



SITE WATER BALANCE

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Version	Effective Date (Month/YYYY)	Revision Detail (Include the main areas reviewed, trigger / why the change)	Author (Name/s)	Review Team (Name/s)
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2	Mar 2018	General Review and Update	MCO	MCO, WRM Water & Environment
3	Apr 2020	To incorporate approved modifications to Stage 1 (MOD 14) and Stage 2 (MOD 3) of the Project	MCO	MCO, WRM Water & Environment
4	Oct 2020	To incorporate approval of Modification 15 (Stage 1)	MCO	MCO
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6	July 2026	General Review and Update	MCO	MCO

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1 INTRODUCTION

The Moolarben Coal Complex (MCC) is located approximately 40 kilometres (km) north of Mudgee in the Western Coalfields of New South Wales (NSW) (**Figure 1**).

Moolarben Coal Operations Pty Ltd (MCO) is the operator of the Moolarben Coal Complex on behalf of the Moolarben Joint Venture (Moolarben Coal Mines Pty Ltd [MCM], Yancoal Moolarben Pty Ltd and a consortium of Korean power companies). MCO, MCM and YM are wholly owned subsidiaries of Yancoal Australia Limited (Yancoal).

Mining operations at the MCC are currently approved until 31 December 2038 and would continue to be carried out in accordance with NSW Project Approval (05_0117) (Moolarben Coal Project Stage 1) as modified and NSW Project Approval (08_0135) (Moolarben Coal Project Stage 2) as modified.

Mining operations at the MCC are undertaken in accordance with the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) approvals EPBC 2007/3297, EPBC 2008/4444, EPBC 2013/6926 and EPBC 2017/7974.

The current mining operations at the MCC are conducted in accordance with the requirements of the conditions of Mining Lease 1605, Mining Lease 1606, Mining Lease 1628, Mining Lease 1691 and Mining Lease 1715 granted under the *Mining Act 1992*.

The general arrangement of the MCC, showing modifications, is provided in **Figure 2**.

1.1 PURPOSE AND SCOPE

This Site Water Balance (SWB) has been prepared by MCO to satisfy the requirements under NSW Project Approval (05_0117) as modified and the NSW Project Approval (08_0135) as modified.

This SWB describes the movement of water across all areas within the assessment timeline (2025-2032) within the Project Boundaries (as defined in Appendix 2 of NSW Project Approval 05_0117 [as modified] and NSW Project Approval 08_0135 [as modified]).

1.2 SUITABLE QUALIFIED AND EXPERIENCED PERSONS

The Secretary of the Department of Planning and Environment (DP&E) (now the NSW Department of Planning, Housing and Infrastructure (DPHI)) approved David Newton (WRM Water & Environment), Peter Dundon (Dundon Consulting), Dr Noel Merrick (Hydrosimulations) and Andrew Durick (Australasian Groundwater and Environmental Consultants (AGE)) as suitably qualified and experienced experts for the preparation of the Water Management Plan (WAMP). The SWB was prepared in consultation with specialist consultants from WRM Water & Environment Pty Ltd.

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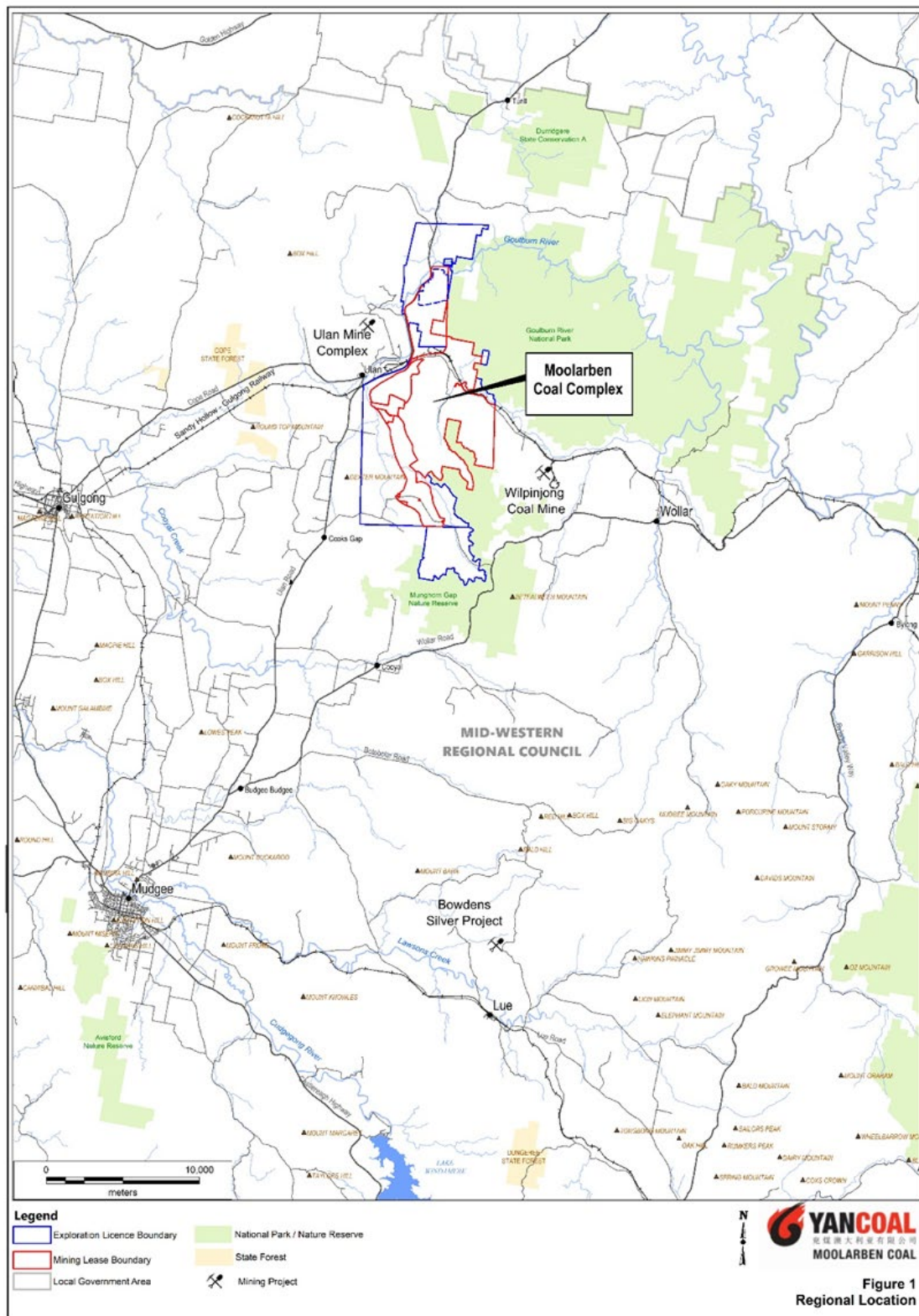


Figure 1: Regional locality plan

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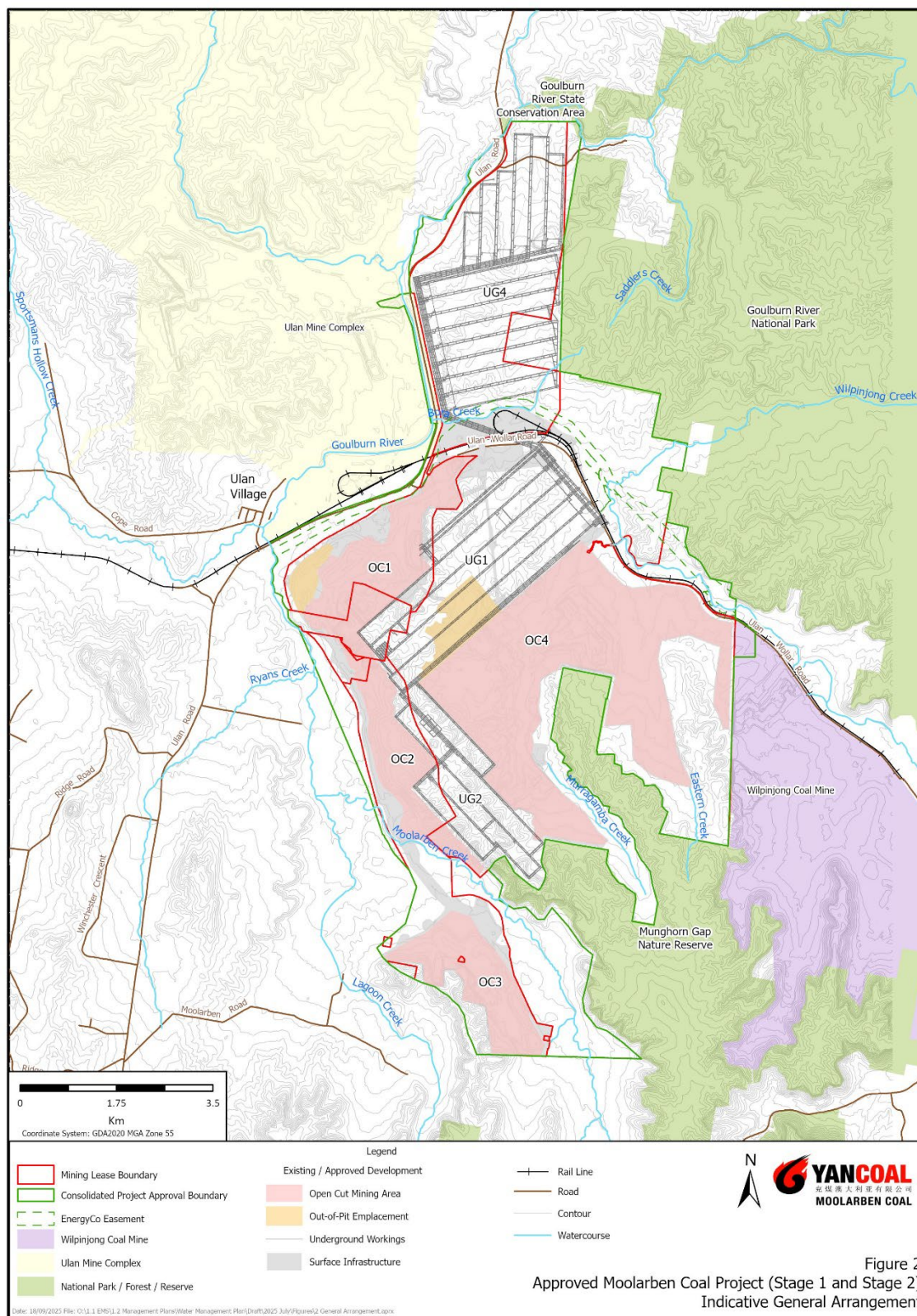


Figure 2: Moolarben Coal Complex – general arrangement

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1.3 STRUCTURE OF THE SITE WATER BALANCE

The remainder of the SWB is structured as follows:

- Section 2.0** Outlines the statutory requirements of the SWB
- Section 3.0** Provides baseline data relevant to the SWB
- Section 4.0** Describes the elements of the Moolarben Water Management System
- Section 5.0** Describes the site water demands
- Section 6.0** Describes the method of water disposal
- Section 7.0** Outlines the various water sources
- Section 8.0** Describes the Moolarben Water Balance Model
- Section 9.0** Describes the review and reporting requirements relevant to the SWB

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2 STATUTORY AND PROJECT APPROVAL REQUIREMENTS

MCO's statutory obligations are contained in:

- the conditions of the NSW Project Approval (05_0117) as modified and NSW Project Approval (08_0135) as modified;
- the conditions of the Commonwealth Approvals (EPBC 2007/3297, EPBC 2013/6926, EPBC 2017/7974 and EPBC 2008/4444);
- relevant licences and permits, including conditions attached to mining leases and Environment Protection Licence (EPL) 12932; and
- other relevant legislation.

