup> percentile</b>	<b>7.4</b>	-	-
Cumbo Creek Upstream (Sites CC2, CC3, CC4, CC5)	Average	8	5,303	11
	Minimum	6.8	100	5
	Maximum	9	10,500	24
	No. Samples	70	70	15
	<b>80<sup>th</sup> percentile</b>	<b>8.2</b>	<b>6,750</b>	<b>16</b>
	<b>20<sup>th</sup> percentile</b>	<b>7.4</b>	-	-
Cumbo Creek Downstream (Site CC1)	Average	8	6,231	43
	Minimum	6.7	540	17
	Maximum	9	10,470	94
	No. Samples	27	27	6



Monitoring Site/Guideline		pH	EC (µS/cm)	Turbidity (NTU)
	<b>80<sup>th</sup> percentile</b>	<b>8.2</b>	<b>7,510</b>	<b>77</b>
	<b>20<sup>th</sup> percentile</b>	<b>7.52</b>	-	-
Wollar Creek (Sites WOL 1, WOL 2, WOL 3)	Average	8	2,311	16
	Minimum	6.5	90	2
	Maximum	8.4	6,540	37
	No. Samples	90	90	20
	<b>80<sup>th</sup> percentile</b>	<b>8.0</b>	<b>3,460</b>	<b>25</b>
	<b>20<sup>th</sup> percentile</b>	<b>7.4</b>	-	-

Where trigger levels are defined (Table 7) the review will identify any exceedances during 2025 and provide preliminary analysis.

**Table 7: Water Quality Impact Assessment Criteria (WCPL, 2017)**

Creek	Monitoring Site	Parameter	Trigger
Wilpinjong Creek (Downstream)	WIL_NC, WIL_D2, WIL_D, WIL_2	EC	If recorded value at the monitoring site is greater than <b>3,440 µS/cm</b> for 3 consecutive readings
		Turbidity	If recorded value at the monitoring site is greater than <b>24 NTU</b> for 3 consecutive readings
		pH (lower)	If recorded value at the monitoring site is less than <b>6.9 pH</b> for 3 consecutive readings
		pH (upper)	If recorded value at the monitoring site is greater than <b>7.7 pH</b> for 3 consecutive readings
Cumbo Creek (Downstream)	CC1	EC	If recorded value at the monitoring site is greater than <b>7,510 µS/cm</b> for 3 consecutive readings
		Turbidity	If recorded value at the monitoring site is greater than <b>77 NTU</b> for 3 consecutive readings
		pH (lower)	If recorded value at the monitoring site is less than <b>7.5 pH</b> for 3 consecutive readings
		pH (upper)	If recorded value at the monitoring site is greater than <b>8.2 pH</b> for 3 consecutive readings

<sup>1</sup> Trigger is only considered to have been exceeded if the recorded value at a monitoring site is greater than (or less than for lower pH Trigger) all values from the upstream monitoring sites sampled on the same day. In the event that a single result is recorded above/below the 80th/20th percentile value, WCPL will undertake a preliminary investigation to ascertain whether the result was caused by an obvious anomaly or whether further testing is required.



## 5.1 Assessment with respect to SWMP (WCPL, 2017) water quality triggers

**Table 8** identifies Water Quality Impact Assessment Criteria defined in the SWMP (WCPL, 2017) that have been exceeded during 2025. This assessment, in line with the SWMP (WCPL, 2017) has only considered triggers to be exceeded under the following circumstances:

- Trigger is only considered to be exceeded if recorded value at the monitoring site is greater than (or less than for lower pH trigger) for 3 consecutive readings.
- Trigger is only considered to have been exceeded if the recorded value at monitoring site is greater than (or less than for lower pH Trigger) all values from the upstream monitoring sites sampled on the same day.

**Table 8: Exceedances of Water Quality Impact Assessment Criteria (WCPL, 2017)**

Creek	Site	Parameter	Trigger	Exceedance during 2025	Summary of Exceedance
Wilpinjong Creek (Downstream)	WIL-NC, WIL-D2, WIL-D, WIL-2	EC	3,440 µS/cm	No	
		Turbidity	24 NTU	No	
		pH (lower)	6.9 pH (7.4 pH proposed)	No	
		pH (upper)	7.7 pH (pH 7.9 proposed)	Yes	All observations from January to December 2025 are above the upper pH trigger, and above upstream pH observations (when available) at WIL-D2 during 2025.  Observations are above the upper pH trigger at WIL-D from May to December 2025  See <b>Section 5.3.1.1</b> and <b>Figure 7</b> .
Cumbo Creek (Downstream)	CC1, CC-1-30m-up, CC-GS-D	EC	7,510 µS/cm	No	
		Turbidity	77 NTU	No	
		pH (lower)	7.5 pH	No	
		pH (upper)	8.2 pH	No	

During the 2025 assessment period, the identified trigger exceedances are upper pH trigger exceedances at Wilpinjong Creek (Downstream), as observed at WIL-D2 and WIL-D.

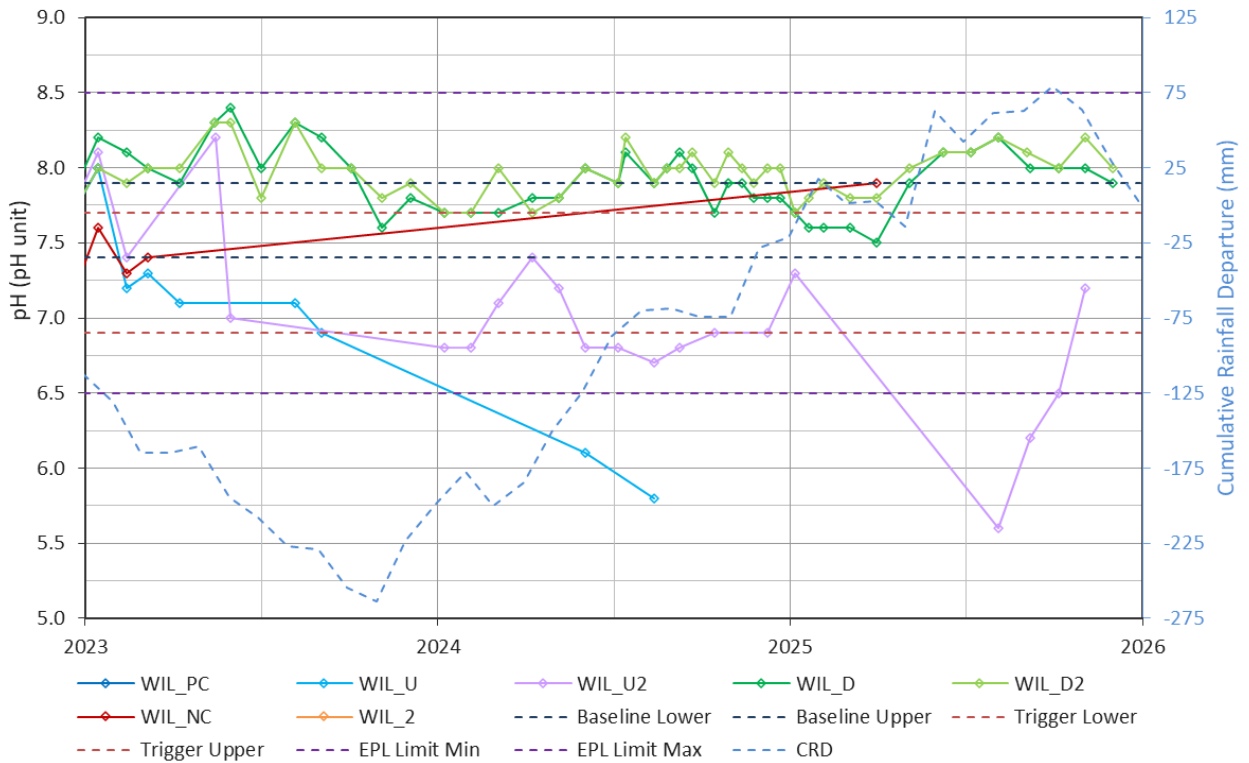
A review of possible and plausible drivers of this trigger exceedance is provided in **Section 5.3.1.1** while **Figure 7** shows time-series pH observations at all Wilpinjong Creek compliance monitoring sites to visualise the frequency and magnitude of 2025 trigger exceedances.

Baseline pH from Wilpinjong Creek downstream monitoring sites as well as pH limits discharge from EPL Point 24 (the RO Plant) are included in **Figure 7**. A submitted but not yet approved version of the SWMP (from January 2025) has indicated that pH trigger levels



at Wilpinjong Creek downstream monitoring sites should be updated to reflect downstream baseline data (pH 7.4 to 7.9 – See Table 8 of the approved SWMP Peabody (2017)). This revised SWMP also indicates that pH trigger levels downstream of RO discharge at EPL Point 24 should reflect the EPL discharge limits when RO Plant discharge is higher than background flow in Wilpinjong Creek (as measured at WILGSU).

**Figure 7: Wilpinjong Creek pH at compliance monitoring locations**



## 5.2 Wilpinjong Creek Upstream

The reach defined as Wilpinjong Upstream (WCPL, 2017) is assessed using monitoring data from sites WIL-U2, WIL-U, WILGSU and WIL-PC **Table 6**). These sites are located along Wilpinjong Creek near the northwestern edge of the current and proposed WCM mining activity (**Figure 1**). **Figure 8** presents time series pH, EC and turbidity data for these monitoring locations.

### 5.2.1 pH

pH observations at the Wilpinjong Creek Upstream monitoring sites during 2025 are likely to be influenced by low flow conditions (Section 4.1) and average rainfall (Section 2.0).

WIL\_GS\_U shows relatively stable and near neutral, with pH generally ranging from pH 6.7 to 7.6. WIL\_GS\_U likely holds water in drier periods as it is located near a weir constructed for flow measurements. Five pH observations were made at WIL\_U2 in 2025, with lower pH (pH 5.6 to pH 6.5) observed in WIL\_U2 from August to October while the January and November observations were near pH 7. No samples were collected at WIL\_U or WIL\_PC due to a lack of flow,

Near average rainfall, and subsequent lower flow conditions are considered to be the primary drivers of fluctuations in the pH observations at upstream Wilpinjong Creek monitoring sites.

### 5.2.2 Electrical Conductivity

EC observations at Wilpinjong Creek Upstream monitoring sites have shown considerable variation between 2006 and 2025 (<1,000  $\mu\text{S}/\text{cm}$  to 6,000  $\mu\text{S}/\text{cm}$ ). EC is more elevated in historical observations (>4,000  $\mu\text{S}/\text{cm}$ ) at WIL-U, WIL-U2, and WIL-PC, and are observed to occur simultaneously with fresher observations at WIL-GS-U (~2,000  $\mu\text{S}/\text{cm}$ ). More saline observations earlier in the monitoring record may indicate some component of groundwater flow from the underlying Permian coal measures. Mining of the Ulan Seam within these coal measures at WCM and adjacent Moolarben will depressurise the coal measures to some extent and may reduce the more saline contribution to Wilpinjong Creek.

A notable freshening at all Wilpinjong Creek Upstream sites occurs in late 2020 to the end of 2022 (generally <750  $\mu\text{S}/\text{cm}$ ), in response to above average rainfall conditions. An increase in EC (to ~1,000  $\mu\text{S}/\text{cm}$ ) is observed during the below average (2023) and near average (2024 and 2025) rainfall and lower flow period of 2023 and 2025 (Section 4.1). EC observations at Wilpinjong Creek Upstream monitoring sites are well below the 80th percentile baseline (4,066  $\mu\text{S}/\text{cm}$ ) for all of 2025, largely below ~2,000  $\mu\text{S}/\text{cm}$ , with no major spikes compared to earlier years.

### 5.2.3 Turbidity

Turbidity observations at Wilpinjong Creek Upstream monitoring sites continuously fluctuate between 2010 and 2025, with observations ranging from 5 – 2,000 NTU and are above the 80th percentile baseline monitoring value (24 NTU) for around half of the observations. Turbidity observations with higher values generally appear to be associated with periods of below average rainfall, particularly periods after low and no-flow conditions.

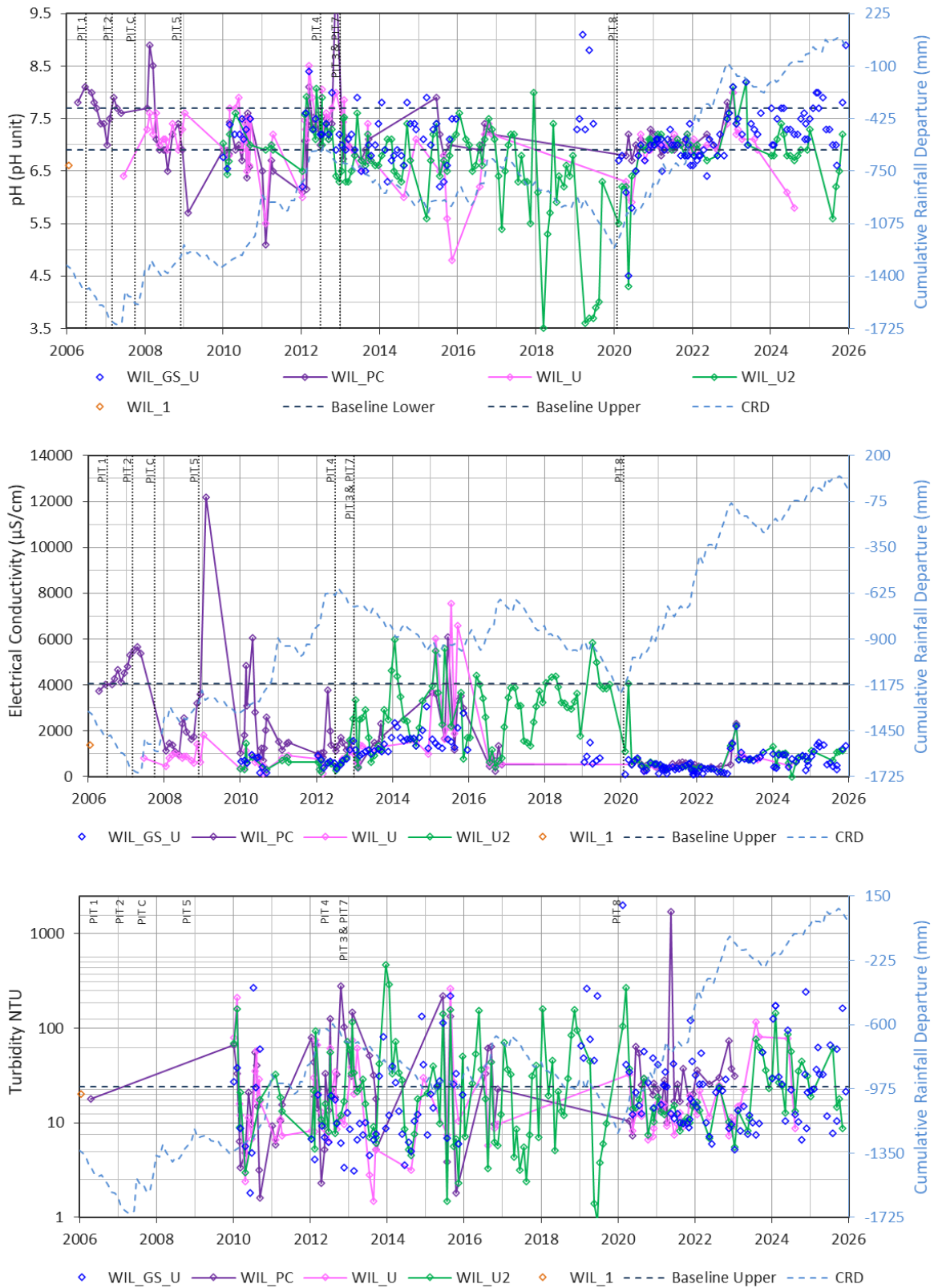
During 2025, turbidity observations ranged from 7.7 – 162 NTU with an average of 38.7 NTU. This is within the range of historical observations but is above the baseline turbidity value of 24 NTU. Future investigation could be considered since turbidity has remained high throughout 2024 and 2025.



Flow conditions (influenced by rainfall trends) are considered to be the primary drivers of turbidity observations at Upstream Wilpinjong Creek monitoring sites. If no influence of operations from WCM or upstream Moolarben can be attributed to turbidity observations consistently reporting above the 80th percentile baseline value, future reviews, or updates of the SWMP could consider updating the baseline period to better capture fluctuations under normal conditions.



**Figure 8: Time-series water quality for Wilpinjong Creek Upstream**



## 5.3 Wilpinjong Creek Downstream

The creek reach defined as Wilpinjong Creek Downstream (WCPL, 2017) is assessed against water quality trigger levels at sites WIL-NC, WIL-D2, WIL-D and WIL-GS-D (**Table 7**). These sites are located along Wilpinjong Creek, adjacent to, or just downstream of the WCM mining operations and confluence with Cumbo Creek (for sites other than WIL-NC) (**Figure 1**). The full series of available data is shown in **Figure 9**.

### 5.3.1 pH

During 2025, pH observations at Wilpinjong Creek Downstream monitoring sites are above the upper trigger level (pH 7.7) for the majority of measurements at WIL-D and WIL-D2. pH observed at Wilpinjong Creek Upstream monitoring sites (WIL-U and WIL-U2) are lower than downstream observations (WIL-D and WIL-D2) for all of 2025, therefore breaching the upper pH trigger level as defined in the SWMP (WCPL, 2017) (Table 7).

WIL-NC was not monitored in 2025 as flow was not observed during sampling for the entire year. Observations at WIL-D and WIL-D2 ranged from pH 7.5 to pH 8.2 with an average of pH 7.9 in 2025.

Time series pH observations for 2025 at all compliance monitoring locations on Wilpinjong Creek are presented in **Figure 7**, above.

These pH exceedances at Wilpinjong Creek Downstream monitoring sites were documented and assessed by SLR (2023c) consistent with requirements of the surface water Trigger Action Response Plan (TARP) (Peabody, 2017 – Table 15).

#### 5.3.1.1 Trigger Exceedance

The following points provide an evaluation of the pH trigger exceedance and consider whether it is likely related to WCM operations. These points draw on the detailed trigger investigation undertaken in SLR (2023c):

- Higher pH surface water is naturally occurring in the Wilpinjong area (Cumbo Creek and Wollar Creek). pH at downstream Wilpinjong Creek is also generally higher than upstream. Historical observations from 2007 and 2013/14 are also above pH 8.
- Discrepancy was identified between real-time datasets (WIL-GSD, **Figure 6**) and manual (monthly or rain event) pH observations (**Figure 7**). Variations in these datasets increase uncertainty when evaluating data and identifying potential mining effects.
- Cumbo Creek is likely influencing the water signature of Wilpinjong Creek (downstream of the confluence) and is likely contributing bicarbonate alkalinity to Wilpinjong Creek. Higher bicarbonate alkalinity is linked to higher pH at Wilpinjong (SLR, 2023c).
- There is no clear evidence of elevated levels in site water storages which could result in the seepage of mine water to Wilpinjong Creek. However, this possibility should remain a consideration.
- Higher pH surface water is present locally, outside the influence of WCM operations. The exceedance is therefore unlikely to pose a threat to the health of local ecosystems. Observations in 2023 of pH 8.6 at upstream Wollar Creek (WOL2), and ~pH 8.5 at upstream Cumbo Creek (CC-3) are consistent with available historical data.



As specified in the surface water annual review and SLR Trigger Exceedance assessment (2023c), baseline pH data collected for downstream Wilpinjong Creek sites have a 20th percentile value of pH 7.4 and an 80th percentile value of pH 7.9 (**Table 6**). Therefore, under normal conditions, pH observations are expected to be higher than pH 7.9, around 20% of the time, meaning a trigger level of pH 7.7 may be too low to meaningfully indicate a potential Wilpinjong Coal mining effect that justifies further investigation.

A submitted but not yet approved version of the SWMP (from January 2025) has indicated that pH trigger levels at Wilpinjong Creek downstream monitoring sites should be updated to reflect downstream baseline data (pH 7.4 to 7.9) based on the SLR (2023c) investigation. This revised SWMP also indicates that pH trigger levels downstream of RO discharge at EPL Point 24 should reflect the EPL discharge limits for pH (pH 6.5 - 8.5) when RO Plant discharge is higher than background flow in Wilpinjong Creek (as measured at WILGSU).

Under these proposed updates, the pH trigger level would not have been exceeded in 2025, noting that RO discharge was consistently higher than flow from Wilpinjong Creek upstream.

### 5.3.2 Electrical Conductivity

As discussed in **Section 4.2**, EC observations at Wilpinjong Creek Downstream monitoring sites are influenced by upstream flow from Wilpinjong Creek, flow from Cumbo Creek, discharge permissible under EPL 12425, and some contribution of groundwater baseflow. This has resulted in higher EC observations in periods of low flow, which is attributed to greater contributions from baseflow or Cumbo Creek flow. Also observed are longer periods of consistently low EC observations from 2016 to 2018 attributed to low EC RO Plant discharge.

In 2025, EC observations are generally between 500-2,000  $\mu\text{S}/\text{cm}$  and all observations are below the trigger level.

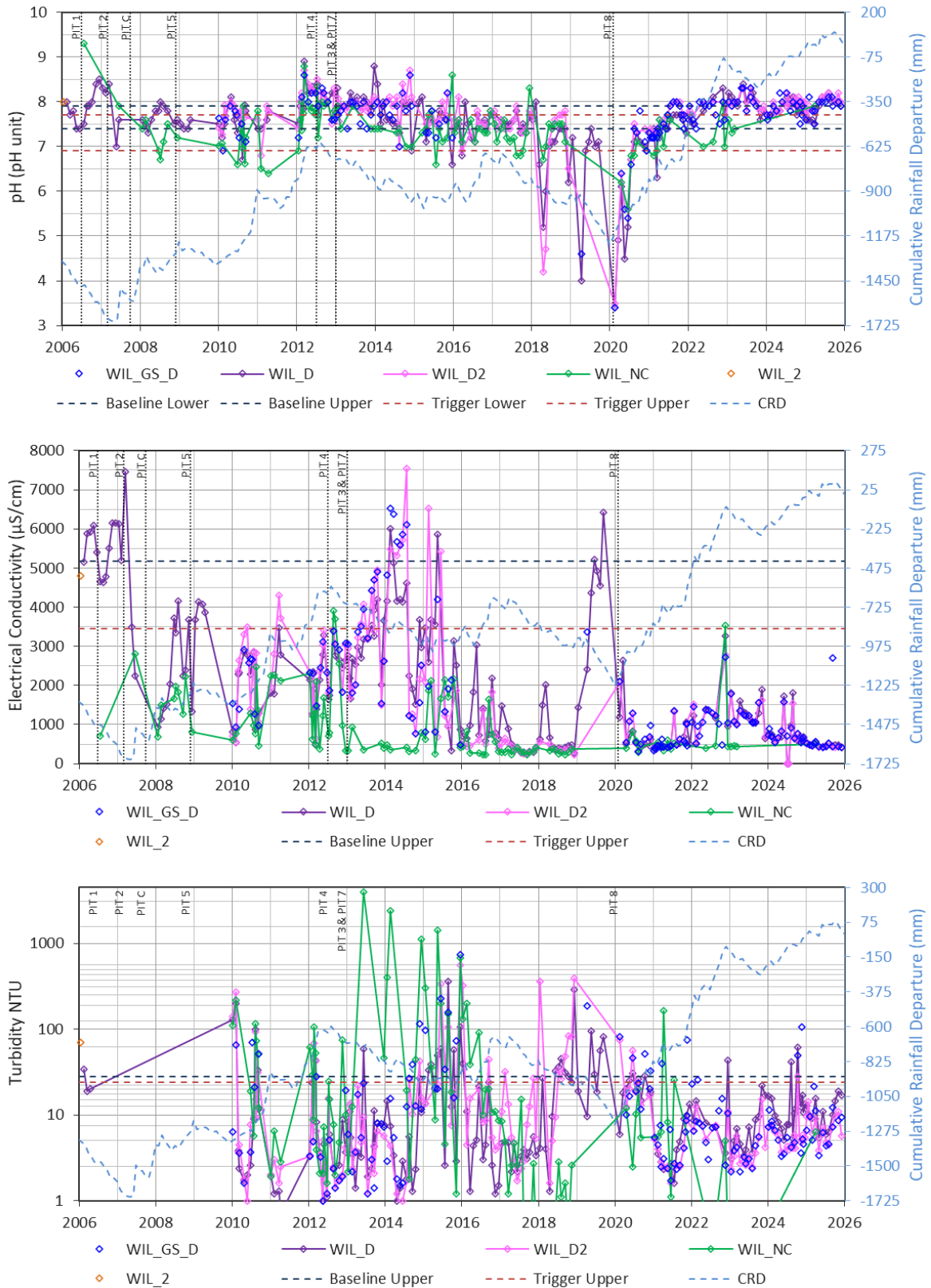
### 5.3.3 Turbidity

Turbidity observations at monitoring sites in the Wilpinjong Creek downstream sites show some variability from 2010 to 2025 (1-1,000 NTU) (**Figure 9**), with a minor inverse relationship to the rainfall trend (i.e. higher than average rainfall can result in lower turbidity)..

During 2025, turbidity observations at Wilpinjong Creek Downstream monitoring sites are generally below the 80th percentile baseline (28 NTU) and trigger level (24 NTU).



**Figure 9: Time-series water quality for Wilpinjong Creek Downstream**



## 5.4 Cumbo Creek Upstream

The creek reach defined as Cumbo Creek Upstream (WCPL, 2017) is assessed using monitoring data from sites CC2, CC3, CC-GS and CC-GS-U (**Table 6**). These sites are located along Cumbo Creek to the south of WCM (**Figure 1**). **Figure 10** presents time series pH, EC and turbidity data for these monitoring locations.

### 5.4.1 pH

pH observations at Cumbo Creek Upstream have been relatively stable from 2015 through 2025. The farthest upstream site, CC-3, has reported observations of around pH 8.3 over 2015-2025 while CC-2 and CC-GS-U were closer to pH 8. In 2025, pH observations at CC-2 and CC-GS-U were recorded within the 20th and 80th percentile baseline value whilst CC-3 showed more alkaline readings; this is consistent with observations since 2015 and earlier historical observations.

### 5.4.2 Electrical Conductivity

EC observations at Cumbo Creek Upstream show considerable variation for the entire period of monitoring (<1,000  $\mu\text{S}/\text{cm}$  to ~10,000  $\mu\text{S}/\text{cm}$ ) but are generally brackish to saline. Freshening may occur following increases in the long-term rainfall trend as is seen in late 2016, and again from mid-2021 to the end of 2022, with the inverse observed in periods of low rainfall.

During 2025 EC observations continued to show an increasing EC trend that began in 2023. This is likely driven by a return to below average (2023), near average (2024), and above average (2025) rainfall conditions which may result in a greater proportion of groundwater discharge to Cumbo Creek compared to 2022 observations in high rainfall conditions. 2025 observations at all sites remain below the 80th percentile baseline (6,750  $\mu\text{S}/\text{cm}$ ).

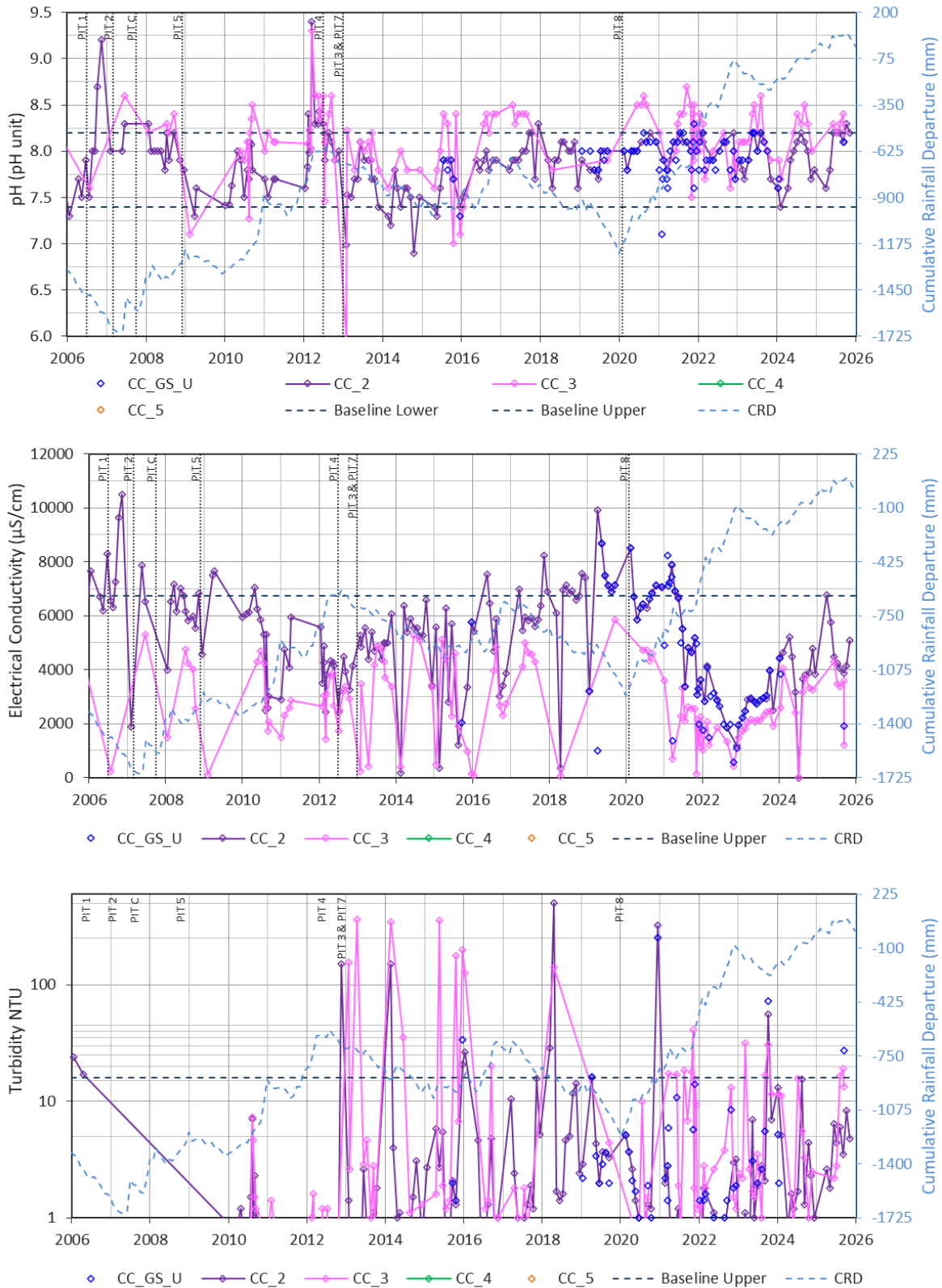
A combination of rainfall, subsequent flow and ongoing baseflow contributions are considered to be the primary drivers of EC observations at Cumbo Creek monitoring sites.

### 5.4.3 Turbidity

Turbidity observations at Cumbo Creek Upstream monitoring sites in 2025 are below the 80th percentile baseline value for data collected from 2004 to 2009 (16 NTU) with exception of CC-2 and CC-GS-U observations for August and September, which reached a maximum of 27.2 NTU observed at CC-GS-U in September 2025. Below average rainfall for August and subsequent above average rainfall for September 2025 might be considered the main driver of the higher turbidity observed during this period, with a “first flush” effect after a dryer period in August.



**Figure 10: Time-series water quality for Cumbo Creek Upstream**



## 5.5 Cumbo Creek Downstream

The reach defined as Cumbo Creek Downstream is assessed against water quality trigger levels at site CC1, CC-GS-D, and CC-1-(up 30 m) (**Table 7**). These sites are located close to the confluence of the Wilpinjong and Cumbo Creeks and are near the northern extent of the WCM mining operations (**Figure 1**). No samples were taken at the alternate downstream Cumbo Creek site, CC-1-(up 30 m) during 2025. Access can be unsafe to this site, and sampling is frequently unsuccessful due to a lack of observable surface flow. It is therefore, not considered further in this analysis.

### 5.5.1 pH

From 2015 to early 2019, pH observations at Cumbo Creek Downstream monitoring sites were consistently below the trigger level defined in the SWMP (WCPL, 2017) at a level of around pH 7 (Figure 11). They were also generally lower than pH observations from Cumbo Creek Upstream monitoring sites (Figure 10).

Throughout 2025 both monitoring sites, CC-1, and CC-GS-D, were generally within the pH trigger level limits (pH 8.2), with one observation below the lower pH trigger level (pH 7.5) at the Cumbo Creek downstream sites in April 2025, when a pH of 7.3 was registered for both CC-1 and CC-GS-D.

### 5.5.2 Electrical Conductivity

EC observations at Cumbo Creek Downstream monitoring sites show considerable variation from 2015 through 2025 (<1,000  $\mu\text{S}/\text{cm}$  to ~6,400  $\mu\text{S}/\text{cm}$ ) but have not recorded an observation above the trigger level since 2015 (7,510  $\mu\text{S}/\text{cm}$ ).

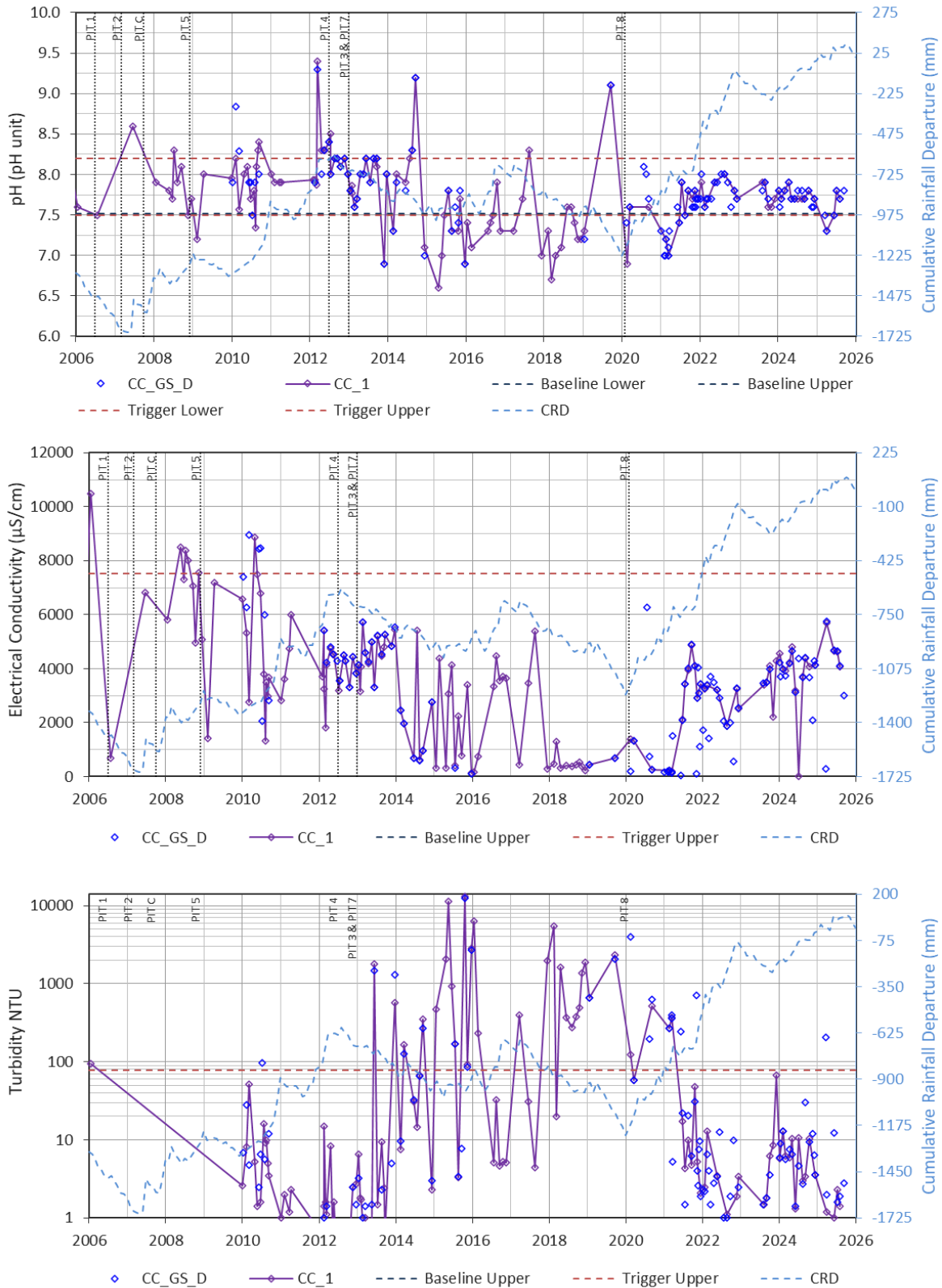
During 2025, EC observations at Cumbo Creek Downstream monitoring sites are well below the trigger level (7,510  $\mu\text{S}/\text{cm}$ ) with readings reaching a maximum of 5,760  $\mu\text{S}/\text{cm}$ .

### 5.5.3 Turbidity

Turbidity observations at Cumbo Creek Downstream monitoring sites in 2025 were below the trigger level (77 NTU) except a single observation of 205 NTU at CC\_GS\_D in March 2025



**Figure 11: Time-series water quality for Cumbo Creek Downstream**



## 5.6 Wollar Creek

Wollar Creek is assessed using monitoring data from sites WOL1 and WOL2 (Figure 1). The sites are located along Wollar Creek to the east and south of WCM, with WOL1 located downstream of the confluence between Wilpinjong and Wollar Creeks. The Wollar Creek monitoring sites are located approximately 5 km from the current extent of the WCM mining activity.

### 5.6.1 pH

pH observations at Wollar Creek have been relatively stable from 2015 through 2025. WOL-1 and WOL-2 observations have been marginally higher than the 80th percentile value (pH 8.0), with a range of pH 7.9 to 8.3 in WOL-1 and pH 7.7 to 8.1 seen in WOL-2.

The observations at both sites are generally consistent with observations from previous years though WOL-2 has shown a general increase in pH since 2015, with 2025 values higher than generally observed in historical data at approximately pH 8.0.

### 5.6.2 Electrical Conductivity

EC observations at both Wollar Creek monitoring locations show some influence from rainfall as well as baseflow from more saline groundwater.

In 2025, all EC observations are below the 80th percentile baseline values (<3,500  $\mu\text{S}/\text{cm}$ ).

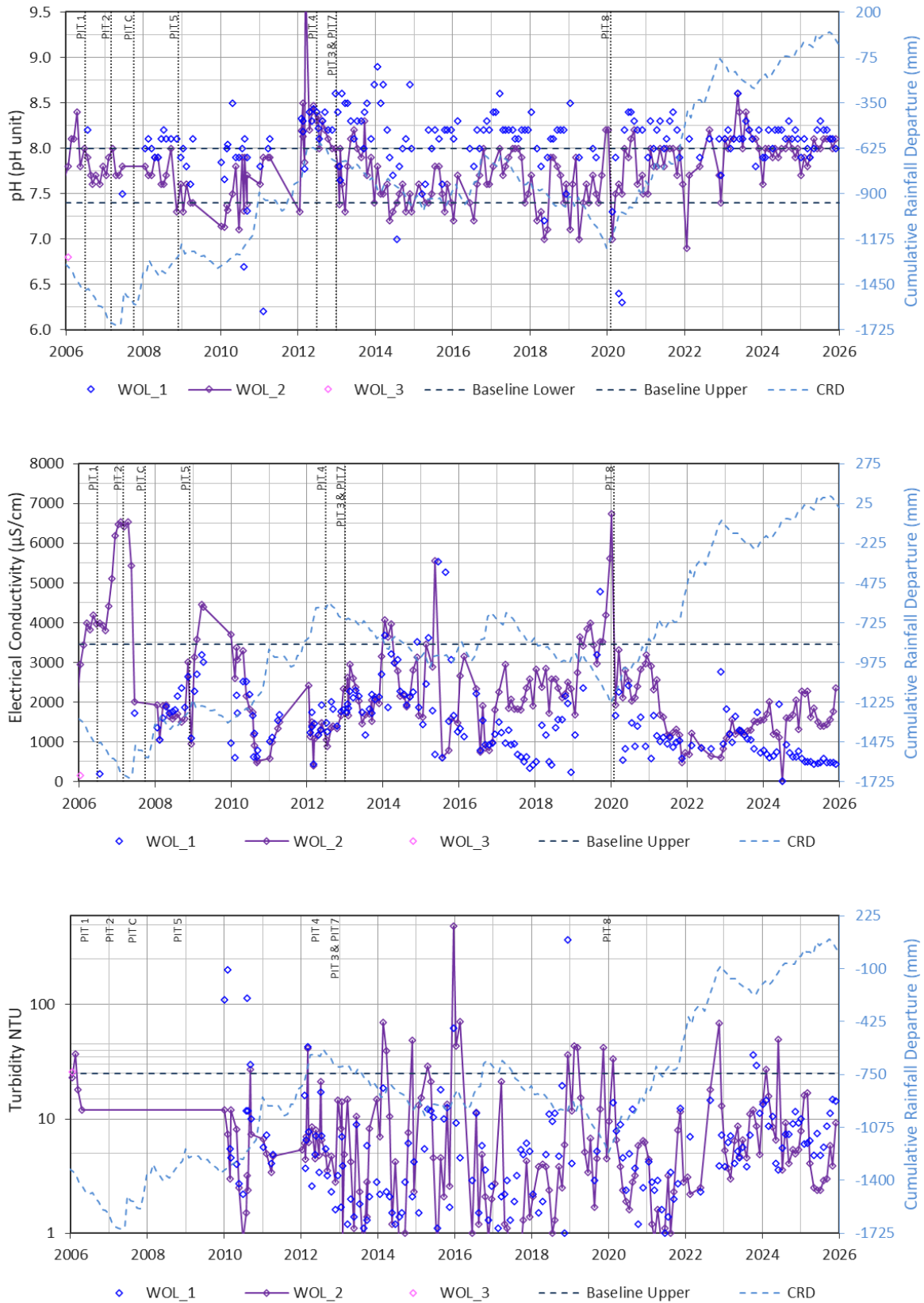
### 5.6.3 Turbidity

Turbidity observations at Wollar Creek monitoring sites have been relatively stable from 2015 through 2025 and have generally been recorded below the 80th percentile of baseline data collected from 2004-2009 (25 NTU).

Turbidity observations during 2025 at Wollar Creek monitoring sites were below the 80th percentile baseline (25 NTU). Overall, turbidity readings for 2025 are consistent with observations for the entire monitoring period (2006-2025).



**Figure 12: Time-series water quality for Wollar Creek**



## 6.0 Recommendations

The only TARP exceedances experienced in 2025 are that associated with pH observations above the trigger level in the Wilpinjong Creek Downstream monitoring locations.

SLR completed the preliminary investigation of the pH trigger exceedances within the WCM surface water monitoring network (SLR, 2023c) at Wilpinjong Creek downstream sites, consistent with the trigger action response plan (TARP) for surface water quality (SWMP Table 15 – WCPL, 2017).

The submitted but not yet approved version of the SWMP (from January 2025) has indicated that pH trigger levels at Wilpinjong Creek downstream monitoring sites should be updated to reflect downstream baseline data (pH 7.4 to 7.9) consistent with findings from SLR (2023c). This revised SWMP also indicates that pH trigger levels downstream of RO discharge at EPL Point 24 should reflect the EPL discharge limits when RO Plant discharge is higher than background flow in Wilpinjong Creek (as measured at WILGSU).

It is recommended that future assessments of pH consider these proposed revisions to the pH trigger levels to help evaluate whether trigger exceedances are likely to be adverse effects from Wilpinjong operations.



## 7.0 References

ANZECC, ARMCANZ (2000). Australian and New Zealand Guidelines for Fresh and Marine Water Quality, Paper 4 National Water Quality Management Strategy. Australian and New Zealand Environment and Conservation Council, Agriculture and Resource Management Council of Australia and New Zealand, Canberra. Vol. 1, pp. 4.2-15.

SLR (2021). Wilpinjong Coal Mine - Surface Water Monitoring Review 2020. Report 665.10014.00305-L02-v1.1-20210329 for Wilpinjong Coal Pty Ltd. March 2021

SLR (2022a) Wilpinjong Coal Mine - Surface Water Monitoring Review 2021. Report 665.10014.01205-R01-v2.0-20220329 for Wilpinjong Coal Pty Ltd. March 2022

SLR (2022b) Wilpinjong Coal Mine – Water Management Plan Support. Report 665.10014.01515 for Wilpinjong Coal Pty Ltd. June 2022.

SLR (2022c) Wilpinjong Creek - Mine Water Discharge Assessment (pertaining to the Oct/Nov 2022 EPL Emergency Water Discharge). Report 665.10014.02005-R01-v2.0-20221202 for Wilpinjong Coal Pty Ltd. December 2022.

SLR (2023a) Wilpinjong Creek - Mine Water Discharge Assessment (pertaining to the Dec 2022/Jan 2023 EPL Emergency Water Discharge). Report 665.10014.02105-R01-v2.0-20230127 for Wilpinjong Coal Pty Ltd. January 2023.

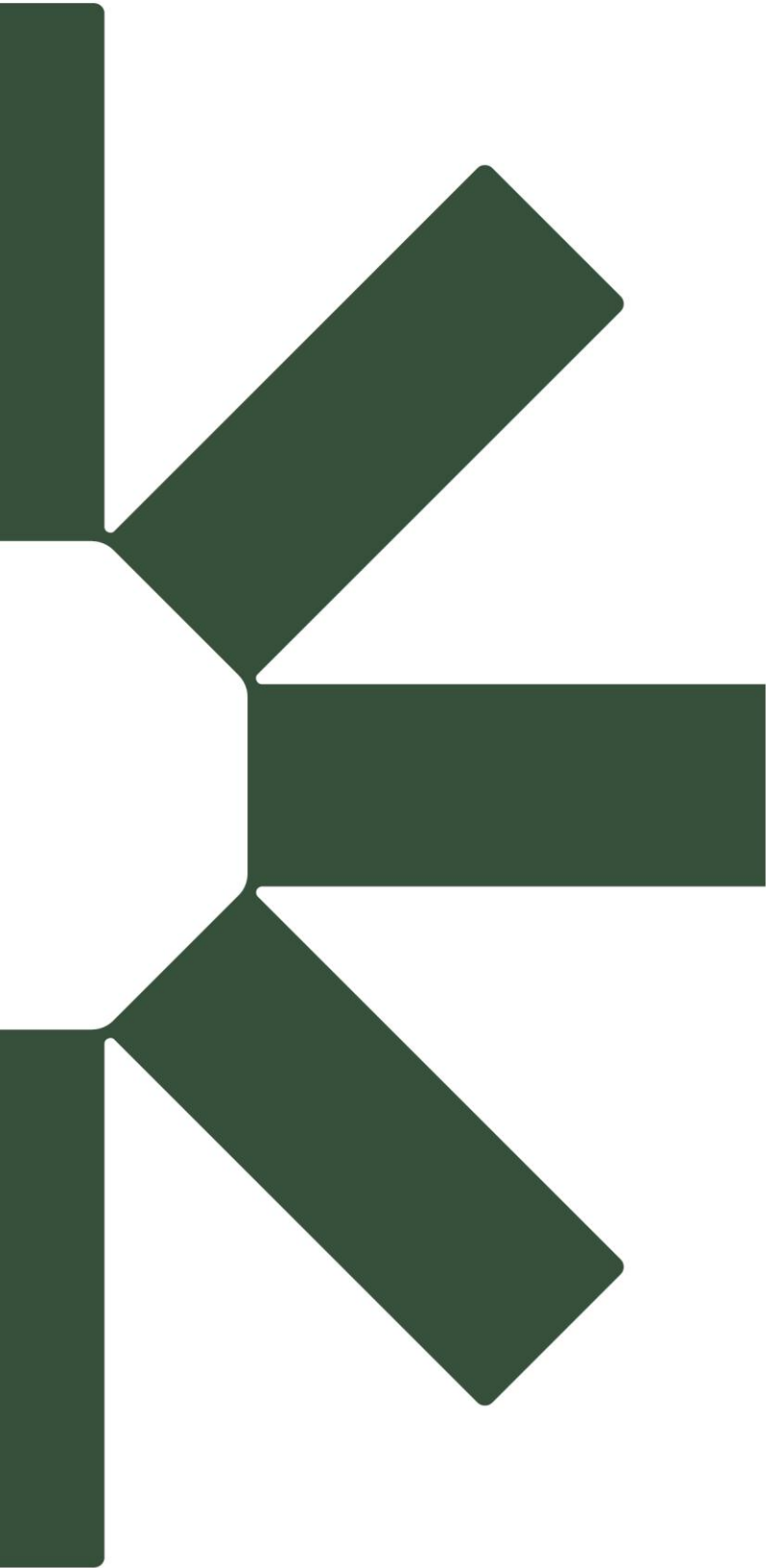
SLR (2023b). Wilpinjong Coal Mine - Surface Water Monitoring Review 2022. Report 665.10014.02305-R01-v2.0-20230331 for Wilpinjong Coal Pty Ltd. March 2023

SLR (2023c) Wilpinjong Creek Surface Water pH Trigger Exceedance Investigation. Report 665.10014.02407-R01-v3.0-20231026 for Wilpinjong Coal Pty Ltd. October 2023.

SLR (2024). Wilpinjong Coal Mine - Surface Water Monitoring Review 2023. Report 665.10014.02305-R01-v2.0-20230331 for Wilpinjong Coal Pty Ltd. March 2024

WCPL, 2017. Wilpinjong Coal - Surface Water Management Plan. August 2017. Document number: WI-ENV-MNP-0040





Making Sustainability Happen



# Site Water Balance Model

## Model Update and Calibration 2026

### Wilpinjong Coal Mine

#### Wilpinjong Coal Pty Ltd

1434 Ulan-Wollar Road  
Wilpinjong NSW 2850

Prepared by:

#### SLR Consulting Australia

10 Kings Road, New Lambton NSW 2305,  
Australia

SLR Project No.: 630.032812.00001

31 March 2026

Revision: 01

## Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
01	25 March 2026	Emily Curtis	Walter Rowlands/ Paul Delaney	Walter Rowlands

## Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Wilpinjong Coal Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.



## Table of Contents

<b>Basis of Report</b> .....	<b>i</b>
<b>1.0 Introduction</b> .....	<b>1</b>
<b>2.0 Background</b> .....	<b>2</b>
2.1 Operational Description .....	2
2.2 Approvals and Licences .....	2
<b>3.0 Water Management System</b> .....	<b>4</b>
3.1 Overview .....	4
3.2 Water Storage infrastructure and Voids .....	5
3.2.1 Function and Specifications .....	5
3.2.2 Storage Characteristics .....	7
3.2.3 Storage Capacities .....	7
3.2.4 Catchment Breakdown .....	8
3.2.5 Water Transfer Infrastructure .....	8
3.3 Water Inventory Monitoring .....	9
<b>4.0 Climate</b> .....	<b>11</b>
4.1 Overview .....	11
4.2 Rainfall .....	11
4.2.1 Annual Rainfall (Data Drill) .....	11
4.2.2 Rainfall Statistics (Data Drill) .....	12
4.2.3 Data Drill vs Site and BoM Rainfall .....	12
4.3 Evaporation .....	13
4.4 Catchment Yield .....	14
4.4.1 Overview .....	14
4.4.2 Parameters .....	14
<b>5.0 Site Water Usage</b> .....	<b>15</b>
5.1 CHPP and MIA Usage .....	15
5.1.1 CHPP Usage .....	15
5.1.2 MIA and Miscellaneous Usage .....	17
5.2 Haul Road Dust Suppression .....	18
5.2.1 Measured Water Usage .....	18
5.2.2 Dust Suppression Sub Model .....	20
5.3 Water Destruction (Sprays) .....	21
5.4 Water Destruction (Irrigation) .....	22
5.5 Harvestable Rights .....	22
5.6 Water Accounting .....	24



<b>6.0</b>	<b>Water Treatment Facility</b>	<b>25</b>
6.1	Overview	25
6.2	Historical Performance	26
6.3	Model Configuration	26
<b>7.0</b>	<b>Discharge</b>	<b>28</b>
7.1	Controlled Discharge	28
7.1.1	Model Configuration	29
7.2	Emergency Discharge	29
7.2.1	Model Configuration	30
<b>8.0</b>	<b>External Water Import</b>	<b>30</b>
8.1	Overview	30
8.2	Model Configuration	31
<b>9.0</b>	<b>Groundwater</b>	<b>31</b>
9.1	Groundwater Inflows	31
9.1.1	Definition	31
9.1.2	Previous Estimates	31
9.1.3	Current Estimates	32
9.1.4	Model Configuration	33
9.2	Spoil Aquifers	34
9.2.1	Overview	34
9.2.2	Properties	34
9.2.3	Model Configuration	35
<b>10.0</b>	<b>Water Quality</b>	<b>37</b>
<b>11.0</b>	<b>Water Balance Model</b>	<b>39</b>
11.1	Overview	39
11.2	Model Schematisation	39
11.3	Model Calibration	39
11.3.1	Overview	39
11.3.2	Configuration	39
11.3.3	Outcomes	40
11.4	Salt Balance Verification	41
11.5	Base Case Model Operating Rules	42
11.6	Performance of Site WMS During Drought Conditions	45
11.7	Performance of Site WMS During Very Wet Conditions	46
<b>12.0</b>	<b>Forecast of Site Water Behaviour</b>	<b>46</b>
12.1	Model Configuration	46



12.1.1	Simulation Methodology .....	46
12.1.2	Catchment Breakdown .....	47
12.1.3	Site Water Management System Operations .....	47
12.2	Outcomes .....	48
12.2.1	Water Balance .....	48
12.2.2	Salt Balance .....	49
<b>13.0</b>	<b>Conclusions and Recommendations .....</b>	<b>51</b>
13.1	Model Limitations .....	52
<b>14.0</b>	<b>References .....</b>	<b>53</b>



## Tables in Text

Table 1: Key Water Storage and Void Specifications with Functional Descriptions.....	5
Table 2: Adopted Full Storage Levels for Site Water Storages.....	7
Table 3: Mining Pit Overflow and Recommended Maximum Fill Levels.....	8
Table 4: Water Transfer Infrastructure Modelled Capacities.....	9
Table 5: Long-Term Data Drill Rainfall Statistics (mm).....	12
Table 6: Long-term Data Drill Mlake Evaporation Statistics (mm).....	14
Table 7: Calibrated AWBM Parameters.....	14
Table 8: Production Summary.....	16
Table 9: Dust Suppression Fill Point Demand.....	19
Table 10: Harvestable Rights Inputs and Estimates – 2025 Reporting Period.....	23
Table 11: Water Accounting at Wilpinjong – 2025 Reporting Period (October 2024 – September 2025).....	24
Table 12: Feedwater Flow Rate Relationship.....	27
Table 13: Summary of Emergency Discharge.....	30
Table 14: Summary of Average Daily Groundwater Inflow.....	32
Table 15: Groundwater Intake Model Configuration.....	33
Table 16: Adopted Salinity Generation Rules.....	37
Table 17: Average Electricity Conductivity ( $\mu\text{S}/\text{cm}$ ) by Month and Sampling Location.....	38
Table 18: Wilpinjong WBM Operating Rules.....	42

## Figures in Text

Figure 1: End of Year 2025 General Arrangement.....	3
Figure 2: Monitored Site Water Inventory.....	10
Figure 3: Historical Annual Rainfall Percentiles.....	12
Figure 4: Cumulative Rainfall (Resetting 1 <sup>st</sup> Jan) – Site AWS, BoM Wollar, SILO.....	13
Figure 5: Coal Washing Process Conceptual Model (Source: WRM, 2019).....	16
Figure 6: CHPP and MIA Monitored Demand.....	17
Figure 7: Metered Haul Road Dust Suppression Water Usage.....	19
Figure 8: Dust Suppression Sub Model: Modelled vs Monitored Data.....	20
Figure 9: Monitored Evaporator Throughput.....	21
Figure 10: Monitored Irrigation Usage.....	22
Figure 11: Conceptual Schematic – WTF and River Discharge Process.....	25
Figure 12: Historical WTF Discharge Volumes.....	26
<b>Figure 13: WTF Sub Model: Modelled vs Monitored Values.....</b>	<b>27</b>
Figure 14: Pit 8 CWD Controlled Discharge to LDP 30.....	29



Figure 15: Average Daily Import Rates.....	31
Figure 16: Indicative Cross Section West to East in Northern Portion of Mine.....	34
Figure 17: Spoil Aquifer Layout .....	35
Figure 18: WBM Calibration Simulated vs Measured Combined Site Inventory.....	41
Figure 19: Salinity Verification Simulated vs Measured – Pit 2W .....	42
Figure 20: Forecast Site Water Inventory – 2026 to 2028 .....	48
Figure 21: CWD Forecast Salinity – 2026 to 2028.....	50
Figure 22: RWD Forecast Salinity – 2026 to 2028.....	50
Figure 23: Pit 2W Forecast Salinity – 2026 to 2028.....	51

## Appendices

- Appendix A Model Schematic**
- Appendix B Catchments and Land Use**
- Appendix C Long-Term Water Quality Data**
- Appendix D Storage Curves**



## 1.0 Introduction

Wilpinjong Coal Pty Ltd (WCPL) operates the Wilpinjong Coal Mine (WCM) which is located approximately 40 km north-east of Mudgee in the Mid-Western region of New South Wales (NSW).

WCPL have developed and continue to maintain a water balance simulation model for the WCM. Initially, the site utilised OPSIM simulation software calibrated to monitoring data between January 2014 and January 2018. The model was then redeveloped in 2020 by SLR Consulting Pty Ltd (SLR, 2020a) using the GoldSim software package and data obtained between January 2018 and December 2019. The GoldSim model has been recalibrated annually since its inception in 2020, with the most recent calibration prior to this study completed in October 2025 as part of the development of water tracking spreadsheet (SLR, 2025b).

WCPL are required to prepare a site water balance in accordance with Condition 30(d)(ii), Schedule 3 of Development Consent SSD-6764. WCPL have engaged SLR to review and update the WCPL Water Balance Model (WBM) to capture changes to the site water catchments and management system during 2025 and calibrate the WBM using monitoring data collected up to the end of December 2025.

This report documents the model update process and outcomes, including:

- Collation and review of historical water monitoring data;
- Review of WCPL's harvestable rights for 2025;
- Updated catchment and land use mapping and changes incorporated to the Water Management System (WMS) in 2025;
- Calibration of WCPL's GoldSim model against the 2025 GoldSim output and data collected between April 2022 and December 2025;
- Description of the GoldSim model, operating rules, and model schematic; and
- Forecast of site water behaviour for the next three years (2026 to 2028).

The intent of this report is to document the basis of the updated WCPL GoldSim model for the 2025 Annual Review, including assessing the predicted water balance versus actual monitored water inventory during 2025, and to provide a 3-year forward projection of water balance at WCM.

Primary changes made within the WBM during this model update include:

- Revised evaporation factor;
- Updated spoil aquifer arrangement;
- Updated water destruction and dust suppression arrangements;
- Revised WTF inflow rates;
- Revised groundwater submodel; and
- Revised total site inventory storages (i.e. removal of Pit 5N).



## 2.0 Background

### 2.1 Operational Description

The WCM is an open cut thermal coal mine located approximately 40 km north-east of Mudgee near the village of Wollar, within the Mid-Western Regional Local Government Area (LGA) in central NSW.

WCM is owned and operated by WCPL, a wholly owned subsidiary of Peabody Energy Australia Pty Ltd (Peabody). The WCM (“the mine” or “the site”) extracts Run-of-Mine (ROM) coal from the Ulan Seam or Moolarben Coal Member which is either processed on site at the coal handling and preparation plant (CHPP) or bypassed directly to product stockpiles. Current approvals permit production of up to 16 million tonnes per annum (Mtpa) of ROM coal. Coal products are transported by rail on the existing Sandy Hollow Gulgong Railway to domestic energy generators and to the Port of Newcastle for export (Resource Strategies, 2015).

The WCM has eight approved open cut mining areas, named Pit 1 through to Pit 8. Mining is currently undertaken in Pits 1 to 8. Open cut mining of Pit 1, 2 and 5 historically originated at a point and has progressed outward, forming a series of peripheral excavations separated by backfilled spoil. These sub-pits are defined based on their relative position within the associated main pit, i.e., Pit 5 South (Pit 5S), Pit 5 North (Pit 5N) and so on.

WCM is located adjacent to the right (southern) bank of Wilpinjong Creek, which is incised into a valley between the sandstone plateaus of the Munghorn Gap Nature Reserve to the south, and the Goulburn River National Park to the north. The mine is located on the alluvial/colluvial flats associated with the gullies draining the southern escarpment. The valley flats have typical gradients toward Wilpinjong Creek of approximately 1 in 65 (1.5%). The escarpment rises approximately 100 m from the valley floor to elevations exceeding 450 m Australian Height Datum (mAHD) on the plateau. The sandstone plateaus are heavily forested. The surrounding valley flats are used for cattle and sheep grazing with intermittent cropping, principally for fodder (WRM, 2015).

A general arrangement plan of WCM as of 31 December 2025 is provided in **Figure 1**.

### 2.2 Approvals and Licences

WCM originally operated under Project Approval 05-0021 that was granted by the NSW Minister for Planning under Part 3A of the NSW Environmental Planning and Assessment Act 1979 (EP&A Act) on 1 February 2006.

On 24 April 2017, WCPL was granted Development Consent SSD 6764 for the Wilpinjong Extension Project (WEP) that provides for the continued operation of WCM at rates of up to 16 Mtpa of ROM coal out to 2033, and access to approximately 800 hectares (ha) of open cut extensions. Development Consent SSD 6764 has superseded the Project Approval 05 0021, which was surrendered on 28 April 2020 as required under SSD-6764.

WCM is also subject to conditions outlined in Environmental Protection Licence (EPL) No. 12425.

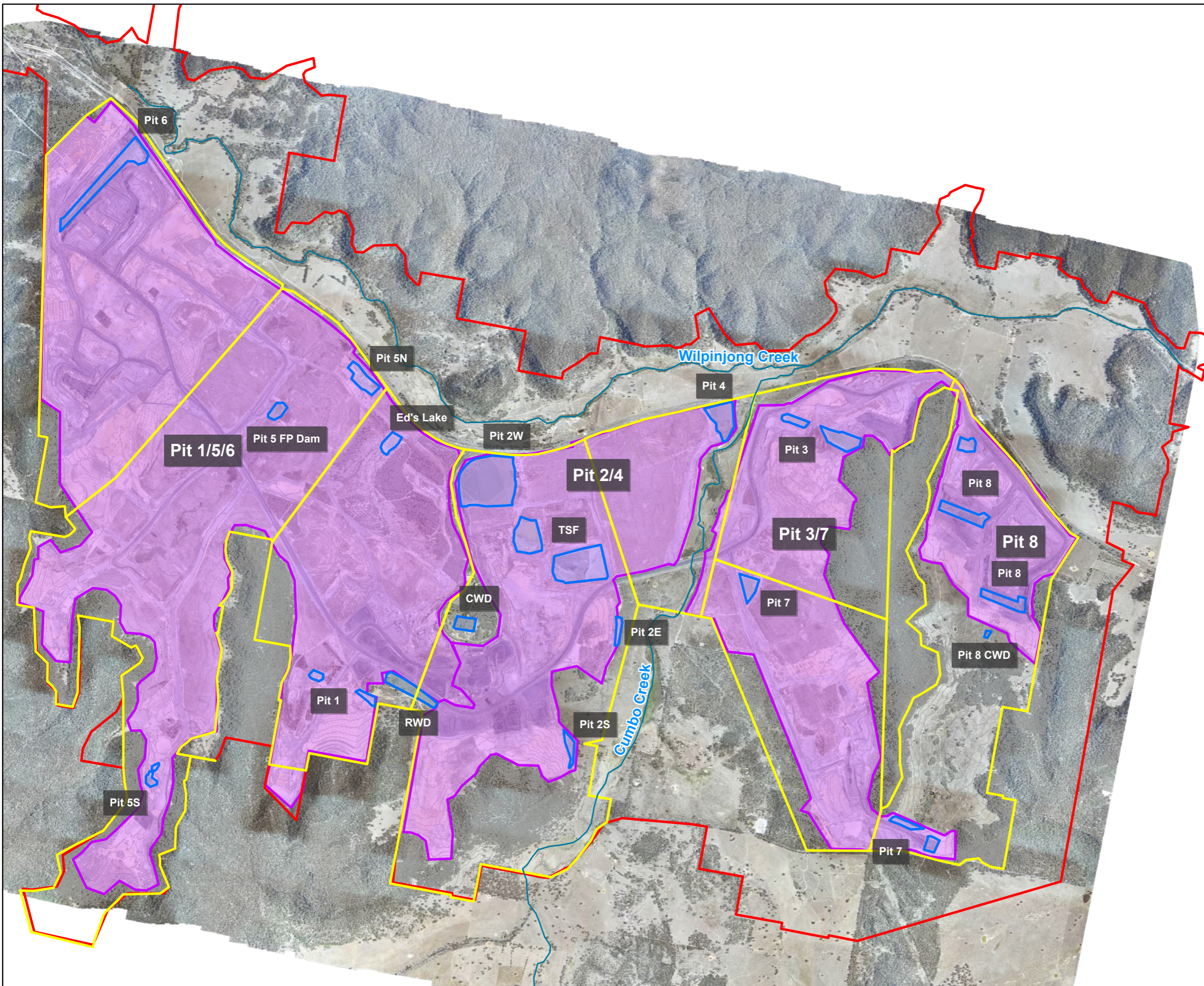
Mining operations are carried out upon Mining Leases (MLs) 1573, 1779, 1795 and 1846 in accordance with the Rehabilitation Management Plan (RMP), a requirement of MLs and SSD-6764.



FIGURE 1

LEGEND

- ▬ WEP New DA Boundary
- ▬ Water Storage
- ▬ WBM Pit Grouping
- ▬ Pit Boundary
- ▬ Watercourse
- ▬ Existing Contours (5m intervals)



Data Sources:  
Aerial imagery dated December 2025 provided by WCM  
Contour data dated January 2025 provided by WCM

DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.



Coordinate System: GDA 1994 MGA Zone 55

Scale: 1:32,000 at A4

Project Number: 630.032812

Date Drawn: 25-Mar-2026

Drawn by: JH



## 3.0 Water Management System

### 3.1 Overview

The WCM Water Management System (WMS) comprises a network of internal dams interconnected via pumps/pipelines and drainage channels. The main objective of the WMS during wet periods is to minimise the risk of uncontrolled discharge of water to the receiving environment and to minimise the risk of pit inundation which may impact coal production. During dry periods, the main objective of the WMS is to ensure that adequate reserves are available to maintain water supply for mining operations. If required, WCM have access to a water supply bore field which can be activated to import external water during these periods. The majority of the system's water storage capacity is provided by Pit 2W, a former open cut mining pit located adjacent to Ulan-Wollar Road. Other significant water storages include the Recycled Water Dam (RWD) and Clean Water Dam (CWD) (refer **Figure 1**).

WCM currently has eight open cut mining pits (Pit 1, 2, 3, 4, 5, 6, 7 and 8). Review of deepest mined topographic data shows that historical mining has occurred within four distinct voids, which each share a common and continuous pit floor, and are divided from each other by an unmined in-situ rock barrier. These voids are referred to herein as Pit 1/5/6 (containing Pits 6, 5S, 5N, and 1), Pit 2/4 (containing Pits 2W, 2S, 2E and 4), Pit 3/7 (containing Pits 3 and 7) and Pit 8 (containing Pit 8). Pit 1/5/6, Pit 2/4 and Pit 3/7 feature a central overburden emplacement area, which acts as a highly permeable aquifer. During 2025, mining activities proceeded in Pits 6 and 8.

Water within each void passively drains to the north down the dip of the former coal seam, collecting in either Pit 3, Pit 2W, Pit 4, Pit 6, or Pit 8 where it is then pumped to the Pit 2W hub water storage. Note that the Pit 1/5/6, Pit 2/4 and Pit 3/7 definitions are only used in the context of water management; these definitions do not align with mine planning terminology.

Water inflows to the WMS include rainfall, catchment runoff and groundwater interception. The mine has intersected several ephemeral creeks, and these catchments now report to the WMS. It is also noted that WCM's mine rehabilitation is still progressing in accordance with the RMP and those completed rehabilitated areas have not yet had sufficient time to mature to the extent that would allow runoff from these areas to be discharged off-site in compliance with approval conditions.

Water is used for dust suppression (road watering, stockpile sprays), wash down (wash bays and vehicle wash stations) and for coal washing. The majority of water used for these applications is lost via evaporation or entrainment within railed product coal and waste rock dumps. The coal washing process formerly included a wet-tailings circuit, with tailings slurry pumped to a number of approved Tailings Dams (TDs) adjacent to Pit 2W for consolidation and water recovery (note that tailings was pumped into two approved TDs located at the northern end of Pit 1 prior to using the Pit 2 TDs).

The process was modified in April 2015 to include a tailings belt filter press (BFP). Mixed reject is now co-disposed of within the overburden dumps. TD1 to TD5 have been capped and rehabilitated. TD6 remains active to allow for the deposition of tailings slurry during periods in which the BFP is undergoing maintenance. As TD6 is projected to reach capacity in 2025-26 if the tailings deposition rate determined in 2023 is maintained at the site (SLR, 2023), WCPL are currently progressing the design of TD7. This structure is proposed immediately northwest of TD6 within the former Pit 2 mine void, at a downgradient location that currently receives seepage from the northwest corner of TD6.

During periods of heightened water inventory, WCM operates a Water Treatment Facility (WTF) which utilises reverse osmosis (RO) technology and discharges a blend of permeate



and Pit 2W water to the adjacent Wilpinjong Creek in accordance with flow and water quality limits specified in EPL 12425.

The WTF comprised a RO Plant located at Pit 2W. WTF reject, along with backwash from the WTF and water that doesn't meet the requirements outlined in EPL 12425, is directed to Pit 2W and/or the RWD.

During periods of low water inventory associated with extended drought, WCM are licenced to draw water from a network of water supply bores to supplement site water demands. WCM also import potable water which is used to supply amenities. In 2025, the site supplemented potable water at the mining camp with treated water from Pit 2 via the water treatment facility. Sewage is either treated and disposed on site via irrigation in accordance with EPL 12425 or occasionally removed from site by a licenced contractor to be processed through a licenced facility. The potable water circuit has no functional influence on the performance of the WMS and is not discussed further in this study.

The following subsections summarise the physical characteristics of the WCM water management system, including water storage specifications and function, catchment and land use classification breakdown, and key transfer infrastructure specifications as incorporated in the model.

## 3.2 Water Storage infrastructure and Voids

### 3.2.1 Function and Specifications

**Table 1** summarises the location, specifications and description for key water storages and voids within the WMS. Consistent with documentation associated with previous water model updates, infrastructure has been grouped as follows:

- **Water Storages:** Infrastructure used for storing water that has come into contact with mining operations. Comprises surface ponds/dams and inactive mining pits used for bulk water storage;
- **Sediment Dams:** Sumps/dams used to intercept and capture sediment laden runoff generated from disturbed areas. Water captured in these structures is pumped back to the mine WMS;
- **Tailings:** Dams or repurposed open cut mining pits used to store tailings waste. Note that tailings storage capacities have not been listed in the following tabulation, as available space in these structures is not intentionally used for water storage; or
- **Mining Pits:** Open cut voids currently subject to active mining. Intercept surface water and groundwater prior to transfer to the WMS. Not used for water storage (unless required to prevent off-site discharge to the environment).

**Table 1: Key Water Storage and Void Specifications with Functional Descriptions**

Storage	Location (GDA94 Zone 55)		Catchment (ha)	Full Storage Capacity		Functional Description
	Easting	Northing		(mAHD)	(ML)	
<b>Water Storages</b>						
Pit 2 West (Pit 2W)	770975	6419350	415.1	373	2,848	Hub water storage, and primary buffer storage. Receives dewatering from mining and processing areas and supplies water to industrial tasks as required. Feed water supply for the WTF.



Storage	Location (GDA94 Zone 55)		Catchment (ha)	Full Storage Capacity		Functional Description
	Easting	Northing		(mAHD)	(ML)	
Pit 5 Fill Point (FP) Dam	769030	6419995	33.2	392.2	8.5	Water supply for dust suppression activities in the Pit 5 mining area. Water makeup from local mining area dewatering, or Pit 2W as a backup.
Clean Water Dam (CWD)	770785	6418000	2.1	397	51	Water supply for CHPP/ Mine Infrastructure Area (MIA). area tasks. Water makeup from Pit 2W.
Recycled Water Dam (RWD)	770270	6417430	26.7	416	401	Water supply for CHPP/MIA area tasks and to the ROM truck fill point. Water makeup from Pit 2W. May also receive concentrate from the WTF.
Ed's Lake	770085	6419690	292.4	375.3	110	Transfer dam located in backfilled Pit 1N void. Storage capacity includes basin to the north-east of the main void storage. Also captures water from the Pit 1 rehab area.
Pit 8 CWD	775683	6418277	270	-	25	Small farm dam located above Pit 8 that captures majority of Pit 8 upslope catchment. Some diversion of the natural catchment above pit 8 occurs via the Pit 8 east diversion. Water pumped from the dam is discharged to the east of Pit 8 via LDP 30. The original CWD dams constructed in 2020 have been mined through and a small farm dam is now being used to capture Pit 8 CW flows.
<b>Sediment Dams</b>						
Sed. Dams			-	-	-	Sediment interception works located adjacent to open cut workings and CHPP area. Function is to capture sediment laden runoff, allowing this water to then be pumped back to the WMS. <b>Note:</b> these dams have been functionally modelled as additional catchment assigned to their respective open cut void (i.e. assumes no storage in sediment ponds, and no pumping constraints).
<b>Mining Pits</b>						
Pit 5 South	767855	6416610	328.4	n/a	n/a	Active mining pits.
Pit 5 North	769853	6420204	996.5	n/a	n/a	
Pit 1	769820	6417358	297.7	n/a	n/a	
Pit 2 South	771759	6416854	37.9	n/a	n/a	
Pit 2 East	772171	6417945	33.1	n/a	n/a	
Pit 4	773149	6419926	132.5	n/a	n/a	
Pit 3	774249	6479710	294.0	n/a	n/a	
Pit 7	775053	6415985	320.5	n/a	n/a	
Pit 6	767721	6422373	430.3	n/a	n/a	
Pit 8	775800	6418195	256.4	n/a	n/a	
<b>Tailings Storage</b>						
TD6	771800	6418530	78.7	n/a	n/a	



Storage	Location (GDA94 Zone 55)		Catchment (ha)	Full Storage Capacity		Functional Description
	Easting	Northing		(mAHD)	(ML)	
TD7	771320	6418860		n/a	n/a	TD6 is an active tailings dam used intermittently when the BFP is offline. The TD7 structure is currently under design and yet to be commissioned. At present, the proposed TD7 footprint receives rainfall-runoff contributions and seepage from the northwest corner of TD6.

### 3.2.2 Storage Characteristics

Storage characteristics (stage-storage relationships) remain reasonably consistent with the previous model update. Spoil aquifer stage-storages have been updated as part of recent spoil investigation works (SLR, 2025b).

Modelled stage-storage profiles for all storages have been provided for reference in **Appendix D**.

### 3.2.3 Storage Capacities

#### 3.2.3.1 Water Storages

Adopted Full Storage Levels (FSLs) for all water storages are listed in **Table 2**.

**Table 2: Adopted Full Storage Levels for Site Water Storages**

Storage	FSL (mAHD)	Basis
Pit 2 West (Pit 2W)	373	As per the stage-storage provided by WCPL from recent Bathymetric survey (July 2023).
Pit 5 Fill Point (FP) Dam	392	Defined based on review of 2019 surface topography. Nominal level at which overflow to Pit 5N would occur.
Clean Water Dam	397	Maximum water level recorded in historical water level survey. FSL defined as a maximum operating level rather than a spillway level. Comprises an agricultural concrete overflow point.
Recycled (Dirty) Water Dam	416	It is understood that this dam seeps to the CHPP area at high water levels, and water levels in the dam are managed to minimise the risk of this occurring. FSL defined as an operational level rather than a spillway level. It is understood that this dam has no formally constructed spillway outlet (WRM, 2019). Levels as per the stage-storage provided by WCPL from recent Bathymetric survey (July 2023).
Ed's Lake	375	Defined based on review of 2019 surface topography. Nominal elevation at which overflow to Wilpinjong Creek would occur via a low point in adjacent road/rail.
Pit 8 CWD	-	Original Dam capacity of 25ML, dams mined through in 2025 and farm dam now being used. Assume similar capacity of 25 ML.

#### 3.2.3.2 Open Cut Pits

To prevent an uncontrolled release of water to the receiving environment, excess mine water would be temporarily stored within one or more open cut mining pits. This practice would continue until the excess water is drawn down through evaporation, supplied to demands (e.g., dust suppression, evaporators) or via EPL Licensed Discharge Point (LDP) LDP 24 (via the site's WTF).



The assumed order of preference in which pits would be filled is Pit 3 then Pit 4. Note that water storage in up-dip pits (i.e., Pit 5, Pit 1, Pit 2S, Pit 7) is not possible as these voids freely drain down the dip of the coal seam, through the in-pit spoil placement areas to their respective down-dip pits.

Overflow and recommended maximum fill levels are listed in **Table 3**. Recommended maximum fill levels reflect settings incorporated into the WBM for current storage capacities. Recommended fill levels have been set five metres below the nominal overflow level. Actual fill levels (which trigger filling of the next pit in sequence) should continue to be confirmed/defined to reflect changes due to mine progression.

**Table 3: Mining Pit Overflow and Recommended Maximum Fill Levels**

Pit	Level (mAHD)		Notes
	Overflow	Max Fill	
Pit 4	366	361	As per the stage-storage provided by WCPL from recent Bathymetric survey (July 2023).
Pit 3	363	358	As per the stage-storage provided by WCPL from recent Bathymetric survey (July 2023).

### 3.2.4 Catchment Breakdown

Catchment boundaries for water storages within the WCM have been delineated based on the most recent available topographic data (dated 2024), no LIDAR data is available for the 2025 period. Catchment areas for 2025 have been summarised in **Table 1**. Catchment and land use maps are provided in **Appendix B**.

Land use classifications used for the model calibration have been determined based on review of end of year 2025 satellite imagery.

Current investigations have adopted a land use classification schedule to align with catchment yield parameters:

- **Natural / undisturbed** – no disturbance, typically grass or brush;
- **Roads / industrial / hardstand / mining Pit** – sealed or unsealed road or track, cleared and compacted earth or concrete (layout areas etc.), open-cut void;
- **Spoil / overburden** – unrehabilitated spoil emplacement, clear of vegetation, also includes cleared areas and beach and other exposed tailings reject areas; and
- **Rehabilitated overburden** – emplacement areas that have been shaped and re-vegetated.

Land use data has been used to calculate catchment yield within the WBM. Different land use classifications generally correspond with a unique catchment runoff model parameter set. Catchment yield is discussed further in **Section 4.4**.

A breakdown of land use type per water storage catchment area has been provided in **Appendix B**, in addition to catchment and land use plans.

### 3.2.5 Water Transfer Infrastructure

The WCM transfer network comprises a mixture of fixed pump and pipeline infrastructure connections, supplemented with portable infrastructure that can be moved around for pit dewatering. Water transfer capacities adopted as part of the WCM WBM are generally consistent with the previous model update and are summarised in **Table 4**. Active management of Pit 8 commenced in 2020 and pumped discharge from the Pit 8 CWD via EPL Licensed Discharge Point LDP 30 commenced in 2021 and are included below.



The following assumptions towards water transfer infrastructure have been applied:

- Assumed no pumping from up-dip pits, i.e., Pit 5S, Pit 1, Pit 2S, Pit 2E and Pit 7. These pits passively drain along the dip of the mined coal seam (either along the surface or through the highly permeable in-pit spoil placement areas) to their respective down-dip pits;
- Water transfers from dams for industrial tasks are assumed to be constrained by demand, not by pump/pipeline capacity; and
- Assumed no pumping from any tailings dams – water inflow to these areas is assumed to evaporate or seep to the underlying Pit 2/4 spoil aquifer which is hydraulically connected to Pit 2W.

The WBM includes a time delay for transfer of water volumes by seepage, and this parameter has been progressively calibrated within annual WBM updates.

**Table 4: Water Transfer Infrastructure Modelled Capacities**

Category	Connection Points		Flow Capacity	
	Storage (From)	Directed (To)	L/s	ML/day
Pit Dewatering	Pit 5N	Pit 2W	180 <sup>1</sup>	15.5
	Pit 4	Pit 2W	160 <sup>1</sup>	13.8
	Pit 3	Pit 2W	90	7.8
	Pit 6	Pit 2W	160 <sup>1,3</sup>	15.5
	Pit 8	Pit 2W	100	8.6
Mine Water Containment	Ed's Lake	Pit 5 FP Dam	100	8.6
	Ed's Lake	Pit 2W	100	8.6
	Pit 2W	Pit 5N	100	8.6
	Pit 2W	Pit 3	90	7.8
	Pit 2W	Pit 4	100	8.6
Controlled Discharge	Pit 8 CWD	Off-site <sup>2</sup>	200	17.3
Other	Pit 2W	CWD	100	8.6
	Pit 2W	RWD	100	8.6
	Pit 2W	Pit 5 FP Dam	50	4.3

<sup>1</sup> Dewatering capacity for active pits is variable, subject to allocation of pump resources.

<sup>2</sup> Prior to 2021 water was pumped from Pit 8 CWD to Pit 2W at 160 L/s.

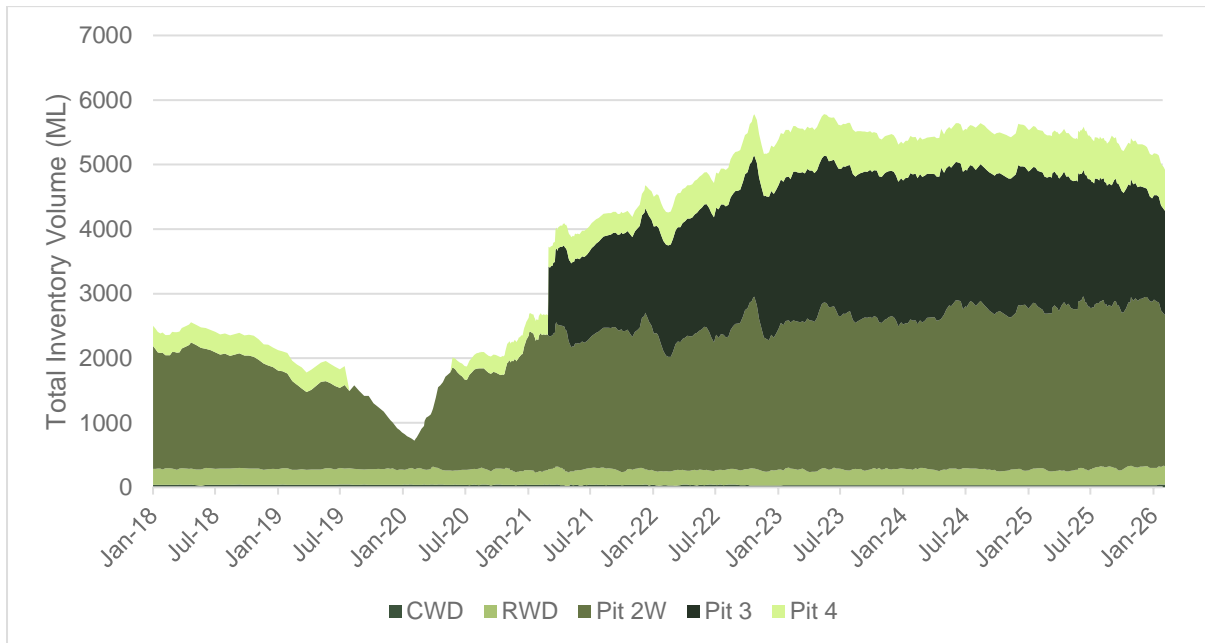
<sup>3</sup> Dewatering of Pit 6 from 2023.

### 3.3 Water Inventory Monitoring

WCPL regularly monitor primary water storages across the site to provide indication of the site water inventory. The combined WMS primarily consists of Pit 2W, RWD, CWD, Pit 4 and Pit 3, which has a total capacity of 6549 ML.



Monitoring data is available for the site from 2018 to 2025. Volumes for storages are estimated based on the observed level and the stage-storage at the time of measurement. Available monitoring data is shown in **Figure 2**.



**Figure 2: Monitored Site Water Inventory**

As shown in **Figure 2**, Pit 2W is the predominant storage within the site water inventory. In mid-2021, Pit 3 increases in volume as mining ceased in this area and the void was utilised as a more permanent water storage. Pit 3 now holds a significant volume of site water.



## 4.0 Climate

### 4.1 Overview

Climatic influences on the WMS include catchment rainfall–runoff and evaporation (from wetted areas) and evapotranspiration (from catchments). The WBM has been configured to simulate system performance on the basis of long-term historical climate data. Historical data has been directly applied, based on the assumption that climatic conditions observed in the past, and captured in the data, are indicative of persistent local climatic trends. Historical data is therefore assumed to represent the range of potential conditions likely to be observed in the near future.

This investigation, and those prior, have not included allowance for climate change effects as these are unlikely to be material in the three-year forecasting period.

Updated climatic data for WCM (latitude -32.35, longitude 149.9) has been sourced from the SILO Data Drill service (Jeffrey et al., 2001). The Data Drill service accesses grids of climate data interpolated from point observations by the Bureau of Meteorology (BoM) for any point in Australia. Sourced information includes daily resolution rainfall and evaporation data, for the 126-year period of 1900 to present. This information has been processed and summarised in the following sub-sections.

WCPL have also provided rainfall data for the January 2016 to December 2025 period, recorded at the site automated weather station (AWS), located within the rail loop (near the CWD). Rainfall data recorded at the neighbouring BoM rainfall gauge at Wollar (Wollar Barrigan St Station 062032) has also been sourced and used for reference. Site AWS and BoM rainfall data have been compared against Data Drill rainfall in **Section 4.2**.