2.1 EP&A ACT APPROVAL

This SWB has been prepared in accordance with Condition 33, Schedule 3 and Condition 29, Schedule 3 of the NSW Project Approvals (05_0117 and 08_0135, respectively). **Attachment 1** indicates where each component of the relevant conditions has been addressed in the SWB. The SWB is a component of the Water Management Plan (WAMP).

Management Plan Requirements

Condition 3, Schedule 5 of Project Approval (05_0117) and Condition 3, Schedule 6 of Project Approval (08_0135) outline the management plan requirements that are applicable to the preparation of the SWB. **Attachment 1** presents these requirements and indicates where they are addressed within this SWB.

2.2 WATER LICENCES

In accordance with Condition 29, Schedule 3 and Condition 25, Schedule 3 of the NSW Project Approvals (05_0117 and 08_0135, respectively), MCO would obtain additional licences under the *Water Management Act 2000 (amended 2026)* and *Water Act 1912 (amended 2025)* as they are required for activities at the Moolarben Coal Complex (**Table 1**).

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Table 1: Water Licences Held by MCO

Licence Number	Description	Total Share Component (ML) ¹	Maximum Predicted Take (ML/y) ²
WAL36340, WAL37583 and WAL19424	Wollar Creek Water Source – Hunter Unregulated and Alluvial Water Sources	218	282
WAL37582, WAL41888 and WAL19052	Upper Goulburn River Water Source – Hunter Unregulated and Alluvial Water Sources	208	250
WAL39799	Sydney Basin - North Coast Fractured and Porous Rock Groundwater Source	2,950	3,910
20BL173935	Monitoring and Test Bores	N/A	N/A

¹ As per NSW Water Register.

² Typically occurs for one water year only

2.3 OTHER LEGISLATION

MCO will operate the MCC in accordance with the NSW Project Approvals (05_0117 and 08_0135) and Commonwealth Approvals (2007/3297, 2013/6936, 2017/7974 and 2008/4444), as well as any other NSW Acts, Regulations and Guidelines that may be applicable to a Part 3A Project.

The requirements of EPL 12932 regarding water discharge and monitoring are considered in Sections 4.0, 4.6, 6.1 and 6.2. Additional detail regarding MCO's commitments under EPL 12932 can be found in the Surface Water Management Plan (SWMP) (MCO, 2024).

A summary of the NSW Acts, Regulations and Guidelines that may be relevant to the MCO is provided in Section 2 of the WAMP.

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3 AVAILABLE DATA

The SWB model has been developed using available monitoring data, including the following:

- Climate data; and
- Water Management System monitoring data.

The available monitoring data has been used to calibrate the SWB model and estimate key site parameters (e.g. site demands and losses).

A summary of the relevant site monitoring data is provided in the following sections.

3.1 CLIMATE DATA

MCO operates one permanent meteorological monitoring station located on a property on Ulan Road (WS03), which is linked into the real-time monitoring system. Other weather stations may be used to supplement weather data as required. This data was used as part of the model calibration process (see **Section 8.4**). Site recorded meteorological information is provided in the Annual Review.

Long term daily rainfall and evaporation data for the area from January 1889 to December 2024 (135 years) was obtained from the Department of Environment and Science (DES) Scientific Information for Land Owners (SILO) database, which is an Australian climate database developed by the Queensland Government.

Morton's equation for Lake evaporation has been used to estimate evaporation losses from storages.

Figure 3 and 4 shows the long-term monthly average and percentile for Morton's lake evaporation and rainfall data at MCO respectively based on SILO data (1889-2024). The average annual estimated rainfall on site is 651.2 mm and Morton's lake evaporation is 1,387.3 mm.

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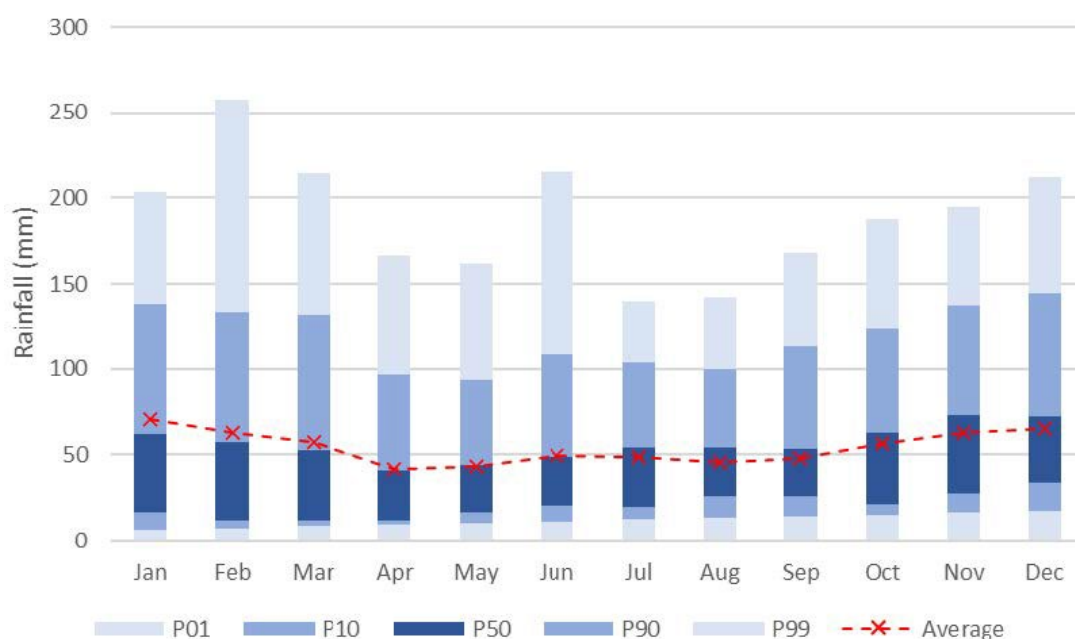


Figure 3: SILO monthly rainfall summary (1889-2024)

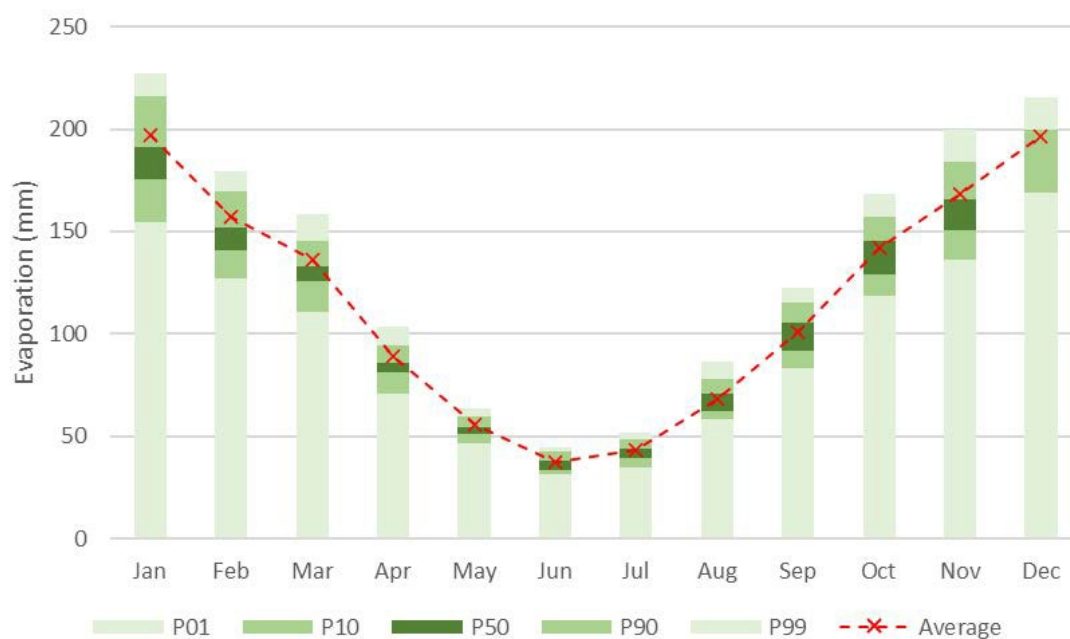


Figure 4: SILO monthly Morton's Lake evaporation summary (1889-2024)

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3.2 WATER MANAGEMENT SYSTEM MONITORING

MCO monitors the following relevant aspects of the site water management system:

- Storage water levels and volumes;
- Inflows from the following sources:
 - Pit inflows;
 - Mine water provided under agreement from the Ulan Mine Complex (i.e. Ulan Water Sharing Agreement [UWSA]);
 - Dewatering/production bores
 - Underground dewatering;
 - Potable water supply;
- Site water demands including dust suppression, potable water and water supply to underground;
- Coal Handling and Preparation Plan (CHPP) inflows and outflows including:
 - Feed tonnage and moisture contents;
 - Product tonnage and moisture contents;
 - Rejects/tailings moisture contents;
- Licensed discharges; and
- Flow monitoring at Wilpinjong Creek, Murragamba Creek and Goulburn River.

A summary of the relevant water management system monitoring information is provided in the Annual Review.

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4 WATER MANAGEMENT SYSTEM

Water at the MCC is stored in surface dams, open cut pits, mining voids (when available) and sediment dams. The construction of emergency tailings dams, mine infrastructure dams, groundwater storages and treatment dams will comply with a permeability standard that is the equivalent of $<1 \times 10^{-9}$ m/s. Brine storages will be constructed to a permeability standard that is the equivalent of $<1 \times 10^{-9}$ m/s over 1000mm (as required by Condition 32, Schedule 3 of Project Approval [05_0117]). A monitoring program will be conducted during construction of each of these facilities to confirm the permeability of these dams.

4.1 DAM STORAGES

The locations of the operational and indicative dams at the CHPP and in the Open Cut are shown in , **Figure 6**, and **Figure 7** with detailed information provided in

Table 2. This information is the dam capacity following any required upgrades. Indicative locations are shown in **Figure 8** and **Figure 9** with detailed information provided in **Table A-1**.