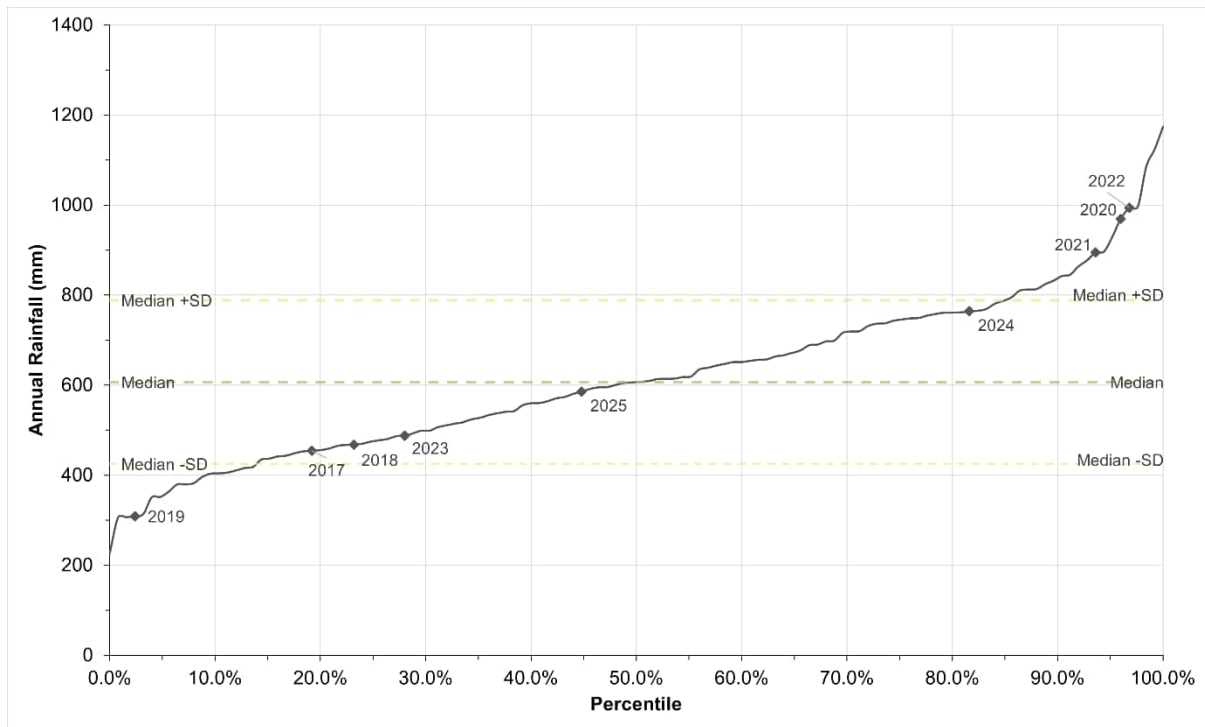
### 4.2 Rainfall

#### 4.2.1 Annual Rainfall (Data Drill)

Annual rainfall at the site varies between approximately 200 mm and 1,200 mm (~1,000 mm range), with a median of 607 mm  $\pm$  182 mm. Approximately 70% of the dataset falls within 1 standard deviation of the median. Annual rainfall totals (calendar year) have been presented on a percentile basis in **Figure 3**.

WCM experienced drought conditions across 2017 to 2019. During this period, the 2017 and 2018 rainfalls were equivalent to historical 19th and 23rd percentile (dry), respectively, whilst the 2019 rainfall was equivalent to a historical 2nd percentile (very dry). In contrast, rainfall experienced during 2020, 2021 and 2022 was equivalent to a historical 96th percentile, 94th percentile rainfall and 97th percentile, respectively (very wet). Rainfall in 2023 and 2024 varied, equivalent to a historical 28th percentile (dry) in 2023 followed by an 82nd percentile rainfall (wet) in 2024. Rainfall experienced during 2025 was reflective of a slightly drier than a median year equivalent to a 45<sup>th</sup> percentile event with an annual rainfall total of 568 mm.





**Figure 3: Historical Annual Rainfall Percentiles**

#### 4.2.2 Rainfall Statistics (Data Drill)

The statistics for the long-term SILO Data Drill rainfall data for the 126-year period are summarised in **Table 5**. Annual totals are for a calendar year January to December.

**Table 5: Long-Term Data Drill Rainfall Statistics (mm)**

Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max	204	364	241	200	184	249	175	137	174	216	266	203
90th %ile	132	139	121	79	77	88	97	83	90	108	122	124
Median	60	45	48	31	31	34	40	37	35	48	56	50
10th %ile	14	6	5	2	5	10	7	12	10	9	11	13
Min	0	0	0	0	0	0	1	0	0	0	0	0
Mean	67	61	57	40	39	45	45	44	43	53	61	61
St. Dev	45	59	49	37	33	41	33	29	32	42	47	46
Count	126	126	126	126	126	126	126	126	126	126	126	126

#### 4.2.3 Data Drill vs Site and BoM Rainfall

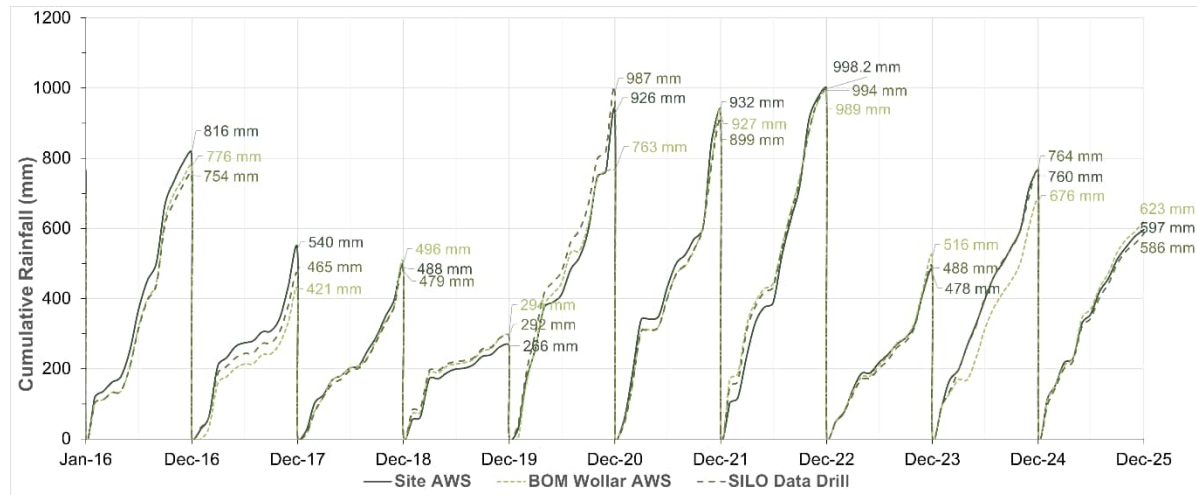
SILO Data Drill rainfall data has been compared against data recorded at the WCM AWS and at the neighbouring BoM rainfall gauge at Wollar (BoM station ID 062032, approximately 8 km east of Wilpinjong).

The intent of comparing SILO Data Drill rainfall against the site and BoM reference data is to:



- Demonstrate that the SILO rainfall is comparable to local measurements, and is therefore an appropriate input time series to the Wilpinjong WBM model (for long-term modelling); and
- Identify an appropriate measured rainfall dataset to be used in the WBM calibration exercise completed as part of current investigations.

Cumulative rainfall totals, resetting on an annual basis, are presented in **Figure 4**. Note the BoM rainfall gauge at Wollar lacked data for April 2024, reducing total annual rainfall when compared to the SILO Data Drill and WCM AWS. If the April average from these stations (68 mm) is assumed for the BoM rainfall gauge, annual rainfall at the gauge totals 744 mm.



**Figure 4: Cumulative Rainfall (Resetting 1<sup>st</sup> Jan) – Site AWS, BoM Wollar, SILO**

Data from the AWS appears to be consistent with the other stations.

Key outcomes of the above comparison are:

- The model calibration exercise completed as part of this update has focused on the period April 2022 to December 2025 (four years). For consistency with previous model updates, model calibration was based on the Site AWS data; and
- SILO Data Drill rainfall is consistent with data recorded at gauges in the study area and is therefore considered to be an appropriate input time series to the WBM for use in forecasting estimations.

### 4.3 Evaporation

Long-term daily evaporation data for the WCM has been sourced from the SILO Data Drill service. Morton lake evaporation ('Mlake') has been used to estimate evaporation from the wet surface areas of surface storages.

An adjustment factor of 0.8 has been applied to pits or catchment areas based on model calibration. The statistics for the long-term Data Drill Mlake evaporation data are summarised in **Table 6**.



**Table 6: Long-term Data Drill Mlake Evaporation Statistics (mm)**

Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Max	232	187	163	108	65	45	53	84	122	171	204	237	1539
90th %ile	220	174	150	98	61	41	49	75	110	157	184	215	1467
Median	196	157	137	89	56	38	44	68	101	143	168	195	1391
10th %ile	174	140	124	81	51	34	40	63	92	128	150	178	1320
Min	153	122	110	62	44	31	33	54	83	112	119	149	1275
Mean	197	157	136	89	56	38	44	68	101	142	168	196	1393
St. Dev	17	13	11	7	4	3	4	5	8	11	14	15	56
Count	127	127	127	127	127	127	127	127	127	127	127	127	0

## 4.4 Catchment Yield

### 4.4.1 Overview

Accurate estimation of catchment yield hydrology is an important component of water management investigations. Catchment yield within the WBM is simulated using the Australian Water Balance Model (AWBM). The AWBM is a saturation overland flow model which uses daily rainfalls and estimates of catchment evapotranspiration to calculate daily values of runoff using a water balance approach (Boughton, 1993). The AWBM is widely accepted and commonly used throughout Australia.

### 4.4.2 Parameters

Different AWBM model parameters are defined for each land use type within the mine catchment. AWBM model parameters were initialised using values from the previous 2019 model update (WRM, 2019) and are considered to remain well suited to current site conditions, determined through the WBM calibration.

Adopted AWBM model parameters are summarised in **Table 7**.

**Table 7: Calibrated AWBM Parameters**

Parameter		Natural	Rehab	Spoil	High Runoff (Hardstand/Active Pit)
Partial Areas	A1	0.134	0.134	0.134	1.0
	A2	0.433	0.433	0.433	-
	A3	0.433	0.433	0.433	-
Soil Storage	S1	17.6 mm	14.7 mm	11.0 mm	17.0 mm
	S2	182.6 mm	153.2 mm	114.1 mm	-
	S3	366.2 mm	306.9 mm	228.8 mm	-
Baseflow Index	BFI	0.50	0.50	0.50	0.00
Surface Lag	Ks	0.80	0.97	0.97	0.00
Baseflow Lag	Kb	0.97	0.80	0.80	0.00
Avg. Storage	S_avg	239.9 mm	201.2 mm	150.0 mm	17.0 mm



It is noted that at the start of the calibration period (April 2022) the site was experiencing prolonged intense rainfall. Therefore, the soil storages within the AWBM were assumed to be saturated at the start of the simulation.

## 5.0 Site Water Usage

### 5.1 CHPP and MIA Usage

Water is pumped from Pit 2W to the RWD and CWD. Water is then pumped from these dams into a distribution network which is used to supply water to the following demands within the CHPP and MIA area:

- CHPP process;
- MIA wash-down pads;
- Heavy vehicle (HV) and light vehicle (LV) wash bays;
- Coal handling/stockpile dust sprays; and
- Other miscellaneous MIA/CHPP tasks (cleaning/hoses, clarifier tank overflow or bleed-off via old tailings lines).

Water supply from the RWD and CWD to the distribution network is metered, but the individual offtakes are unmetered (WRM, 2019).

The following sub-sections summarise a process which has attempted to separate the CHPP process water makeup from the other MIA demands.

#### 5.1.1 CHPP Usage

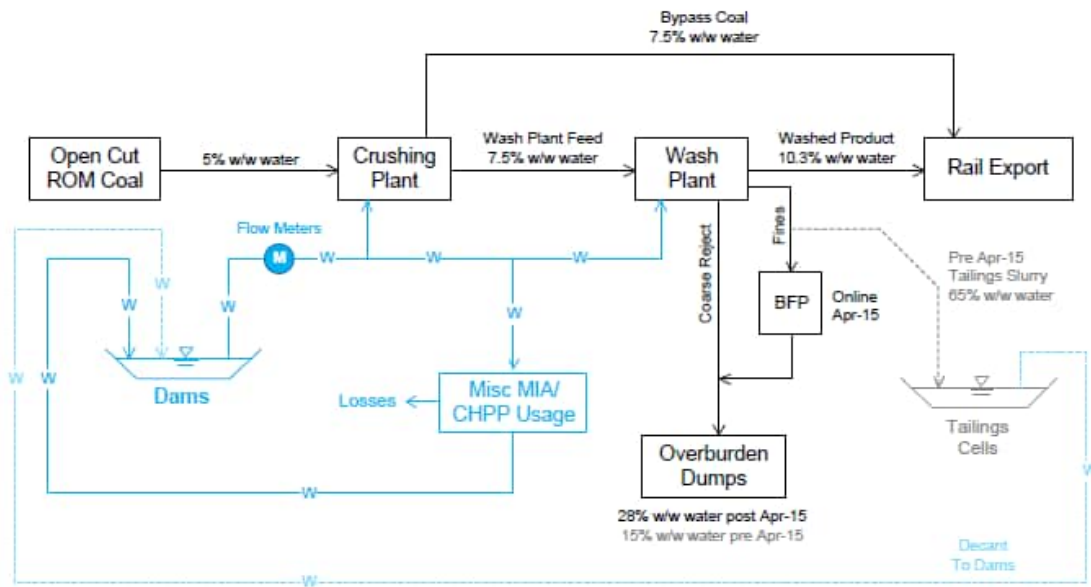
##### 5.1.1.1 Overview

A conceptual model of the coal washing process is shown in **Figure 4**. Note that prior to April 2015 the CHPP reject circuit comprised separate coarse and fine waste material streams. Coarse rejects were trucked and disposed of within in-pit overburden dumps, and fine tailings were pumped as a slurry to tailings cells adjacent to Pit 2W. The CHPP tailings circuit was modified in April 2015 to include a BFP, which dewateres the tailings stream and allows this material to be disposed of as a dry waste stream with the coarse reject. Any moisture bleed-off from within the BFP process is captured and re-circulated to the clarified water tank. Excess water from the clarified water tank may be drained off by pumping water to the tailings dams via the old slurry pipelines (WRM, 2019).

The following moisture contents are assumed for various material streams within the CHPP:

- ROM: 5% moisture w/w
- Bypass coal: 7.5% moisture w/w
- CHPP feed: 7.5% moisture w/w
- Product coal: 10.3% moisture w/w
- Mixed reject: 28.0% moisture w/w





**Figure 5: Coal Washing Process Conceptual Model (Source: WRM, 2019)**

### 5.1.1.2 Historical Production

Material tonnages have been summarised in **Table 8** for the 2022 through 2025 calendar years alongside forecast production for 2026. Review of **Table 8** shows that the annual railed product was approximately 10.05 Million tonnes (Mt) in 2025 which is a decrease upon production in recent years. A further decrease in production is expected in 2026.

**Table 8: Production Summary**

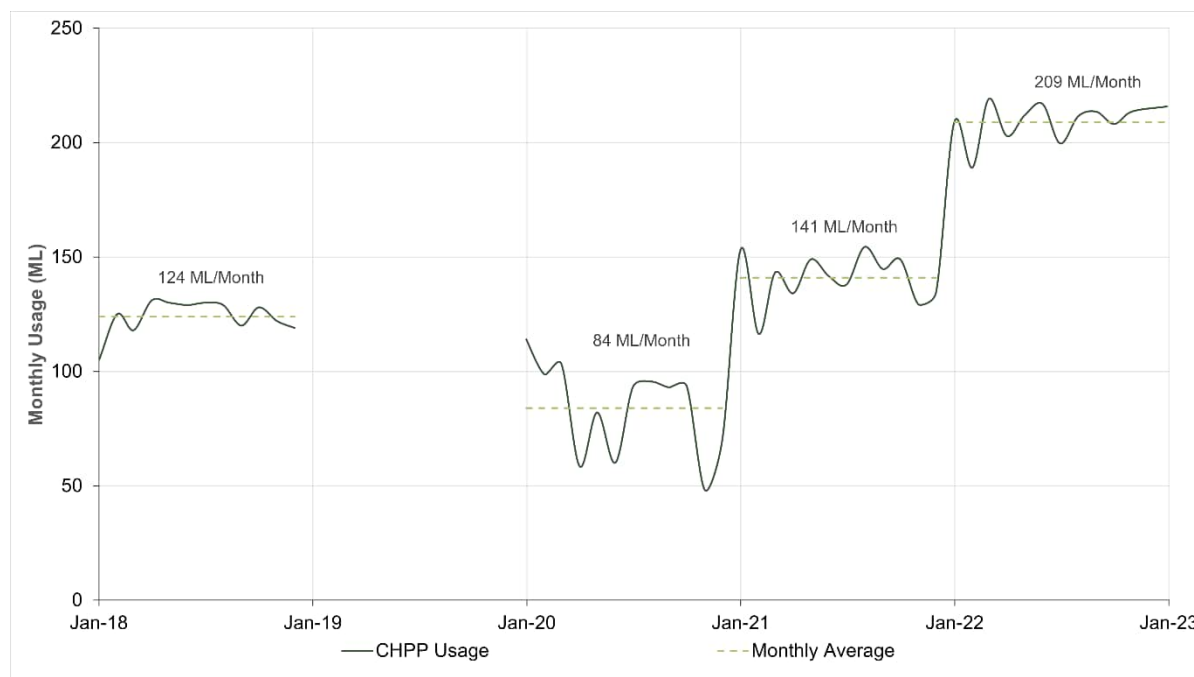
Material Stream	2020	2021	2022	2023	2024	2025	2026 (Forecast)
Waste Rock/Overburden	54.59 Mbcm	43.71 Mbcm	40.31 Mbcm	40.45 Mbcm	41.08 Mbcm	36.1 Mbcm	38.0 Mbcm
ROM coal <sup>^</sup>	14.74 Mt	14.48 Mt	13.28 Mt	12.84 Mt	13.28 Mt	11.79 Mt	10.35 Mt
Coarse Reject & Tailings (BFP)	2.63 Mt	2.57 Mt	2.20 Mt	2.11 Mt	2.90 Mt	2.41 Mt	2.18 Mt
Fine Tailings	0	0	0	0	0	0	0
Railed product	12.50 Mt	12.17 Mt	11.05 Mt	10.53 Mt	10.97 Mt	10.05 Mt	8.39 Mt

**Note:** <sup>^</sup>WCM are approved for a rate of up to 16 Mtpa out to 2033.  
 Mbcm: Million bulk cubic metres.

### 5.1.1.3 Process Water Makeup

**Figure 6** presents the metered water supply from the RWD and CWD to the CHPP-MIA water distribution network. Data relating to the allocation of water to the CHPP area and MIA separately were not recorded for the 2019 or 2023 to 2025 monitoring periods.





**Figure 6: CHPP and MIA Monitored Demand**

Review of **Figure 6** shows the following:

- CHPP or MIA water usage data was recorded during 2018, 2020, 2021 and 2022;
- Combined CHPP water usage for 2020 was an average supply rate of 84 ML/month which is significantly less than other years.
- Water usage, when last metered in 2022 at an average of 209 ML/month, was on a continually increasing trend from 2020; and
- A rate of 140 ML/month has been adopted for modelling of the 2023 - 2025 reporting periods, taken as the average of all monitored usage to date.

#### 5.1.1.4 Model Configuration

The yearly fluctuation in water demand at the CHPP has been set as a time series with demand for each year set as the average monthly usage for that year (i.e., 209 ML/month for 2022). Where no data is available or for forecasting purposes an average usage of 140 ML/month has been adopted based average monitoring data.

Note the model assumes all water sent to the CHPP to close the mass balance is lost, with nil recovered (e.g., all water is entrained within railed product or in-pit dumps). Note that a 20 ML/month miscellaneous usage is modelled with a large percentage of this water returning to Pit 2W (see **Section 5.1.2**). It is possible that a portion of this water is associated with activities in the CHPP.

#### 5.1.2 MIA and Miscellaneous Usage

Previous model updates have shown an unaccounted-for component of the RWD and CWD water supply which is estimated at approximately 20 ML/month. This flow rate is understood to represent water supply to the various demands listed in **Section 5.1**.

Based on the previous water balance modelling, the inferred net loss rate from this miscellaneous water usage stream is expected to be relatively low. Modelling has adopted a net water loss of 100 ML/year (8.3 ML/month) which is consistent with the previous model



updates and typical MIA water consumption observed at other operations comparable to Wilpinjong.

The WBM has been configured to extract 20 ML/month from the CWD or RWD and recirculate 17.4 ML/month of this flow back into the WMS via Pit 2W.

## 5.2 Haul Road Dust Suppression

### 5.2.1 Measured Water Usage

Water is extracted from the WMS and applied using water trucks over HV/LV roads to minimise dust lift-off. There are four fill points (FPs) in operation: the ROM FP, Pit 2 FP, Pit 3 FP, and Pit 5 FP. All water truck fill points have been fitted with flow meters.

From 2019 to 2021, the site utilised Dust-a-side (DAS) at the site to help minimise water usage associated with dust suppression. DAS is a dust suppression agent that reduces dust generation on roads, hardstand and laydown areas and reduces the need for water carts. At a stage in 2021, WCM moved to a Reynolds Soil Technologies (RST) product to assist with dust mitigation and reduce dust suppression water usage.

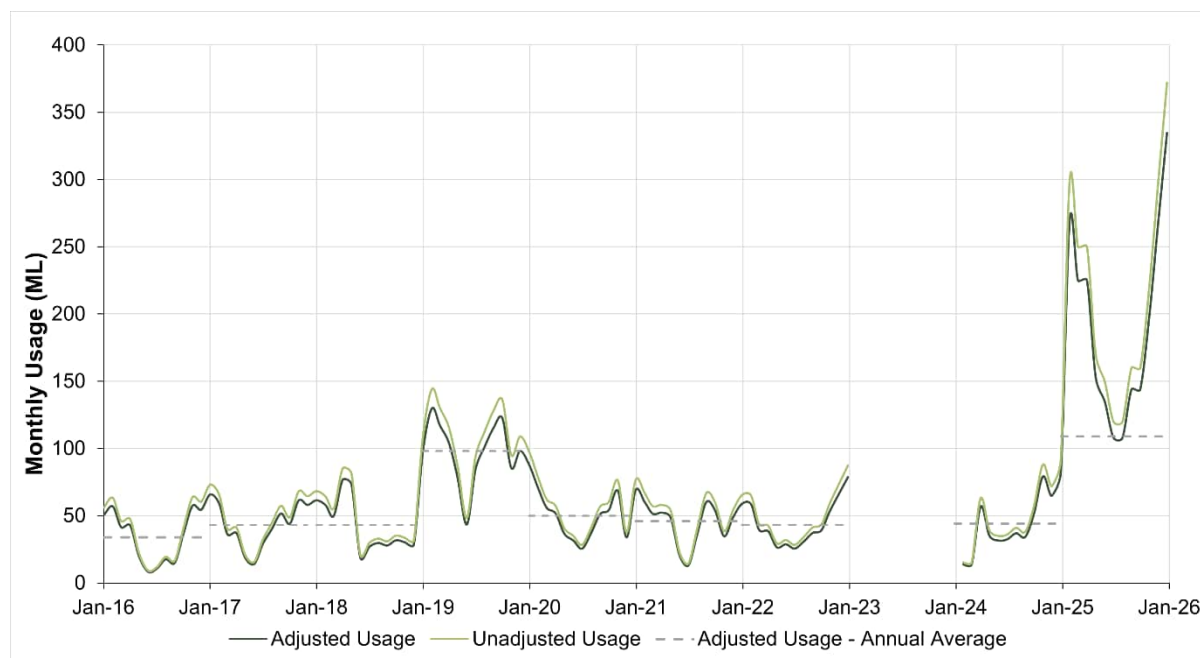
On the occasion that FP flow meters are offline or technical malfunction occurs, and daily data cannot be obtained, trip-count data is used to estimate usage. WCM operates a Global Positioning System (GPS) logging system which maintains a count of how many times each truck has driven within a certain proximity of a FP. Water usage is estimated by multiplying each individual truck's trip count by its respective water fill capacity.

WCPL have provided updated flow meter data and trip-count-based estimates of water usage for January 2016 to December 2025. **Figure 7** presents haul road dust suppression data throughout this period. Across 2023, no data pertaining to water truck usage was recorded by the site.

It has been assumed that actual haul road dust suppression water losses are lower than what is recorded by the flow meters and/or estimated based on GPS trip counts. Consistent with previous model updates an adjustment factor of 0.9 has been applied to the historical water usage data to account for the following:

- Flow recirculation recorded by flow meters (e.g. trucks being overfilled, with excess water draining back to the supply dam); and
- Over-estimation bias inherent to trip-count based methods, which assume every "trip" entails a truck being filled from empty to full, whereas in practise trucks may return to the fill point part-full or may even drive past the fill point without stopping (which is still registered as a "trip").





**Figure 7: Metered Haul Road Dust Suppression Water Usage**

Review of **Figure 7** indicates:

- Water usage is seasonal, with highest usage rates occurring in summer, and lows in winter. Seasonal variability is driven largely by changes in ambient temperature and evaporation rates;
- Water usage is also lower during periods of rainfall; and
- Average water usage rates are relatively consistent year-to-year at around 43 ML/month (520 ML/year). The 2019 usage was higher than previous years, this is likely attributed to the prevalent drought conditions experienced throughout 2019 including limited rainfall and increased evaporation. Water usage during 2025 has risen significantly, this is likely due to decreased rainfall and greater need for water destruction at the site. A significant water volume was trucked from FP3 in 2025 to reduce volumes within the pit.

No data breakdown of dust suppression demand by FP has been provided. It is therefore assumed to be generally consistent with 2018 values discussed in the 2019 update (WRM, 2019). However, this does not include the Pit 3 FP installed in 2023. As majority of dust suppression water is likely to have been taken from FP 3 in 2025 due to need to reduce Pit 3 levels the breakdown has been adjust as per **Table 9**.

**Table 9: Dust Suppression Fill Point Demand**

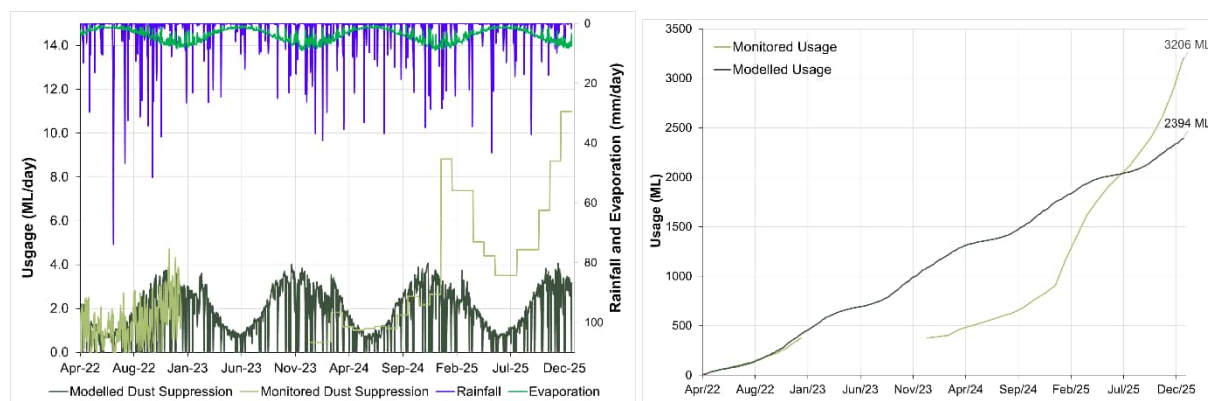
Fill Point	Prior to 2023 (%)	2023 Onward (%)
ROM FP	75.08	35
Pit 2 FP	24.01	4.99
Pit 5 FP	0.01	0.01
Pit 3 FP	-	60



## 5.2.2 Dust Suppression Sub Model

Haul road dust suppression water usage is simulated within the WBM using a sub-model, which accounts for the seasonal variation and sensitivity to rainfall observed in the metered usage data. Daily water application is calculated as a function of wetted haul road area, evaporation, and rainfall. Water is applied to offset daily evaporation from the wetted area. Evaporation rates are subject to monthly adjustment factors. Application is cancelled if rainfall exceeds a nominated minimum threshold of 1.5 mm/day (WRM, 2019).

Monthly evaporation factors and the rainfall threshold determined in the previous model update are compared to measured water usage rates during the period April 2022 to December 2025 and adjusted as required. The results of this process are presented in **Figure 8**. Note that measured data have been factored in accordance with **Section 5.2.1**.



**Figure 8: Dust Suppression Sub Model: Modelled vs Monitored Data**

Review of **Figure 8** shows relatively good agreement between calculated and measured data. Anomalies do occur throughout the calibration period however overall usage shows good correlation with seasonal trends demonstrated. Monitored usage in 2025 is significantly higher than previously observed dust suppression usage. It is likely this is a result of operational decision onsite rather than due to climatic conditions. Increased water carts are likely due to the need to remove surplus water from Pit 3.

Results have been derived using the following parameter set consistent with previous model updates:

- Haul road wetted area: 44 ha (per WEP surface water assessment, WRM 2015)
- Rainfall threshold: 1.5 mm/day
- Evaporation adjustments:
  - January to February: 1.1
  - March to June: 1.6
  - July to September: 1.9
  - October: 1.7
  - November: 1.5
  - December: 1.3

The parameter adjustment process has sought to reproduce: 1. total usage volumes, 2. seasonal variation in water usage (i.e. general peaks and troughs in spring/summer and autumn/winter respectively), and 3. sensitivity to rainfall (reductions in usage during wet



periods such as winter 2016, 2020 and 2022). If changes similar to those observed in 2025 continue the parameters may need to be revised.

Additionally, monthly adjustment factors are the same for each year and should also follow a relatively smooth profile within the year (e.g., not fluctuating up and down repeatedly).

### 5.3 Water Destruction (Sprays)

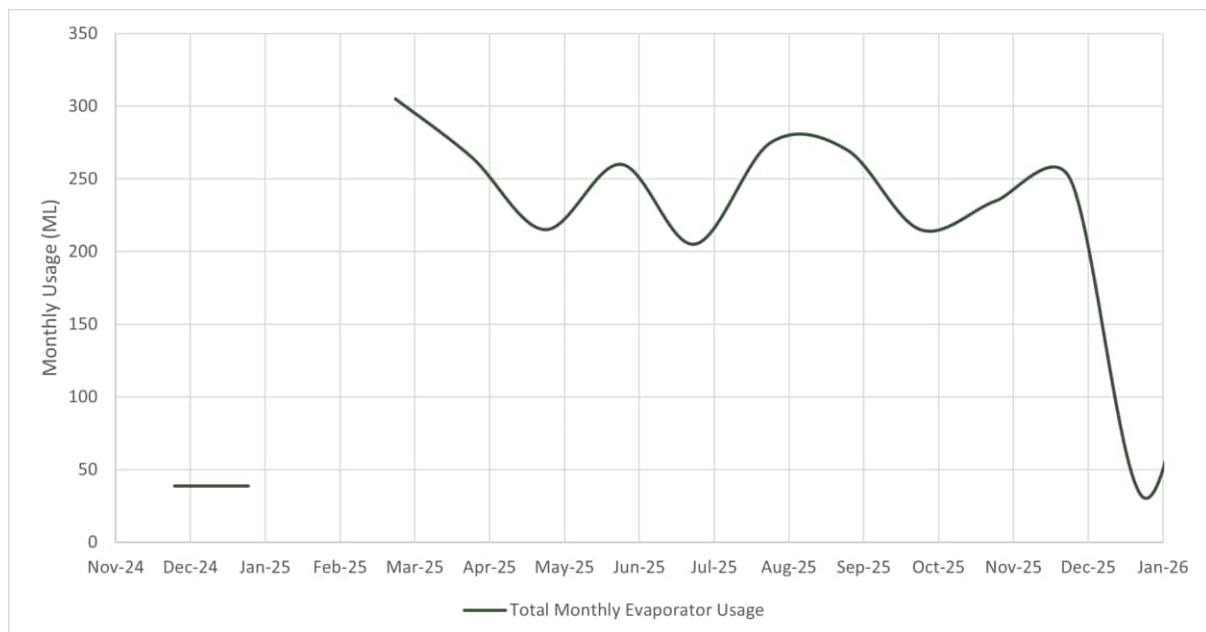
As Wilpinjong is primarily a water surplus site, WCPL have access to a suite of water evaporator sprays which are employed to reduce water inventory. The site operates the sprays at two distinct locations:

- On the eastern bank of Pit 2W; and
- On the southern bank of Pit 3.

The sprays at Pit 2W have been intermittently run since 2017, while the sprays at Pit 3 were only recently introduced during 2024. The Pit 2W sprays were not operated from 2019 – 2021, then later recommissioned in 2022 and 2023 and employed on an ad-hoc basis. In 2024, the Pit 3 sprays were run during late December.

High levels within the site inventory and the need to large volumes of water currently held in Pit 3 storages in order to resume mining, have increased the use of water destruction sprays at the site. In 2025, evaporators at Pit 2W and Pit 3 were run consistently throughout the year and additional water cannons were installed on the Pit 3 rehabilitation area to increase potential evaporation of surplus water.

Evaporator usage has been monitored between December 2024 and December 2025. Monthly evaporator inflows are shown in **Figure 9**.



**Figure 9: Monitored Evaporator Throughput**

Evaporators operated throughout 2025 were shown to have an average usage rate of 250 ML/Month (8.2 ML/day). Unmetered usage of Pit 2W has previously been estimated as 1 ML/day.

An average evaporation rate between 20% – 40% has been estimated based on monthly average temperature, relative humidity and wind speed for 2025 using principles described in the evaporator investigation (SLR, 2025d). Although evaporation efficiency may vary



based on seasonal characteristics an average evaporation efficiency is expected as approximately 25% for typical conditions at WCM.

The WBM has therefore been configured to model a net 0.25 ML/day extraction from Pit 2W prior to July 2024. Following this time a net water extraction of 2.1 ML/day is used based on daily average usage and evaporation efficiency. This is assumed to be primarily extracted from Pit 3 (60%) with the remaining extracted from Pit 2W (40%). This is equivalent to 1.26 ML/day and 0.84 ML/day for Pit 3 and Pit 2W respectively. The outflow is assumed to remove no salt from the storages.

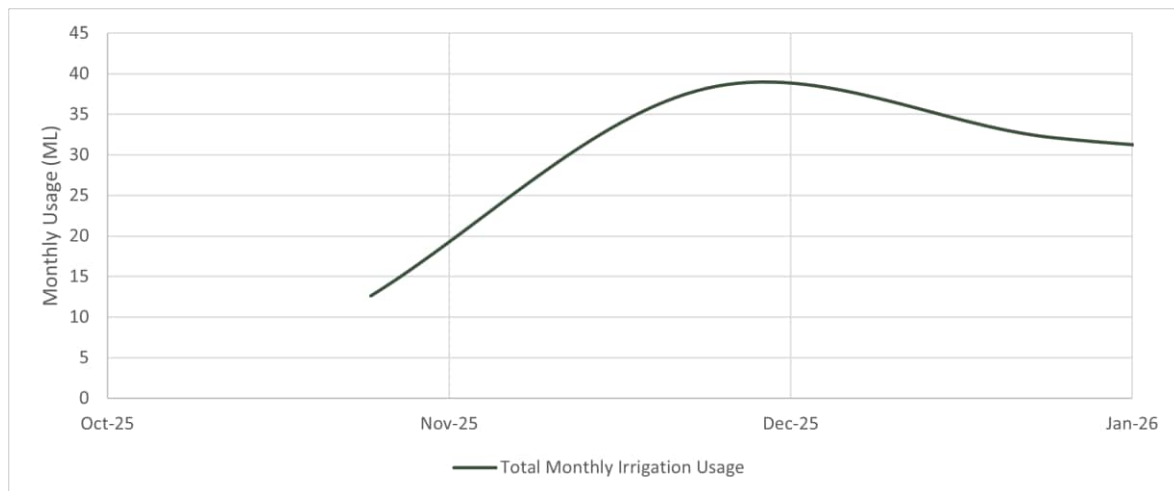
It is noted that two of the water cannons have been installed over the Pit 3 rehabilitation area. Therefore, there is potential for further losses due to plant uptake and evapotranspiration. However, these additional losses have not been considered here.

Operation of the spray system has been assumed to cease if the combined inventory in the WMS is reduced below a specified minimum threshold, which was initially specified at 1,000 ML in previous model iterations. This threshold was increased to 4,000 ML in the 2023 model update to better reflect site operations during drier periods and observed operation during wet periods. This threshold is considered suitable for continued use in this model update; however, this threshold should be reviewed and accordingly revised where new data indicates the need.

## 5.4 Water Destruction (Irrigation)

With an increasing need to remove surplus water from the site inventory, WCPL have implemented a travelling irrigator on the rehabilitation area located at Pit 4. It is assumed that the irrigation system has been designed such that the irrigation rate results in water stored within the soil or utilised by vegetation and does not cause runoff. Therefore, the irrigation rate is assumed as an outflow from the water management system. The outflow is assumed to remove salt from the storage.

Monitoring data for the irrigation system is shown in **Figure 10**.



**Figure 10: Monitored Irrigation Usage**

The WBM has been configured to model a loss of 0.9 ML/day extraction from Pit 4 starting in November 2025. Irrigation would cease if rainfall occurred.

## 5.5 Harvestable Rights

The site is located within the coastal draining catchments and central inland-draining catchments harvestable rights area. As of September 2023, up to 10% of the average



annual regional rainfall runoff may be captured and used for any purpose within this harvestable rights area, as per the *Harvestable Right (coastal-draining catchments) Order 2023* (DPE, 2023) under the *Water Management Act 2000*.

The WCPL landholding area is 20,400 ha. Using a harvestable rights multiplier of 0.07 as per the Department of Planning and Environment (DPE) guidelines, the harvestable right for the site is 1,428 ML. Based on rainfall data sourced from the Site AWS, the annual rainfall for the reporting period is 597 mm (refer **Section 4.2**).

There are currently 423 farm dams located within the WCPL landholding area. Due to the nature of these dams, the capacity is unknown. The method set out by DPE to determine the capacity of existing harvestable rights dams for small dams (less than 10 ML) has been used to determine the approximate capacity of WCPL farm dams within the land holding. The capacity of these existing water storages is estimated at approximately 242 ML.

It is noted that the maximum harvestable right does not include storages that are used to control pollution to a water source. Dams used solely for the capture, contamination, and recirculation of drainage and/or effluent, consistent with best management practices or required by a public authority to prevent the contamination of a water source, that are located on a minor stream are exempt under *Clause 3 of Schedule 1 of the Water Management (General) Regulation 2018*.

For the site, preventing contamination includes the capture of predominantly “dirty” water, including sediment laden runoff and mine water runoff. Therefore, water that is captured within mining disturbance boundaries is exempt from requiring a Water Access Licence (WAL), water use approval or water supply work approval. Water captured can be used for any purpose, such as dust suppression and processing, provided it does not result in the contamination of a water source. This definition applies to all the site’s water storages.

The current mining disturbance area captured within the site water management system is 2,677 ha. Clean water catchment draining internally to the mine water management structures consists of 1,582 ha. The estimated runoff captured from these clean water areas is 977 ML.

The total WCPL harvested volume is calculated as:

$$\text{Farm Dam Capacity} + \text{Clean water draining WCM} = \text{Total Harvested Volume (ML)}$$

The calculated volume is described in **Table 10**.

**Table 10: Harvestable Rights Inputs and Estimates – 2025 Reporting Period**

Parameter	Input Value
Annual Rainfall Depth (mm)	597
Runoff Coefficient (clean catchment)	0.11
Mine Disturbance Area (ha)	2,677
Clean Catchment Draining to WCM (ha)	1,582
Storage / Licence	Estimated / Known Value
Clean Water to WCM (ML)	1008
Farm Dam Capacity (ML)	267
WAL Volume (ML)	150
Reporting Volume	Estimated Value



Parameter	Input Value
<b>Total Harvested Volume (ML)</b>	<b>1,250</b>
Surplus Volume (ML)	178
Surplus Volume (with WALs) (ML)	328

The total harvested volume for 2025 is estimated to be 1,250 ML. Given that the WCPL harvestable right is 1,428 ML, the site was within its harvestable right allowance and had a surplus allowance of 178 ML for the year.

Additionally, WCPL hold 150 ML in WALs. Therefore, the site had a surplus allowance of 328 ML including these WALs during 2025.

## 5.6 Water Accounting

WCPL undertake accounting related to water usage at WCM in order to quantify the various water input and output streams associated with the site. This reporting assists WCPL to appreciate how water enters and exits the operation, the quantities and qualities of different streams, compliance against licensing, as well as measuring how effective the site is at sustainably managing water through reuse and recycling practices. This is done as part of the site's environmental, social and governance (ESG) reporting with the reporting period of October to September.

**Table 11** presents estimated accounts of water usage at WCPL for the 2025 reporting period. These estimates are based upon a combination of monitored inputs at the site and estimates made using tools including GIS, WBM and the numerical groundwater model.

**Table 11: Water Accounting at Wilpinjong – 2025 Reporting Period (October 2024 – September 2025)**

Item	Estimated Volume (ML)	Description
Fresh surface withdrawal (<1,000 TDS)	1,219	Estimated based on harvestable rights calculations
Other withdrawal (groundwater) (>1,000 TDS)	1,135	GW model outputs (SLR, 2025c) <b>Permian Aquifer Take – 938 ML</b> The Permian aged Illawarra Coal Measures aquifer generally has TDS> 1,000 mg/L <b>Alluvial Aquifer Take – 197 ML</b> Wilpinjong Alluvial Aquifers (Wilpinjong, Cumbo and Wambo Creeks) generally have TDS> 1,000 mg/L
Fresh withdrawal third-party	1.32	Potable Usage
Discharge (Surface)	1,882	RO Discharge to Wilpinjong Creek
Discharge (Groundwater)	NA	



## 6.0 Water Treatment Facility

### 6.1 Overview

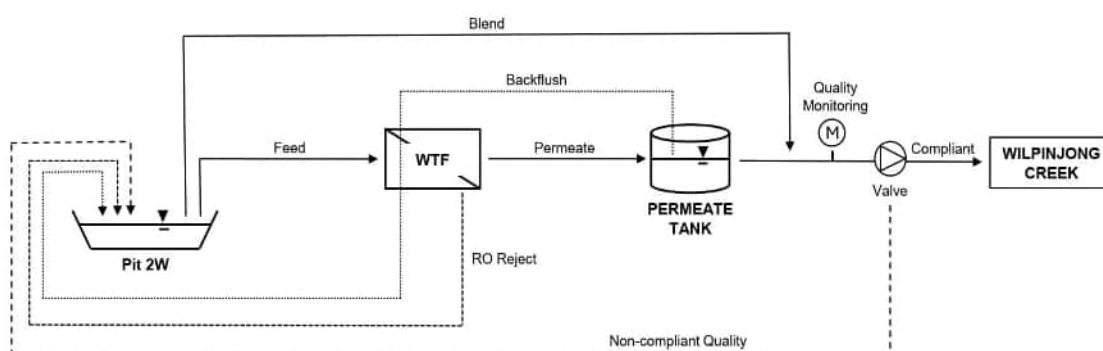
WCM operate a Water Treatment Facility (WTF) which is used to treat excess mine water and discharge a blend of permeate and mine water to Wilpinjong Creek in accordance with conditions outlined in EPL 12425. The WTF comprises a reverse osmosis (RO) treatment plant which is permitted to release at a rate of 6.5 ML/day as of March 2023.

For the period between January 2017 and January 2018, a secondary RO treatment plant leased from General Electric (GE) was in operation, increasing the prescribed maximum release rate to 15 ML/day. The second RO treatment plant was decommissioned at the beginning of 2018 once the site's mine water inventory had been sufficiently reduced. Following decommission, the capacity of the WTF reverted back to the original capacity of 5 ML/day. Due to considerable drought conditions experienced during 2018 and 2019, the RO treatment plant was decommissioned for the period between November 2018 and November 2020. The RO plant was recommissioned following considerable rainfall throughout 2020 resulting in significant surplus water within the site inventory.

Current license conditions require a maximum release water electrical conductivity of 500  $\mu\text{S/cm}$ , a pH range between 6.5 and 8.5, oil and grease not to exceed 10 mg/L and total suspended solids not to exceed 50 mg/L.

The WTF is located adjacent to and east of Pit 2W (location marked in **Figure 1**). Feed water is extracted from Pit 2W (EC  $\approx$ 3,500 to 4,000  $\mu\text{S/cm}$ ), and then passes through a process of strainers, ultrafiltration filters and RO membranes to produce a low EC permeate stream (typically  $\approx$ 180  $\mu\text{S/cm}$ ). The permeate stream is blended with a small amount of feed water prior to release to achieve a mixed EC closer to the 500  $\mu\text{S/cm}$  limit prescribed in the EPL. The EC of the RO reject by-product varies depending on permeate recovery but is typically around 14,000  $\mu\text{S/cm}$  EC. Reject is pumped back to Pit 2W. Some permeate is also used for RO back-flushing/cleaning.

A conceptual schematic of the WTF and river discharge process is presented in **Figure 11**.



**Figure 11: Conceptual Schematic – WTF and River Discharge Process**

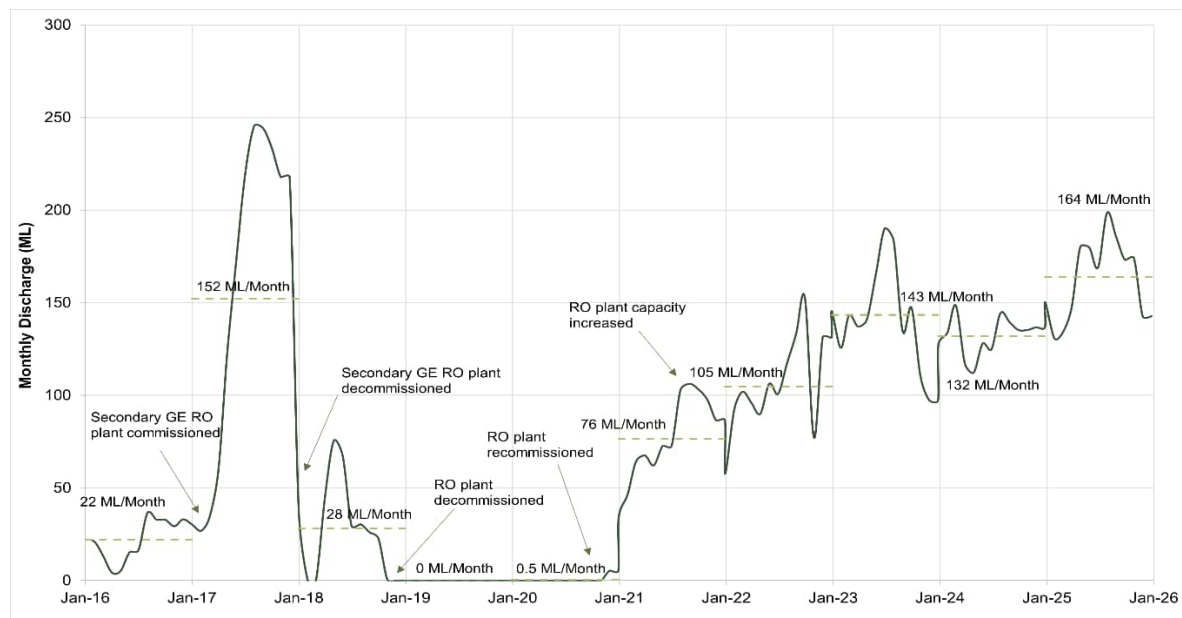
The WCPL WTF is approved to produce enough permeate to discharge a blended stream of water to Wilpinjong Creek at up to 6.5 ML/day. With both the WCM and GE WTFs operating, the combined rate of discharge had the capacity to reach up to approximately 8 ML/day. The site's discharge capacity was then effectively reduced to zero from late 2018



to late 2020 with the decommissioning of both RO plants. The capacity of the WCPL WTF then returned to 5 ML/day from July 2021 due to significant rainfall experienced at WCM throughout 2020 and 2021. During March 2023, the WTF was approved to discharge up to 6.5 ML/day in line with an update to the site EPL criteria.

## 6.2 Historical Performance

WCPL have provided records of daily discharge volumes to Wilpinjong Creek (from both plants) for the period January 2016 to December 2025. This data is presented in **Figure 12**.



**Figure 12: Historical WTF Discharge Volumes**

Review of **Figure 12** shows the following:

- Discharge volumes significantly increase after March 2017, following a significant wet period, modification of the Site's EPL discharge limit, optimisation of the WCPL WTF, and installation/ramp-up of the GE WTF;
- The WTF facility was not operated during 2019 and majority of 2020 due to low levels within the site inventory and very low rainfall throughout 2019;
- Significant discharge occurred throughout 2021 to 2023 as a result of significant rainfall over consecutive years from 2020 to 2022;
- Continued high discharge from the water treatment plant was undertaken in 2023 to 2025 due to high inventory levels within site storages and the commencement of Pit 3 dewatering in 2025.

## 6.3 Model Configuration

The WBM has been constructed to be used for future studies with the following defined as part of the previous model updates, assuming the GE plant is offline:

- WTF capacity: up to 6.5 ML/day;
- Permeate recovery: 75% of feed;
- Permeate EC: 180  $\mu\text{S}/\text{cm}$ ;
- Reject EC: calculated in model based on feed water EC;



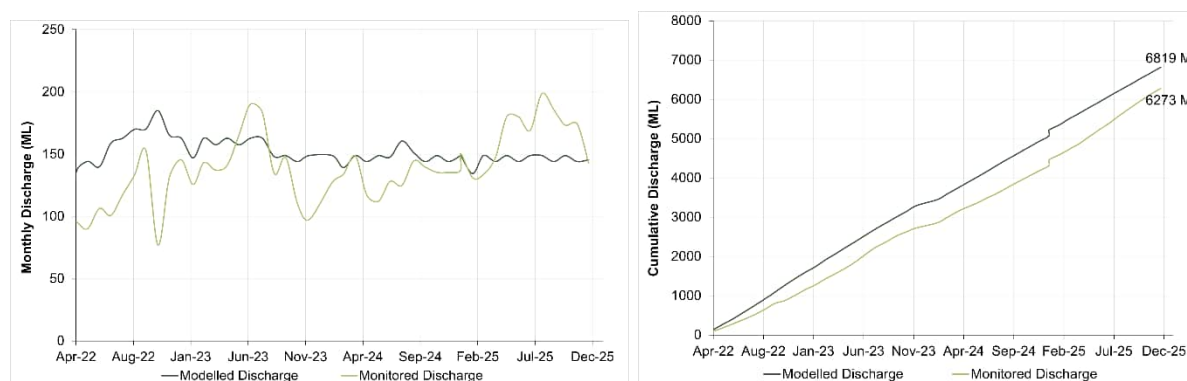
- Discharge water EC: 350  $\mu\text{S/cm}$  EC (per recent historical sampling – see **Table 17**);
- Blend water volume: assumed 0.3 ML/day based on average feed water EC and required discharge EC; and
- Assumed no reduction in RO recovery due to increasing feed water EC.

As part of the previous model updates, a set of operating rules were established within the WBM which aim to reflect on-site decisions regarding the WTF. This includes a deactivation trigger to 2,000 ML, and incorporation of the relationship between climatic conditions (i.e., rainfall) and feed water flow. These changes were reviewed as part of this model update. Operating rules are revised within the model updates (**Table 12**) to improve the fit of observed versus modelled discharge from the WTF as well as modelling of Pit 2W.

Operation of the WTF is based on both site mine water inventory and rainfall forecasts. From historical monitoring data it is also observed that discharge flows vary and may not always operate at full capacity. Due to limited software capabilities, predicting rainfall beyond the current timestep cannot be determined. Rather, daily feed water flows within the WBM are determined by the previous 5-day rainfall and the level within the site mine water inventory. Application is cancelled if site inventory exceeds the nominated minimum threshold of 2,000 ML.

Inflow rates to the WTF have been based on discharge flows and their associated rainfall and site inventory levels given in the January 2018 to December 2025 monitoring data. The results of this process are shown in

**Figure 13.**



**Figure 13: WTF Sub Model: Modelled vs Monitored Values**

Review of

**Figure 13** shows relatively good agreement between calculated and measured data. Results have been derived using the relationship described in **Table 12**.

**Table 12: Feedwater Flow Rate Relationship**

Site Inventory (ML)	5-Day Rainfall (mm)	Feedwater Flow (ML/day)
>6000	-	8.66
6000 - 5500	-	7
5500 - 5000	-	6.4
5000 - 4500	-	6.2
4500 – 4000	-	6



Site Inventory (ML)	5-Day Rainfall (mm)	Feedwater Flow (ML/day)
4000 - 3500	-	5.4
3500 - 3000	-	5.1
3000 - 2900	>1.5	4.3
	≤1.5	4
2900 - 2800	>1.5	3.7
	≤1.5	3.5
2800 - 2700	>1.5	3
	≤1.5	2
2700 - 2600	>1.5	2.5
	≤1.5	1.8
2600 - 2500	>1.5	2
	≤1.5	0.9
2500 - 2400	>1.5	2.5
	≤1.5	0.9
2400 - 2350	>20	0.9
	20 – 1.5	0.7
	≤1.5	0.3
2350 - 2000	>20	0.3
	≤20	0
<2000	-	0

The WTF operating rules have sought to better simulate inflows and associated outflows for the WTF based on climate variation and site inventory levels for use in predictive studies. The WBM has been verified with seven years of data and should continue to be refined and validated using observed site data.

## 7.0 Discharge

### 7.1 Controlled Discharge

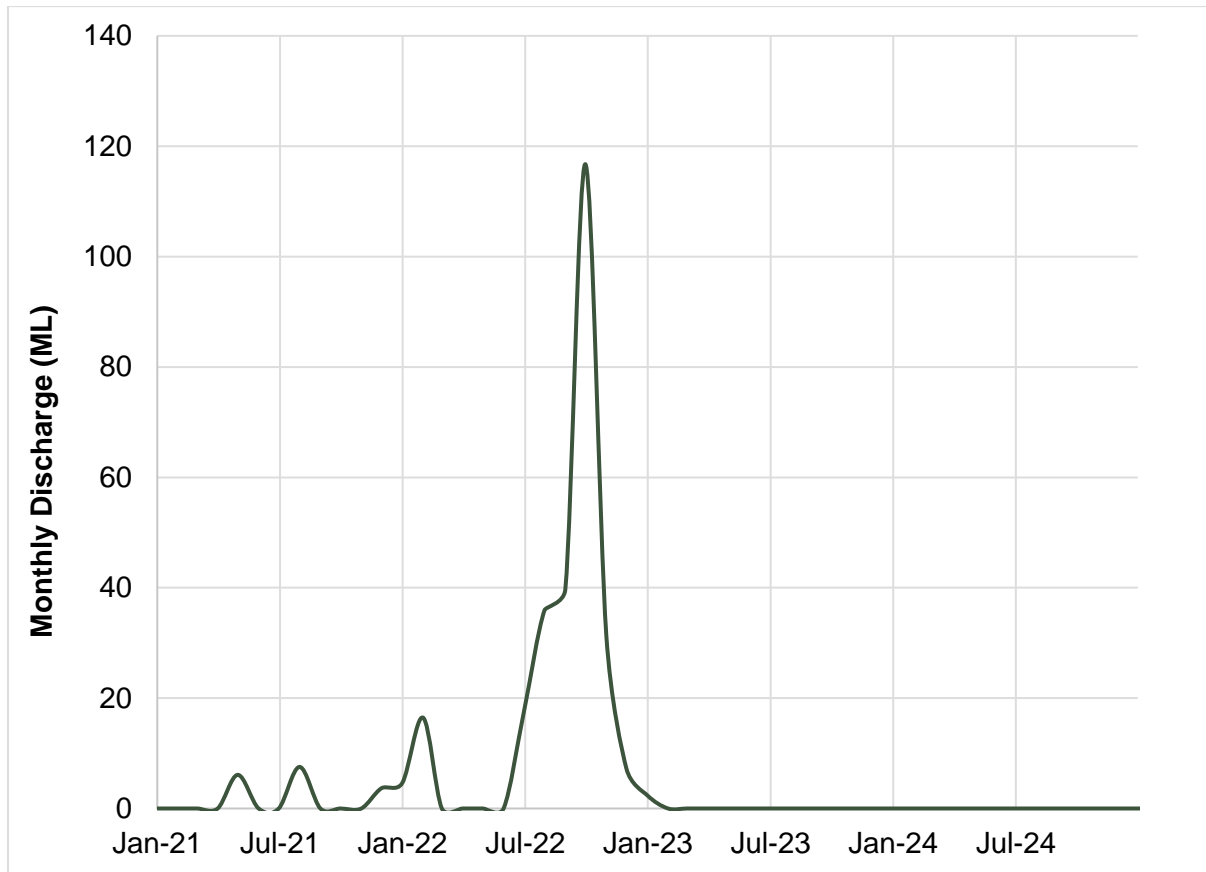
In 2021 following the development of Pit 8, WCPL sought a variation to EPL 12425 to allow the clean water collected by the diversion upstream of Pit 8 to discharge to Wilpinjong Creek under various water quality conditions. The approved LDP 30 permits water to be discharged from the Pit 8 CWD if the value of turbidity does not exceed the turbidity value measured at the Wilpinjong Creek upstream gauging station. When there is no flow within Wilpinjong Creek at the upstream gauging station, the value of turbidity measured at point LDP 30 must not exceed 50 Nephelometric Turbidity Units (NTU).

During 2025 the Pit 8 CWDs and the clean water diversion on the western side of Pit 8 was mined through. The diversion on the eastern side of Pit 8 remains and diverts water from the east around the pit to flow north toward Wilpinjong Creek. A number of existing farm dams are located above Pit 8 within the clean water catchment. To allow continued diversion of majority of clean water flows around Pit 8 WCPL pump water from the northern most farm dam around the east side of Pit 8 to discharge to the paddock at the north via level spreader. This only occur when significant rainfall within the catchment results in high levels within the farm dam.

During the 2025 reporting period pumping occurred on a single event. A volume of 0.576 ML was discharged via this system.



Monitored controlled discharge from Pit 8 CWD is shown in **Figure 14**. There has been no discharge recorded from LDP 30 since early 2023. The original Pit 8 CWDs and associated discharge route to LDP 30 have now been absorbed into the pit progression.



**Figure 14: Pit 8 CWD Controlled Discharge to LDP 30**

### 7.1.1 Model Configuration

The WBM has been configured to model a net 17.3 ML/day (200 L/s) water extraction from Pit 8 CWD (now farm dam). Discharge occurs when the volume in the dam is above 80% full.

## 7.2 Emergency Discharge

In October 2022, WCPL sought an exemption under S.284 of the *Protection of the Environment Operations Act* (POEO Act) to allow for the emergency off-site discharge of mine water due to above average rainfall associated with the third consecutive La Nina year.

The total cumulative annual rainfall recorded for 2022 was 987 mm, for 2021 was 942 mm and for 2020 was 916 mm. This represents three consecutive years of annual rainfall above 90<sup>th</sup> percentile annual rainfall.

Licence Variation Notice 1623919 to discharge from the premises, under emergency conditions, from surplus rainwater captured and stored in open cut pits and associated dams was approved on 31 October 2022. *Licence Condition E1 Emergency Water Discharge* permitted discharge from several LDPs up to the following volumes:

- EPL daily discharge limit of 71 ML, including:
  - LDP 30 – 18 ML/day



- LDP 31 – 18 ML/day
- LDP 32 – 35 ML/day

Emergency discharge occurred from 31 October 2022 to 25 November 2022 (Phase 1) and 15 December 2022 to 1 January 2023 (Phase 2). Phase 2 imposed limits of 90 ML and 270 ML from LDP 30 and LDP 32, respectively. A summary of water discharged is given in **Table 13**. A total of 1,607 ML was discharged between 31 October 2022 and 1 January 2023. No emergency discharges were reported for the remainder of 2023, 2024 or 2025.

**Table 13: Summary of Emergency Discharge**

Discharge Point	Daily Average (ML)	Daily Maximum (ML)	Daily Limit (ML)	Total Volume (ML)	Permitted Under EPL
<b>Phase 1</b>					
LDP 30 (Pit 8)	11	14	18	243	71 ML/day
LDP 31 (Pit 4)	15	16.6	18	389	
LDP 32 (Pit 2W)	25.2	33.5	35	655	
<b>Phase 2</b>					
LDP 30 (Pit 8)	4.65	4.95	5	85	90 ML
LDP 32 (Pit 2W)	13.05	15.32	15	235	270 ML

### 7.2.1 Model Configuration

Due to the nature of the discharge and the requirement for changes to approvals, emergency discharge is not included in the WCPL WBM.

## 8.0 External Water Import

### 8.1 Overview

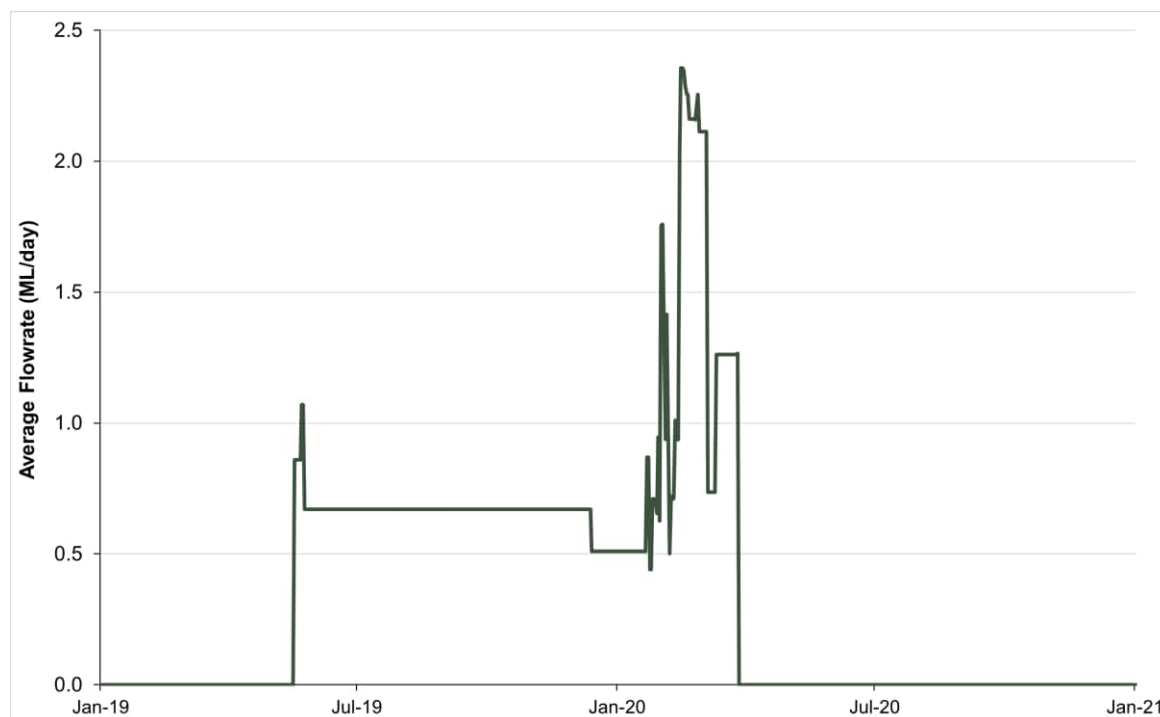
WCM have access to external water supply bores that may be operated as required. Given the historic surplus mine water in storage at the site, WCM did not require this source until the extreme drought conditions that occurred during 2018 and 2019. External water was sourced from the water supply bores during May 2019 to March 2020.

Accessible external water supply sources are outlined below:

- WCM water supply system includes an external water supply borefield;
- It is understood that WCPL are licensed to collectively take up to 3,121 ML annually (equivalent to 8.55 ML/day) including water pumped from mining pits, inferred groundwater and water supply bores;
- WCPL has an in-principle agreement with the nearby Moolarben Coal Mine to source excess water from this mining operation (by pipeline) if required in the future (subject to approval); and
- Local contractors that truck potable water to site for staff amenities (does not enter the WMS).

WCM have provided records of water import volumes for the January 2019 to December 2025 period. **Figure 15** shows the recorded water import volumes which solely accounts for water imported from the external borefield. It is understood the borefield has not been utilised since 2020 due to adequate water holdings/supply on site.





**Figure 15: Average Daily Import Rates**

Review of **Figure 15** shows a consistent supply of water from 17 May 2019 to 26 March 2020 with an average flowrate of 0.67 ML/day (7.8 L/s) in 2019 and 1.16 ML/day (13.4 L/s) in 2020. Based on the 2019-2020 monitoring data, a maximum of 27.3 L/s was supplied to the mine via the external borefield. Since 2020, the external borefield has not been operated.

## 8.2 Model Configuration

WCPL has advised that this source is not particularly reliable and would only be utilised in extreme circumstances.

Given the nature of the borefield and typical site usage, the borefield has not been included within the WBM to assist in providing more accurate forecasting. This configuration should be reviewed if more consistent use of the borefield is expected or reflected in site monitoring data.

## 9.0 Groundwater

### 9.1 Groundwater Inflows

#### 9.1.1 Definition

Groundwater inflows are defined as waters reporting to the WMS from aquifers external to the current extent of disturbance. This generally includes seepage from coal seams and in-situ rock and alluvial aquifers, and water released from fractures and pores within coal and rock as it is broken as part of the mining process (WRM, 2019).

#### 9.1.2 Previous Estimates

Previous estimates of groundwater inflow to the WCM include the following:



- WEP EIS (2015): net groundwater inflow rates adopted as part of the WEP surface water assessment (WRM, 2015) were derived by applying highwall evaporative losses to gross inflow rates determined through hydrogeological modelling as part of the groundwater assessment (HydroSimulations, 2015);
- Previous 2016 model update (Hatch, 2017): net groundwater inflow rates were inferred at a constant rate of 3.8 ML/day through the period January 2014 to January 2017 as part of the water balance model calibration process;
- Previous 2019 model update (WRM, 2019): net inflow rates determined through model calibration exercise varying from 3.51 ML/day in 2014 to 2.00 ML/day in 2018;
- Groundwater Model Update (SLR, 2020b): net groundwater inflow rates determined from hydrogeological modelling; and
- Groundwater Model Update (SLR, 2025c) net groundwater inflow rates determined from hydrogeological modelling.

### 9.1.3 Current Estimates

Groundwater inflow rates have previously been inferred for a given year through historical model calibration. However, during a previous model update an operation within the model was established that varies groundwater inflow depending on the state of groundwater influences therefore allowing the model to be more effectively used as a predictive tool for determining future on-site water volumes. This operation allows groundwater inflows to be adjusted based on recent rainfall trends to align simulated mine water inventory trends during dry and wet periods. The degree to which groundwater inflows are adjusted has been determined using historical model calibration. Updated adjustment factors include the following:

- Mean annual predicted inflow based on Groundwater Modelling (SLR, 2025c) values;
- 6-monthly rainfall greater than 25% of the mean correlates to a 15% increase in predicted groundwater inflow to reflect increased groundwater recharge; and
- 6-monthly rainfall less than 25% of the mean correlates to a 15% decrease in predicted groundwater inflow to reflect reduced groundwater recharge.

Based on the above operations, average groundwater inflows for the calibration period are as shown in **Table 14**. It should be noted that assessment of inferred groundwater take for WCM licence conditions is assessed based on the water year (period 1 July to 30 June).

**Table 14: Summary of Average Daily Groundwater Inflow**

Calendar Year			Water Year		
Period	Modelled Groundwater Inflow (ML/day)	Groundwater Model (SLR, 2025c) (ML/day)	Period	Modelled Groundwater Inflow (ML/day)	Groundwater Model (SLR, 2025c) (ML/day)
2022	1.8	1.9	2022-2023	1.8	1.9
2023	1.7	1.7	2023-2024	1.6	1.7
2024	1.8	1.7	2024-2025	2.5	2.6
2025	3.0	3.0	2025-2026	3.0	2.4

Groundwater inflows in 2025 were estimated at an annual average of 3.0 ML/day for the 2025-2026 water year. This exceeds predictions made in the current groundwater model which equate to 2.4 ML/day (SLR, 2025c).



### 9.1.4 Model Configuration

The WBM has been configured to simulate a future net inflow rate based on 6-monthly rainfall trends as described in **Section 9.1.3**, reporting to the site WMS.

Note that activities in the Pit 8 extraction area began during 2019, predominantly during the early stages of mining (i.e., pre-stripping) with limited pit development. It is therefore expected that Pit 8 was elevated above the groundwater table throughout 2019 and 2021 hence no direct groundwater interception would have occurred. Groundwater inflow to Pit 8 was expected to occur during 2021. As outlined in the Groundwater Model Update (SLR, 2025c), inflows across 2022 to 2024 were projected to be predominantly to Pit 6 and Pit 8. Mining in Pit 3 is scheduled to recommence in 2025-26, which will prompt adjustment of inflow proportions for subsequent model updates.

The model configuration for groundwater inflow is given in **Table 15** and is based on the predicted inflows from the groundwater model (SLR, 2025c).

**Table 15: Groundwater Intake Model Configuration**

Year	Inflow to Pit (%)			
	Pit 1/5/6	Pit 2/4	Pit 3/7	Pit 8
2018	62	18	21	-
2019	69	14	17	-
2020	52	32	16	-
2021	37	2	33	29
2022	66	1	4	29
2023	76	0	2	21
2024	70	0	3	27
2025	37	0	51	12
2026	43	0	47	10
2027	44	0	48	8
2028	28	0	65	8
2029	27	0	64	9
2030	11	0	56	33
2031	13	0	0	87
2032	0	0	0	100
2033	0	0	0	100
2034	0	0	0	100
2035	0	0	0	0

Groundwater operations within the WBM are used as a preliminary tool to determine groundwater inflows, however, there remains scope to improve measurement of inflow to the pits to further validate groundwater inflow within the model. It is recommended that inflow assumptions continue to be revised as further information becomes available.



## 9.2 Spoil Aquifers

### 9.2.1 Overview

Mining operations have extracted coal from three distinct voids, termed Pit 1/5/6, Pit 2/4 and Pit 3/7 with the addition of Pit 8 in 2019 (refer **Section 3.1** and **Figure 1**). In-pit spoil placement areas have been formed within Pit 1/5/6, Pit 2/4 and Pit 3/7 for creation of most the mining landform. These in-pit placement areas are porous and highly permeable.

Groundwater movement through the site is generally from the southwest to the northeast. In the northern portion of the site where mined pits reach their greatest depth, Pit 5 and Pit 6 spoil areas effectively operate as a single area due to the complete removal of material between them. Due to pit floor topography the Pit 5 area will flow toward Pit 6.

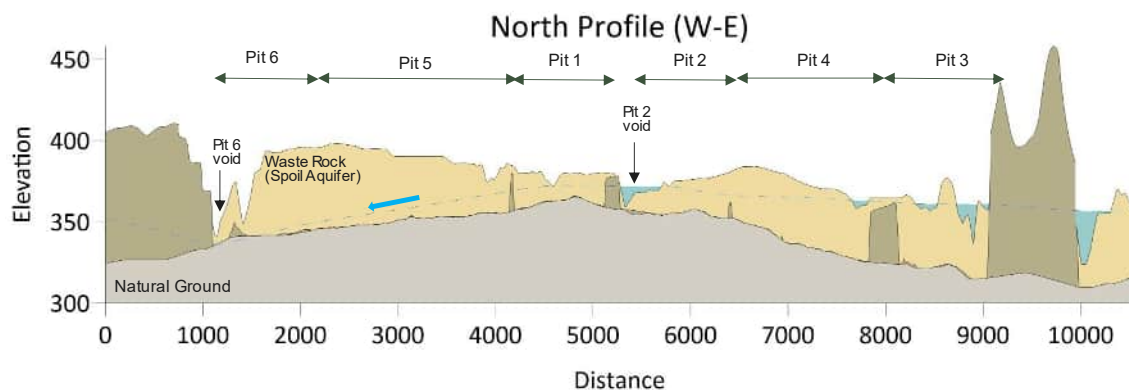
Pit 1 and Pit 5 are separated by a thin wall of natural material which may impede flow between them at the northern end of the pit. Towards the central area, Pit 1 forms one large area with Pit 5 and Pit 6.

A groundwater divide in the waste rock material exists between Pit 1 and Pit 2 with flow directed to the west and east separated by a wall of natural material. To the east, Pit 2 and Pit 4 are divided by a thin wall of natural material. Pit 4 is also separated from Pit 3 by natural material.

Spoil areas to the southern side of the mining area are likely “dry” (not saturated) and seepage generally occurs from these areas to the lower mined pits at the north of the site.

Mining in Pit 8 is expected to have some groundwater interactions, however, is not expected to interact with spoil aquifers at current mining.

An indicative cross section of the area at the north of the site is given in **Figure 16**.



**Figure 16: Indicative Cross Section West to East in Northern Portion of Mine**

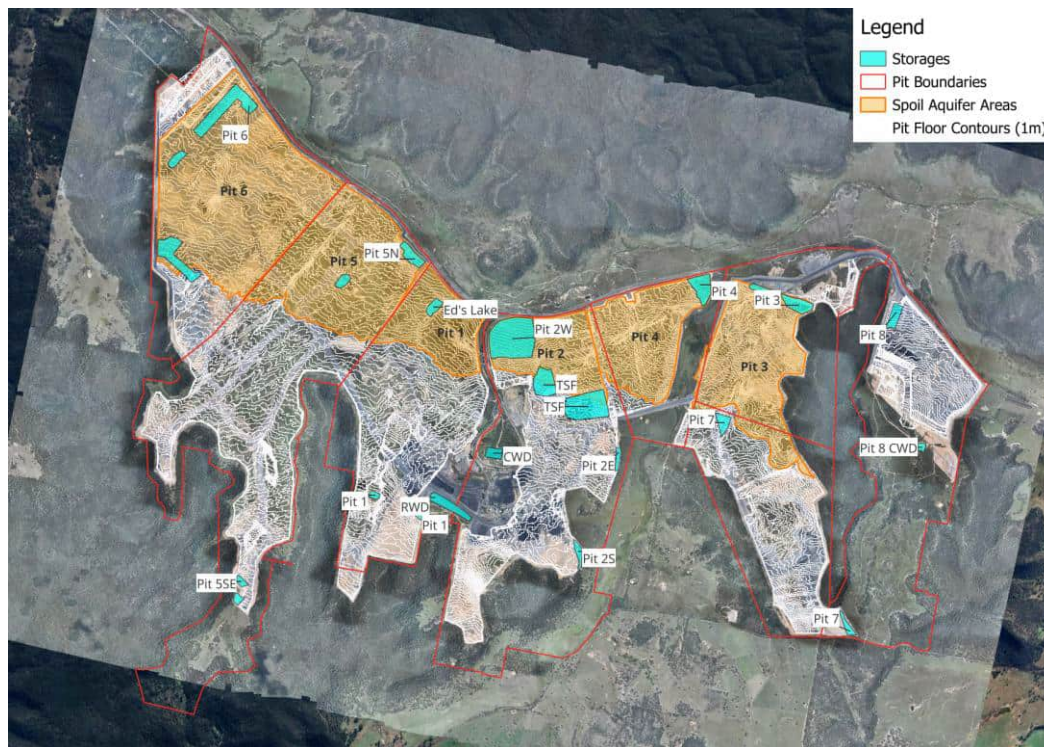
Storage of water in-pit is expected to result in flow of water from the open water body into the adjoining spoil placement area, forming a saturated zone within the spoil in which significant volumes of water may be stored. In the event of a pit filling with water, leakage to the adjoining spoil aquifer will prolong the filling process, and conversely, leakage from the aquifer will prolong the subsequent dewatering process.

### 9.2.2 Properties

The model currently incorporates four spoil aquifers including the spoil areas at Pit 1, Pit 2, Pit 4 and Pit 5. The model has been updated to include additional spoil areas at Pit 3 and Pit 6.



Pit floor contours and the surface contours (data dated June 2025) were utilised to determine spoil aquifer areas. The top of spoil aquifer storage was determined as the level at which flow would transfer outside the mined pit area. Spoil aquifer areas are shown in **Figure 17**.



**Figure 17: Spoil Aquifer Layout**

Stage-storage curves determined for the spoil areas are given in **Appendix D**.

Hydraulic conductivity of the waste rock material varies between 1.6 m/day and 35.8 m/day based on slug testing at Pit 2 and Pit 3. No site-specific measurement of porosity has been undertaken, however, Standard Penetration Test results conducted at Pit 2 boreholes are consistent with material that is medium dense, where expected porosity would range from 10-20%.

### 9.2.3 Model Configuration

The updated model incorporates the six spoil aquifers. Water stored within the lower pit areas is expected to result in flow from open water bodies to the adjacent spoil areas forming a saturated zone where water is stored. These adjacent areas are expected to result in flow to achieve equilibrium of water levels across the pit floor. The following changes to transfers have been incorporated within the WBM as part of the 2026 model update:

- Pit 6 and Pit 6 spoil aquifer equalise at 332 m (have the same base level);
- Pit 6 spoil aquifer and Pit 5 spoil aquifer equalise above 346 m (the lowest level in Pit 5);
- Pit 5 spoil aquifer and Pit 1 spoil aquifer equalise above 359 m (level of top of natural material);
- Pit 5N seeps to the Pit 5 spoil aquifer;
- Pit 2W and Pit 2 spoil aquifer equalise at 351 m (have the same base level);



- Pit 4 and Pit 4 spoil aquifer equalise at 322 m (have the same base level); and
- Pit 3 and Pit 3 spoil aquifer equalise above 330 m (seepage to spoil aquifer till water level reaches the current base of Pit storage).

Transfer rates for movement of water between the storages have been based on hydraulic conductivity and head level differences.

Given the separation of Pit 2 spoil aquifer and Pit 4 spoil aquifer by natural material with low hydraulic conductivity, seepage to Pit 4 is expected to be minimal. Additionally, if water levels rise above the level of this material, this calibration found that little transfer of water is expected due to similar water levels. This relationship may need to be revised when calibration data are available for a significantly dry period or if either Pit 4 or Pit 2W is no longer used for permanent water storage.

Porosity of waste rock material for the different spoil storages has been estimated through calibration as:

- 10% for Pit 1, 2, 3, 4 and 5 spoil aquifers; and
- 20% for the Pit 6 spoil aquifer.



## 10.0 Water Quality

Water quality sampling at WCM is undertaken at various locations with samples analysed for the standard suite of quality indicators. Monthly average measurements of EC for selected surface water locations have been summarised for 2025 in **Table 17** with long-term data provided in **Appendix C**. Note that limited EC data for the WMS dams or pits was provided from 2020 to 2025. Review of available information shows the following:

- Water circulating through the WMS has historically averaged around 3,000 to 4,000  $\mu\text{S}/\text{cm}$  (see pit, dam and feed water data). Since 2023, available data indicates salinity has trended upwards at the site (Pit 2W and WTF discharge).
- The EC of water within CWD increased slightly in 2019, coinciding with input from external bore supplies;
- The EC of water within Pit 2W is slightly higher than other areas of the WMS due to the inflow of RO reject. Concentrations of salt within this storage appear to have been diluted within the pit but have steadily increased since first receiving RO reject.
- The EC of the blended discharge stream to Wilpinjong Creek has generally increased over time, now typically ranging around 350 to 450  $\mu\text{S}/\text{cm}$ . This likely coincides with the salinity increase observed throughout the broader WMS which coincides with the site's increased confidence with the WMS and ability to effectively manage salinity. The discharge remains compliant with the 500  $\mu\text{S}/\text{cm}$  EC end-of-pipe limit specified in EPL 12425.

The WBM maintains a running account of salt mass in all water storages which is equated to and reported as EC. Salt mass inflows are typically estimated by assigning salinity concentrations to runoff from various land use types, and to point water sources (e.g., groundwater, pipeline water).

Water quality model parameters were initially defined as part of the WEP surface water assessment (WRM, 2015). This water balance model update confirmed that these parameters continued to produce reasonable estimates of EC in the circulating WMS inventory (based on Pit 2W data). The current investigation has retained water quality parameters from these earlier studies.

Adopted water quality parameters are summarised in **Table 16**.

**Table 16: Adopted Salinity Generation Rules**

Item	Salinity (EC) ( $\mu\text{S}/\text{cm}$ )
<b>Catchment Runoff Source</b>	
Natural / undisturbed	1,600
Roads / industrial / hardstand / pit	3,000
Spoil / overburden / cleared	2,500
Rehabilitated overburden	2,000
<b>Point water sources</b>	
Groundwater	3,000
External water supply (e.g., borefield)	3,000



**Table 17: Average Electricity Conductivity (µS/cm) by Month and Sampling Location**

Year	Month	Monthly Rainfall (mm)	Dams					Pits			WTF				Reference (Waterways)		
			Pit 2W	Pit 5 FP	CWD	RWD	Ed's Lake	Pit 5	Pit 4	Pit 3	Feed	Permeate	Discharge	Concentrate	Wilp. Ck Upstream	Wilp. Ck Downstream	Cumbo Creek
2025	Jan	95.2	4,643	-	-	-	-	-	-	-	-	-	404	-	832	482	5,826
	Feb	50.1	4,598	-	-	-	-	-	-	-	-	-	406	-	1,000	476	ND
	Mar	56.3	4,693	-	-	-	-	-	-	-	-	-	392	-	1,235	456	ND
	Apr	19.8	4,728	-	-	-	-	-	-	-	-	-	376	-	1,310	448	ND
	May	98.1	4,858	-	-	-	-	-	-	-	-	-	398	-	ND	468	5,197
	Jun	24.2	4,728	-	-	-	-	-	-	-	-	-	400	-	579	416	4,504
	Jul	60.6	4,824	-	-	-	-	-	-	-	-	-	371	-	550	501	4,270
	Aug	39	4,670	-	-	-	-	-	-	-	-	-	360	-	472	630	3,906
	Sep	56.5	4,770	-	-	-	-	-	-	-	-	-	314	-	546	599	3,727
	Oct	36.5	4,808	-	-	-	-	-	-	-	-	-	329	-	1,006	446	4,689
	Nov	20.6	4,847	-	-	-	-	-	-	-	-	-	374	-	1,272	438	5,094
	Dec	28.7	4,933	-	-	-	-	-	-	-	-	-	347	-	832	418	5,826

**Note:** Wilpinjong Creek and Cumbo Creek EC values are flow-weighted averages, calculated for that month. Rainfall totals were calculated based on the data obtained from the SILO Data Drill service.  
ND – No Data.



## 11.0 Water Balance Model

### 11.1 Overview

The WBM has been designed to simulate the operation of all major components of the WMS including catchment runoff, water inventory fluctuation and overflow, pump and gravity transfers, coal mining operations usage and return, climatic influence, groundwater inflow, open cut mine dewatering, discharge of water to Wilpinjong Creek (via the WTF), and interaction with spoil aquifers.

The components of the WMS are described and quantified in the preceding report sections.

### 11.2 Model Schematisation

A representative schematic of the WBM has been provided in **Appendix A**. Review of **Figure 1A** shows the model comprises a network of interconnected nodes, where nodes represent key components of the WMS (dams, wash plant, pits, etc.).

### 11.3 Model Calibration

#### 11.3.1 Overview

The GoldSim model has been constructed to represent the operations currently taking place at WCM. Operations particularly in relation to the WMS have generally remained consistent from early 2022 to 2025, hence calibration of the model has been undertaken using the monitoring data provided by WCPL for the April 2022 to end December 2025 period. Water level data have been converted to estimates of water volume using storage characteristics as described in **Section 3.2.2**. Inventory data and available water usage/discharge data have been utilised for model calibration.

The model calibration exercise specifically focused on reproducing the measured inventory in the combined WMS (Pit 2W, RWD, CWD, Pit 3 and Pit 4). The objective of the exercise was to infer or establish key model inputs and parameters, and to demonstrate that the WBM suitably replicates observed site inventory trends.

#### 11.3.2 Configuration

The following inflows and outflows were hard coded into the model as time series data:

- Extraction of water from the RWD and CWD to supply demands in the MIA/CHPP area, including the CHPP and miscellaneous MIA demands (modelled as per metered stream in **Section 5.1**).

The following processes were simulated within the model:

- Climatic influence: evaporation, evapotranspiration, direct rainfall and catchment runoff based on daily rainfall data at the BoM Wollar station and Site AWS (refer to **Section 4.2**) and SILO Data Drill evaporation data (refer to **Section 4.3**);
- Water extraction from Pit 2W, Pit 3, the RWD and Pit 5 FP Dam for dust suppression (per **Section 5.2**);
- Transfer of water between storages, pit dewatering, etc. (refer to **Table 4**);
- Seepage from up-dip pits into down-dip pits via spoil aquifers (e.g., Pit 3 seepage to Pit 7);



- Saturation and drainage of spoil aquifers adjacent to open cut pits (spoil aquifers modelled adjacent to Pit 2W, Pit 3 and Pit 4) (refer to **Section 9.2**);
- WTF inflow and outflow rates (refer to **Section 6.3**);
- Off-site discharges (refer to **Section 7.0**); and
- Groundwater inflow rates (refer to **Section 9.1**).

The following parameters were adjusted to improve the overall agreement between simulated and observed historical WMS performance:

- WTF operating rules;
- Groundwater adjustment factors and groundwater inflow apportioning to pits; and
- Other settings and configuration assumptions including:
  - Catchment and land use information described in **Section 3.2.4**; and
  - Stage storage updates as given in **Appendix D**.

### 11.3.3 Outcomes

Model simulated volumes have been compared against historical measurements in **Figure 18** for the period April 2022 to December 2025. Results have been plotted for the combined water inventory in the WMS (comprising the CWD, RWD, Pit 2W, Pit 3 and Pit 4).