Table 2: Water Storage Dam and Sediment Dam Requirements

Location of Dam	Name of Dam	Type of Dam	Capacity of Dam (ML)	Status
CHPP	WP01	Mine Water Dam	15.0	Existing
	WP02	Mine Water Dam	13.0	Existing
	WP07	Sediment Dam	2.1	Existing
	WP08	Sediment Dam	2.8	Existing
	WP09	Sediment Dam	0.7	Existing
	WP10	Mine Water Dam	2.3	Existing
	WP12	Mine Water Dam	3.4	Existing
	WP13	Sediment Dam	36.6	Existing
	WP14	Sediment Dam	6.6	Existing
	WP15	Mine Water Dam	90.7	Existing
	WP16	Mine Water Dam	130.4	Existing
	WP17	Mine Water Dam	8.6	Existing
	WP18	Mine Water Dam	27.8	Existing
	WP19	Mine Water Dam	170.0	Existing
	WP20	Brine Dam	22.8	Existing
	WP21	Brine Dam	23.1	Existing

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Location of Dam	Name of Dam	Type of Dam	Capacity of Dam (ML)	Status	
	WP22	Mine Water Dam	14.6	Existing	
	ETD	Mine Water Dam	19.8	Existing	
OC1	101	Sediment Dam	11.0	Existing	
	102	Sediment Dam	5.7	Existing	
	103	Sediment Dam	4.0	Existing	
	104	Sediment Dam	1.4	Existing	
	105	Sediment Dam	2.4	Existing	
	106	Sediment Dam and Licensed Discharge Point (LPD) EPA-02	93.8	Existing	
	107	Mine Water Dam	97.1	Existing	
	111	Mine Water Dam	234.5	Existing	
	112	Mine Water Dam	49.4	Existing	
	114	Mine Water Dam	1,000	Indicative	
OC2	201	Mine Water Dam	20.4	Existing	
	202	Sediment Dam and LDP EPA-28	12.6	Existing	
	203	Sediment Dam	11.3	Existing	
	206	Sediment Dam	14.0	Existing	
	209	Mine Water Dam	535.1	Existing	
	210	Sediment Dam	4.7	Existing	
	211	Sediment Dam	11.8	Existing	
	212	Sediment Dam	25.6	Existing	
	213	Sediment Dam	139.0	Existing	
OC3^	301	Mine Water Dam	58.0	Existing	
	302A	Mine Water Dam	477.5	Existing	
	302B	Brine Water Dam	527.4	Existing	
	303	Mine Water Dam	128.7	Existing	
	304	Sediment Dam	28.5	Existing	
	305	Sediment Dam	44.2	Existing	
	306	Sediment Dam	40.0	Existing	
	308	Sediment Dam	147	Indicative	
	309	Sediment Dam	26	Indicative	
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Location of Dam	Name of Dam	Type of Dam	Capacity of Dam (ML)	Status
	310	Clean Water Dam	117	Indicative
	311	Sediment Dam	161	Indicative
	313	Sediment Dam	77	Indicative
	314	Sediment Dam	113	Indicative
	316A	Mine Water Dam	1,109.5	Existing
	316B	Mine Water Dam	805.2	Existing
	317	Sediment Dam	62	Indicative
	321	Sediment Dam	36	Indicative
	323	Sediment Dam	19	Indicative
	324	Sediment Dam	29	Indicative
	325	Sediment Dam	29	Indicative
OC4*^	401	Mine Water Dam	513	Existing
	403	Sediment Dam	32	Existing
	408	Sediment Dam	1.1	Existing
	414	Sediment Dam	48.4	Existing
	423	Clean Water Dam	410	Existing
	424	Sediment Dam	104	Existing
	425	Sediment Dam	104	Indicative
	426	Sediment Dam	5.8	Existing
	Murragamba Clean Water Dam (CWD01)	Clean Water Dam	484.6	Existing
	'Eastern' Creek Dam	Clean Water Dam	250	Indicative
UG**	UG01	Mine Water Dam	59.8	Existing
	UG02	Sediment Dam	1.2	Existing
	UG03	Sediment Dam	0.8	Existing
	UG04	Sediment Dam	4.1	Existing
	UG05	Sediment Dam	0.4	Existing

ML = megalitres

* OC4 sediment dams will be progressively decommissioned and/or replaced with mine progression.

** Underground mine and temporary sumps not shown.

^ Indicative means it will be developed progressively ahead of mining/disturbance – refer indicative staging plans in Attachment 2

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Sediment dams are sized and operated generally in accordance with the Landcom (2004) publication *‘Managing Urban Stormwater: Soils and Construction – Volume 1 and Volume 2E Mines and Quarries’*. For the purposes of water balance modelling and preliminary sizing, sediment dams have been assumed to be Type F/D basins. Refer to Section 4.3.2 of the MCO_PLN_0037 Surface Water Management Plan for more detail.

Where practical, surface water infrastructure has been designed to facilitate the diversion of clean water (i.e. run-off from undisturbed or rehabilitated catchments) away from the active pit throughout the duration of mining. Diversion drains are to be designed to cater for a 100-year Average Recurrence Interval flood. Clean water diversion dams on Murragamba and ‘Eastern’ Creeks will be adequately sized to divert runoff around OC4.

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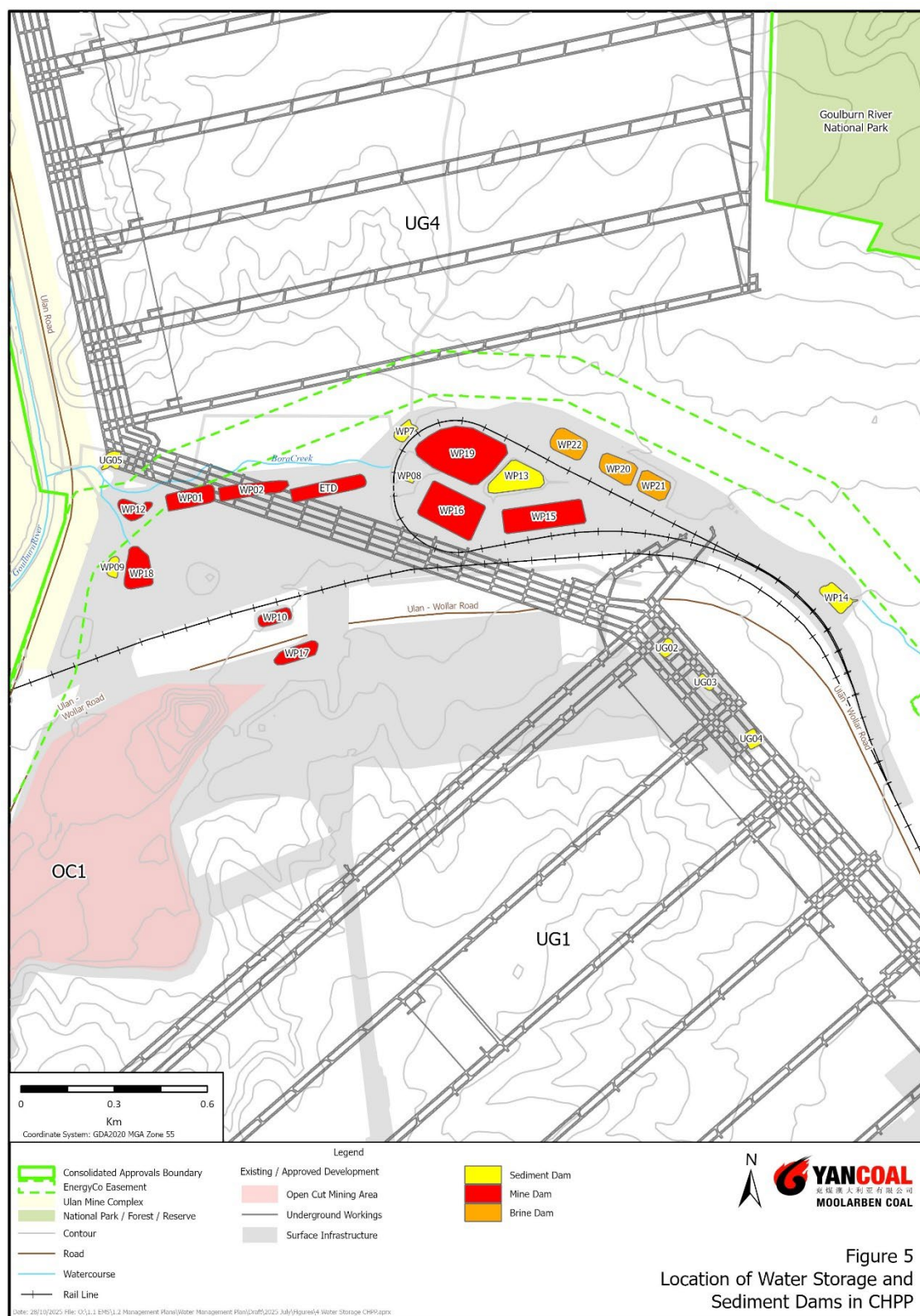


Figure 5: Location of water storage dams and sediment dams in CHPP area

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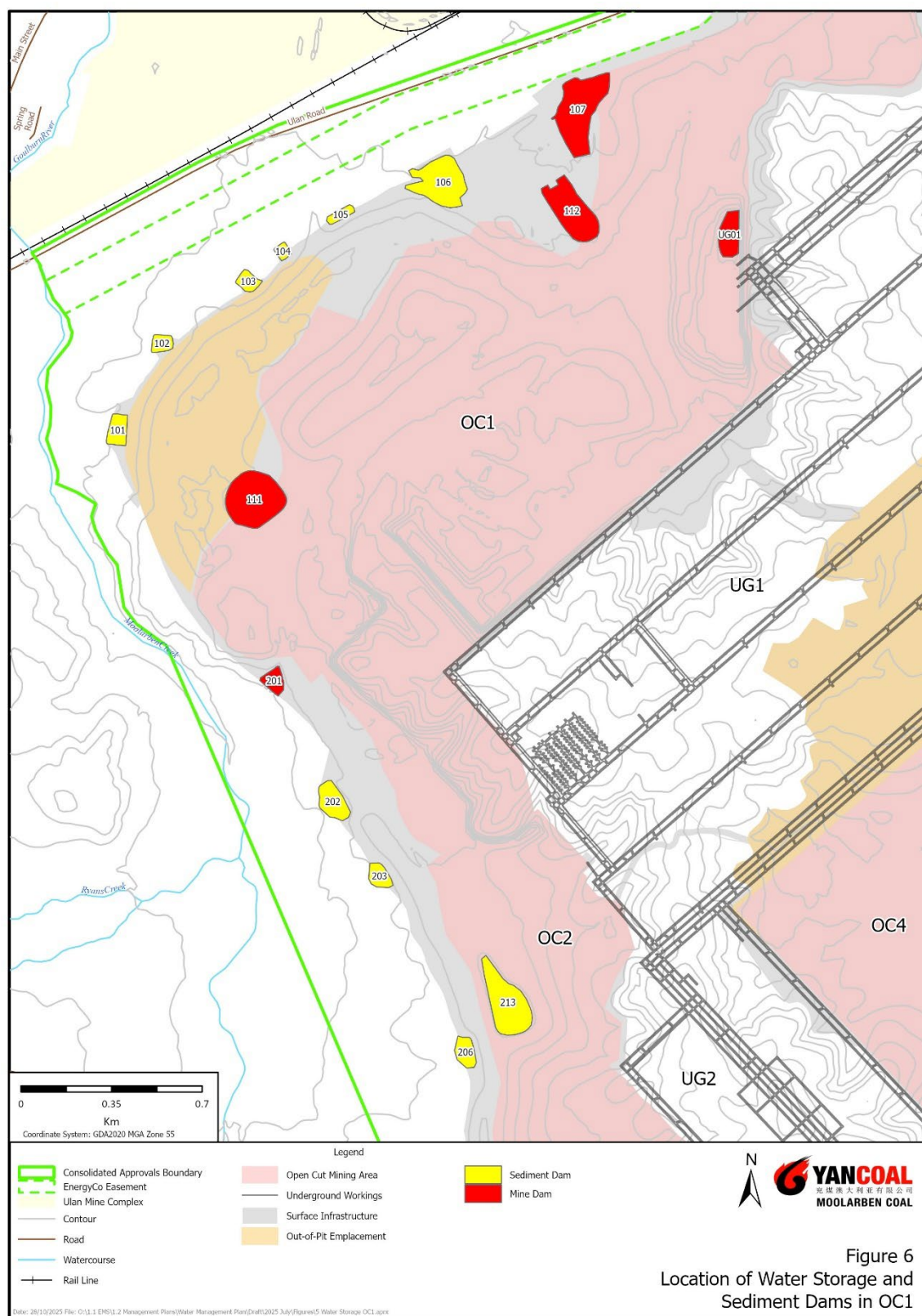


Figure 6: Location of water storage dams and sediment dams in OC1

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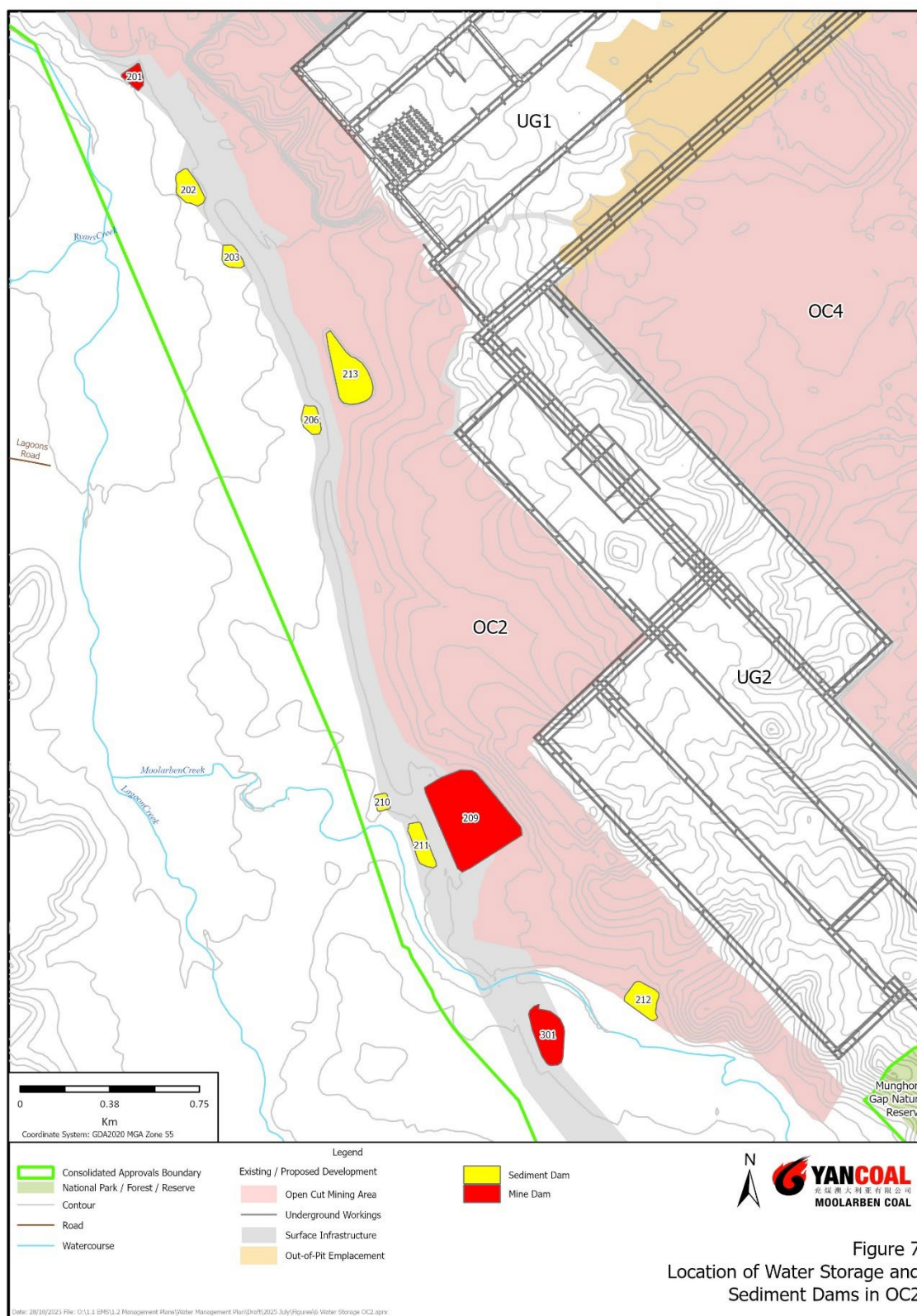


Figure 7: Location of water storage dams and sediment dams in OC2

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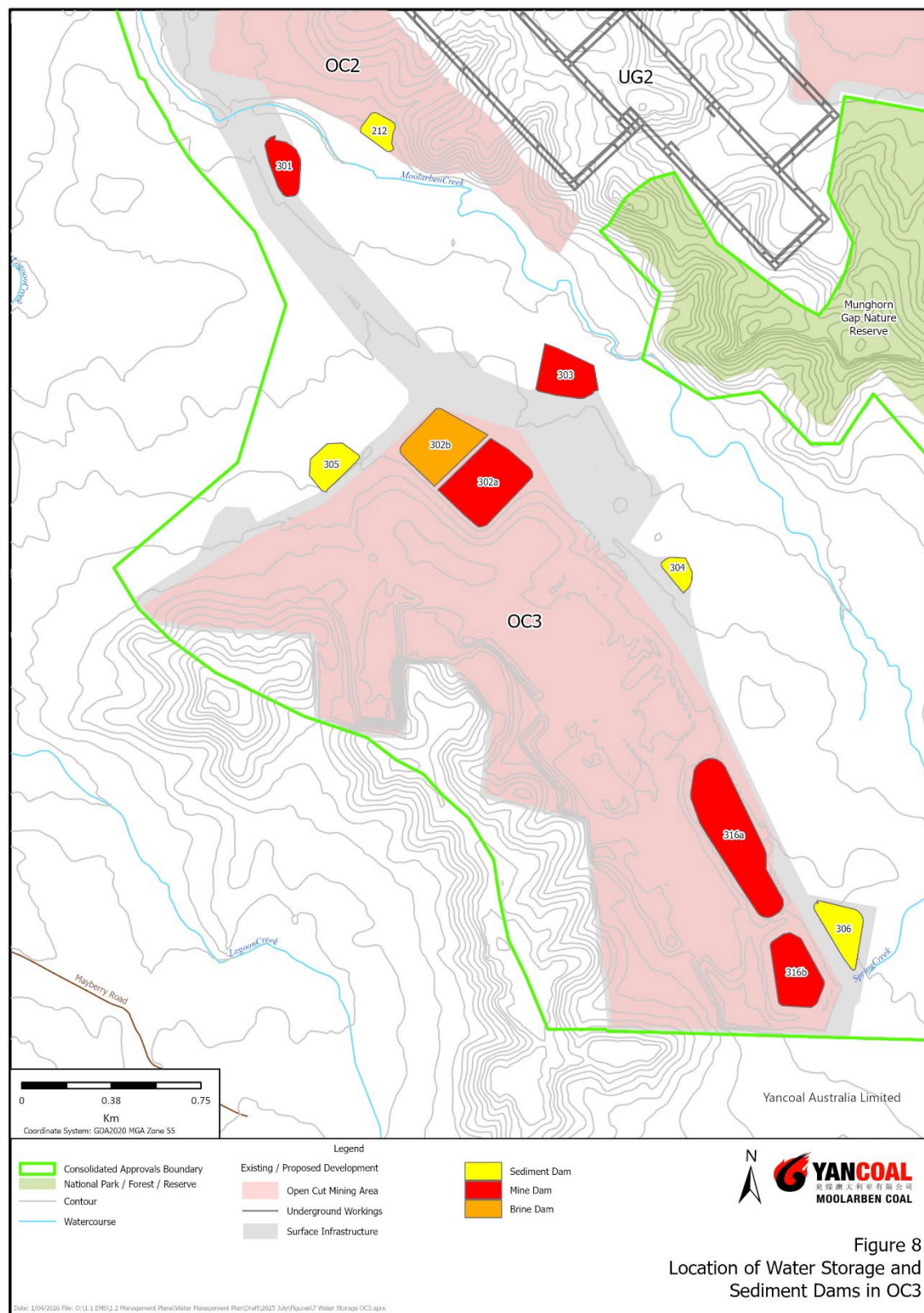