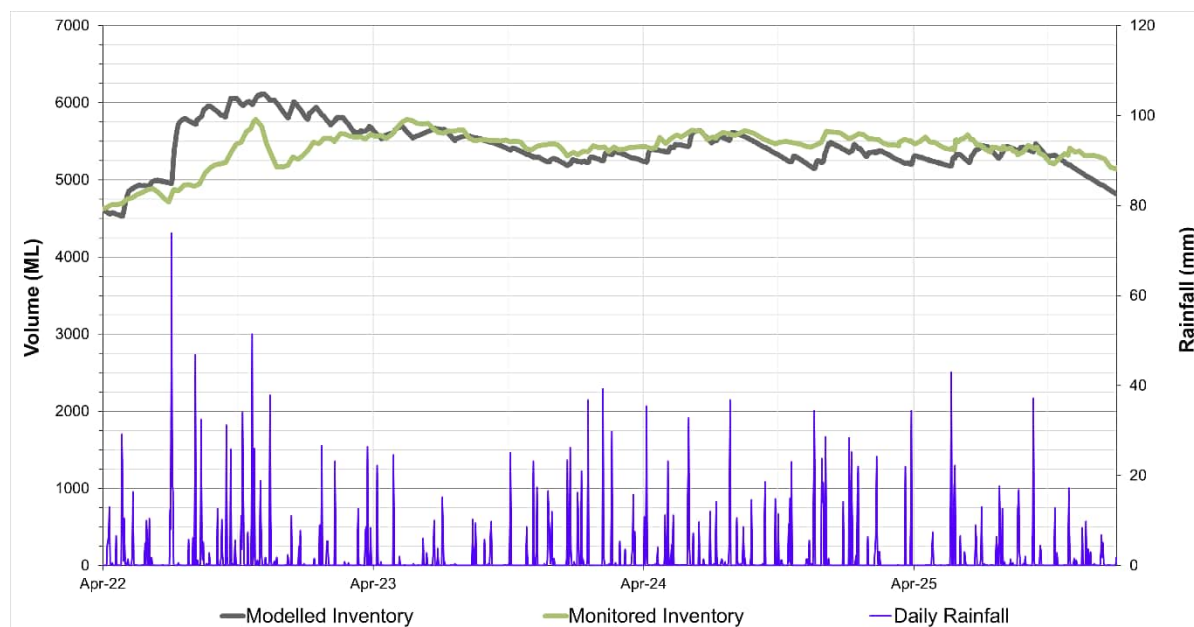
Note Pit 5N has been removed from the site water inventory given its high seepage rate to Pit 6 and observed low storage rate.

Model simulations have been compared against historical measurements in **Figure 18**. Results are plotted for the combined site water inventory.

It is noted that there is a large discrepancy between monitored and simulated results from July 2022 to January 2023. This is likely due to emergency discharges that were undertaken during this period. This process is not included within the WBM and therefore not accounted.

Annual calibration exercises have resulted in model results that appear well fitted against observed data to the end of 2025 under the current WMS arrangement.





**Figure 18: WBM Calibration Simulated vs Measured Combined Site Inventory**

Key outcomes of the calibration process include:

- Effective representation of monitored site water inventory;
- Effective representation of inventory reduction through measures such as evaporators and operation of the RO plant; and
- Verification of a series of operating rules regarding groundwater inflow rates, WTF operation and allow the model to be more effectively used as a predictive tool for on-site water behaviour.

## 11.4 Salt Balance Verification

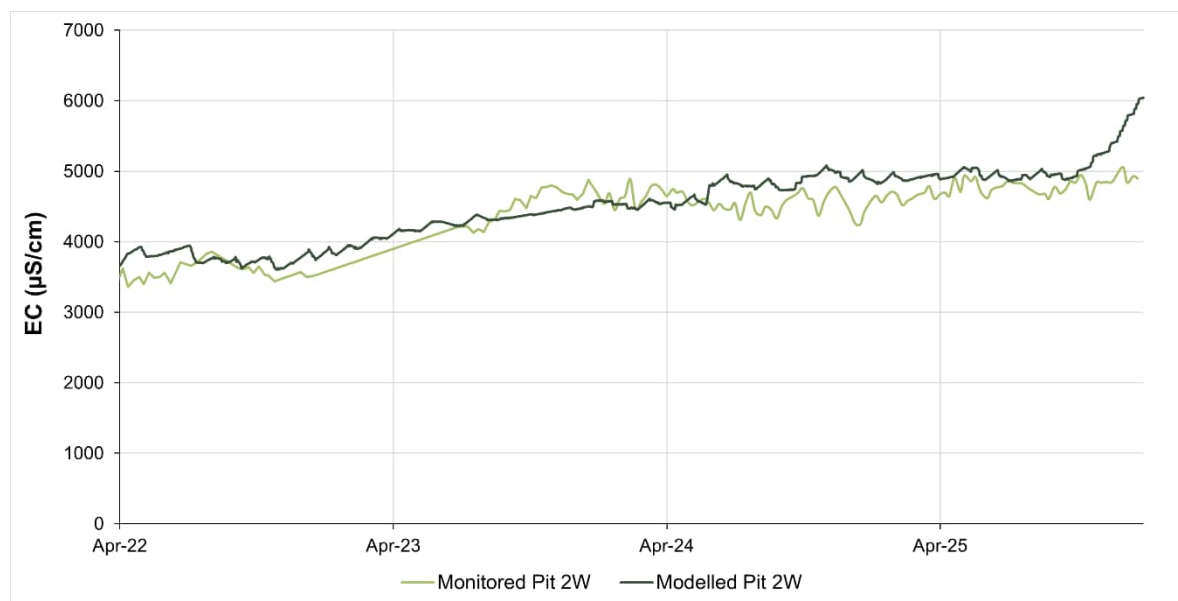
The WBM maintains a running account of salt mass in all water storages which is equated to and reported as EC. Model verification of the salt balance has been undertaken using salinity monitoring for the 2025 calibration period (1 April 2022 to 31 December 2025). This only includes storage Pit 2W due to the limited availability of monitoring data for other storages for this period. The objective of this verification is to establish that salt transfer is effectively being captured within the WBM.

Salt mass inflows are typically estimated by assigning salinity concentrations to runoff from various land use types, and point water sources (e.g., groundwater, pipeline water) as described in **Section 10.0**. Increased salt concentrations are also recirculated into the WMS via the concentrate return from the WTF, directed to Pit 2W. No salinity is lost via evaporation from storages.

From available monitoring data, it is found that water circulating through the WMS is typically within the EC range of 3,000 to 5,000  $\mu\text{S}/\text{cm}$ . Where data are unavailable, the initial conditions within Pit 2W were assumed to be within this range. Model simulated salinity within Pit 2W has been compared against historical measurements in **Figure 19** for the period April 2022 to December 2025.

A key outcome of this verification process is the effective representation of salinity that aligns with trends in monitored data (where available).





**Figure 19: Salinity Verification Simulated vs Measured – Pit 2W**

## 11.5 Base Case Model Operating Rules

Representative operating rules that define the Wilpinjong WBM are summarised in **Table 18**. The operating rules have been refined by calibration against monitored data over a four-year period.

**Table 18: Wilpinjong WBM Operating Rules**

Item	Description	Operating Rules
<b>1.0</b>	<b>External Water Supply</b>	
1.1	External Water Supply	<ul style="list-style-type: none"> <li>Water imported from an external source has not been included within the model to reflect site operation preferences</li> </ul>
<b>2.0</b>	<b>Supply to Demands</b>	
2.1	CHPP	<ul style="list-style-type: none"> <li>Modelled as a net water extraction of 140 ML/month (4.6 ML/day) sourced evenly between the CWD and RWD</li> <li>Usage consistent with CHPP water balance and forecast production (see Section 5.1.1.4)</li> <li>No return from demand</li> </ul>
2.2	Miscellaneous Industrial Area	<ul style="list-style-type: none"> <li>Modelled as a net water extraction of 20 ML/month (0.66 ML/day) sourced evenly between the CWD and RWD</li> <li>Assumed loss rate of 0.274 ML/day (100 ML/year)</li> <li>Balance assumed to return to Pit 2W</li> </ul>
2.3	Dust suppression	<ul style="list-style-type: none"> <li>Water usage calculated daily in model as a function of climate and application area (Refer to <b>Section 5.2.2</b>)</li> <li>No dust suppression if rainfall exceeds 1.5 mm/day</li> <li>Demand supplied based on the following breakdown:                             <ul style="list-style-type: none"> <li>Pit 3 FP (Pit 3) – 0% prior to 2023 - 60% after</li> <li>ROM FP (RWD) – 75.08% prior to 2023 – 35% after</li> <li>Pit 2 FP (Pit 2W) – 24.91% prior to 3023 - 4.99% after</li> <li>Pit 5 FP (Pit 5 FP Dam) – 0.01%</li> <li>No return from demand modelled</li> </ul> </li> </ul>



Item	Description	Operating Rules
2.4	Evaporators	<ul style="list-style-type: none"> <li>Modelled as a net 0.25 ML/day loss from Pit 2W up to 1 July 2024, then as a net 2.1 ML/day loss after 1 July 2024 based on monitored data</li> <li>Outflow stream assumed to be water only, no salt removed from Pit 2W</li> <li>Disabled if site water inventory is less than 4,000 ML</li> </ul>
2.5	WTF	<ul style="list-style-type: none"> <li>Used to draw down mine water inventory, operated if inventory in WMS exceeds 2,000 ML</li> <li>Supplied feedwater from Pit 2W at up to 8.66 ML/day, flowrate modelled dependent of previous 5-day rainfall (see <b>Section 6.3</b>)</li> <li>Permeate recovery modelled as 75% of feed. No reduction in recovery modelled due to high feed water EC</li> <li>Permeate EC modelled at 180 <math>\mu\text{S/cm}</math></li> <li>WTF reject EC modelled as a function of feed water EC based on salt mass balance</li> <li>WTF reject pumped to Pit 2W.</li> <li>Discharge water EC modelled at 350 <math>\mu\text{S/cm}</math>, achieved by adding Pit 2W water to the residual permeate stream assumed 0.3 ML/day based on average EC of Pit 2W and discharge water</li> </ul>
<b>3.0</b>	<b>Operation of Key Storages</b>	
<b>3.1</b>	<b>Water Storages</b>	
3.1.1	Pit 2W	<ul style="list-style-type: none"> <li>Primary hub mine water storage</li> <li>Supplies makeup water to the following locations as required: <ul style="list-style-type: none"> <li>RWD and CWD</li> <li>Pit 2 FP</li> <li>Pit 5 FP Dam</li> </ul> </li> <li>Receives pumped dewatering from Pit 5N, Pit 4, Pit 3, Pit 6 and Pit 8</li> <li>Pumps to Pit 3 at 90 L/s (7.8 ML/day). If Pit 3 is full, Pit 2W pumps to Pit 4 at 100 L/s (8.6 ML/day) and then to Pit 5N as a last resort at 100 L/s (8.6 ML/day).</li> <li>Supplies water to WTF for treatment and discharge to Wilpinjong Creek under EPL 12425</li> <li>Feed water for evaporator spray system</li> <li>Exchanges water with adjacent Pit 2/4 spoil aquifer to maintain equalised water levels (exchanges water with Pit 2 half of spoil aquifer only)</li> <li>No spillway overflows modelled</li> </ul>
3.1.2	RWD	<ul style="list-style-type: none"> <li>Mine water dam in the CHPP/MIA area</li> <li>Supplies water to the following locations: <ul style="list-style-type: none"> <li>CHPP process water makeup</li> <li>MIA/CHPP miscellaneous water usage</li> <li>ROM FP</li> </ul> </li> <li>Sources water from Pit 2W to maintain water level at 412.1 mAHD (230 ML)</li> <li>No spillway overflow modelled</li> </ul>
3.1.3	CWD	<ul style="list-style-type: none"> <li>Mine water dam located north of CHPP/MIA, within the rail loop</li> <li>Supplies water to the following locations: <ul style="list-style-type: none"> <li>CHPP process water makeup</li> <li>MIA/CHPP miscellaneous water usage</li> </ul> </li> <li>Sources water from Pit 2W to maintain water level at 395.8 mAHD (30 ML)</li> <li>No spillway overflow modelled</li> </ul>
3.1.4	Pit 5 FP Dam	<ul style="list-style-type: none"> <li>Water supply for Pit 5 FP</li> <li>Receives pumped inflows from Ed's Lake</li> </ul>



Item	Description	Operating Rules
		<ul style="list-style-type: none"> <li>Sources makeup water from Pit 2W to maintain a minimum water level of 391.5 mAHD (3 ML)</li> <li>Spillway overflow to Pit 5N at 392.2 mAHD (full storage volume 8.5 ML)</li> </ul>
3.1.5	Ed's Lake	<ul style="list-style-type: none"> <li>Residual void left within backfilled and rehabilitated Pit 1N void</li> <li>Supplies makeup water to Pit 5 FP Dam</li> <li>Pumps excess water to Pit 2W at 100 L/s (8.64 ML/day)</li> <li>Seepage to underlying Pit 1/5/6 spoil aquifer modelled at 0.5 ML/day</li> <li>Spillway overflow to Wilpinjong Creek at 375.3 mAHD (storage capacity nominally 110 ML)</li> </ul>
3.1.6	Pit 8 Clean Water Dams	<ul style="list-style-type: none"> <li>Constructed in 2020</li> <li>Capture water from the Pit 8 upstream</li> <li>Excess water discharge offsite east of Pit 8 at up to 200 L/s</li> <li>Original dams become part of the pit 8 mining area from 2024, existing farm dam now used to capture and divert water</li> </ul>
<b>3.2</b>	<b>Tailings Storage Facilities</b>	
3.2.1	All TDs	<ul style="list-style-type: none"> <li>Old tailings storage cells</li> <li>All receive local catchment runoff with no pumped inflows</li> <li>No pumped outflows modelled. Standing water left to evaporate, or seep to Pit 2/4 spoil aquifer (at an assumed rate of 2 mm/day)</li> </ul>
<b>3.3</b>	<b>Mining Pits</b>	
3.3.1	Pit 5N	<ul style="list-style-type: none"> <li>Residual void left when backfilling Pit 5N. Situated predominantly within spoil material with high seepage rate to Pit 6.</li> <li>Excess water pumped to Pit 2W at 180 L/s (15.6 ML/day) unless receiving storage is above its maximum operating level</li> <li>Seepage to Pit 6 (via Pit 1/5/6 spoil aquifer) modelled as a depth loss rate of 300 mm/day</li> </ul>
3.3.2	Pit 5S	<ul style="list-style-type: none"> <li>Seepage to Pit 6 (via Pit 1/5/6 spoil aquifer) modelled as a depth loss rate of 300 mm/day</li> <li>No pumped dewatering</li> </ul>
3.3.3	Pit 4	<ul style="list-style-type: none"> <li>Receives seepage via Pit 2/4 spoil aquifer</li> <li>Excess water pumped to Pit 2W at 160 L/s (14.0 ML/day) unless receiving storage is above its maximum operating level</li> <li>Receives groundwater inflow</li> <li>Feed water for Pit 4 rehabilitation irrigation</li> <li>Exchanges water with adjacent Pit 2/4 spoil aquifer to maintain equalised water levels (exchanges water with Pit 4 half of spoil aquifer only)</li> </ul>
3.3.4	Pit 1	<ul style="list-style-type: none"> <li>Seepage to Pit 1/5/6 spoil aquifer modelled as a depth loss rate of 300 mm/day</li> <li>No pumped dewatering</li> </ul>
3.3.5	Pit 2S	<ul style="list-style-type: none"> <li>Seepage to Pit 2/4 spoil aquifer modelled as a depth loss rate of 300 mm/day</li> <li>No pumped dewatering</li> </ul>
3.3.6	Pit 3	<ul style="list-style-type: none"> <li>Receives seepage from Pit 7 via Pit 3 spoil aquifer</li> <li>Excess water pumped to Pit 2W at 90 L/s (7.8 ML/day) unless receiving storage is above its maximum operating level</li> <li>Receives groundwater inflow</li> <li>Feed water for evaporator spray system</li> </ul>



Item	Description	Operating Rules
3.3.7	Pit 7	<ul style="list-style-type: none"> <li>Seepage to Pit 3 spoil aquifer modelled as a depth loss rate of 300 mm/day</li> <li>No pumped dewatering</li> </ul>
3.3.8	Pit 6	<ul style="list-style-type: none"> <li>Receives seepage via Pit 1/5/6 aquifer.</li> <li>Receives groundwater inflow</li> <li>Excess water pumped to Pit 2W at 100L/s</li> </ul>
3.3.9	Pit 8	<ul style="list-style-type: none"> <li>Excess water pumped to Pit 2W at 100L/s</li> <li>Receives groundwater inflow</li> </ul>
<b>3.4</b>	<b>Spoil Aquifers</b>	
3.4.1	Pit 1/5/6 Aquifer	<ul style="list-style-type: none"> <li>Modelled as three separate cells: Pit 6 spoil aquifer, Pit 5 spoil aquifer and Pit 1 spoil aquifer</li> <li>Pit 6 spoil aquifer equalises with Pit 6 open cut above 332 mAHD</li> <li>Pit 6 soil aquifer and Pit 5 spoil aquifer equalise above 346 mAHD</li> <li>Pit 5 spoil aquifer and Pit 1 spoil aquifer equalise above 359 mAHD</li> </ul>
3.4.2	Pit 2/4 Aquifer	<ul style="list-style-type: none"> <li>Modelled as two separate cells: Pit 2 spoil aquifer and Pit 4 spoil aquifer</li> <li>Pit 2W and Pit 2 spoil aquifer equalise at 351 mAHD</li> <li>Pit 4 and Pit 4 spoil aquifer equalise at 322 mAHD</li> </ul>
3.4.2	Pit 3 Aquifer	<ul style="list-style-type: none"> <li>Pit 3 and Pit 3 spoil aquifer equalise above 330 m</li> </ul>
<b>4.0</b>	<b>Other</b>	
4.1	Climate	<ul style="list-style-type: none"> <li>All water storages receive catchment runoff and lose water to evaporation</li> </ul>
4.2	Groundwater Inflow	<ul style="list-style-type: none"> <li>Passive groundwater inflow is experienced due to active mining</li> <li>Groundwater inflow is determined using predicted inflows and adjustment factors to simulate rainfall and recharge responses (see <b>Section 9.1.4</b>)</li> <li>Inflow directed to downdip pits within void areas, Pit 6, Pit 4, Pit 3 and Pit 8. The total expected rate is apportioned as per predicted inflows from the groundwater model.</li> </ul>

## 11.6 Performance of Site WMS During Drought Conditions

As discussed in **Section 4.0**, during 2018 and 2019 significant drought conditions were experienced in the region. As a result, water within the site water inventory was seen to decrease to a minimum of 760 ML during this period. In order to preserve site water supplies, a number of strategies have been implemented at WCPL including:

- Operation of the revised CHPP model which includes a BFP (as opposed to direct pumping into tailings dams); and
- The use of DAS to reduce dust generation on roads, hardstand and laydown areas and reduces the need for water carts.

As discussed in **Section 5.1.1**, the CHPP tailings circuit was modified in April 2015 to include a BFP, which dewateres the tailings stream and allows this material to be disposed of as a dry waste stream with the coarse reject. Any moisture bleed-off from within the BFP process is captured and re-circulated to the clarified water tank, thereby reducing the net water usage of the CHPP.

In order to reduce water resources required in times of increased demand for dust suppression, WCPL implemented the use of DAS in 2019. During 2019, minimal rainfall fell at the site (equivalent to a 1st percentile historical rainfall) which increased the need for dust



suppression significantly, as illustrated in **Section 5.2**. It is presumed water consumption and associated loss of site water to evaporation would have increased without DAS usage.

Although the site water inventory reduced significantly during this drought period, the above practices along with reduced discharge from the WTF, import of external water sources and effective management of site water storages ensured the site could operate effectively throughout this period.

## 11.7 Performance of Site WMS During Very Wet Conditions

As discussed in **Section 4.0**, during 2020, 2021 and 2022 significant rainfall conditions were experienced in the region. As a result, water within the site water inventory was seen to increase to a maximum of 5781 ML during this period.

To relieve excess water supply, several strategies have been implemented at WCPL including:

- Utilisation of water disposal infrastructure including site WTF and evaporation sprays; and
- EPL licence variation notice to emergency discharge via three LDPs (30, 31, 32).

As discussed in **Section 7.2**, emergency discharge was undertaken from October 2022 to January 2023. During the period 2020 to 2022 above 90<sup>th</sup> percentile annual rainfall was experienced in all years including 97<sup>th</sup> percentile annual rainfall in 2022. Consecutive wet climatic conditions significantly increased the need for water reduction. Effective site management measures ensured the site could operate effectively throughout this period.

## 12.0 Forecast of Site Water Behaviour

The Wilpinjong WBM as described in this report has been utilised to investigate the behaviour of the site water inventory for the 3-year forecast period from 1 January 2026 to 31 December 2028.

### 12.1 Model Configuration

The WBM has been configured to account for changes required to simulate site operations scheduled to occur in future. The WBM primarily operates as per the configuration described in this report, however, adjustments have been made to the simulation methodology, catchment breakdown, site WMS operations. These elements are described in the following sections.

#### 12.1.1 Simulation Methodology

The WBM was run on a daily timestep for the period between 1 January 2026 and 31 December 2028. As described in **Section 4.2** and **4.3**, 126 years of climate data sourced from the SILO Data Drill is available for WCM for use in analysis in long-term climate trends. Stochastic climate data has been used to determine rainfall patterns for the forecasted years.

The purpose of stochastic rainfall generation is to develop a wide range of climate sequences based on the recorded rainfall data of the area. These sequences have comparable statistical characteristics to that of the historical dataset for a range of parameters, including mean, variance, skew, and count of wet or dry days. Each sequence has an order in which the rainfall has occurred. For example, one sequence may have wetter years at the start of the sequence, where another sequence may have the wetter years towards the end of the sequence. Some sequences may be wetter or dryer than others in



order to account for the variability of the climate which may occur during the LOM. The probabilistic rainfall data replicates the seasonality of the historical rainfall data.

The probabilistic climate data for the WBM was used to predict rainfall at the site during the forecast period to determine the volume of water on site which needs to be managed. The probabilistic rainfall sequences were produced through the use of the Stochastic Climate Library (SCL) software (eWater CRC).

Stochastic rainfall data was produced for 500 replicates of 3-year rainfall data (1,500 years of probabilistic data total). This allows a broad range of climatic conditions to be simulated, which then gives the mean and median of the assessment. The assessment also yields percentiles which are interpreted as a percentage exceedance probability (i.e., the likelihood of an event occurring).

Monthly evaporation rates have been utilised for the forecast period as per **Section 4.3**. Due to limitations in the number of stations in the region, long-term average values were used in the WBM as opposed to stochastic evaporation data.

The stored volumes prior to the simulated forecast period (to 31 December 2025) were estimated based on monitored water level data recorded by WCPL. The combined site volume to the latest date prior to the prediction period was 5,143 ML on 30 December 2025.

The results of the site water inventory are presented in terms of the following climatic conditions:

- Very Wet Climatic – 99th percentile results of the volume predicted using the 500 probabilistic climatic sequences;
- Wet Climatic – 90th percentile results of the volume predicted using the 500 probabilistic climatic sequences;
- Median Climatic – 50th percentile results of the volume predicted using the 500 probabilistic climatic sequences;
- Dry Climatic – 10th percentile results of the volume predicted using the 500 probabilistic climatic sequences; and
- Very Dry Climatic – 1st percentile results of the volume predicted using the 500 probabilistic climatic sequences.

AWBM parameters have been set to have an initial soil storage volume of 0 mm given rainfall trends at the end of 2025.

### 12.1.2 Catchment Breakdown

Catchment boundaries for water storages within WCM along with land use classifications for the years 2026, 2027 and 2028 have been delineated based on the most recent available catchment areas and land use types provided by WCPL and the long-term mine forecast. A breakdown of land use type per water storage catchment area, together with catchment and land use maps, is provided in **Appendix B**.

### 12.1.3 Site Water Management System Operations

The operations within the site WMS for the forecast period are expected to be generally consistent with the arrangement described throughout this report.

Since approximately the start of 2022, Pit 3 has been utilised as a permanent water storage. Following consecutive years of continuous high rainfall, Pit 3, along with majority of the site storages, is close to full capacity at the time of writing. Pit 3 currently stores approximately 2 GL of water with additional volumes stored within the adjacent spoil. Pit 3 is now set to



continue mining and as such can no longer be utilised as a large water storage. Therefore, operating rules within the WBM have been updated to reflect this change in storage operation and progressive drawdown of Pit 3 levels moving forward.

Removal of Pit 3 as a permanent water storage will greatly reduce the water inventory storage available onsite.

The following have been adopted in the model to incorporate this change:

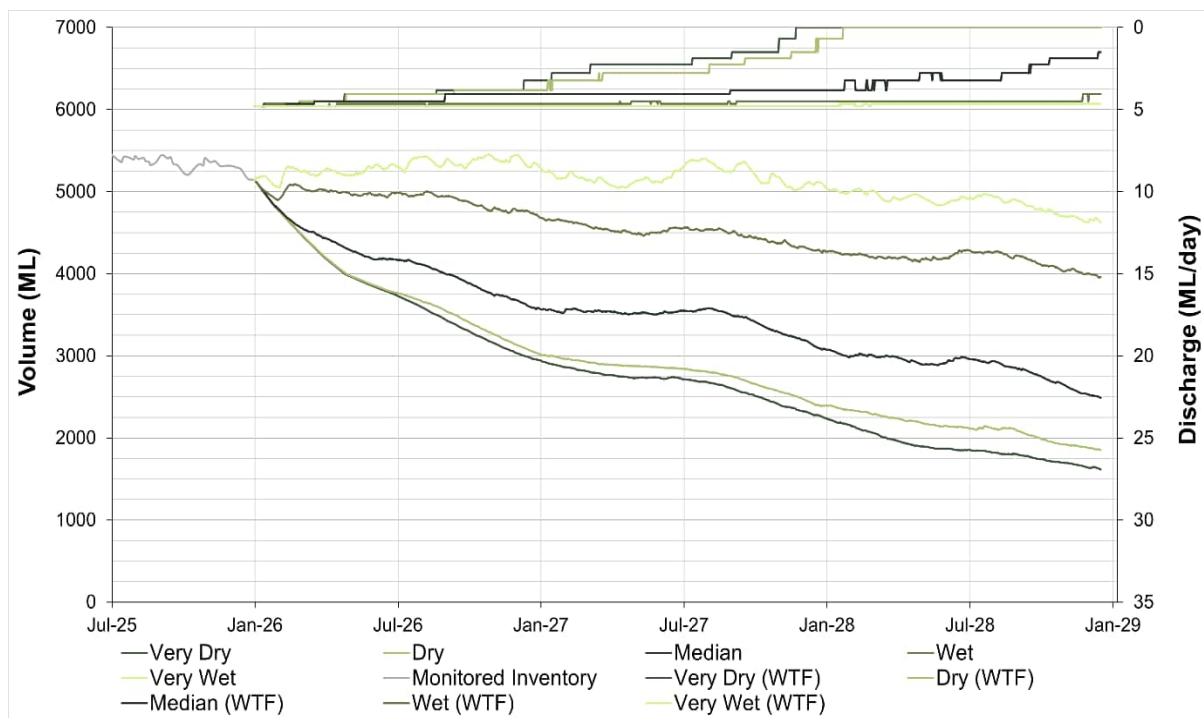
- Consistent transfer of water to Pit 2W from Pit 3 when water is available and Pit 2W has capacity;
- Dewatering of Pit 2W, if required, will be to Pit 4 rather than Pit 3; and
- Remove Pit 3 as a permanent storage within the site water inventory.

## 12.2 Outcomes

### 12.2.1 Water Balance

Model simulated volumes have been forecast for the period 1 January 2026 to 31 December 2028. Results have been plotted for the combined water inventory in the WMS (comprising CWD, RWD, Pit 2W, Pit 3, and Pit 4).

**Figure 20** shows the forecasted total site inventory and associated WTF discharge for the period 1 January 2026 to 31 December 2028 through varying climatic conditions.



**Figure 20: Forecast Site Water Inventory – 2026 to 2028**

Review of **Figure 20** shows the following:

- The 1<sup>st</sup> percentile (represents very dry climatic conditions) results in a total site water decrease to 2,959 ML at the end of 2026, 2,279 ML at the end of 2027, and 1,615 ML at the end of 2028;



- The 10<sup>th</sup> percentile (represents dry climatic conditions) results in a total site water decrease to 3,040 ML at the end of 2026, 2,405 ML at the end of 2027, and 1,853 ML at the end of 2028;
- The 50<sup>th</sup> percentile (represents median climatic conditions) results in a total site water decrease to 3,572 ML at the end of 2026, 3,098 ML at the end of 2027, and 2,488 ML at the end of 2028;
- The 90<sup>th</sup> percentile (represents wet climatic conditions) results in a total site water decrease to 4,719 ML at the end of 2026, 4,290 ML at the end of 2027, and 3,960 ML at the end of 2028; and
- The 99<sup>th</sup> percentile (represents very wet climatic conditions) results in a total site water decrease to 5,341 ML at the end of 2026, 5,117 ML at the end of 2027, and 4,624 ML at the end of 2028.

Overall, the forecast indicates that there is adequate water inventory to provide security of supply across consecutive years with dry conditions.. Water inventory during very wet years will be manageable, however, the site will need to remain proactive and implement strategies to reduce inventory as implemented following the 2022 wet period. This will be particularly crucial with the loss of the large Pit 3 storage due to mining following current dewatering.

### 12.2.2 Salt Balance

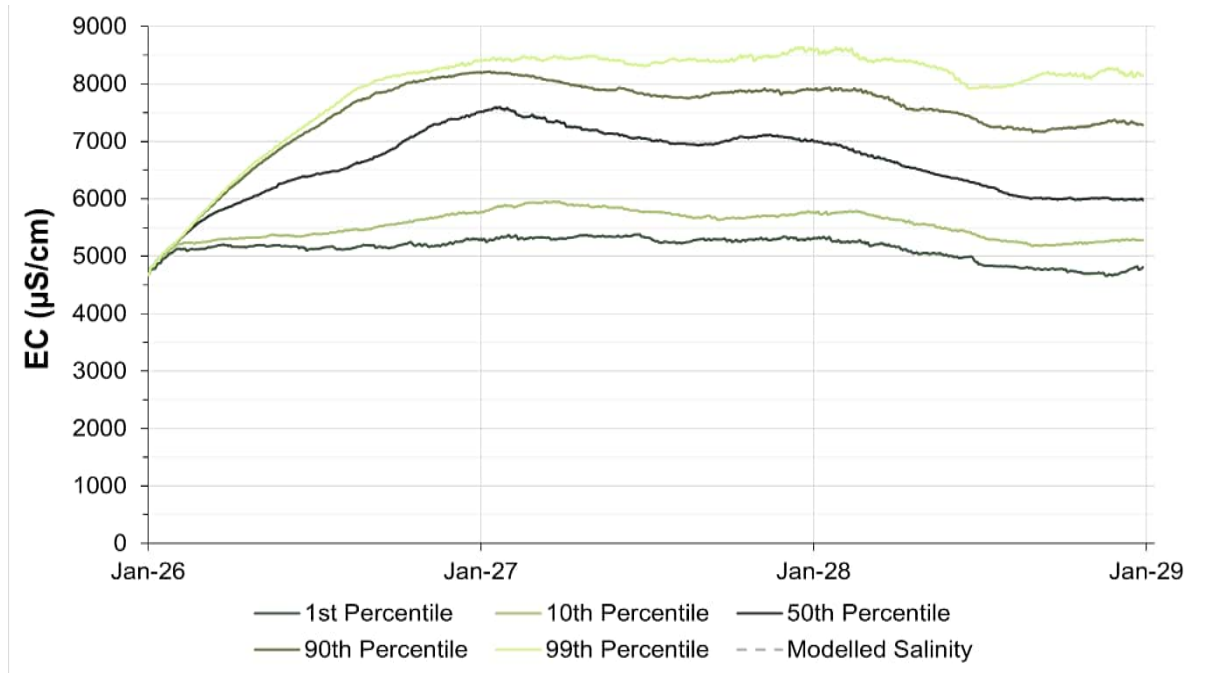
Model simulated salinity has been forecast for the period 1 January 2026 to 31 December 2028. Results have been plotted for the primary transfer storages within the combined water inventory in the WMS (i.e., CWD, RWD, and Pit 2W).

Salinity has been presented in terms of salinity percentile of salinity levels that may result from the varying climatic conditions simulated and provides an indication of the range of salinities that may be experienced within storages. Hence, the 99th percentile salinity is the highest 99 percent of possible salinity levels occurring in the water storage and therefore does not necessarily correlate to very wet (99th percentile) rainfall.

Where water within storages becomes significantly low, such as during very dry or dry conditions described in **Section 12.2.1**, the model does not capture all of the processes associated with the movement and transfer of salt. For this reason, the salt concentration of the site water storages has been capped at a maximum of 25,000 mg/L (EC of 37,313  $\mu\text{S/cm}$ ). This rarely activates in the model and typically only applies to very dry or dry climate conditions when storages dry out or reach very low water levels. In these instances, the mass of salt predicted is small but as the volume of water modelled is also small this is reported as a very high salt concentration. In reality, a proportion of the salts would be lost to seepage or settle as sediment in the storage.

**Figure 21** shows the forecasted salinity of the CWD throughout the forecast period.

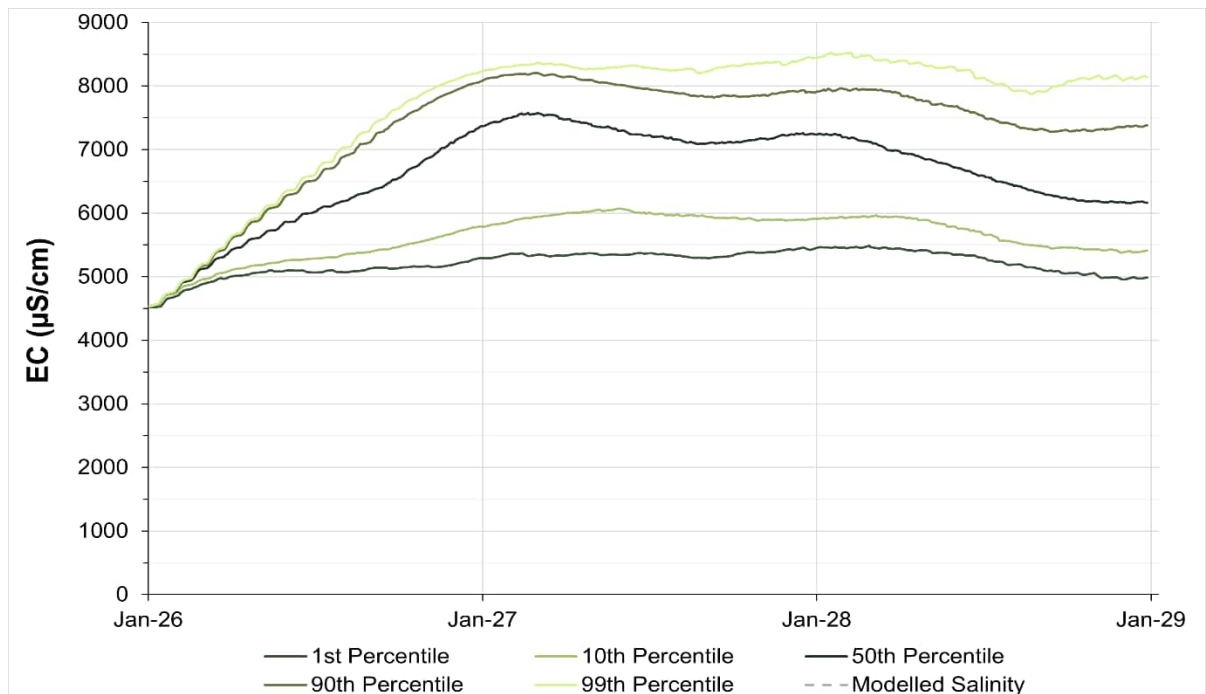




**Figure 21: CWD Forecast Salinity – 2026 to 2028**

Review of **Figure 21** shows that median salinity within the CWD fluctuates between 4,600  $\mu\text{S/cm}$  to 8,700  $\mu\text{S/cm}$  throughout the simulation.

**Figure 22** shows the forecasted salinity of the RWD throughout the forecast period.

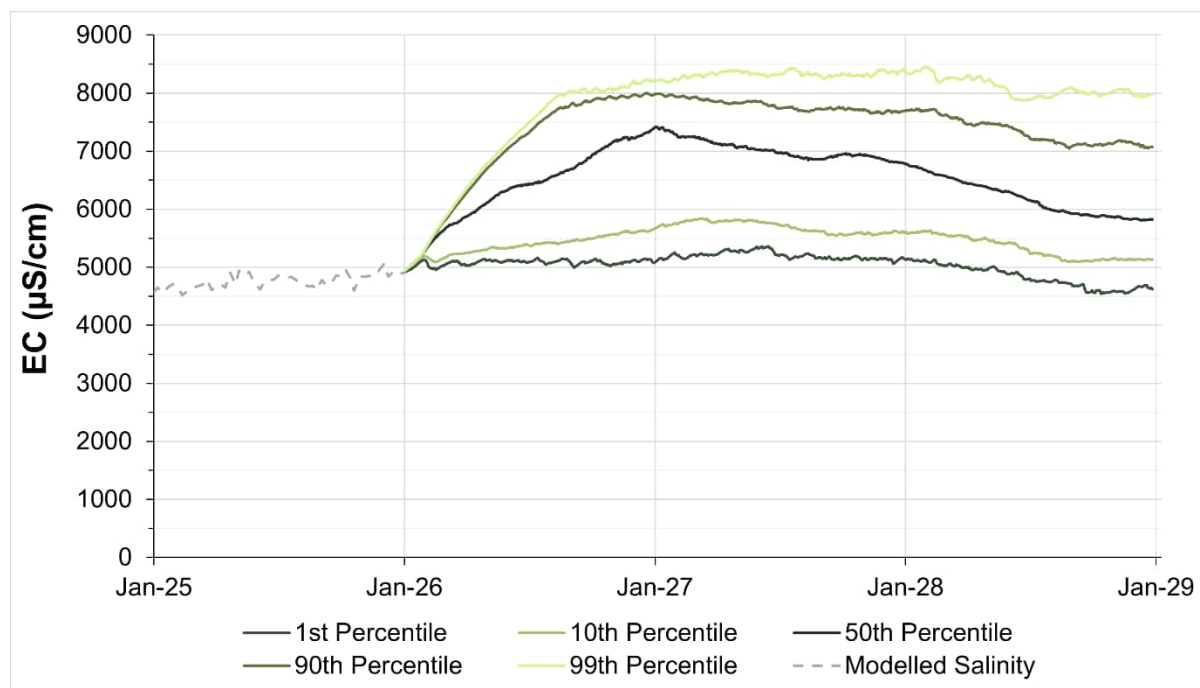


**Figure 22: RWD Forecast Salinity – 2026 to 2028**

**Figure 22** shows that median salinity within the RWD fluctuates between 4,500  $\mu\text{S/cm}$  to 8,500  $\mu\text{S/cm}$  throughout the simulation.

**Figure 23** shows the forecasted salinity for Pit 2W throughout the forecast period.





**Figure 23: Pit 2W Forecast Salinity – 2026 to 2028**

Figure 23 shows that median salinity within Pit 2W ranges between 4,500  $\mu\text{S}/\text{cm}$  to 8,500  $\mu\text{S}/\text{cm}$  throughout the simulation.

## 13.0 Conclusions and Recommendations

The current investigation has updated the WCM WBM to reflect changes in the WMS and additional monitoring data recorded during 2025. Key outcomes of current investigations include:

- Updated catchment schedule and land use classifications based on information current as at the end of year 2025;
- WBM that captures current operations within the WMS;
- Overall, the WBM provides a good correlation between monitored and predicted water inventory and provides a sound platform for future studies;
- The salt balance incorporated within the WBM effectively tracks overall salt mass within the site storages; and
- Forecast site mine water inventory behaviour for the period 2026 to 2028 under different site operating scenarios and climatic conditions. Overall, the forecast indicates that the site water inventory is likely to be able to be reduced with continued use of surplus water destruction. Water inventory is manageable during very wet years; and that there is adequate water security during dry conditions.

It is recommended that WCM implement improved monitoring of groundwater inflows which will allow for improved calibration on this aspect of the WBM in future studies. Groundwater inflow has previously been inferred by reviewing monitored volumes of water extracted from the WCM open cut pits. It is recommended that pumping records are again reviewed to measure/estimate groundwater inflow. This will enable validation and improved calibration of the WBM and numerical groundwater model in future studies. Specifically, Pit 8 could be a good indicator for groundwater inflows as it has minimal interaction with spoil aquifers and pumped inflows.



The updated WBM is considered to be well suited for planning studies, infrastructure sizing and operational decision making, provided these studies incorporate sensitivity analysis (as any robust study should).

It should be noted that the content of this report may be subject to revision with any future improved understanding of the operational and response characteristics of the WCM water management system. When possible, the WBM should be calibrated to assess performance during significant drought conditions under the current operational arrangement.

### **13.1 Model Limitations**

Climatic data (rainfall and evaporation), supply, demand, and transfer volumes have been modelled as daily totals. The model assumes that daily data can be distributed over 24 hours. The model does not accurately represent events with durations less than 24 hours. For example, storm runoff events with durations less than 24 hours cannot be accounted for using the WBM.

The WBM has been developed and calibrated with a focus on the water management system as a whole. Model accuracy is considered better for design applications of wider scope (e.g., site water balance) relative to studies of narrower focus (e.g., single dams). Although the model is well suited for undertaking smaller studies, inputs and controls should always be first understood and then modelled to a level of detail suitable to the task at hand.