Figure 8: Location of water storage dams and sediment dams in OC3

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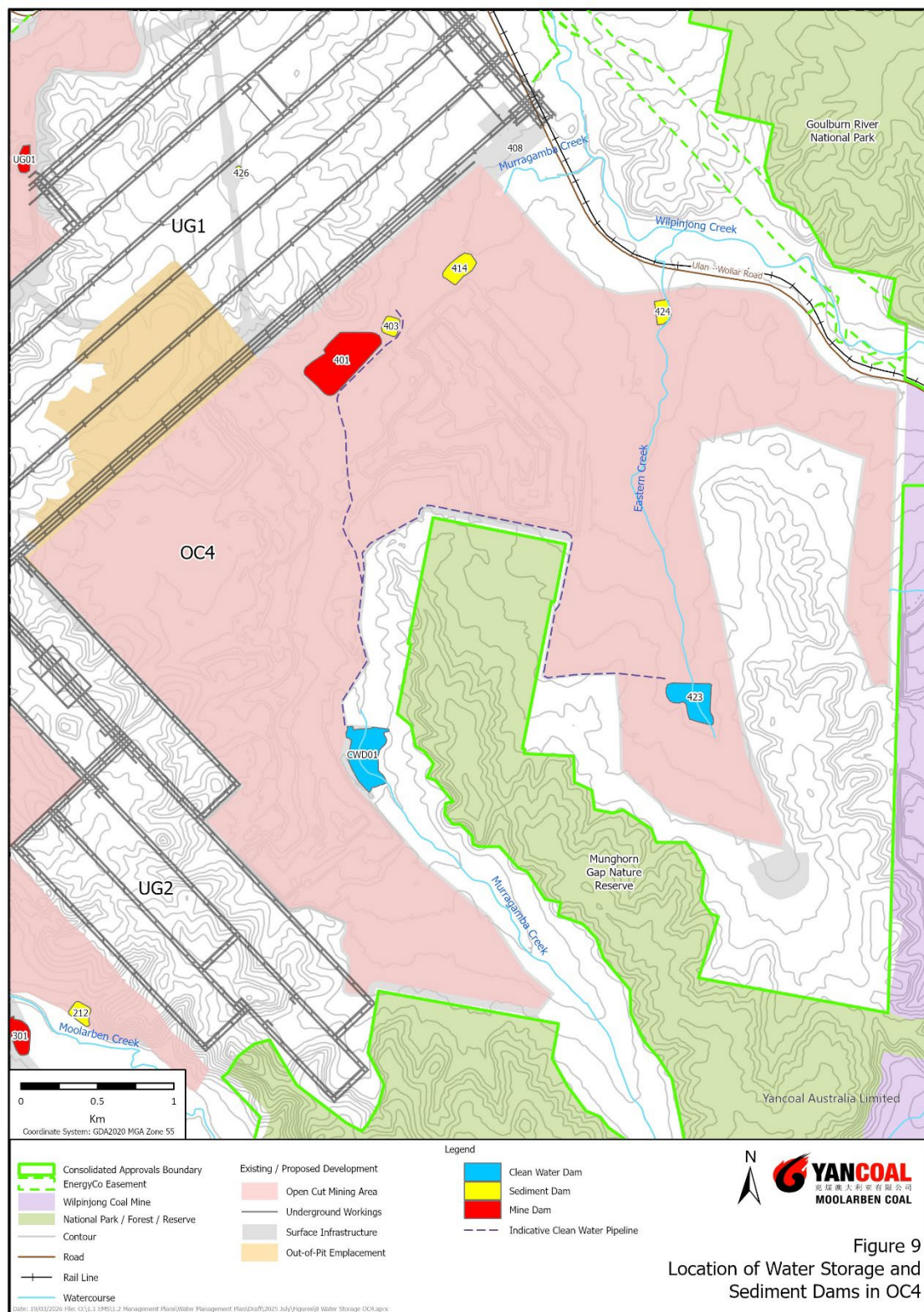


Figure 9: Location of water storage dams and sediment dams in OC4

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4.2 RUNOFF FROM REHABILITATED AREAS

Rehabilitated areas will be shaped to the final landform and drainage structures installed in accordance with the Rehabilitation Management Plan (RMP). Run-off from rehabilitated areas will be diverted to sediment dams for treatment until the water quality of surface runoff is suitable for release from the site. Conceptual plans for final voids, drainage lines on rehabilitation and control of potential water pollution from rehabilitated areas are included in the RMP.

4.3 MINIMISATION OF WATER USE

MCO's water management strategy includes preferential use of on-site derived mine water, thereby reducing the need to import raw water from external sources for operational purposes. This includes (inter alia):

- Use of a belt filter press to reclaim water from rejects materials for reuse during the coal washing process (Note; use of a belt filter press circumvents the need for disposal of tailings in dedicated tailings storage dams).
- Primarily washing run of mine (ROM) coal from open cut operations (i.e. underground ROM coal will primarily bypass the coal wash plant).
- Irrigation undertaken to minimise surplus water only.
- Use of surplus mine water from the adjacent Ulan Mine Complex as a primary supplementary water source (under the UWSA).
- Use of groundwater from advanced dewatering of underground mining areas as a primary supplementary water source.
- Diversion of clean water where practicable around the operation, e.g. development and operation of the Murragamba and 'Eastern' Creek Clean Water Diversion system.

4.4 PIPELINES

Water obtained from the Ulan Mine Complex and dewatering/production bores is currently delivered via poly pipe to CHPP dams, located within the rail loop.

The pipeline has a capacity of approximately 63 litres per second (L/s) (5.4 million litres per day [ML/day]) when one pump is in use and approximately 100 L/s (8.6 ML/day) when two pumps are in use. MCO has an agreement with Ulan Coal Mine Limited (UCML) for the supply of up to 1,000ML/year of surplus mine water from its operations.

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4.5 POTABLE WATER

Potable water for all facilities is supplied by the MCO Water Treatment Facility and supplemented as required from external sources. The total production of potable water is estimated to be 39 ML/year.

4.6 WATER TREATMENT FACILITY

A water treatment facility has been constructed to allow surplus water stored on-site to meet the water quality concentration limits of EPL 12932 and provide water for on-site use.

The water treatment process involves pre-treatment followed by a secondary treatment of water via reverse osmosis (RO).

Additional water storages have been constructed part of the water treatment facilities to hold feed water, blend water and treated water, and to store by-products of the treatment process (**Figure 4**).

Water is blended and transferred from the water treatment facility to the Goulburn River Diversion via a pipeline. The pipeline runs through culverts under Ulan Road adjacent to the existing water supply pipeline between the MCC and Ulan Mine Complex to the discharge point on the Goulburn River Diversion.

4.7 HISTORICAL PERFORMANCE OF WATER MANAGEMENT SYSTEM

Since commencing construction in 2008/2009, MCO has supplemented its available on-site water supply with groundwater drawn from production bores on site and from surplus mine water imported from the Ulan Mine Complex. This information is shown in **Table 3** and **Table 4**.

Table 3: Imported water volumes (from borefield) since 2015:

Year	Water Volume (ML)
2015	0
2016	4
2017	50
2018	5.8
2019	0
2020	0
2021	0
2022	0
2023	0
2024	0
2025	0

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Table 4: Imported water volumes (via the UWSA) since 2015:

Year	Water Volume (ML)
2015	116
2016	210
2017	7
2018	423
2019	178
2020	337
2021	0
2022	0
2023	0
2024	0
2025	0

MCO has the ability to discharge surplus water (of an appropriate quality) (see **Section 6.2**) from a number of licensed discharge points (not including licensed sediment dam rainfall-induced overflow releases) under EPL 12932. This information is shown in **Table 5**.

Table 5: EPL licensed discharge volumes since 2015:

Year	Water Volume (ML)
2015	0
2016	0
2017	0
2018	0
2019	0
2020	1,426
2021	3,097
2022	4,584
2023	3,438
2024	2,097
2025	1,611

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5 WATER DEMANDS

5.1 OVERVIEW

Water demands on-site include the following:

- Water used in the CHPP, including water retained in coal products and rejects and water for dust suppression (including stockpiles);
- Haul road dust suppression;
- Potable water
- Underground water demands; and
- Miscellaneous water usage such as irrigation, vehicle wash down, and Main Infrastructure Area (MIA) water usage.
- Water sources and the hierarchy of water use are described in **Section 7**.

5.2 CHPP WATER DEMANDS

Water consumption at the MCC is predominately by the CHPP. Water lost from the coal handling and preparation process is either entrained within product coal or rejects material. Water usage has been estimated to range between 73 and 80 ML per million tonnes (Mt) of ROM coal washed at the CHPP based on the recorded CHPP water usage. At maximum production, the MCC will mine up to 16 million tonnes per annum (Mtpa) of ROM coal. Applying the CHPP water use rate yields a net water requirement for the CHPP of about 1,280 ML/year at maximum production (**Section 0**).

5.3 HAUL ROAD DUST SUPPRESSION

The total surface area of haul roads has been estimated from the mine plans and an assessment made of the potential water usage for dust suppression. This has been based on an assessment of the amount of water which is lost from these surface areas as a result of evaporation and infiltration. From this assessment and previous recorded water usage at MCO, the total water demand for dust suppression across the MCC is approximately 1,399 ML/year at maximum production and haul road footprint.

5.4 MISCELLANEOUS WATER USAGE

The miscellaneous water demand is an estimate of unmetered site demands such as vehicle wash-down, irrigation and MIA water usage. The total miscellaneous water demand is estimated to be 156 ML/year.

5.5 UNDERGROUND WATER DEMANDS

The water supplied to the underground is sourced from the WTP permeate water and 50% of the underground demand is lost and 50% is returned back to the mine water management system.

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Based on underground consumption estimates, the underground water demand requires a supply of approximately 17 L/s of suitable quality water to the underground workings. On this basis, the total underground water demand is estimated to be approximately 525 ML/year.

Suspended solids load will be removed from the underground water supply by means of in line filters fitted with a back-flush cleaning. Back-flush water and associated sediment will be contained within the water management system.

5.6 OTHER WATER LOSSES

Evaporation estimates for open water bodies (including dams) were based on evaporation data for the area obtained from the SILO data service. Surface areas for the dams have been determined based on as-constructed drawings and topographical data (for existing storages) and conceptual design plans (for proposed dams).

Water losses associated with potential seepage from water dams is assumed to be negligible in terms of the overall site water balance and has therefore not been modelled. This assumption is supported by the fact that the construction of emergency tailings dams, mine infrastructure dams, groundwater storages and treatment dams will comply with a permeability standard that is the equivalent of $<1 \times 10^{-9}$ m/s (Section 4).

6 WATER DISPOSAL

6.1 WASTEWATER EFFLUENT DISPOSAL

Wastewater from offices, workshop and bath houses is collected and treated in on-site effluent treatment systems located near the Open cut offices, CHPP Offices, Underground MIA and Administration Offices. Effluent disposal is undertaken in accordance with EPL 12932. Any additional effluent sites installed for expanded operations will be appropriately licensed.

6.2 LICENSED DISCHARGES

MCO has the ability to discharge water into the Goulburn River Diversion and Moolarben Creek from three licensed discharge points (Goulburn River Diversion discharge point, Dam 106 and Dam 202) in accordance with EPL 12932.

EPL 12932 and Project Approval (05_0117) permit a maximum discharge of 10 ML/day from the Goulburn River Diversion discharge point for the majority of the MCC life, 20 ML/day during mining operations in UG4, and the release of a combined volume greater than 15 ML/day during prolonged wet periods with the approval of the EPA.

MCO is also permitted to allow stormwater discharge from additional locations in accordance with EPL 12932.

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All discharges will be undertaken in accordance with the conditions in EPL 12932 and Condition 31, Schedule 3 of Project Approval (05_0117) and Condition 27, Schedule 3 of Project Approval (08_0135).

Further information on licensed discharges is detailed in Section 7.3 of the SWMP.

6.3 OTHER DISPOSAL

MCO and Wilpinjong Coal Mine will continue to liaise regarding opportunities for physical water sharing between the operations. Where reasonable and feasible, water will be shared between the sites.

MCO and Energy Corporation of NSW's (EnergyCo) will contemplate potential water sharing during the construction of the approved electricity transmission lines for the Central West Orana (CWO) renewable Energy Zone (REZ) Transmission Project in accordance with the Stage 1 (05_0117) and Stage 2 (08_0135) Project Approvals.

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7 WATER SOURCES

Sources of water supply to the MCC are summarised in decreasing order of priority:

- Groundwater inflows to open cut and underground mining operations;
- Runoff captured from the footprint of the mining disturbance area by the water management system;
- Groundwater extracted from advanced underground dewatering;
- Mine water imported from the Ulan Mine Complex under agreement with UCML; and
- Groundwater extracted from production bores.

Operational water supply is reviewed monthly, collating all groundwater extractions, in-pit rainfall accumulation and runoff, as well as imported water to inform on-site water management. Water will be sourced based on the supply hierarchy with consideration given to water quality requirements.

MCO will manage the available water sources and, if necessary, adjust the scale of operations to match the available water supply (in accordance with Condition 29, Schedule 3 of Project Approval [05_0117]). Where practical, preference will be given to water captured on-site and sourced from surplus supplies at adjoining mines.

7.1 GROUNDWATER INFLOWS

Open cut and underground mining within the MCC may intercept saline groundwater aquifers. To maintain safe mining operations all of the groundwater that accumulates within mining pits will need to be pumped to surface storages and will be re-used in mining operations. **Table 6** summarises the predicted total groundwater inflows from the groundwater model undertaken by AGE (2023).

Table 6: Predicted Groundwater Inflows

Site Water Balance Model Stage	Year	Total Groundwater Inflows (ML/year)
1	2025	4,071
	2026	3,025
2	2027	3,466
	2028	3,580
	2029	2,190
3	2030	1,905
	2031	1,274
	2032	1,200

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7.2 RUNOFF AND DIRECT RAINFALL

As described in Section 4 of the SWMP, as far as practically possible, clean water runoff from up catchment areas is diverted around active mining and other disturbance areas. Diversion design will consider catchment extent, required disturbance and safety. Water that accumulates within mining pits will be pumped to surface storages for re-use in the mining operations and CHPP. **Table 7** summarises the predicted runoff and direct rainfall for current MCC operational areas for dry, median and wet climatic conditions, averaged over the water balance modelling period.

Table 7: Predicted Runoff and Direct Rainfall

Open Cut Mining Area	Average Annual Surface Water Inflows (Dry Climatic Conditions) (ML/year)	Average Annual Surface Water Inflows (Median Climatic Conditions) (ML/year)	Average Annual Surface Water Inflows (Wet Climatic Conditions) (ML/year)
OC3	108	134	242
OC4	655	1,005	1,274

7.3 WATER SHARING

Where practical, MCO seeks to share surplus mine water from other mines. MCO has an agreement with UCML for the supply of 1,000 ML/year of surplus mine water from its operations. The volume of water sourced externally under the UWSA (or from dewatering/production bores) will be managed to the available on-site storage capacity. Transferred water can be saline and is therefore treated as mine water.

7.4 PUMPING FROM LICENSED GROUNDWATER SOURCES

Supplementary water supply during dry years may be sourced from licensed dewatering bores from advanced dewatering of the UG4 mine (**Figure 10**). The borefield water supply system may comprise of pumps, pipelines, storage dams and tanks to extract and store groundwater. Groundwater will be drawn from these bores on an as need basis.

Each production bore will be equipped with a meter to measure the volume of water extracted. These meters will be maintained in good working order and calibrated in accordance with the *NSW Non-urban Water Metering Policy* (NSW Department of Planning, Industry and Environment, 2025). All water extracted from these bores will be monitored with the volumes reported in the Annual Review.

In addition, MCO is reviewing the feasibility of the installation of opencut dewatering bores, in the OC4 mining areas prior to opencut mining, to assist with dewatering saturated overburden material.

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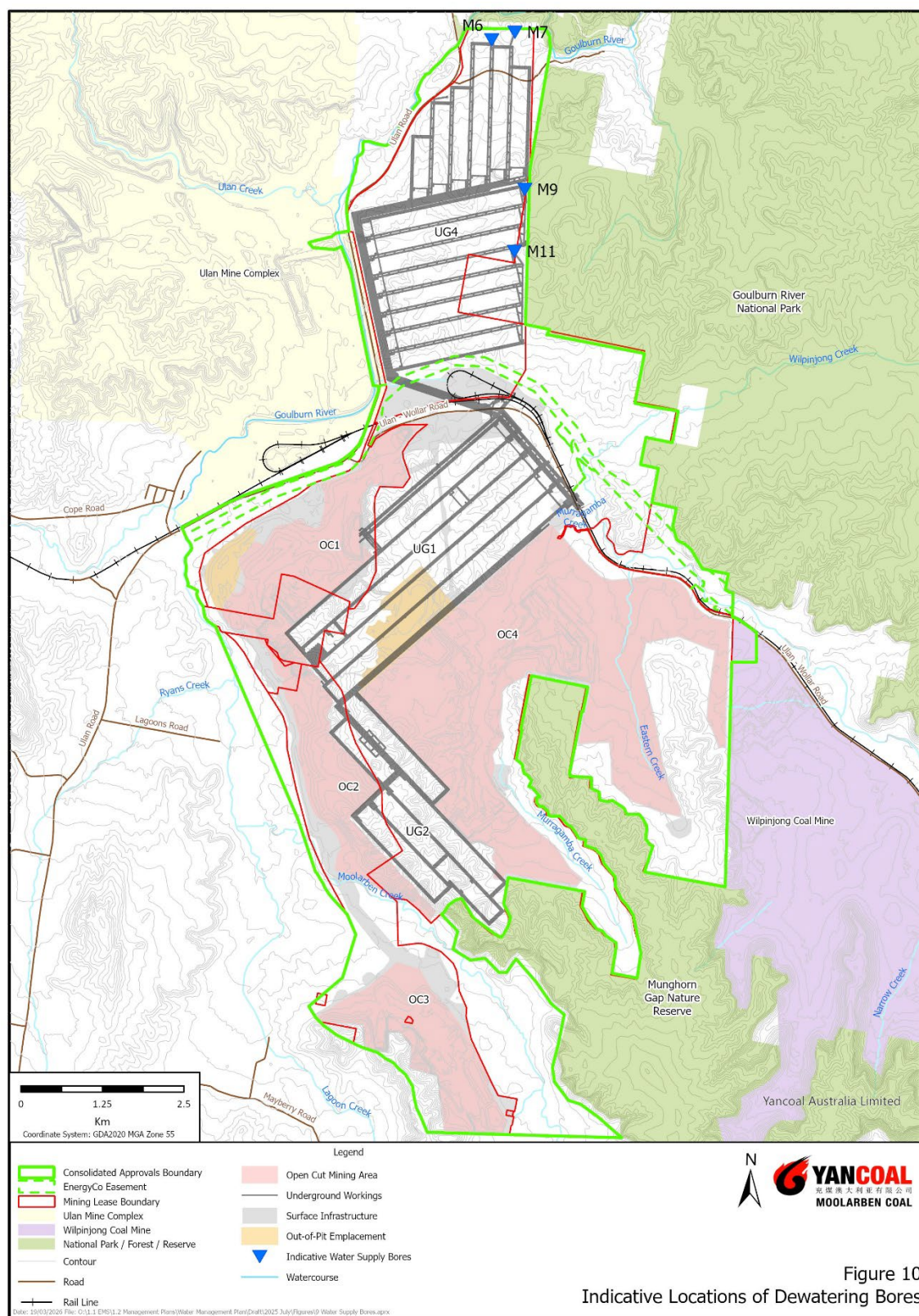


FIGURE 10: INDICATIVE DEWATERING LOCATIONS

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8 WATER BALANCE MODEL CONFIGURATION AND ASSUMPTIONS

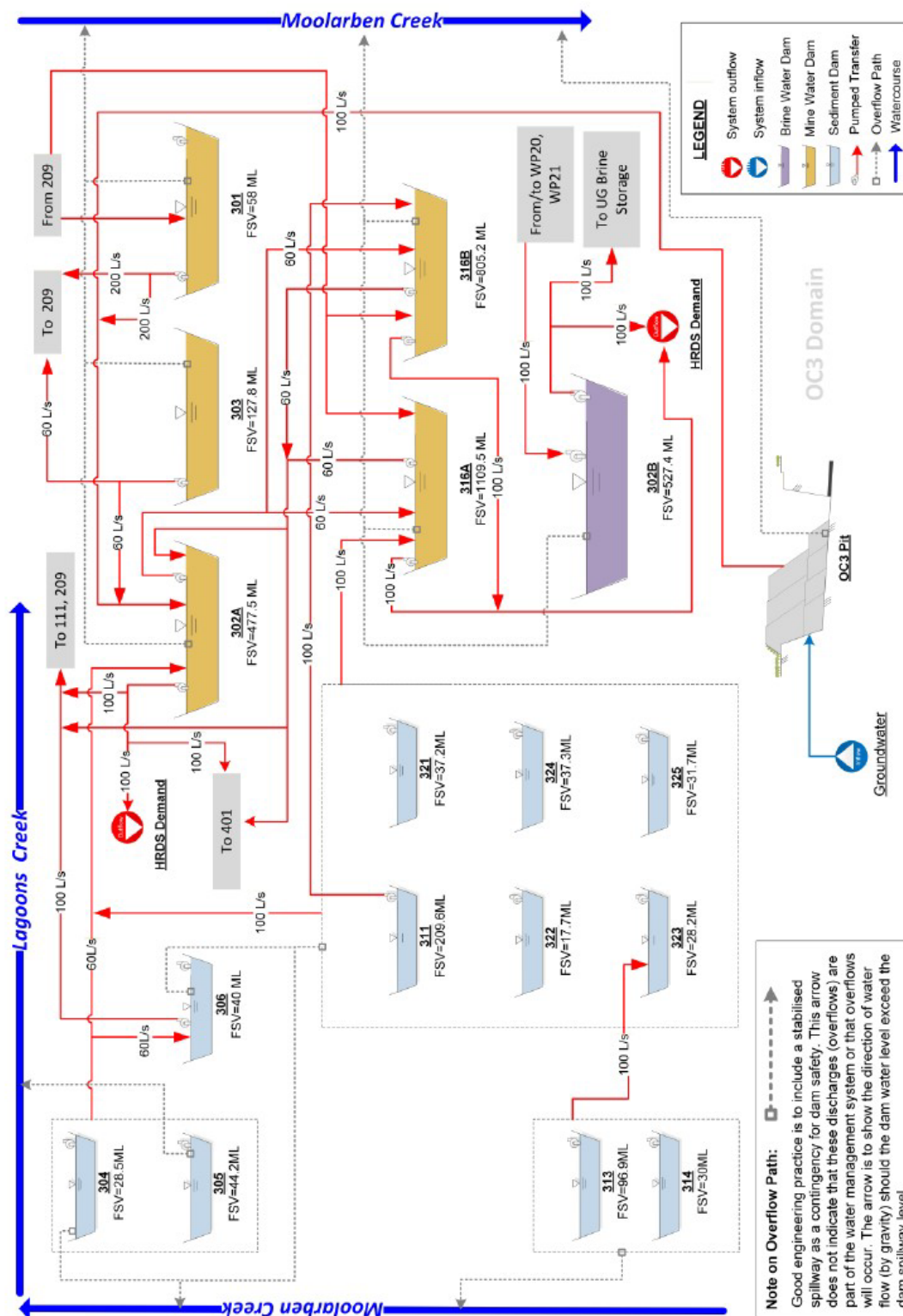
8.1 OVERVIEW

A water balance model of MCC has been developed, using the GoldSIM modelling software package. The model was developed by WRM (2017) as part of the *Moolarben Coal Complex Open Cut Optimisation Modification Site Water Balance and Surface Water Assessment* and refined as part of this SWB. The GoldSIM model is used by suitably qualified and experienced consultants to provide advice on the water balance impacts of future site development. A summary of the existing and proposed system operating rules and assumptions are provided in **Attachment 3**. The GoldSIM model is reviewed in accordance with the provisions described in **Section 4** of this report.