## 14.0 References

- Boughton, 1993 *'A Hydrograph-based Model for Estimating the Water Yield of Ungauged Catchments'*.
- Boughton, 2010 *'Rainfall-Runoff Modelling with the AWBM'*
- BP, 2013 *'Water in the Energy Industry'*
- Concawe, 2022 *'Definition Guidelines of Water Reuse, Recycling and Reclamation for European Refinery Sector'*.
- GRI, 2018 *'GRI 303: Water and Effluents 2018'*.
- Hatch, 2017 *'Baseline OPSIM Model Setup'* Document H352411-00000-228-230-0001 Rev 0, Hatch Pty Ltd, April 2017.
- HydroSimulations, 2015 *'Wilpinjong Extension Project Groundwater Assessment' Document HC2015/042, November 2015.*
- ICMM, 2017 *'A Practical Guide to Consistent Water Reporting'*.
- IPIECA, 2020a *'Sustainability Reporting Guidance for the Oil and Gas Industry'*.
- IPIECA, 2020b *'Reuse of produced water from the onshore oil and gas industry'*.
- ISO, 2015 *'Environmental management – Water footprint – Principles, requirements and guidelines'*.
- Jeffrey et al., 2001 *'Using spatial interpolation to construct a comprehensive archive of Australian climate data'. Environmental Modelling and Software, Vol 16/4, pp 309-330. DOI: 10.1016/S1364-8152(01)00008-1.*
- NSW EPA, 2017 *'Environmental Protection License 12425'*, February 2017.
- NSW Gov., 2006 *'Project Approval PA 05-0021'*, Modified November 2014.
- NSW Gov., 2017 *'Development Consent SSD-6764'*, 24 April 2017
- Resource Strategies, 2015 *'Wilpinjong Extension Project Environmental Impact Statement' Document 00695084 Version A.*
- US EPA, 2012 *'2012 Guidelines for Water Reuse'*. United States Environmental Protection Agency.
- WBCSD, 2017 *'Business guide to circular water management: spotlight on reduce, reuse and recycle'*, June 2017.
- WRM, 2015 *'Wilpinjong Extension Project Surface Water Assessment' Document 1052-01-B9, November 2015*
- WRM, 2017 *'Wilpinjong Clean Water Diversions – Conceptual Location Plan' Document 1052-05-J, December 2017*



WRM, 2018	<i>Water Balance Model Update 2018 – Model update and calibration report</i> Document 1052-08-C. WRM Water & Environment Pty Ltd, May 2018.
WRM, 2018a	<i>‘Wilpinjong Mine – Site Water Balance for 2017 Annual Review’</i> Document 1052-08-B. WRM Water & Environment Pty Ltd, March 2018.
WRM, 2019	<i>‘Water Balance Model Update 2019 – Model update and calibration report’</i> Document 1052-10-C1. WRM Water & Environment Pty Ltd, May 2019.
WRM, 2019a	<i>‘Wilpinjong Mine – Site Water Balance Addendum’</i> Document 1052-10-E. WRM Water & Environment Pty Ltd, October 2019.
SLR, 2020a	<i>‘Water Balance Model Update 2020 – Model Update &amp; Calibration Report’ Document 665.10014-R01-v0.1.</i> SLR Consulting Australia, August 2020.
SLR, 2020b	<i>‘Wilpinjong Coal Mine Groundwater – Model Update Report’ Document 665.10014-R01.</i> SLR Consulting Australia, June 2020.
SLR, 2022	<i>‘Water Balance Model Update 2022 – Model Update &amp; Calibration’ Document 665.10014-R01-v2.00.</i> SLR Consulting Australia, March 2022.
SLR, 2023	<i>‘Tailings Storage Facility TD6 – 2023 Annual Surveillance Report’ Document 623.30227-R01-v1.0.</i> SLR Consulting Australia, April 2023.
SLR, 2024a	<i>‘Water Balance Model Update 2024’ Document 630.031405-R01-v1.0-20240327.</i> SLR Consulting Australia, March 2024.
SLR, 2024b	<i>‘Wilpinjong WBM Forecast’ Document 630.031827.00001.</i> SLR Consulting Australia, October 2024.
SLR, 2025a	<i>‘Water Balance Model Update 2025’ Document 630.032087-R01-v1.0-20250327.</i> SLR Consulting Australia, March 2025.
SLR, 2025b	<i>‘Wilpinjong Water Tracking WBM Updates and Boundary Determination’.</i> Document 630.032698.00001. SLR Consulting Australia, October 2025.
SLR, 2025c	<i>‘Pit 8 Extension Modification – Groundwater Modelling Technical Report’</i> Document 660.V14286.00001. SLR Consulting Australia, September 2025.
SLR, 2025d	<i>‘Evaporation Investigation – Wilpinjong Evaporator Fans’ Document 630.0302582.00001.</i> SLR Consulting Australia, September 2025.





# Appendix A Model Schematic

## Site Water Balance Model

Wilpinjong Coal Mine

Wilpinjong Coal Pty Ltd

SLR Project No.: 630.032812.00001

31 March 2026





# Appendix B Catchments and Land Use

## Site Water Balance Model

Wilpinjong Coal Mine











Wilpinjong Coal Pty Ltd

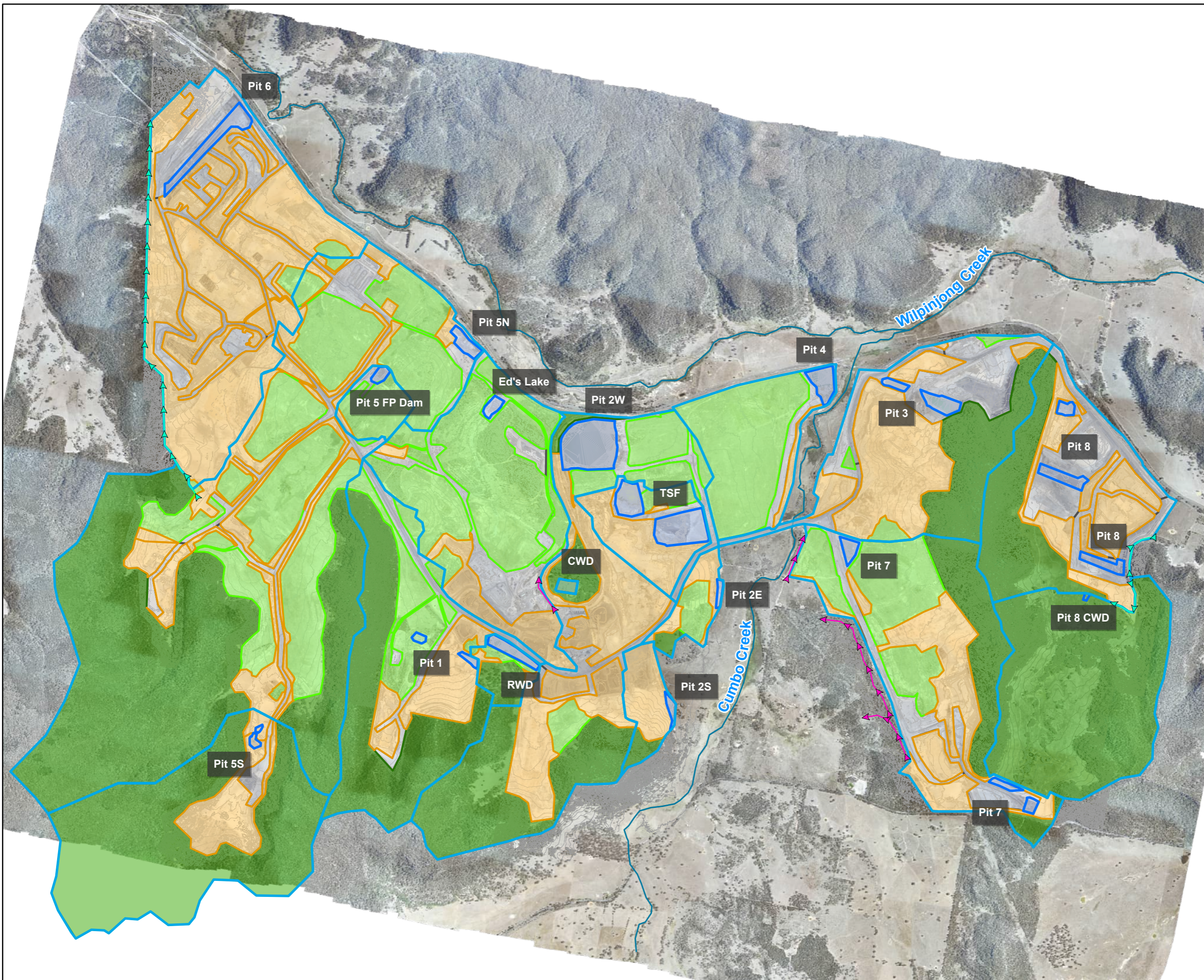
SLR Project No.: 630.032812.00001

31 March 2026

FIGURE 1B

LEGEND

-  Catchment Boundary
-  Water Storage
-  Natural Areas
-  Active Pit / Hardstand Areas
-  Rehabilitation Areas
-  Spoil Areas
-  Clean Water Diversion
-  Levee
-  Watercourse
-  Existing Contours (5m intervals)



Data Sources:  
Aerial imagery dated December 2025 provided by WCM  
Contour data dated January 2025 provided by WCM

DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.



Coordinate System: GDA 1994 MGA Zone 55

Scale: 1:32,000 at A4

Project Number: 630.032812

Date Drawn: 18-Mar-2026

Drawn by: JH













**Table B1: 2025 Catchment and Land Type Areas  
(Based on 2025 End of Year Conditions)**

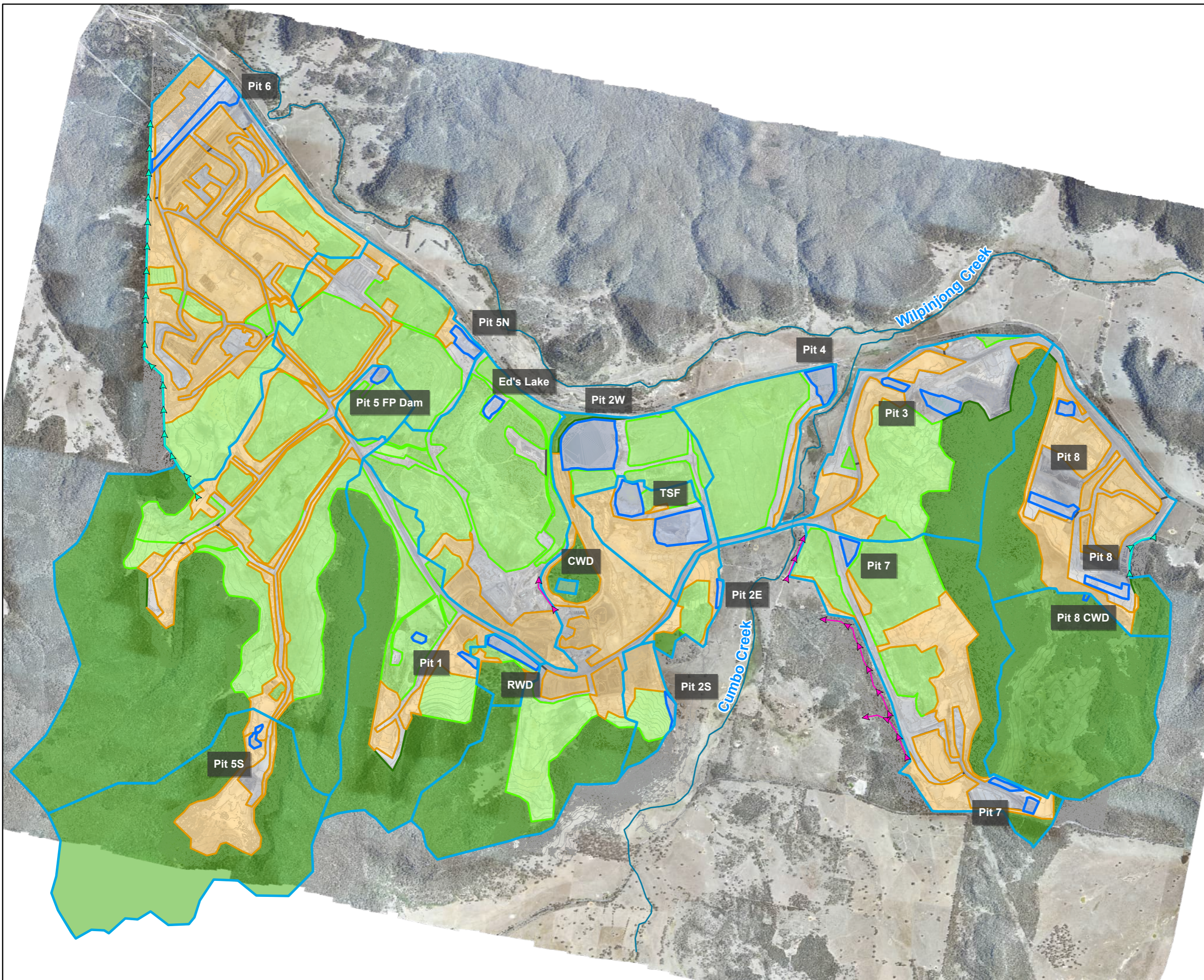
Name	Natural (ha)	Rehabilitation (ha)	Spoil (ha)	Hardstand/ Active Pit (ha)	Total (ha)
<b>Water Storages</b>					
Pit 2 West (Pit 2W)	149.4	57.4	138.6	67.5	<b>412.9</b>
Clean Water Dam (CWD)	-	-	-	2.1	<b>2.1</b>
Ed's Lake	-	188.6	41.3	62.4	<b>292.3</b>
Pit 1S	-	-	-	-	<b>-</b>
Pit 5 FP Dam	-	27.4	1.3	4.5	<b>33.2</b>
Recycled Water Dam (RWD)	14.5	3.8	3.0	5.4	<b>26.7</b>
Pit 8 Mine Water Dams (CWD)	269.8	-	-	0.8	<b>269.8</b>
<b>Sediment Dams</b>					
<i>Included in respective pit catchments.</i>					
<b>Mining Pits</b>					
Pit 1	152.7	58.3	53.4	35.2	<b>299.6</b>
Pit 2 East	4.2	13.3	14.3	1.3	<b>33.1</b>
Pit 2 South	6.6	-	29.6	1.7	<b>38.0</b>
Pit 3	76.1	8.6	121.1	88.1	<b>293.9</b>
Pit 4	-	107.6	6.1	19.5	<b>133.2</b>
Pit 5 North	473.9	333.1	117.7	71.9	<b>996.6</b>
Pit 5 South	271.9	-	48.1	8.1	<b>328.1</b>
Pit 6	-	8.8	305.5	116.0	<b>430.3</b>
Pit 7	73.5	98.0	93.8	54.7	<b>319.9</b>
Pit 8	88.9	-	72.2	94.9	<b>256.0</b>
<b>Other</b>					
Combined (6 & 7) Tailings Dams	-	8.8	42.6	27.3	<b>78.7</b>



FIGURE 2B

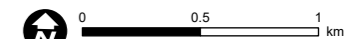
LEGEND

-  Catchment Boundary
-  Water Storage
-  Natural Areas
-  Active Pit / Hardstand Areas
-  Rehabilitation Areas
-  Spoil Areas
-  Clean Water Diversion
-  Levee
-  Watercourse
-  Existing Contours (5m intervals)



Data Sources:  
Aerial imagery dated December 2025 provided by WCM  
Contour data dated January 2025 provided by WCM

DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.



Coordinate System: GDA 1994 MGA Zone 55

Scale: 1:32,000 at A4

Project Number: 630.032812

Date Drawn: 18-Mar-2026

Drawn by: JH













**Table B2: 2026 Catchment and Land Type Areas**

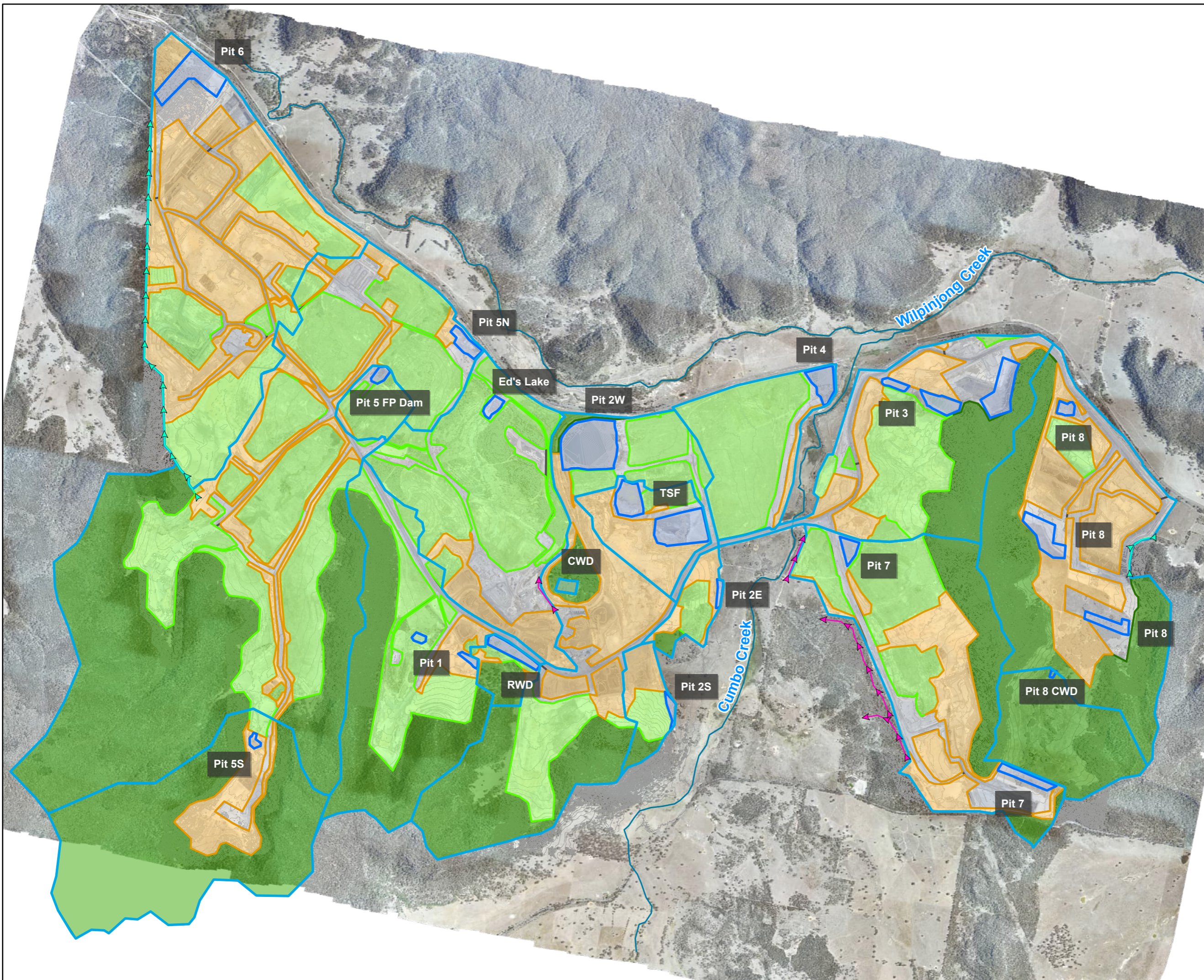
Name	Natural (ha)	Rehabilitation (ha)	Spoil (ha)	Hardstand/ Active Pit (ha)	Total (ha)
<b>Water Storages</b>					
Pit 2 West (Pit 2W)	149.4	100.8	95.2	67.5	<b>412.9</b>
Clean Water Dam (CWD)	-	-	-	2.1	<b>2.1</b>
Ed's Lake	-	191.1	38.8	62.4	<b>292.3</b>
Pit 1S	-	-	-	-	<b>-</b>
Pit 5 FP Dam	-	27.4	1.3	4.5	<b>33.2</b>
Recycled Water Dam (RWD)	14.5	3.8	3.0	5.4	<b>26.7</b>
Pit 8 Mine Water Dams (CWD)	248.4	-	-	-	<b>248.4</b>
<b>Sediment Dams</b>					
<i>Included in respective pit catchments.</i>					
<b>Mining Pits</b>					
Pit 1	152.7	78.9	32.8	33.5	<b>297.9</b>
Pit 2 East	4.2	13.3	14.3	1.3	<b>33.1</b>
Pit 2 South	6.6	14.4	15.2	1.7	<b>37.9</b>
Pit 3	76.1	79.6	50.2	88.1	<b>294.0</b>
Pit 4	-	107.6	6.1	19.5	<b>133.2</b>
Pit 5 North	473.6	352.7	98.0	71.9	<b>996.2</b>
Pit 5 South	271.9	0.0	48.1	8.1	<b>328.1</b>
Pit 6	-	109.1	225.0	106.2	<b>440.3</b>
Pit 7	73.5	98.0	93.8	54.7	<b>319.9</b>
Pit 8	91.7	-	97.0	89.0	<b>277.7</b>
<b>Other</b>					
Combined (6 & 7) Tailings Dams	-	8.8	42.6	27.3	<b>78.7</b>



FIGURE 3B

LEGEND

-  Catchment Boundary
-  Water Storage
-  Natural Areas
-  Active Pit / Hardstand Areas
-  Rehabilitation Areas
-  Spoil Areas
-  Clean Water Diversion
-  Levee
-  Watercourse
-  Existing Contours (5m intervals)



Data Sources:  
Aerial imagery dated December 2025 provided by WCM  
Contour data dated January 2025 provided by WCM

DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.



Coordinate System: GDA 1994 MGA Zone 55

Scale: 1:32,000 at A4

Project Number: 630.032812

Date Drawn: 18-Mar-2026

Drawn by: JH













**Table B3: 2027 Catchment and Land Type Areas**

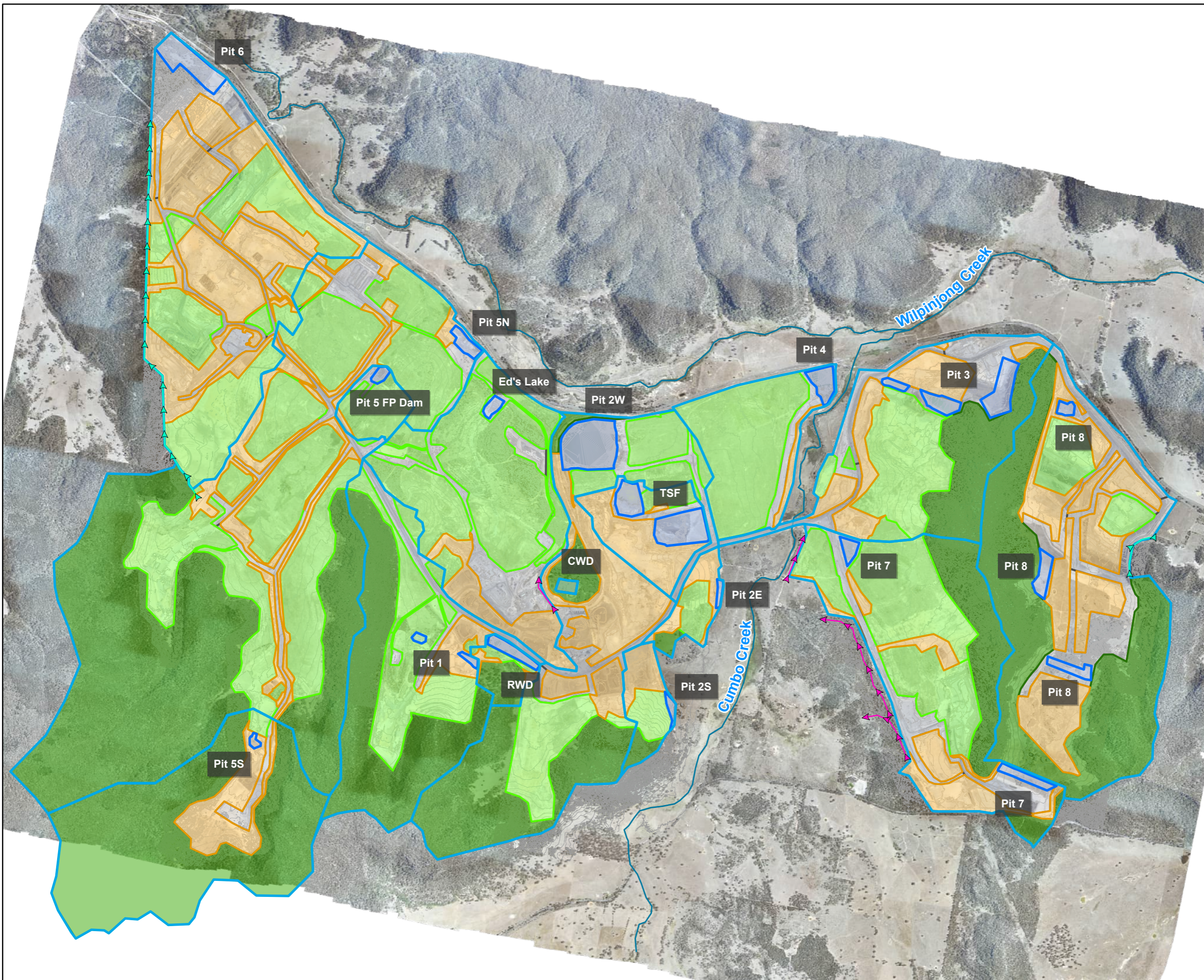
Name	Natural (ha)	Rehabilitation (ha)	Spoil (ha)	Hardstand/ Active Pit (ha)	Total (ha)
<b>Water Storages</b>					
Pit 2 West (Pit 2W)	149.4	100.8	95.2	67.5	<b>412.9</b>
Clean Water Dam (CWD)	-	-	-	2.1	<b>2.1</b>
Ed's Lake	-	191.1	38.8	62.4	<b>292.3</b>
Pit 1S	-	-	-	-	<b>-</b>
Pit 5 FP Dam	-	27.4	1.3	4.5	<b>33.2</b>
Recycled Water Dam (RWD)	14.5	3.8	3.0	5.4	<b>26.7</b>
Pit 8 Mine Water Dams (CWD)	109.8	-	-	-	<b>109.8</b>
<b>Sediment Dams</b>					
<i>Included in respective pit catchments.</i>					
<b>Mining Pits</b>					
Pit 1	152.7	100.9	16.8	29.1	<b>299.5</b>
Pit 2 East	4.2	13.3	14.3	1.3	<b>33.1</b>
Pit 2 South	6.6	14.4	15.2	1.7	<b>37.9</b>
Pit 3	76.1	90.4	51.9	75.5	<b>293.9</b>
Pit 4	-	107.6	6.1	19.5	<b>133.2</b>
Pit 5 North	473.6	379.2	77.9	65.5	<b>996.1</b>
Pit 5 South	271.9	3.7	42.9	9.5	<b>328.1</b>
Pit 6	-	145.9	226.4	81.9	<b>454.3</b>
Pit 7	74.7	98.0	96.9	60.8	<b>330.4</b>
Pit 8	177.1	15.1	128.7	84.5	<b>405.4</b>
<b>Other</b>					
Combined (6 & 7) Tailings Dams	-	8.8	42.6	27.3	<b>78.7</b>



FIGURE 4B

LEGEND

-  Catchment Boundary
-  Water Storage
-  Natural Areas
-  Active Pit / Hardstand Areas
-  Rehabilitation Areas
-  Spoil Areas
-  Clean Water Diversion
-  Levee
-  Watercourse
-  Existing Contours (5m intervals)



Data Sources:  
Aerial imagery dated December 2025 provided by WCM  
Contour data dated January 2025 provided by WCM

DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.



Coordinate System: GDA 1994 MGA Zone 55

Scale: 1:32,000 at A4

Project Number: 630.032812

Date Drawn: 18-Mar-2026

Drawn by: JH



**Table B4: 2028 Catchment and Land Type Areas**

Name	Natural (ha)	Rehabilitation (ha)	Spoil (ha)	Hardstand/ Active Pit (ha)	Total (ha)
<b>Water Storages</b>					
Pit 2 West (Pit 2W)	151.5	100.8	95.2	67.5	<b>415.0</b>
Clean Water Dam (CWD)	-	-	-	2.1	<b>2.1</b>
Ed's Lake	-	-	191.1	38.8	<b>62.4</b>
Pit 1S	-	-	-	-	-
Pit 5 FP Dam	-	-	27.4	1.3	<b>4.5</b>
Recycled Water Dam (RWD)	14.5	3.8	3.0	5.4	<b>26.7</b>
Pit 8 Mine Water Dams (CWD)	-	-	-	-	-
<b>Sediment Dams</b>					
<i>Included in respective pit catchments.</i>					
<b>Mining Pits</b>					
Pit 1	152.7	100.9	16.8	29.1	<b>299.5</b>
Pit 2 East	4.2	13.3	14.3	1.3	<b>33.1</b>
Pit 2 South	6.6	14.4	15.2	1.7	<b>37.9</b>
Pit 3	76.1	88.5	57.7	71.7	<b>293.9</b>
Pit 4	-	107.6	6.1	19.5	<b>133.2</b>
Pit 5 North	473.6	379.2	77.9	65.5	<b>996.1</b>
Pit 5 South	271.9	3.7	42.9	9.5	<b>328.1</b>
Pit 6	-	169.6	197.9	85.9	<b>453.4</b>
Pit 7	74.7	146.9	53.5	55.4	<b>330.5</b>
Pit 8	242.0	40.8	131.4	101.0	<b>515.1</b>
<b>Other</b>					
Combined (6 & 7) Tailings Dams	-	8.8	42.6	27.3	<b>78.7</b>





# Appendix C Long-Term Water Quality Data

## Site Water Balance Model

Wilpinjong Coal Mine

Wilpinjong Coal Pty Ltd

SLR Project No.: 630.032812.00001

31 March 2026

Year	Month	Monthly Rainfall (mm)	Dams						Pits				WTF				Reference (Waterways)		
			Pit 2W	Pit 1S	Pit 5 FP	CWD	RWD	Ed's Lake	Pit 5	Pit 2 NB	Pit 4	Pit 3	Feed	Permeate	Discharge	Concentrate	Wilp. Ck Upstream	Wilp. Ck Downstream	Cumbo Creek
2015	Jan	115.7													325				
	Feb	17.5								5,290									
	Mar	16.3	3,048							4,790					310				
	Apr	109.3	3,390	6,670			3,330	3,510	880	1060	4,940	3,960			285				
	May	43.2													210				
	Jun	45.8		9,180							4,100				221				
	Jul	38.4									4,620				144				
	Aug	51.5													185		739	530	5,112
	Sep	10.6	3,490	5,690	2,110		3,440	3,580		2,290		4,250	3,030		158		1,296	365	5,203
	Oct	46.9			3,540						5,190				176		1,957	379	6,005
	Nov	90.3													212		1,007	352	4,694
	Dec	105.1									4,290				269		883	446	
2016	Jan	99.9	3,280	5,770			3,470	3,440	2,210	2,330	4,940	3,640			267		1,053	431	
	Feb	9.1													255		1,351	441	
	Mar	19.2													235			590	
	Apr	4.4													232				
	May	67.9													195				3,620
	Jun	107.7		7,700											176			386	6,254
	Jul	83													208		497	1,082	3,987
	Aug	43.3													201		792	562	5,582
	Sep	172	3,310	6,180			3,280	3,320		2,740		3,880			199		313	73	1,942
	Oct	71.3													235		430	1,100	2,530
	Nov	44.9													284		536	976	
	Dec	35.6													276		1,446	465	
2017	Jan	34.4	3,545												294			486	
	Feb	25.8	3,520												305	14,000		539	
	Mar	130.4	3,670												301	13,400		686	
	Apr	19.4	3,620												307			539	1,431
	May	23.4	3,660												276			359	4,804
	Jun	11.8	3,630												347			344	5,796
	Jul	1.9	3,580												372			272	5,716
	Aug	26.4													357			285	5,365
	Sep	76.3													336			26	5,745
	Oct	33.3	3,710	3,710				7,610							321			290	6,280
	Nov	76.3	3,950	3,950											335			310	
	Dec	82.3													342			384	
2018	Jan	15.7															4,110	599	



Year	Month	Monthly Rainfall (mm)	Dams						Pits				WTF				Reference (Waterways)			
			Pit 2W	Pit 1S	Pit 5 FP	CWD	RWD	Ed's Lake	Pit 5	Pit 2 NB	Pit 4	Pit 3	Feed	Permeate	Discharge	Concentrate	Wilp. Ck Upstream	Wilp. Ck Downstream	Cumbo Creek	
	Feb	60.7																1,500	476	
	Mar	45.2																4,360	2,020	3,690
	Apr	37.4																2,363	590	237
	May	13.4																2,147	424	6,950
	Jun	24.2																1,805	351	3,776
	Jul	7.5														288		1,726	375	6,820
	Aug	29														312		1,656	356	3,655
	Sep	48.9														229		1,600	385	3,521
	Oct	51.3														328		1,781	418	3,629
	Nov	49.6														365		2,001	437	3,977
	Dec	105														367				
2019	Jan	82.3	4,350																	
	Feb	4.8	4,290																	
	Mar	107.3	4,340																	
	Apr	0	4,250																	
	May	18.9	4,170																	
	Jun	7.2	4,010																	7,860
	Jul	3.2	4,120																	7,077
	Aug	7.5	4,120				4,100	3,990												6,956
	Sep	25.1	4,260				4,180	4,250												7,580
	Oct	5.6	4,400																	
	Nov	26.2					4,350	4,370												
	Dec	4.2	4,430																	
2020	Jan	27	4,550				4,610	4,550												
	Feb	137																	1,190	4,940
	Mar	92	3,560				3,740	4,390											2,650	4,025
	Apr	117	2,990				3,260	3,750										532	510	5,850
	May	16	3,000				3,140	3,530										660	744	6,270
	Jun	23	3,080				3,060	3,410										698	835	5,575
	Jul	70	3,050				3,050	3,240										467	545	5,500
	Aug	36	3,080				3,000	3,190										260	311	4,330
	Sep	77	3,110				3,060	3,170										291	420	3,907
	Oct	151	3,140				3,070	3,100										518	492	7,120
	Nov	17																458	464	
	Dec	162																471	629	7,050
2021	Jan	53	2,970													367				
	Feb	127	3,020													390				7,220



Year	Month	Monthly Rainfall (mm)	Dams						Pits				WTF				Reference (Waterways)		
			Pit 2W	Pit 1S	Pit 5 FP	CWD	RWD	Ed's Lake	Pit 5	Pit 2 NB	Pit 4	Pit 3	Feed	Permeate	Discharge	Concentrate	Wilp. Ck Upstream	Wilp. Ck Downstream	Cumbo Creek
	Mar	160													352				7,870
	Apr	2	3,100												345				6,880
	May	9	3,050												381				6,700
	Jun	84													361				3,335
	Jul	67	3,280												371				3,115
	Aug	25	3,320										3,317		382				
	Sep	44	3,350										3,472		375				
	Oct	31	3,610										3,683		398				
	Nov	249	3,610										3,685		395				
	Dec	81											3,334		366				
2022	Jan	101											3,238			294	812	3,143	
	Feb	16											3,310			432	540	3,655	
	Mar	120											3,393			317	901	2,758	
	Apr	95											3,483			352	1,411	2,842	
	May	44											3,502			311	1,588	2,781	
	Jun	13											3,693			337	1,516	2,645	
	Jul	136											3,738			198	1,136	1,763	
	Aug	103											3,860			175	1,026	1,374	
	Sep	94											3,610			172	1,014	1,753	
	Oct	185											3,535			145	754	1,170	
	Nov	64											3,570			492	1,944	1,207	
	Dec	27											3,513				1,787	1,885	
2023	Jan	49											3,562		406	1,755	1,673	2,188	
	Feb	25											3,853		411	791	1,145	2,409	
	Mar	65											3,883		412	1,040	1,098	3,056	
	Apr	48											3,915		405	787	1,311	3,087	
	May	3											3,916		393	728	1,352	2,965	
	Jun	29											4,023		388	586	1,370	3,008	
	Jul	23	4,188												376	568	1,312	2,875	
	Aug	30	4,322												378	708	1,234	3,037	
	Sep	18	4,533												382	935	1,057	3,255	
	Oct	36	4,724												374	1,209	804	3,777	
	Nov	94	4,705												375	1,338	936	3,532	
	Dec	59	4,785												378	1,431	703	3,867	
2024	Jan	87	4,610												386	881	714	3,938	
	Feb	79	4,570												369	793	614	5,336	
	Mar	33	4,730												393	1,118	564	5,418	



Year	Month	Monthly Rainfall (mm)	Dams						Pits				WTF				Reference (Waterways)		
			Pit 2W	Pit 1S	Pit 5 FP	CWD	RWD	Ed's Lake	Pit 5	Pit 2 NB	Pit 4	Pit 3	Feed	Permeate	Discharge	Concentrate	Wilp. Ck Upstream	Wilp. Ck Downstream	Cumbo Creek
	Apr	69	4,570												393		1,001	623	ND
	May	62	4,560												407		919	660	4,384
	Jun	69	4,460												383		654	810	3,802
	Jul	65	4,440												407		683	953	3,519
	Aug	40	4,330												428		633	1,181	3,426
	Sep	45	4,690											37	424		731	771	3,564
	Oct	51	4,570												405		716	775	3,744
	Nov	117	4,690												382		724	572	4,672
	Dec	45	4,260												442		558	680	3,608
2025	Jan	95.2	4,643												404		832	482	5,826
	Feb	50.1	4,598												406		1000	476	ND
	Mar	56.3	4,693												392		1235	456	ND
	Apr	19.8	4,728												376		1310	448	ND
	May	98.1	4,858												398		ND	468	5,197
	Jun	24.2	4,728												400		579	416	4,504
	Jul	60.6	4,824												371		550	501	4,270
	Aug	39	4,670												360		472	630	3,906
	Sep	56.5	4,770												314		546	599	3,727
	Oct	36.5	4,808												329		1006	446	4,689
	Nov	20.6	4,847												374		1272	438	5,094
	Dec	28.7	4,933												347		832	418	5,826





# Appendix D Storage Curves

## Site Water Balance Model

Wilpinjong Coal Mine

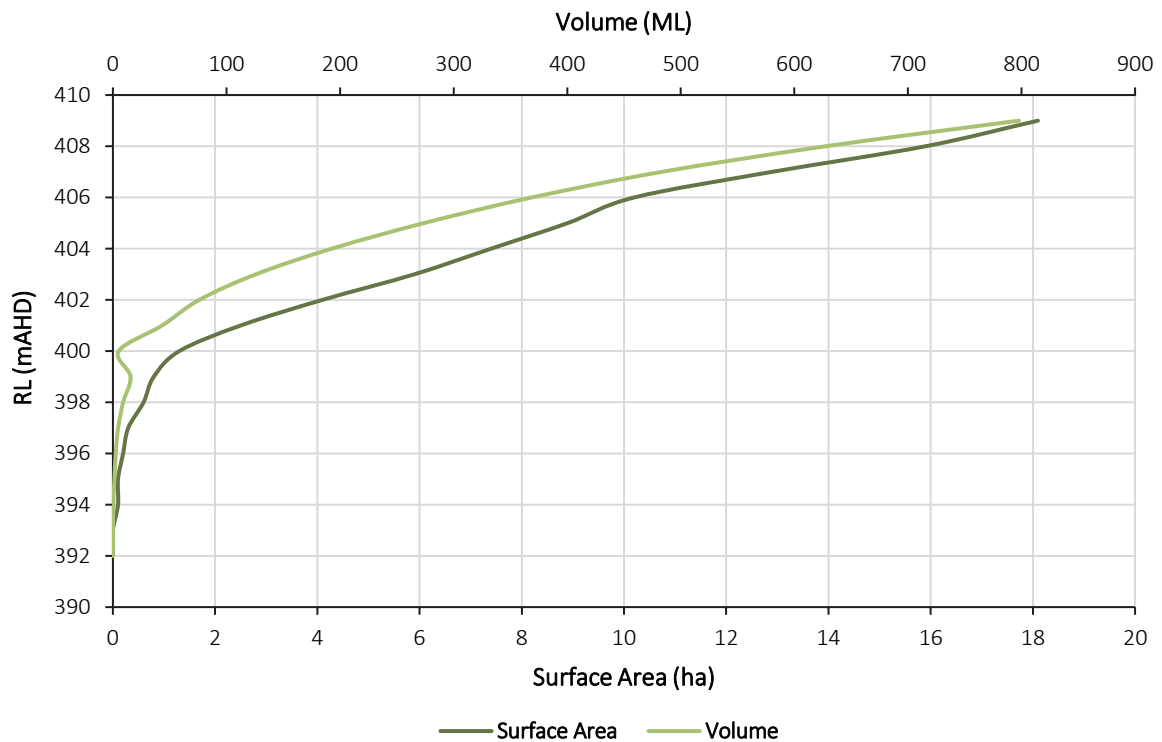
Wilpinjong Coal Pty Ltd

SLR Project No.: 630.032812.00001

31 March 2026

### Pit 1

RL (mAHD)	Area (ha)	Volume (ML)
392	0	0
393	0	0
394	0.1	0.4
395	0.1	1.3
396	0.2	2.5
397	0.3	4.6
398	0.6	9
399	0.8	15.5
400	1.3	5.1
401	2.5	43.4
402	4.1	76
403	5.9	126
404	7.4	192.7
405	8.9	274
406	10.2	368.9
407	12.9	483.4
408	15.9	627.6
409	18.1	797.8

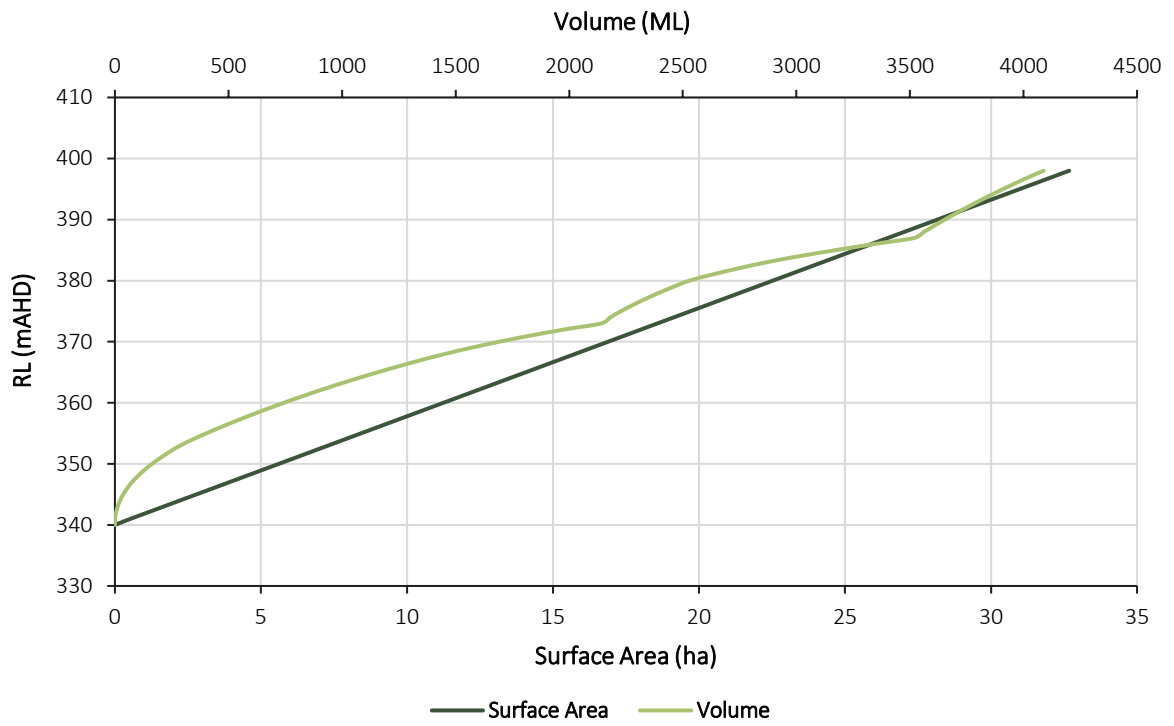


## Pit 2W

RL (mAHD)	Area (ha)	Volume (ML)
340	0	0
341	0.5	1
342	1.1	5
343	1.7	12
344	2.2	23
345	2.8	37
346	3.4	54
347	3.9	75
348	4.5	101
349	5.0	130
350	5.6	164
351	6.2	201
352	6.7	242
353	7.3	288
354	7.9	343
355	8.4	403
356	9.0	466
357	9.6	532
358	10.1	600
359	10.7	671
360	11.3	744
361	11.8	820
362	12.4	899
363	12.9	981
364	13.5	1067
365	14.1	1157
366	14.6	1251
367	15.2	1349
368	15.8	1453
369	16.3	1567

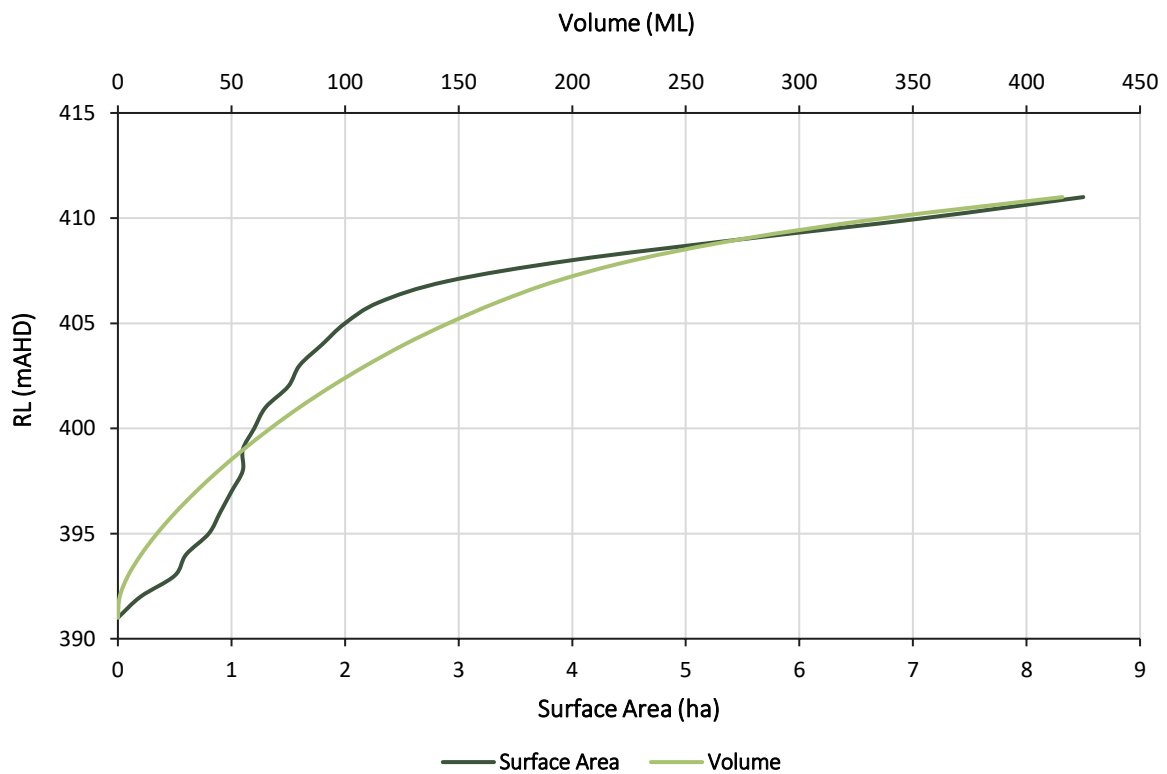
RL (mAHD)	Area (ha)	Volume (ML)
370	16.9	1692
371	17.5	1828
372	18.0	1977
373	18.6	2142
374	19.1	2181
375	19.7	2228
376	20.3	2279
377	20.8	2335
378	21.4	2395
379	22.0	2459
380	22.5	2529
381	23.1	2630
382	23.7	2744
383	24.2	2867
384	24.8	3012
385	25.3	3173
386	25.9	3342
387	26.5	3519
388	27.0	3563
389	27.6	3607
390	28.2	3654
391	28.7	3701
392	29.3	3751
393	29.9	3802
394	30.4	3855
395	31.0	3910
396	31.5	3967
397	32.1	4026
398	32.7	4088





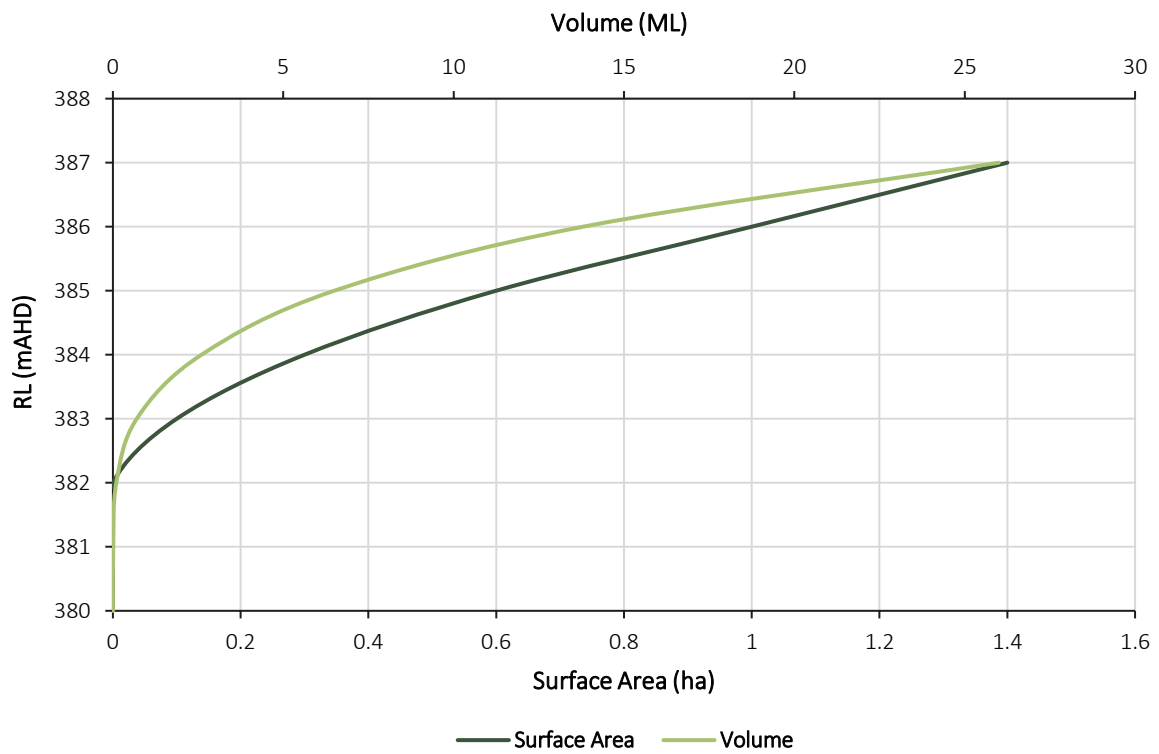
## Pit 2 South

RL (mAHD)	Area (ha)	Volume (ML)
391	0	0
392	0.2	0.8
393	0.5	4.5
394	0.6	10.2
395	0.8	17.2
396	0.9	25.3
397	1	34.4
398	1.1	44.4
399	1.1	55.3
400	1.2	67.1
401	1.3	79.9
402	1.5	94
403	1.6	109.4
404	1.8	126.3
405	2	145.5
406	2.3	167.1
407	2.9	192.8
408	4	227.2
409	5.5	274.4
410	7.1	337.3
411	8.5	415.8



## Pit 2 East

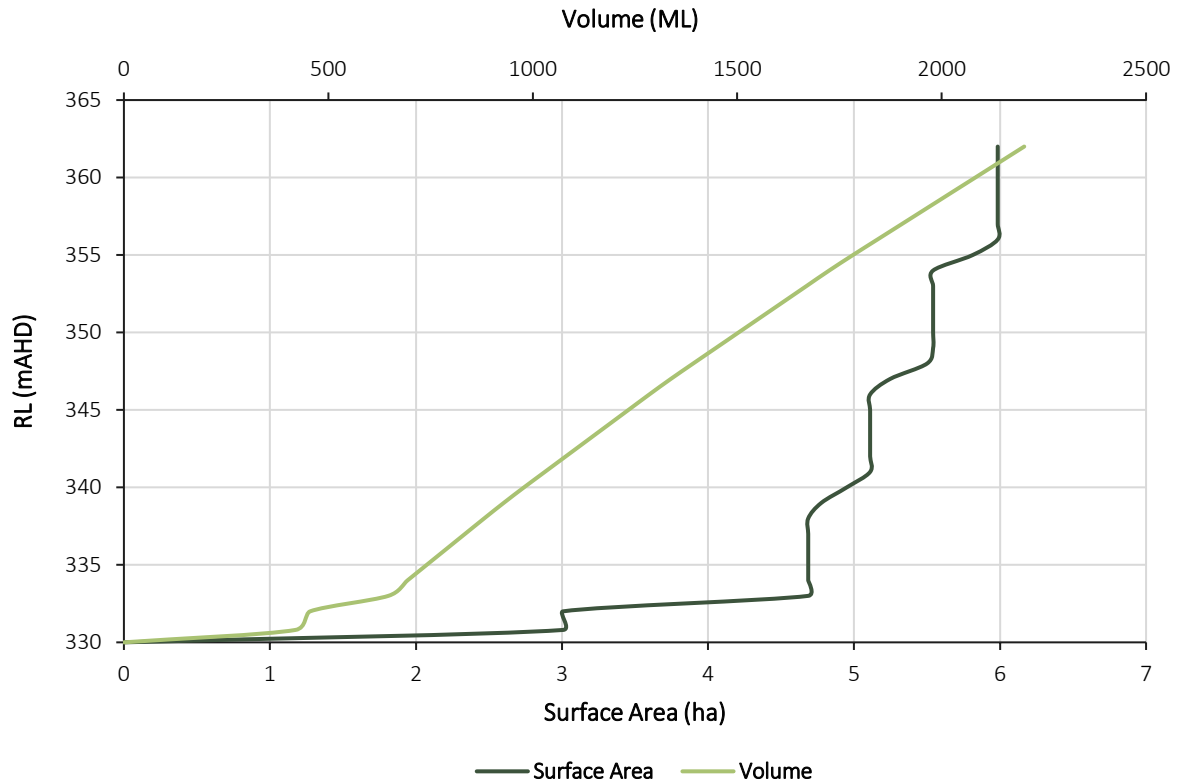
RL (mAHD)	Area (ha)	Volume (ML)
380	0	0
381	0	0.01
382	0	0.1
383	0.1	0.7
384	0.3	2.6
385	0.6	6.5
386	1	13.8
387	1.4	26



### Pit 3

RL (mAHD)	Area (ha)	Volume (ML)
330	0.0	0.0
331	3.0	419.4
332	3.0	455.5
333	4.7	646.8
334	4.7	693.7
335	4.7	740.6
336	4.7	787.4
337	4.7	834.3
338	4.7	881.2
339	4.8	928.9
340	4.9	978.4
341	5.1	1029.5
342	5.1	1080.6
343	5.1	1131.7
344	5.1	1182.8
345	5.1	1233.9
346	5.1	1285.0

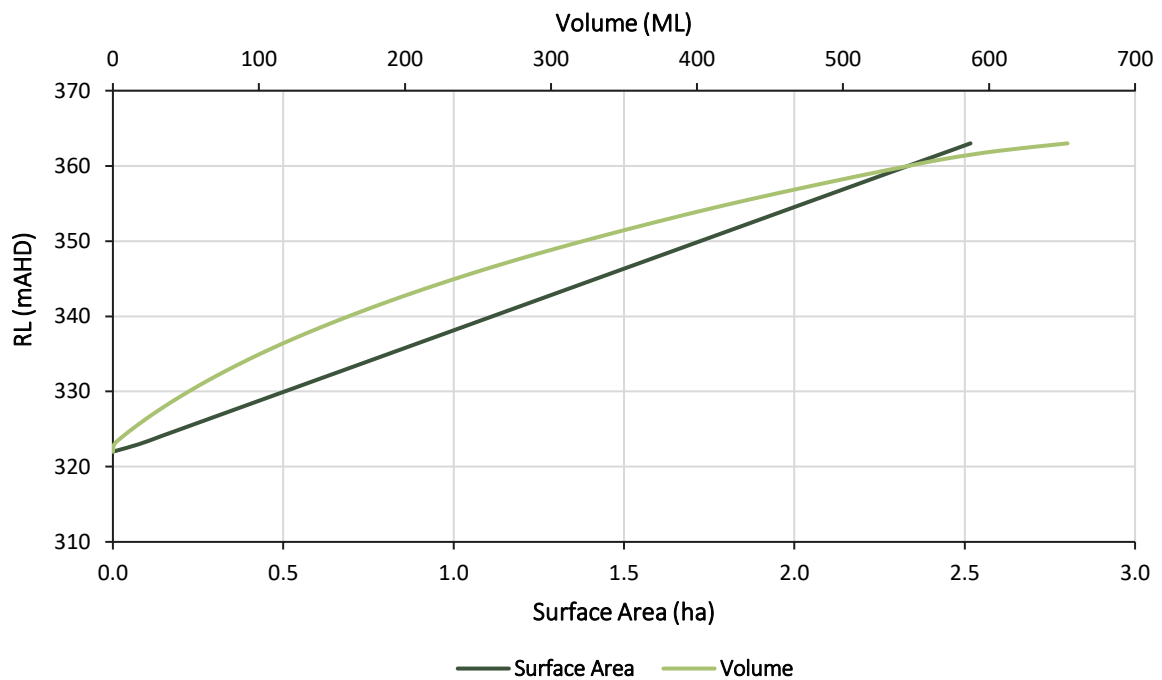
RL (mAHD)	Area (ha)	Volume (ML)
347	5.2	1,337.5
348	5.5	1,392.5
349	5.5	1,447.9
350	5.5	1,503.3
351	5.5	1,558.8
352	5.5	1,614.2
353	5.5	1,669.6
354	5.5	1,725.0
355	5.8	1,783.1
356	6.0	1,843.0
357	6.0	1,902.8
358	6.0	1,962.7
359	6.0	2,022.5
360	6.0	2,082.3
361	6.0	2,142.2
362	6.0	2,202.0



### Pit 4

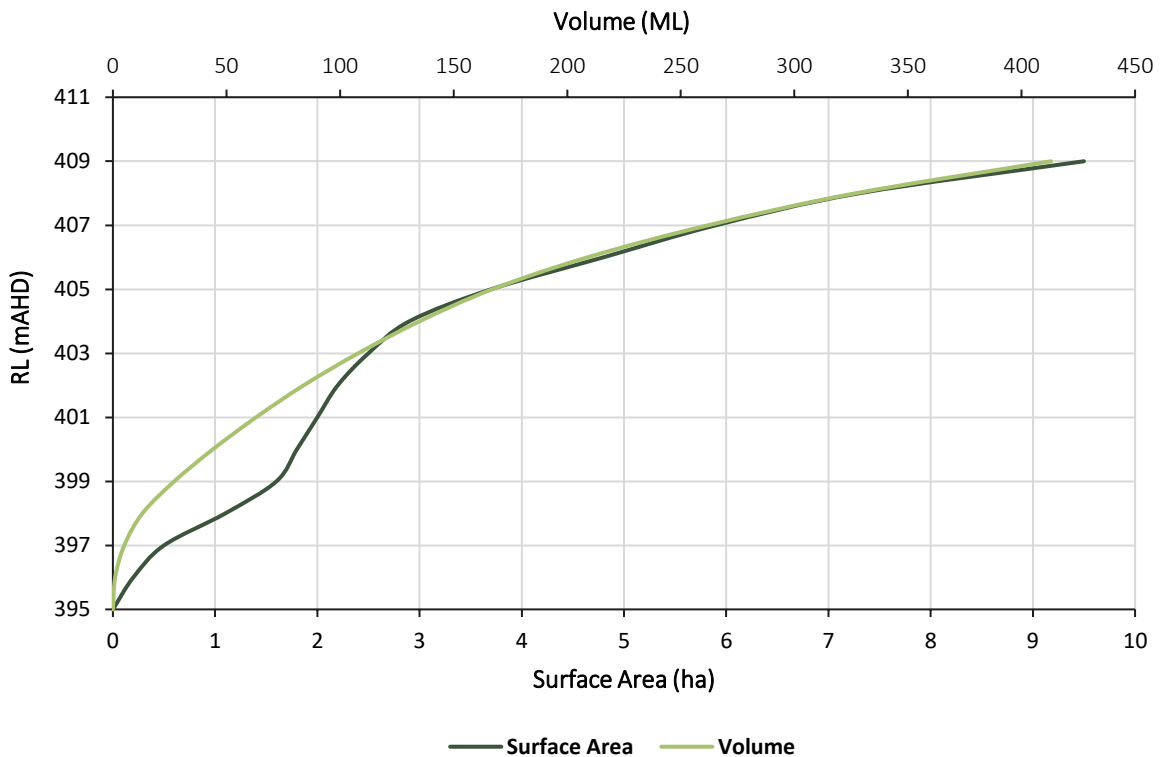
RL (mAHD)	Area (ha)	Volume (ML)
322	0.00	0.0
323	0.08	1.0
324	0.14	6.6
325	0.20	13.2
326	0.26	20.1
327	0.32	27.5
328	0.38	35.3
329	0.44	43.4
330	0.50	51.9
331	0.57	60.8
332	0.63	70.2
333	0.69	79.9
334	0.75	90.1
335	0.81	100.8
336	0.87	111.9
337	0.93	123.5
338	0.99	135.7
339	1.05	148.3
340	1.11	161.5
341	1.18	175.1
342	1.24	189.1
343	1.30	203.7
344	1.36	218.9

RL (mAHD)	Area (ha)	Volume (ML)
345	1.42	234.5
346	1.48	250.7
347	1.54	267.5
348	1.60	285.0
349	1.66	303.3
350	1.72	322.0
351	1.79	341.3
352	1.85	361.1
353	1.91	381.4
354	1.97	402.3
355	2.03	424.0
356	2.09	446.8
357	2.15	470.3
358	2.21	494.4
359	2.27	519.2
360	2.33	544.9
361	2.40	571.7
362	2.46	606.3
363	2.52	653.8
364	2.58	715.5
365	2.64	786.1
366	2.70	866.7



### Pit 5 South

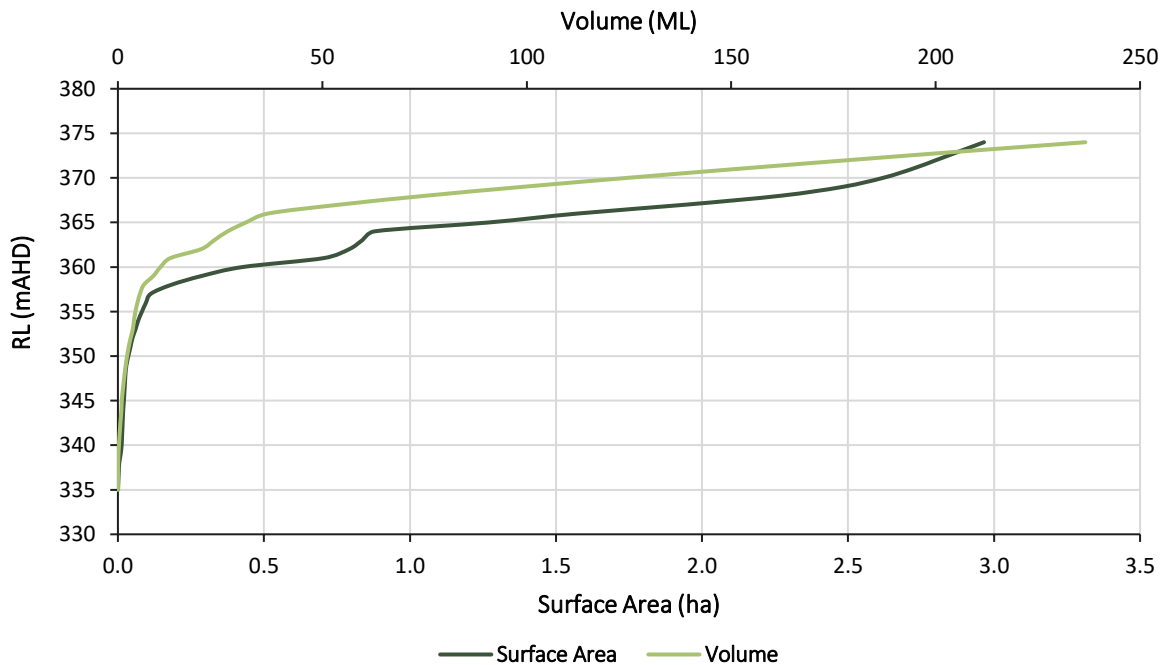
RL (mAHD)	Area (ha)	Volume (ML)
395	0	0
396	0.2	1
397	0.5	5
398	1.1	13
399	1.6	27
400	1.8	44
401	2	63
402	2.2	84
403	2.5	108
404	2.9	135
405	3.7	167
406	4.8	209
407	5.9	262
408	7.3	327
409	9.5	413



### Pit 5 North

RL (mAHD)	Area (ha)	Volume (ML)
335	0.00	0.00
336	0.00	0.01
337	0.00	0.03
338	0.00	0.07
339	0.01	0.14
340	0.01	0.25
341	0.01	0.38
342	0.02	0.53
343	0.02	0.69
344	0.02	0.87
345	0.02	0.94
346	0.02	1.16
347	0.02	1.39
348	0.03	1.64
349	0.03	1.92
350	0.04	2.24
351	0.04	2.63
352	0.05	3.09
353	0.06	3.64
354	0.07	3.93
355	0.08	4.29
356	0.10	4.79
357	0.11	5.40
358	0.18	6.34

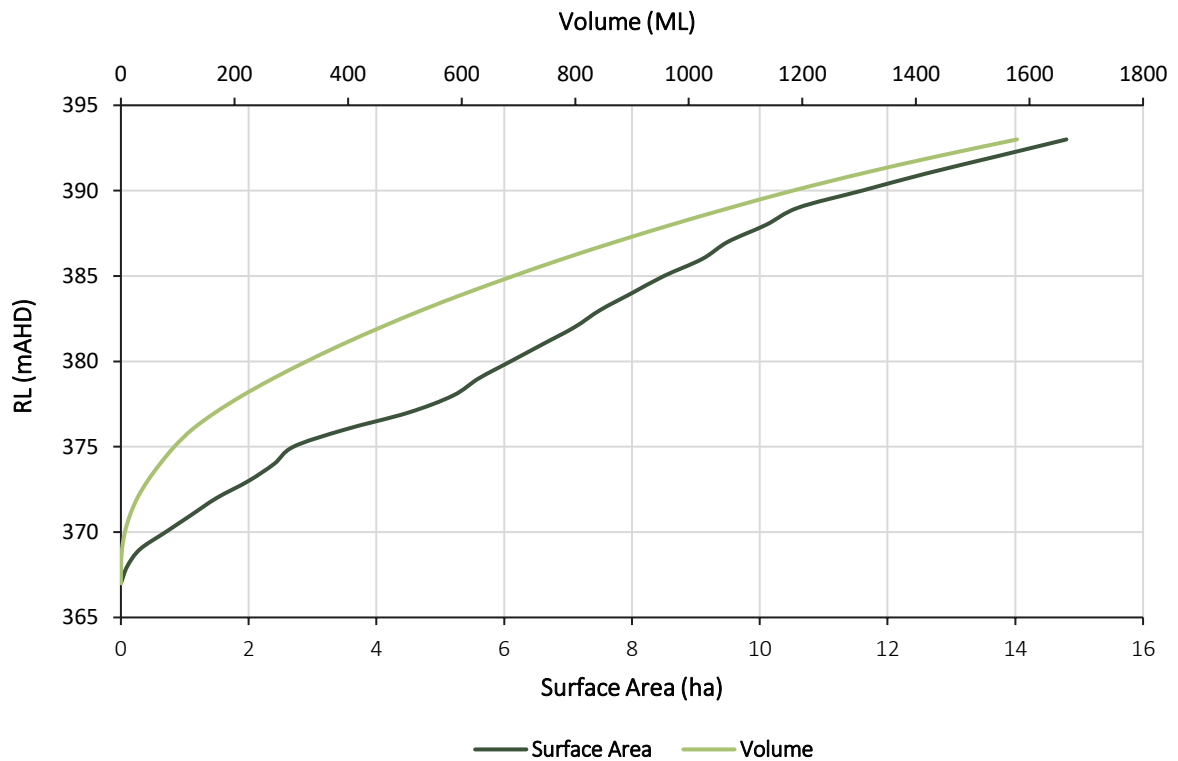
RL (mAHD)	Area (ha)	Volume (ML)
359	0.29	8.68
360	0.43	10.43
361	0.71	12.85
362	0.79	20.34
363	0.84	23.55
364	0.88	26.83
365	1.27	31.34
366	1.57	36.71
367	1.95	54.29
368	2.27	75.36
369	2.48	99.12
370	2.62	124.64
371	2.72	151.33
372	2.80	178.94
373	2.88	207.37
374	2.97	236.61
375	3.05	266.71
376	3.15	297.71
377	3.24	329.67
378	3.35	362.64
379	3.46	396.68
380	3.58	431.87
381	3.71	468.30



### Pit 6

RL (mAHD)	Area (ha)	Volume (ML)
367	0	0
368	0.1	0.2
369	0.3	2
370	0.7	7
371	1.1	16
372	1.5	29
373	2	47
374	2.4	69
375	2.7	94
376	3.5	125
377	4.5	166
378	5.2	214
379	5.6	268
380	6.1	327

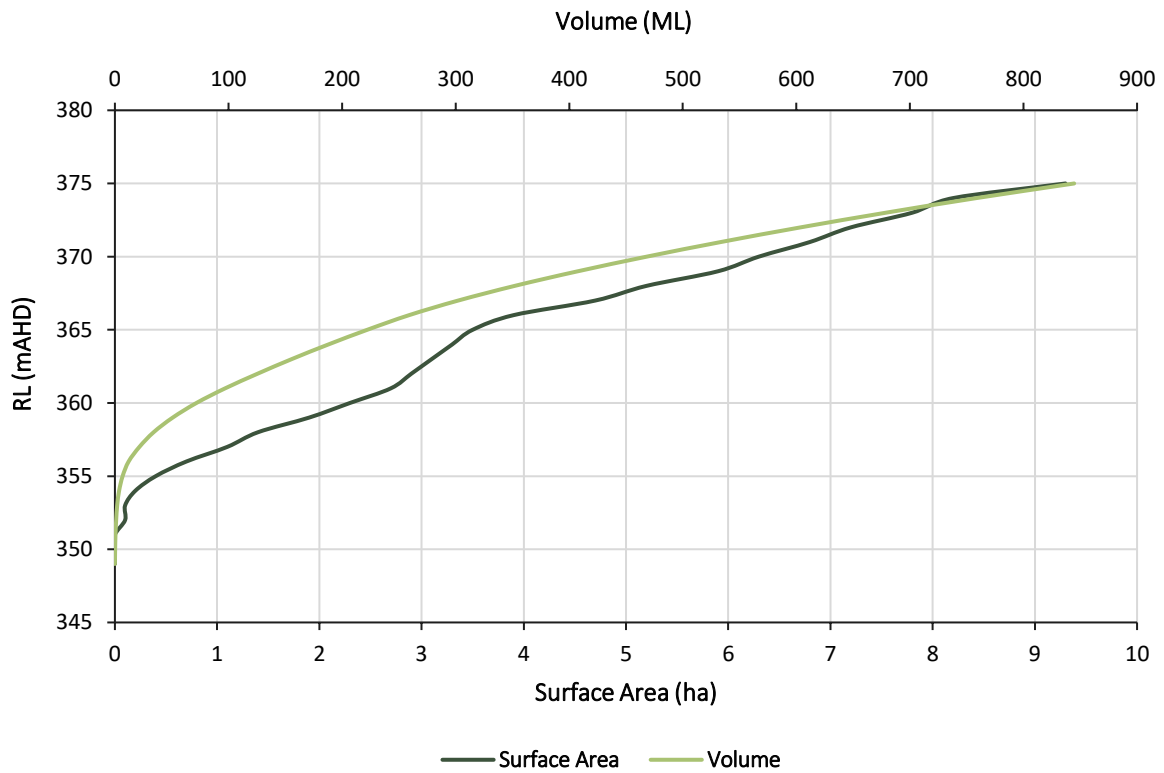
RL (mAHD)	Area (ha)	Volume (ML)
381	6.6	390
382	7.1	458
383	7.5	530
384	8	608
385	8.5	691
386	9.1	778
387	9.5	871
388	10.1	969
389	10.6	1073
390	11.6	1183
391	12.6	1304
392	13.7	1436
393	14.8	1578



### Pit 7

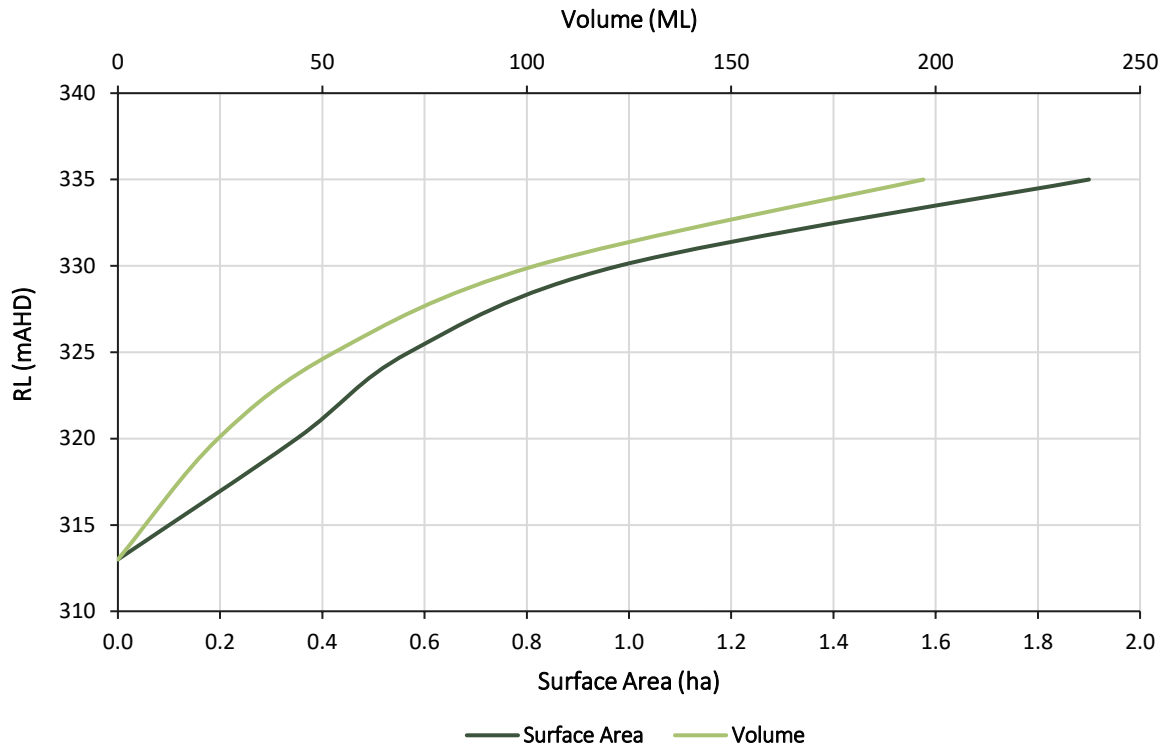
RL (mAHD)	Area (ha)	Volume (ML)
349	0	0
350	0	0.2
351	0	0.5
352	0.1	1.1
353	0.1	2
354	0.2	3.7
355	0.4	6.8
356	0.7	12.1
357	1.1	21.6
358	1.4	34.1
359	1.9	50.9
360	2.3	71.8
361	2.7	97.1
362	2.9	125.6

RL (mAHD)	Area (ha)	Volume (ML)
363	3.1	155.8
364	3.3	188
365	3.5	222.2
366	3.9	259
367	4.7	302.3
368	5.2	352
369	5.9	407.6
370	6.3	468.3
371	6.8	533.7
372	7.2	603.7
373	7.8	678.7
374	8.2	758.5
375	9.3	844.6



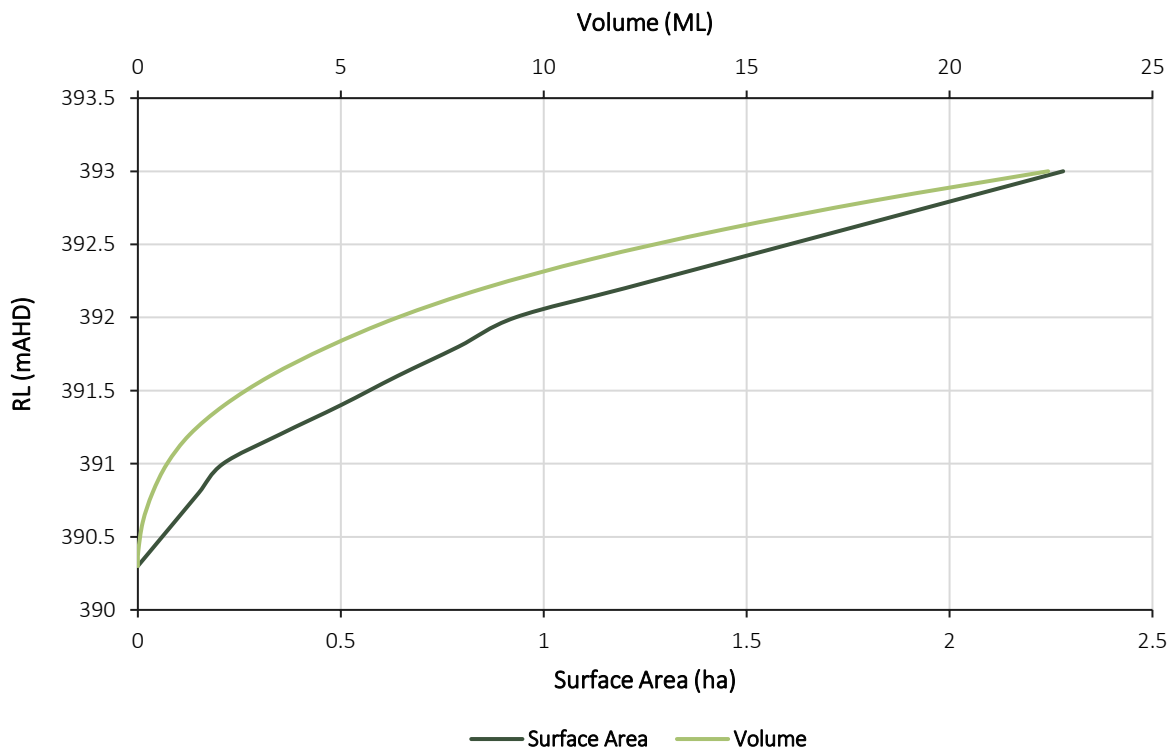
### Pit 8

RL (mAHD)	Area (ha)	Volume (ML)
313	0.0	0
320	0.4	25
325	0.6	53
330	1.0	102
335	1.9	197



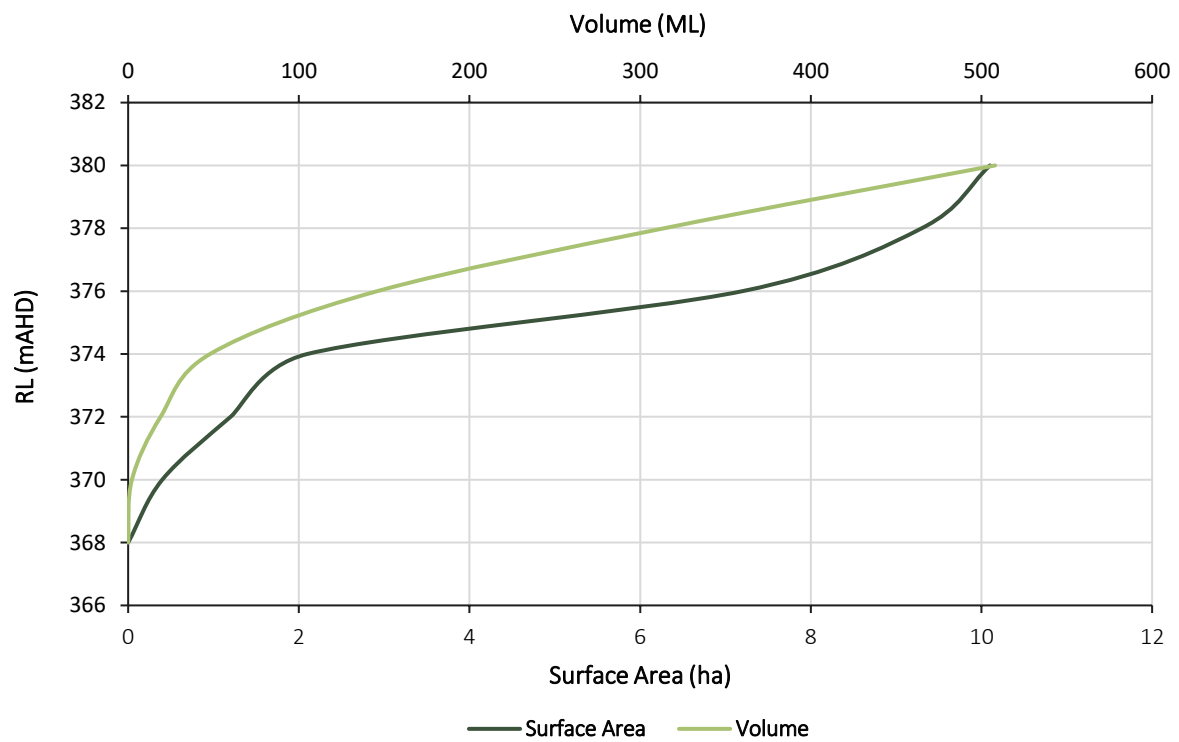
### Pit 5 FP Dam

RL (mAHD)	Area (ha)	Volume (ML)
390.3	0	0
390.4	0.03	0.01
390.6	0.09	0.12
390.8	0.15	0.36
391	0.21	0.72
391.2	0.35	1.28
391.4	0.5	2.13
391.6	0.64	3.26
391.8	0.79	4.69
392	0.93	6.4
392.2	1.2	8.53
392.4	1.47	11.19
392.6	0.74	14.4
392.8	2.01	18.15
393	2.28	22.43



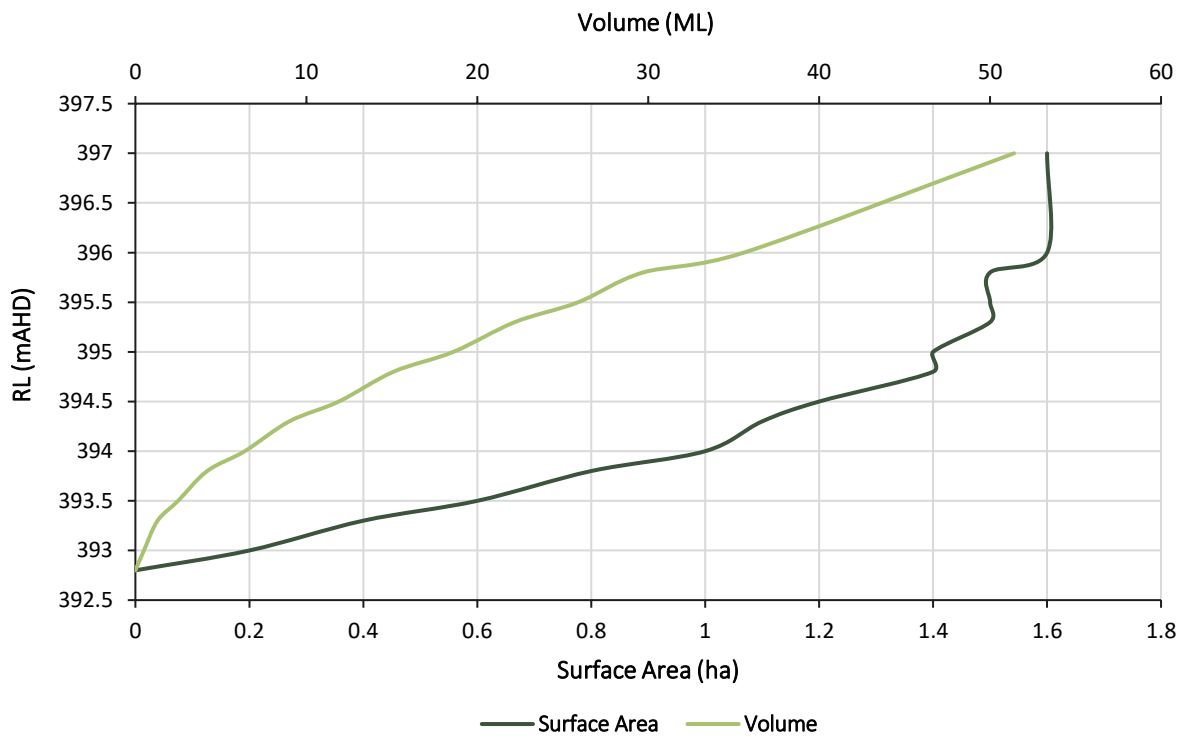
## Ed's Lake

RL (mAHD)	Area (ha)	Volume (ML)
368	0	0
370	0.4	2.2
372	1.2	19
374	2.1	48
376	7.2	146
378	9.3	314
380	10.1	508



### CWD

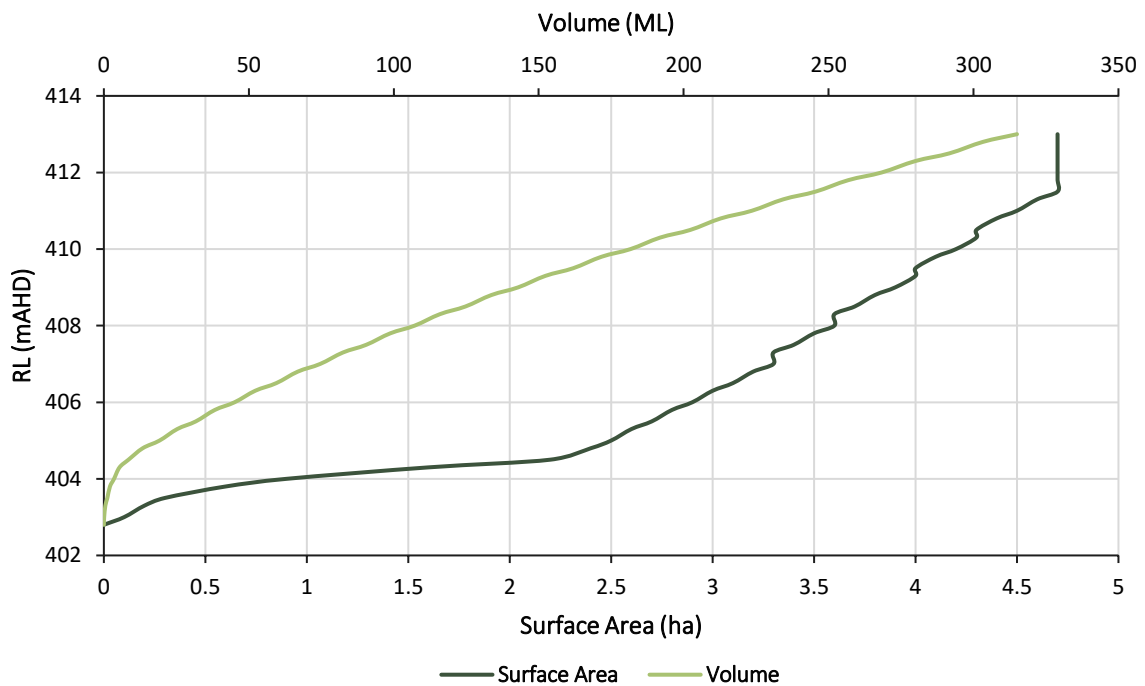
RL (mAHD)	Area (ha)	Volume (ML)
392.8	0	0
393	0.2	0.5
393.3	0.4	1.3
393.5	0.6	2.5
393.8	0.8	4.2
394	1	6.4
394.3	1.1	9
394.5	1.2	11.9
394.8	1.4	15.1
395	1.4	18.6
395.3	1.5	22.2
395.5	1.5	25.9
395.8	1.5	29.7
396	1.6	35.6
397	1.6	51.4