Area Managers are responsible for the operation and maintenance of water infrastructure (e.g. pumping requirements) in consultation with the Environment and Community Advisors.

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The general water management system schematics for MCO are shown in 11,



, Figure 13

and .

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8.2 WATER MANAGEMENT SYSTEM STAGING

The refined water balance model was configured to represent the changing characteristics of the water management system over the modelled period. This included changes in contributing catchment areas draining to the various mine site storages, as well as varying groundwater inflows, coal production rates and site water demand.

Three stages of mine development were modelled to reflect variations over time. These modelling stages are summarised in **Table 8**. Although the catchment areas will continuously change as mining progresses, the adopted approach of modelling discrete stages will provide a reasonable representation of conditions over the 7 year period.

Staged mine plans for each Representative Mine Phase over the modelled period are included in **Attachment 2**.

Table 8: Moolarben Coal Complex Model stages

Representative Mine stage	Applied Range of Mine Life	Stage Duration
1	Oct 2025 - Dec 2026	1.25 years
2	Jan 2027 - Dec 2029	3 years
3	Jan 2030 - Dec 2032	3 years

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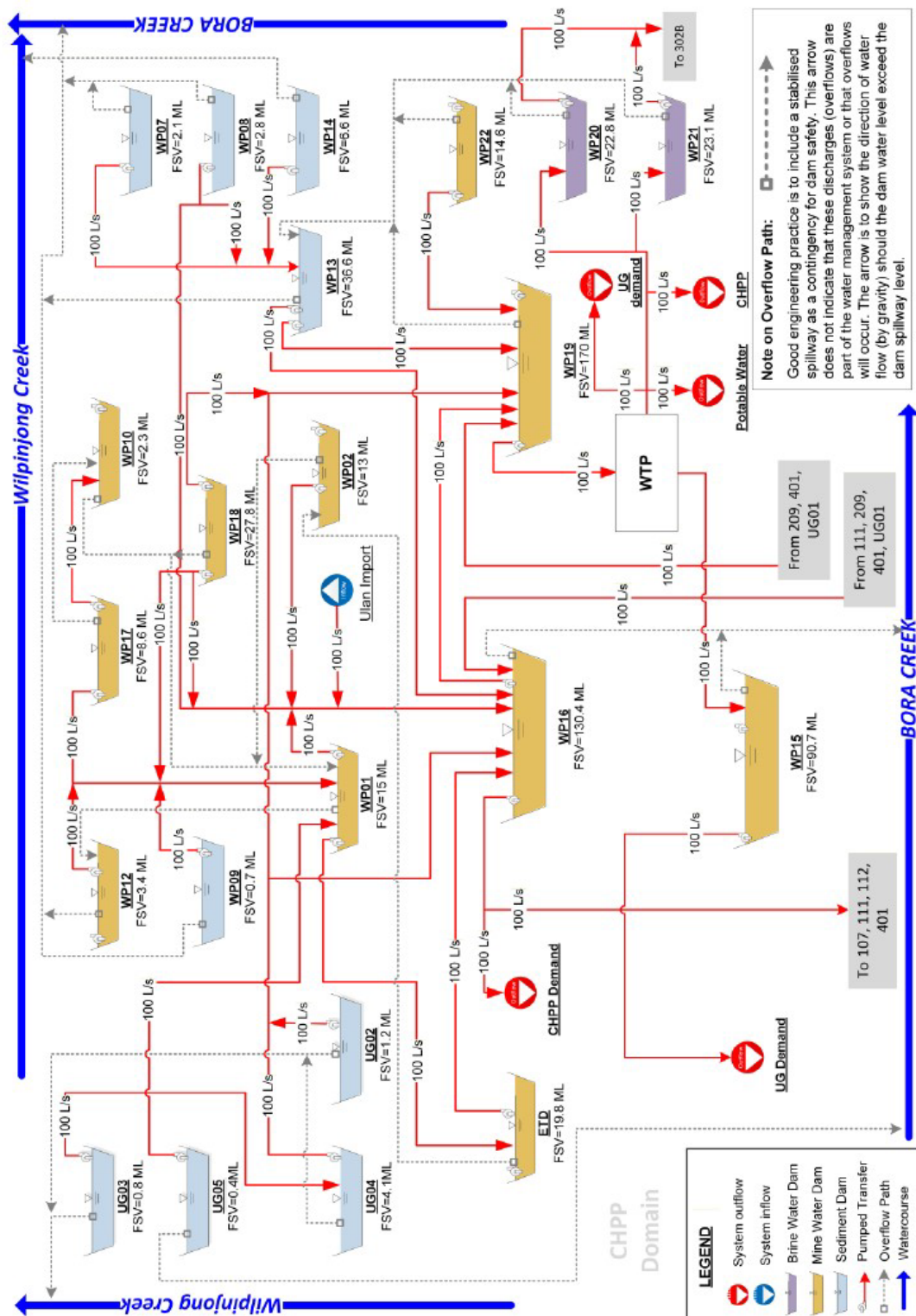


Figure 11: Water management schematic – CHPP

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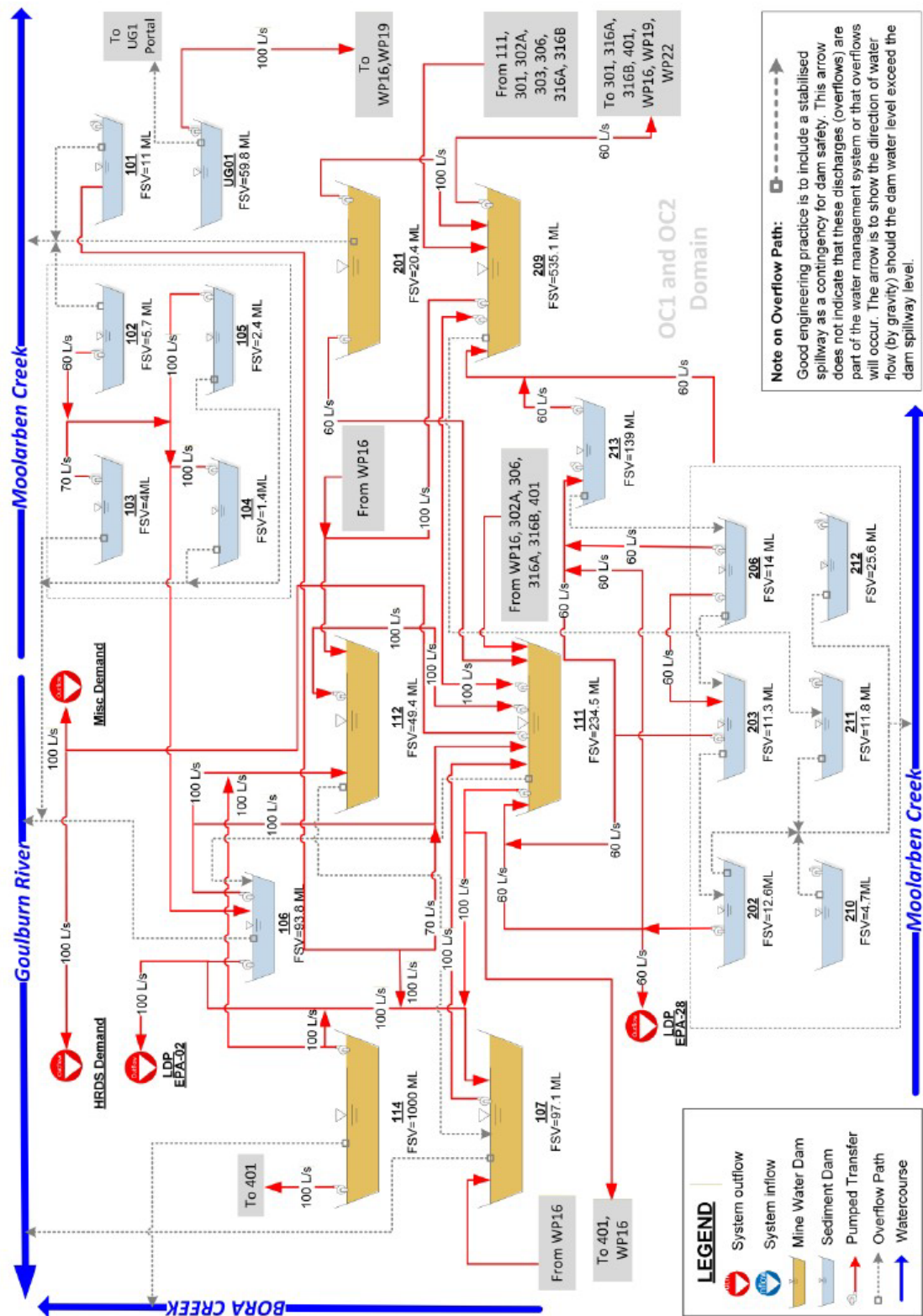