## RWD

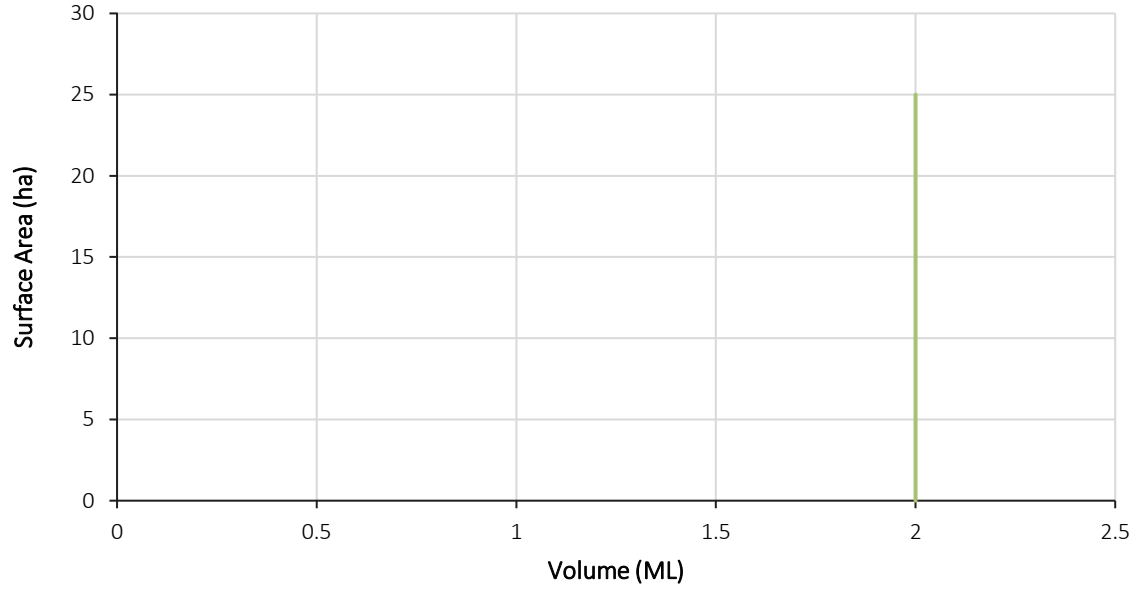
RL (mAHD)	Area (ha)	Volume (ML)
402.8	0	0
403	0.1	0.1
403.3	0.2	0.5
403.5	0.3	1.2
403.8	0.6	2.1
404	0.9	3.5
404.3	1.6	5.4
404.5	2.2	8.5
404.8	2.4	13.4
405	2.5	19.2
405.3	2.6	25.3
405.5	2.7	31.7
405.8	2.8	38.3
406	2.9	45.1
406.3	3	52.2
406.5	3.1	59.5
406.8	3.2	66.9
407	3.3	74.6
407.3	3.3	82.5
407.5	3.4	90.5
407.8	3.5	98.8

RL (mAHD)	Area (ha)	Volume (ML)
408	3.6	107.2
408.3	3.6	115.9
408.5	3.7	124.7
408.8	3.8	133.7
409	3.9	142.9
409.3	4	152.3
409.5	4	161.9
409.8	4.1	171.7
410	4.2	181.7
410.3	4.3	191.9
410.5	4.3	202.3
410.8	4.4	212.8
411	4.5	223.5
411.3	4.6	234.4
411.5	4.7	245.5
411.8	4.7	256.8
412	4.7	268.3
412.3	4.7	280
412.5	4.7	291.7
412.8	4.7	303.3
413	4.7	315



### Pit 8 CWD

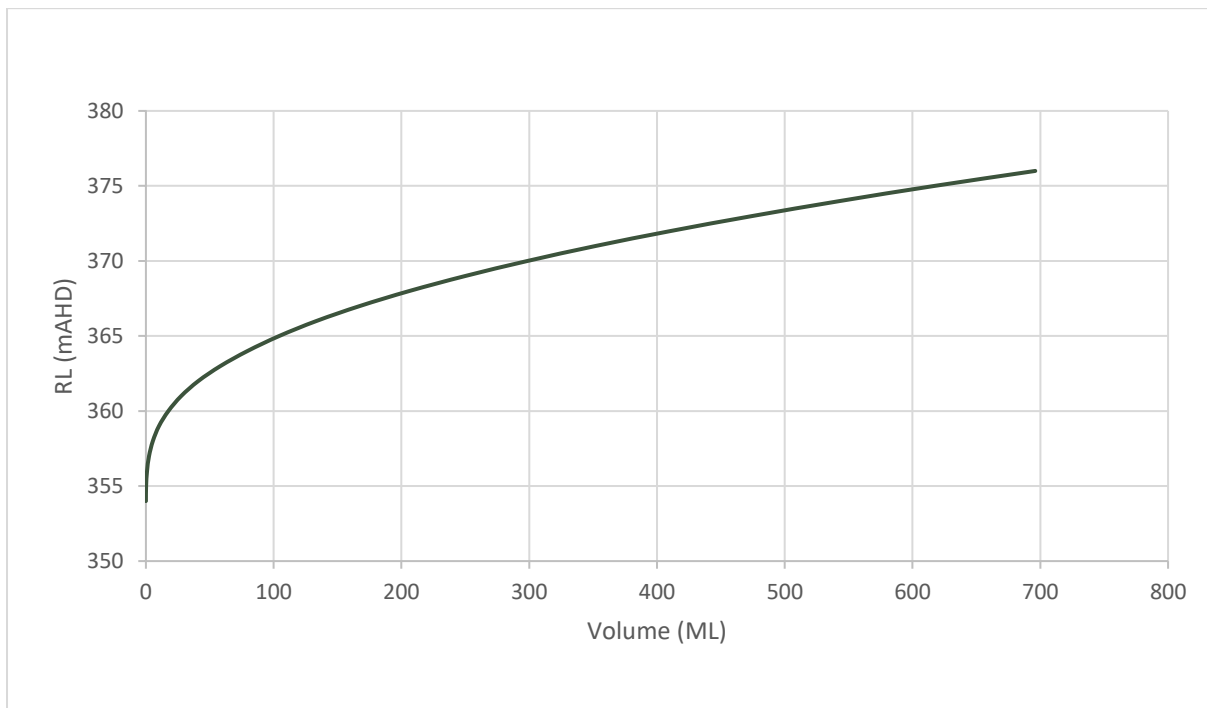
Area (ha)	Volume (ML)
2	0
2	25



### Pit 1 Spoil Aquifer (10% Porosity)

RL (mAHD)	Volume (ML)
354	0
355	0.1
356	1
357	2
358	5
359	10
360	18
361	28
362	41
363	58
364	79
365	104

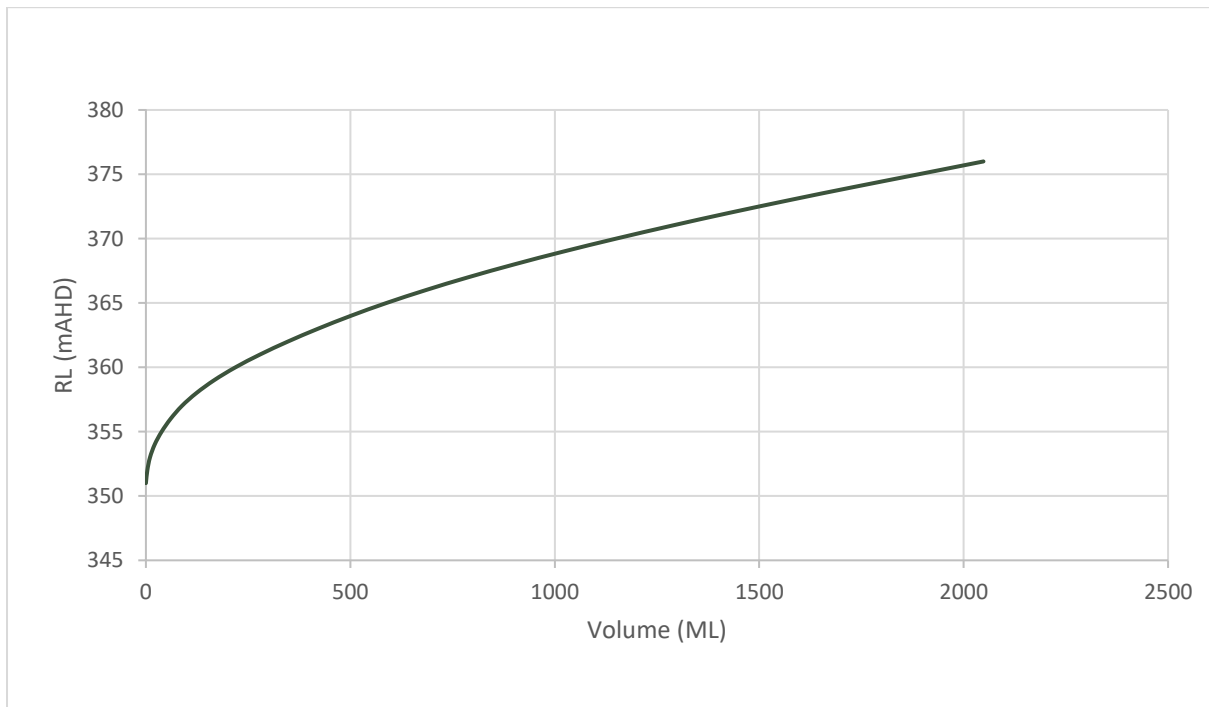
RL (mAHD)	Volume (ML)
366	133
367	167
368	206
369	250
370	299
371	352
372	411
373	475
374	543
375	617
376	696



### Pit 5 Spoil Aquifer (10% Porosity)

RL (mAHD)	Volume (ML)
346	0
347	1
348	3
349	8
350	17
351	30
352	48
353	70
354	99
355	135
356	177
357	226
358	281
359	345

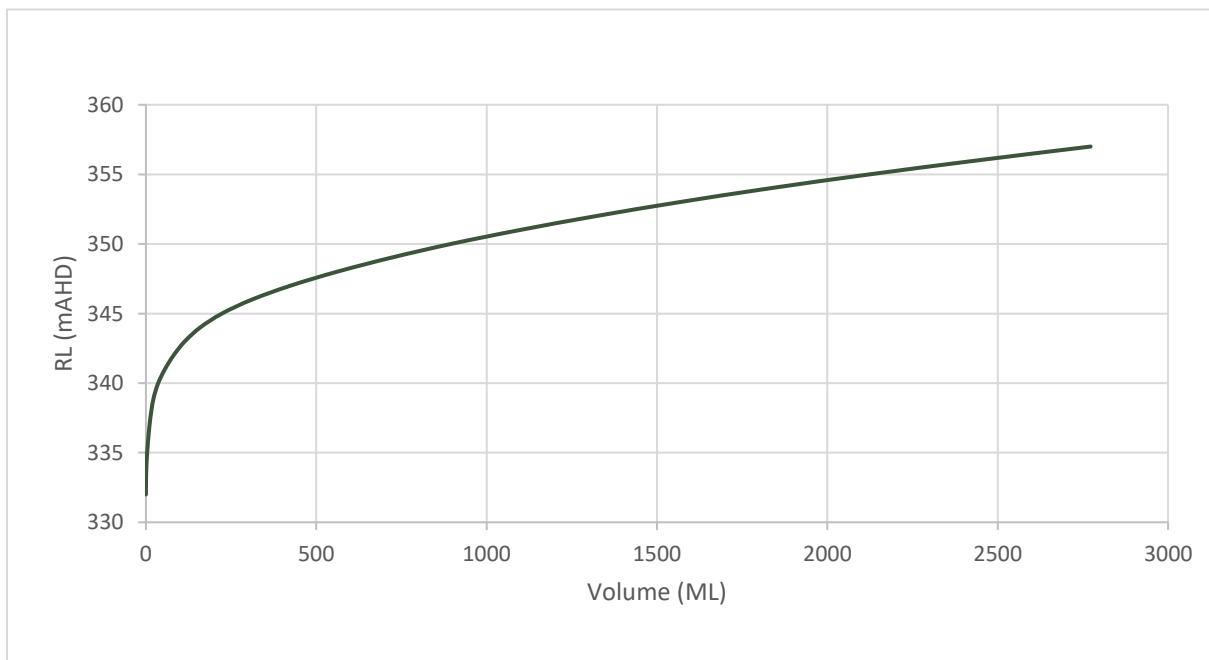
RL (mAHD)	Volume (ML)
360	416
361	495
362	580
363	672
364	770
365	876
366	990
367	1112
368	1241
369	1378
370	1521
371	1671
372	1829



### Pit 6 Spoil Aquifer (20% Porosity)

RL (mAHD)	Volume (ML)
332	0
333	0
334	1
335	4
336	7
337	11
338	16
339	23
340	36
341	56
342	81
343	114
344	159
345	223
346	311
347	424
348	560
349	718
350	895
351	1097
352	1320

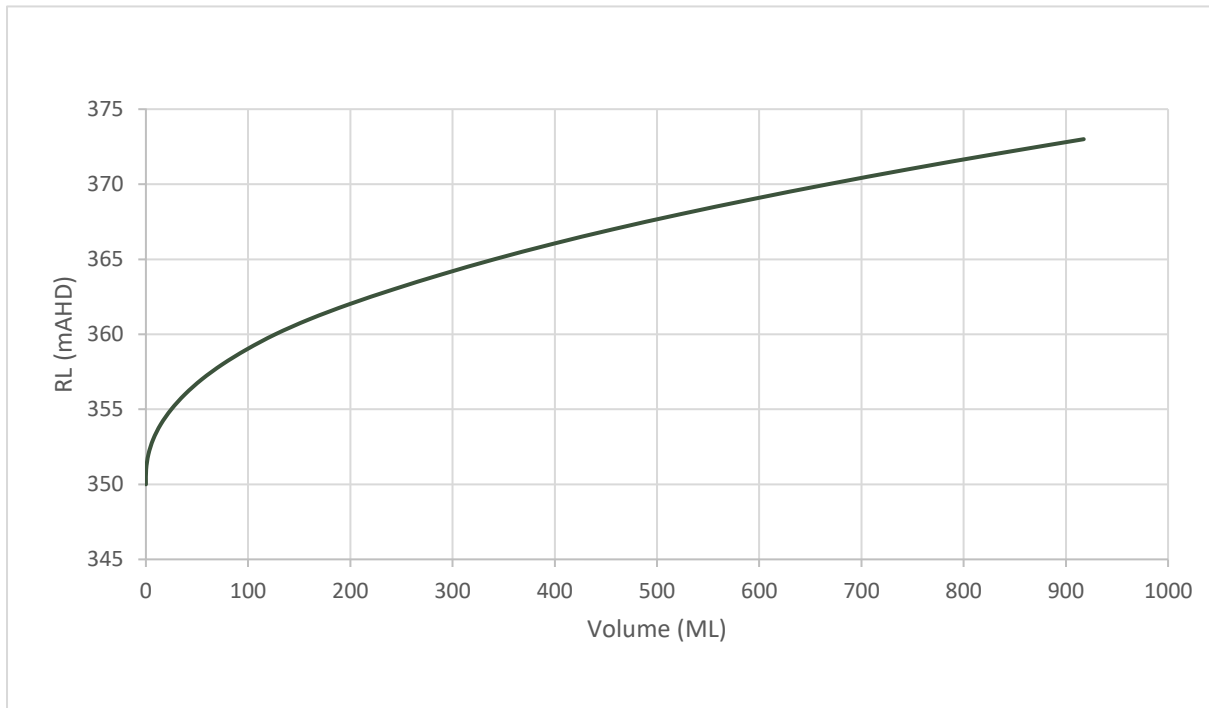
RL (mAHD)	Volume (ML)
353	1565
354	1832
355	2124
356	2439
357	2773
358	3122
359	3487
360	3871
361	4274
362	4697
363	5142
364	5605
365	6087
366	6583
367	7093
368	7617
369	8156
370	8709
371	9277
372	9857



### Pit 2 Spoil Aquifer (10% Porosity)

RL (mAHD)	Volume (ML)
350	0
351	0
352	2
353	7
354	15
355	25
356	38
357	55
358	75
359	99
360	127
361	160
362	199

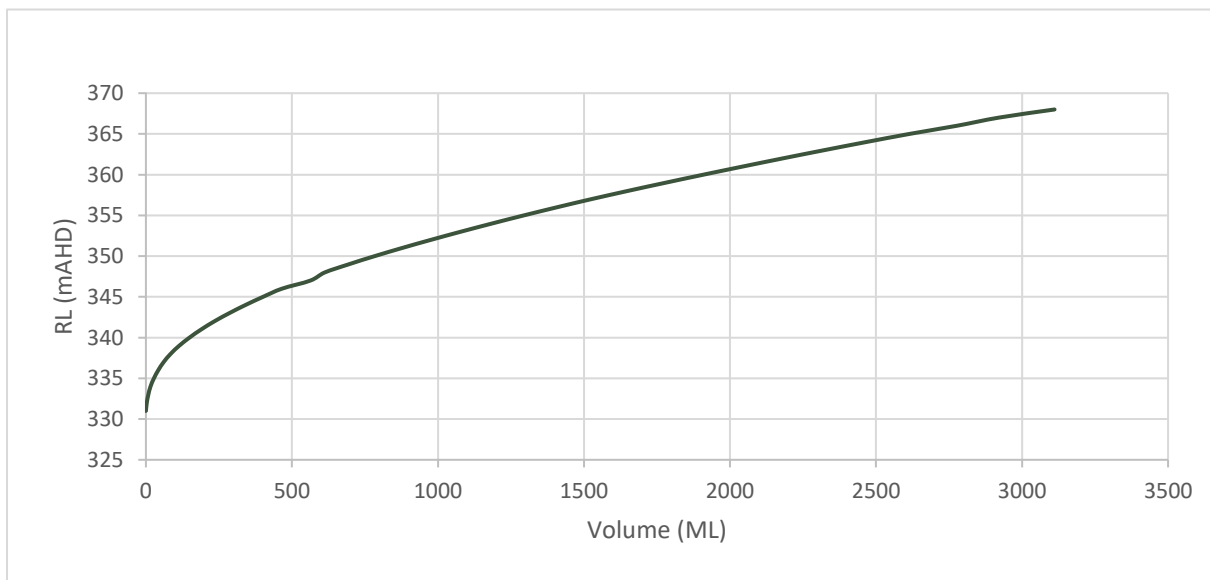
RL (mAHD)	Volume (ML)
363	243
364	290
365	341
366	397
367	457
368	523
369	593
370	668
371	746
372	830
373	918
363	243
364	290



### Pit 4 Spoil Aquifer (10% Porosity)

RL (mAHD)	Volume (ML)
322	0
323	0.0001
324	0.2
325	1
326	3
327	5
328	8
329	13
330	20
331	28
332	39
333	51
334	65
335	83
336	102
337	124
338	149
339	177
340	208
341	243
342	280
343	320

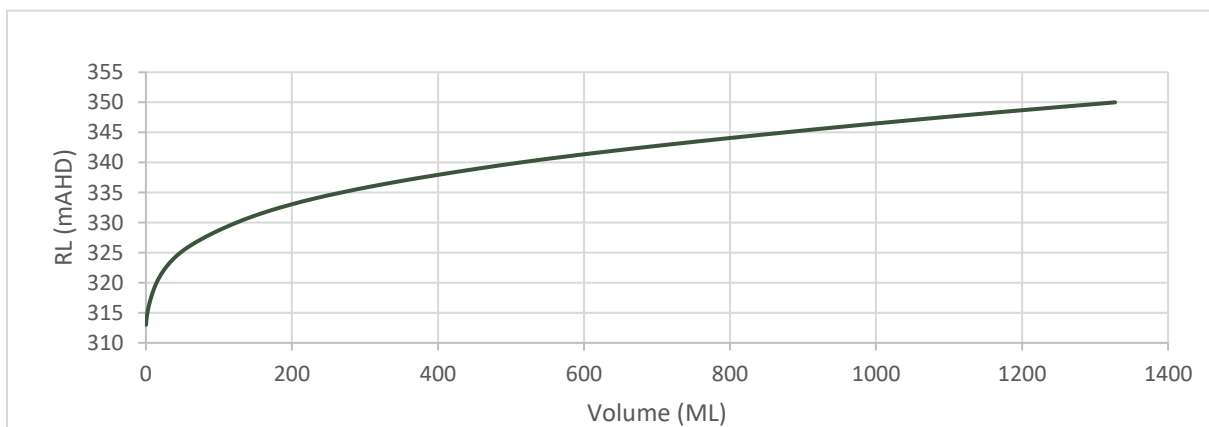
RL (mAHD)	Volume (ML)
344	363
345	409
346	458
347	510
348	565
349	624
350	687
351	753
352	823
353	897
354	973
355	1053
356	1137
357	1224
358	1315
359	1411
360	1511
361	1614
362	1720
363	1830
364	1942
365	2058

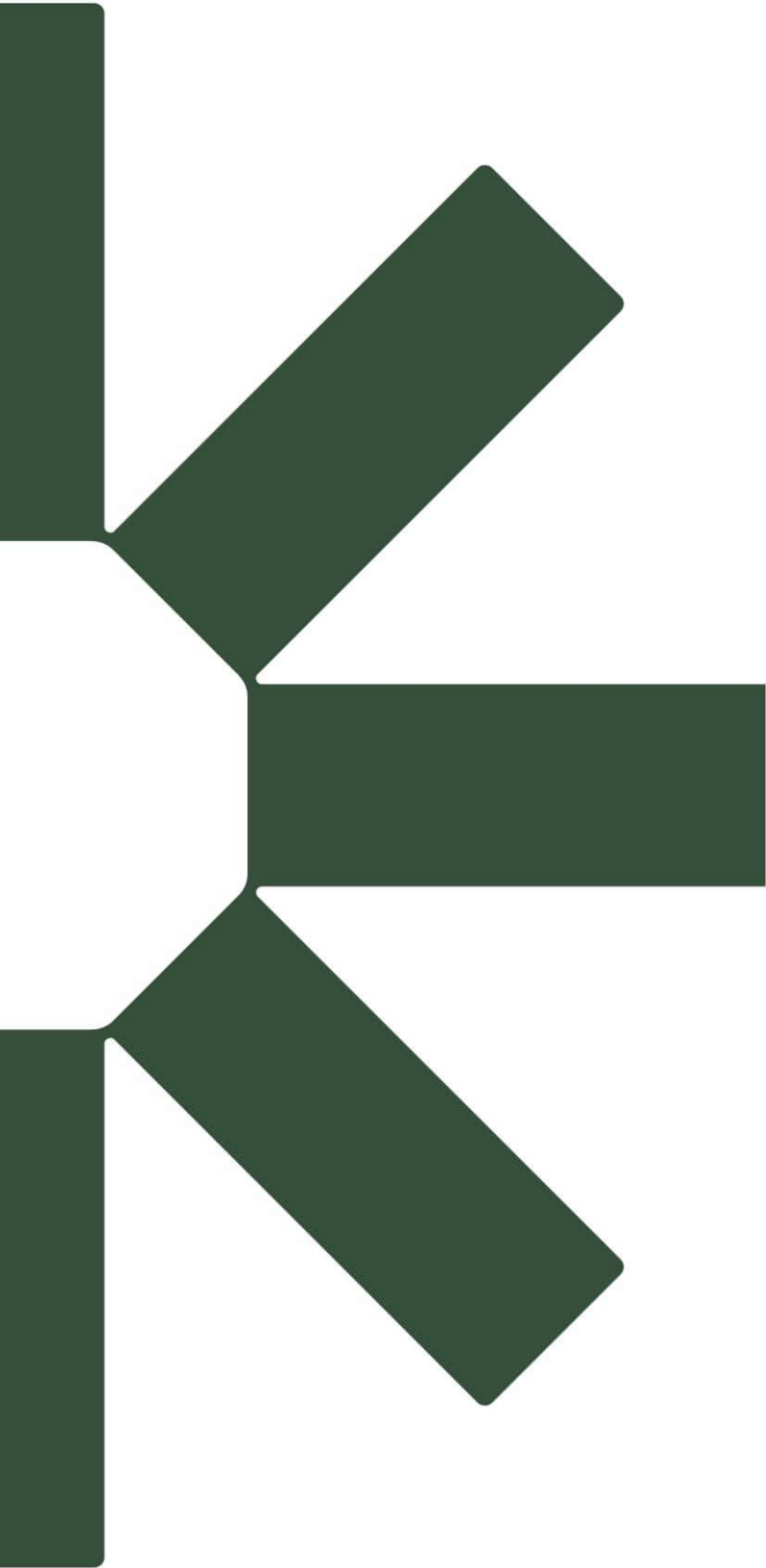


### Pit 3 Spoil Aquifer (10% Porosity)

RL (mAHD)	Volume (ML)
313	0
314	0.8745
315	2.0
316	4
317	6
318	8
319	11
320	15
321	19
322	24
323	30
324	38
325	47
326	59
327	72
328	88
329	105
330	124
331	146
332	170
333	199
334	231
335	268
336	308
337	354
338	403

RL (mAHD)	Volume (ML)
339	456
340	513
341	576
342	644
343	718
344	795
345	875
346	958
347	1045
348	1135
349	1230
350	1327
351	1428
352	1532
353	1640
354	1752
355	1869
356	1991
357	2119
358	2252
359	2391
360	2536
361	2686
362	2840
363	2999















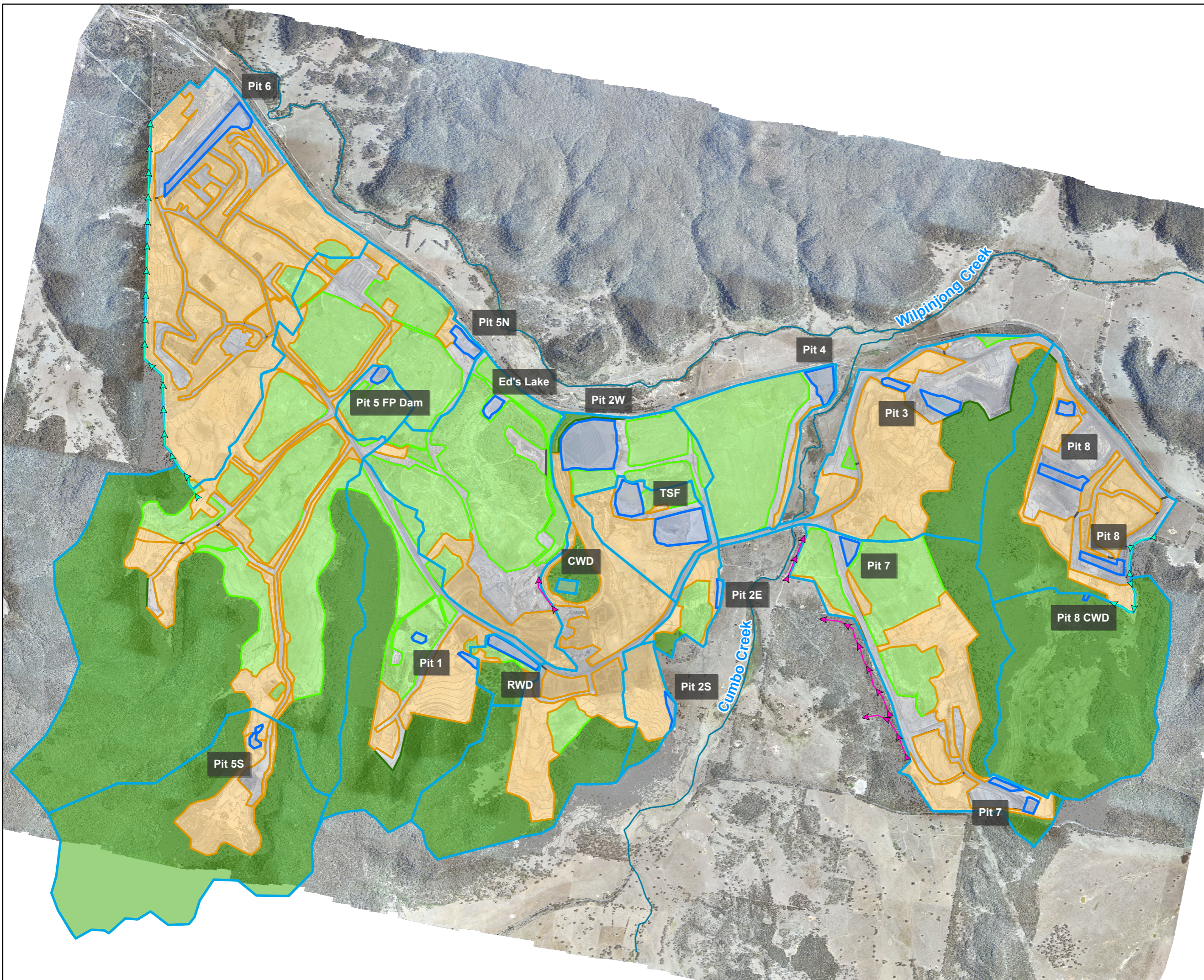
Making Sustainability Happen



FIGURE 1B

LEGEND

-  Catchment Boundary
-  Water Storage
-  Natural Areas
-  Active Pit / Hardstand Areas
-  Rehabilitation Areas
-  Spoil Areas
-  Clean Water Diversion
-  Levee
-  Watercourse
-  Existing Contours (5m intervals)



Data Sources:  
Aerial imagery dated December 2025 provided by WCM  
Contour data dated January 2025 provided by WCM

DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.



Coordinate System: GDA 1994 MGA Zone 55

Scale: 1:32,000 at A4

Project Number: 630.032812











Date Drawn: 18-Mar-2026

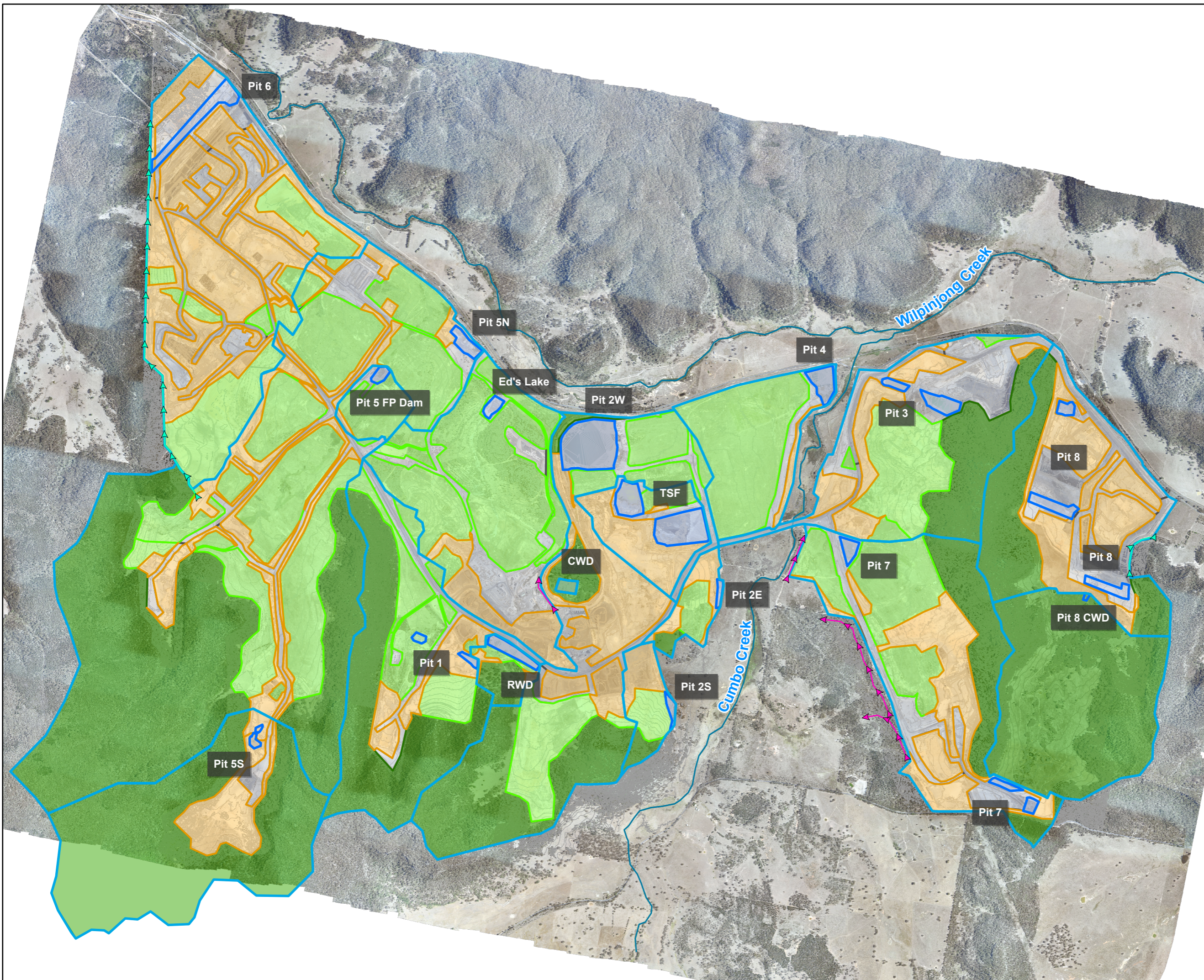
Drawn by: JH



FIGURE 2B

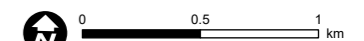
LEGEND

-  Catchment Boundary
-  Water Storage
-  Natural Areas
-  Active Pit / Hardstand Areas
-  Rehabilitation Areas
-  Spoil Areas
-  Clean Water Diversion
-  Levee
-  Watercourse
-  Existing Contours (5m intervals)



Data Sources:  
Aerial imagery dated December 2025 provided by WCM  
Contour data dated January 2025 provided by WCM

DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.



Coordinate System: GDA 1994 MGA Zone 55

Scale: 1:32,000 at A4

Project Number: 630.032812











Date Drawn: 18-Mar-2026

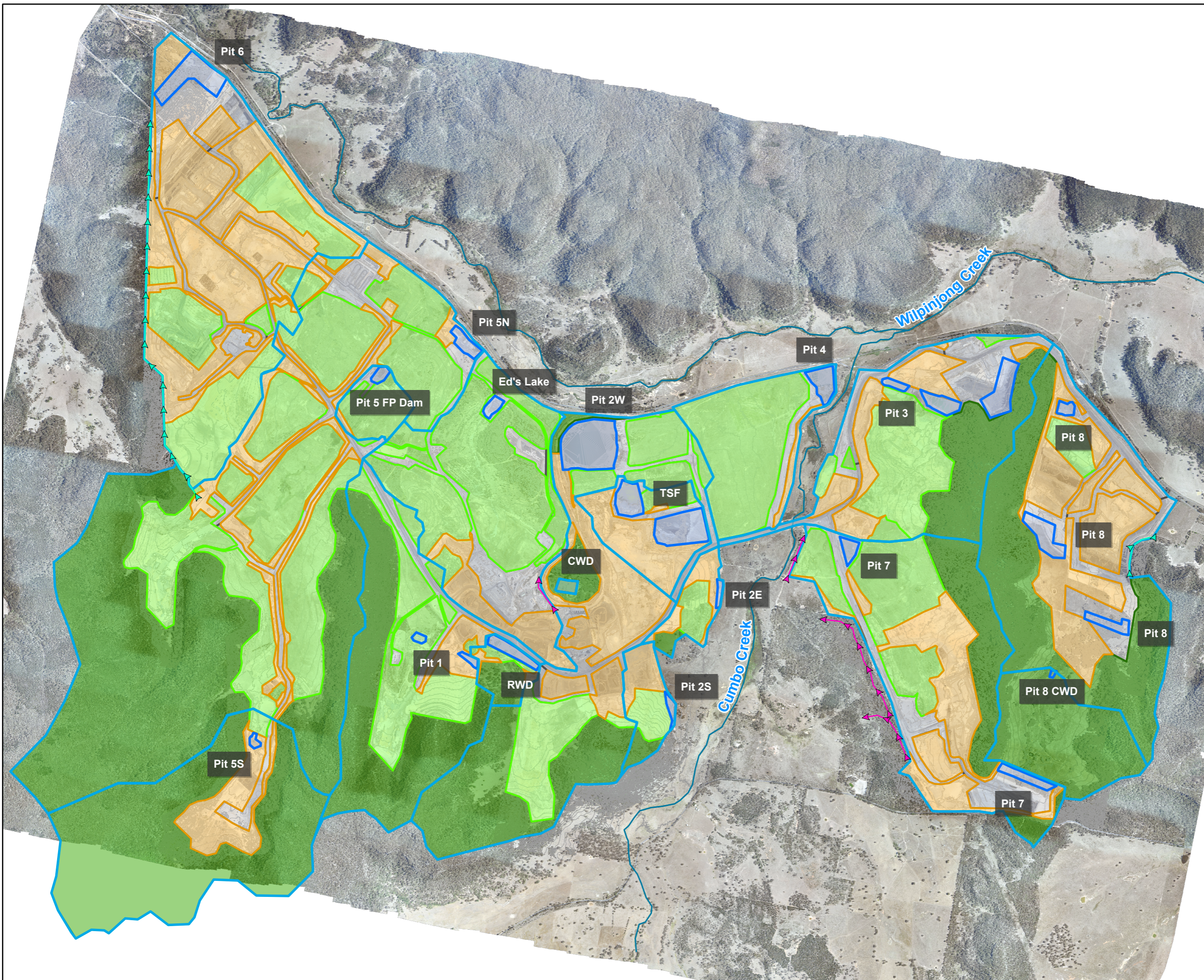
Drawn by: JH



FIGURE 3B

LEGEND

-  Catchment Boundary
-  Water Storage
-  Natural Areas
-  Active Pit / Hardstand Areas
-  Rehabilitation Areas
-  Spoil Areas
-  Clean Water Diversion
-  Levee
-  Watercourse
-  Existing Contours (5m intervals)



Data Sources:  
Aerial imagery dated December 2025 provided by WCM  
Contour data dated January 2025 provided by WCM

DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.



Coordinate System: GDA 1994 MGA Zone 55

Scale: 1:32,000 at A4

Project Number: 630.032812











Date Drawn: 18-Mar-2026

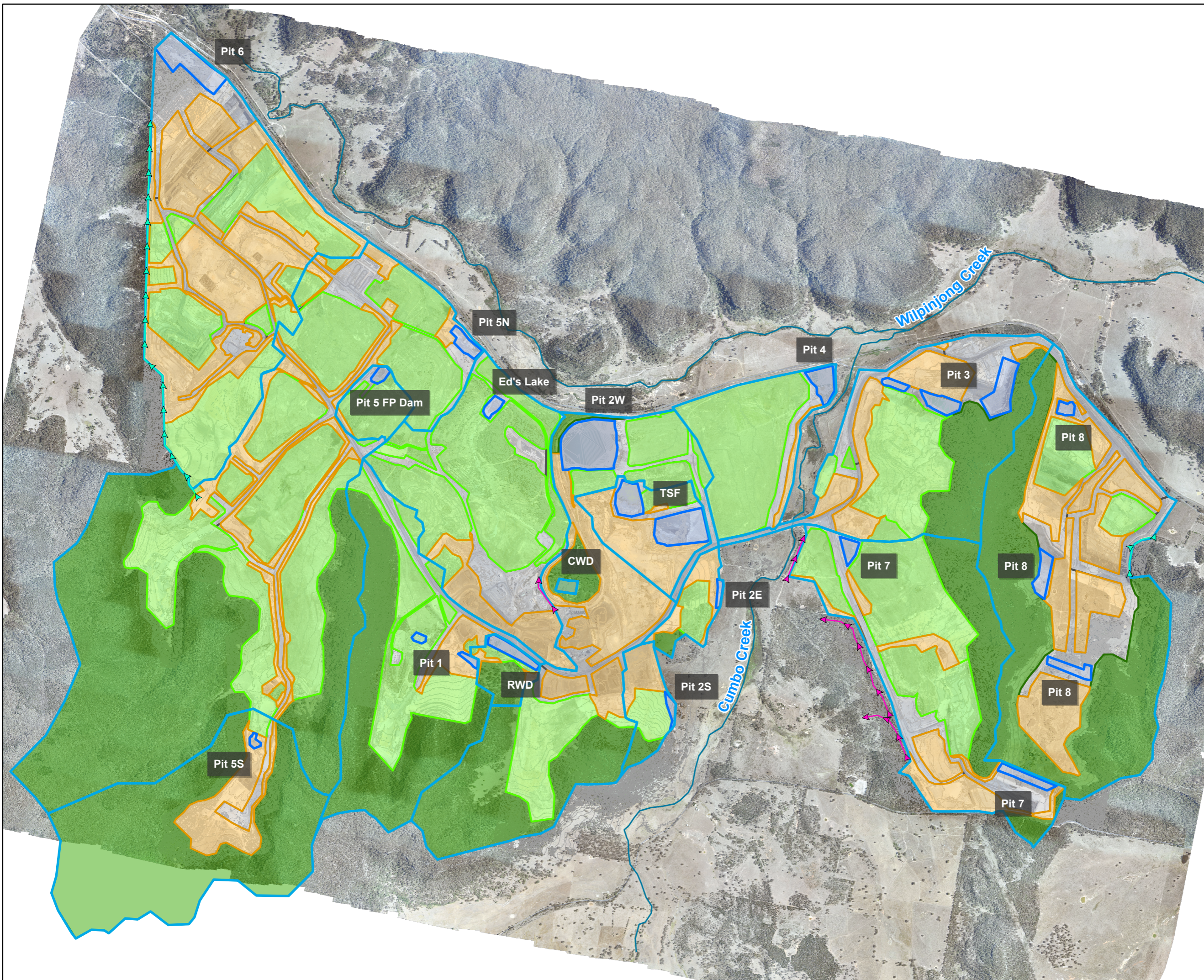
Drawn by: JH



FIGURE 4B

LEGEND

-  Catchment Boundary
-  Water Storage
-  Natural Areas
-  Active Pit / Hardstand Areas
-  Rehabilitation Areas
-  Spoil Areas
-  Clean Water Diversion
-  Levee
-  Watercourse
-  Existing Contours (5m intervals)



Data Sources:  
Aerial imagery dated December 2025 provided by WCM  
Contour data dated January 2025 provided by WCM

DISCLAIMER: All information within this document may be based on external sources. SLR Consulting Pty Ltd makes no warranty regarding the data's accuracy or reliability for any purpose.



Coordinate System: GDA 1994 MGA Zone 55

Scale: 1:32,000 at A4

Project Number: 630.032812

Date Drawn: 18-Mar-2026

Drawn by: JH