Figure 12: Water management schematic – OC1/OC2

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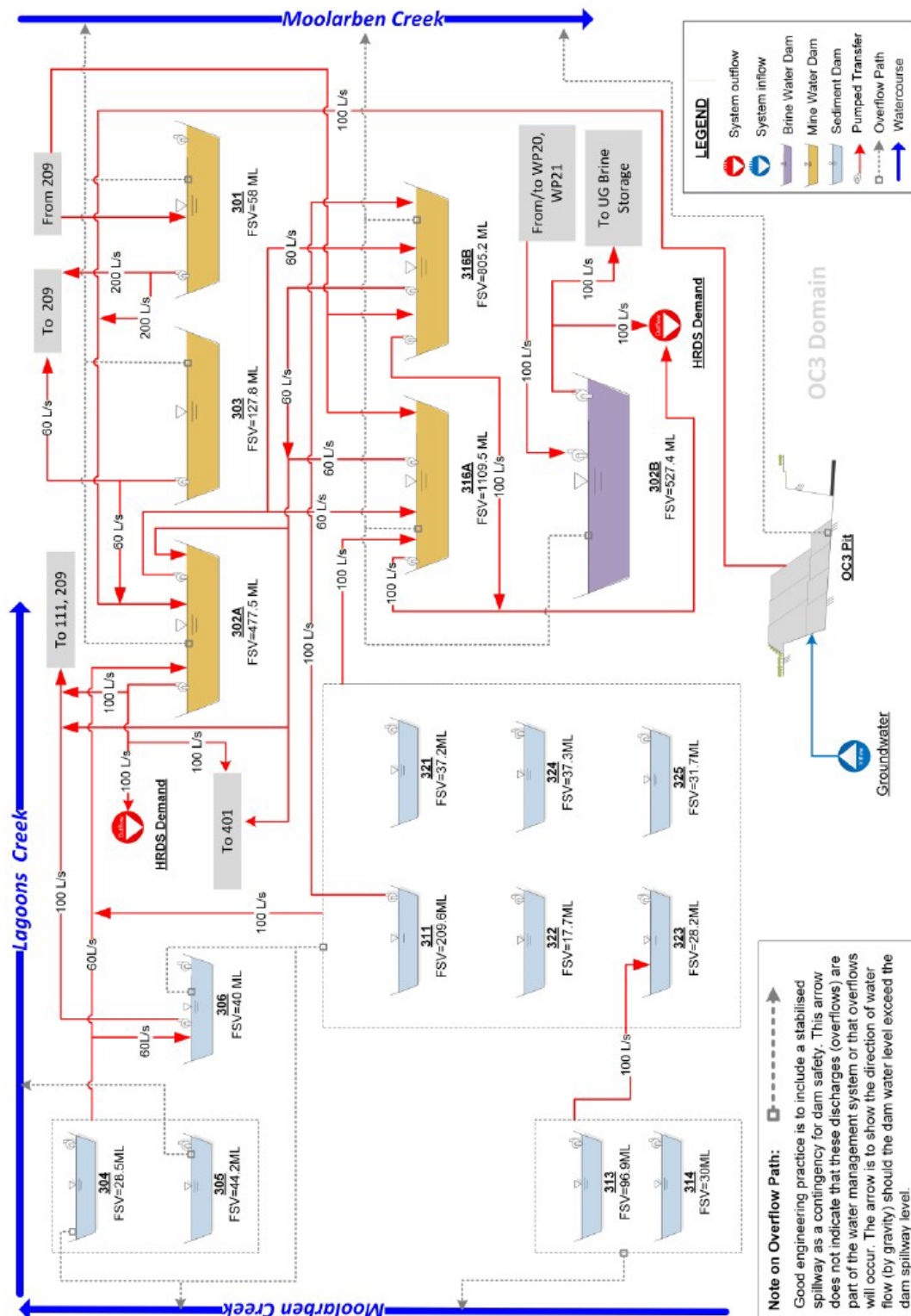


Figure 13: Water management schematic OC3

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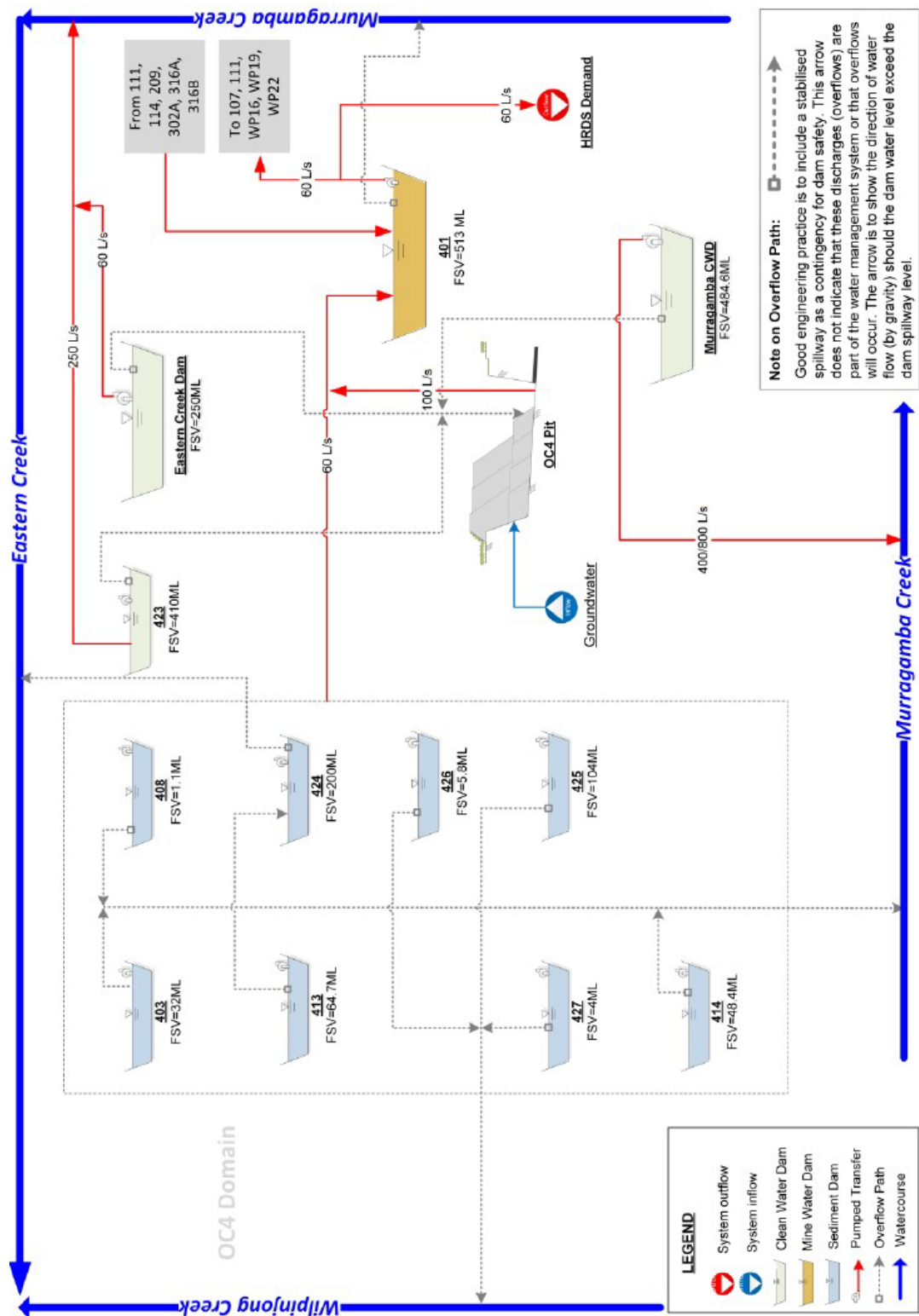


Figure 14: Water management schematic – OC4

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8.3 WATER MANAGEMENT SYSTEM OPERATING ASSUMPTIONS

Detailed water management system operating assumptions are documented in **Attachment 3: Water Management System Operating Rules**.

8.4 SIMULATION OF CATCHMENT RUNOFF

Catchment runoff inflows to the mine water management system are modelled using the Australian Water Balance Model (AWBM) rainfall-runoff model. Catchments across the site are characterised into the following land use types:

- natural;
- hardstand;
- open cut mining area (active pit);
- overburden emplacement area (spoil); and
- rehabilitated overburden emplacement area.

The AWBM model for natural/undisturbed catchments (i.e. not disturbed by mining) has been calibrated against available stream flow data at the following four locations:

- Moolarben Creek at Moolarben Dam;
- Moolarben Creek at Ulan Road (gauge no. MOOL001);
- Bora Creek at Ulan Road (gauge no. MOOL002); and
- Wilpinjong Creek at Red Hill (gauge no. MOOL003).

The calibrated AWBM parameters for the four locations differed significantly. The most suitable parameter set was determined by undertaking a calibration of the GoldSIM model against modelled and observed combined site inventory over a six month period. The results of the GoldSIM model calibration showed that the Bora Creek catchment model parameters produced the best match between modelled and observed combined site inventory.

Whilst it is recognised that a small proportion (less than 20%) of the Bora Creek catchment was disturbed during the calibration period, it is considered representative of a natural catchment for modelling purposes. Hence, the Bora Creek catchment model parameters were adopted for natural/undisturbed catchments (shown in **Table 9**).

Figure 15 and **Figure 16** show predicted and recorded daily runoff and flow duration curves for Bora Creek at Ulan Road. **Figure 17** compares modelled and observed combined site inventory using the adopted AWBM parameters for August 2021 to July 2022. The model was calibrated to observed site inventory using site rainfall data. The model calibration results show the adopted AWBM parameters are appropriate.

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Model parameters for pit, hardstand and stockpile catchments were adopted based on previous experience with GoldSIM modelling on these types of catchments. Model parameters for spoil catchments were adopted from a previous study of runoff from disturbed mine catchments in the Hunter Valley region (ACARP, 2001). Natural/undisturbed catchment AWBM parameters were adopted for rehabilitated spoil catchments. Model parameters for the various catchment types are summarised in **Table 9**.

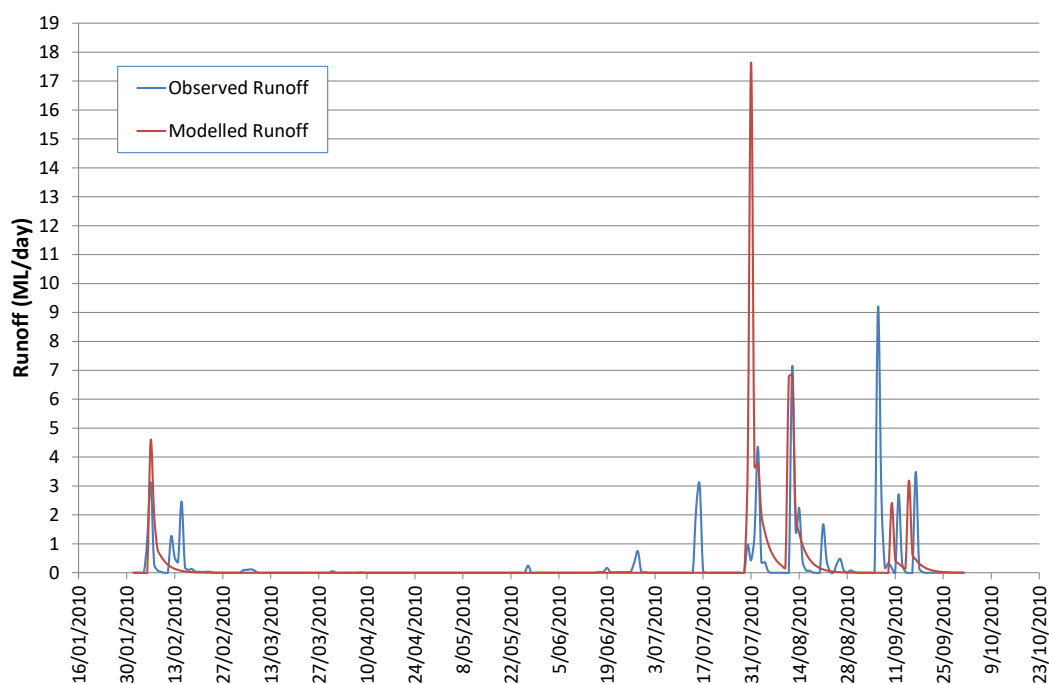


Figure 15: Comparison of Modelled and Observed Daily Runoff, Bora Creek at Ulan Road

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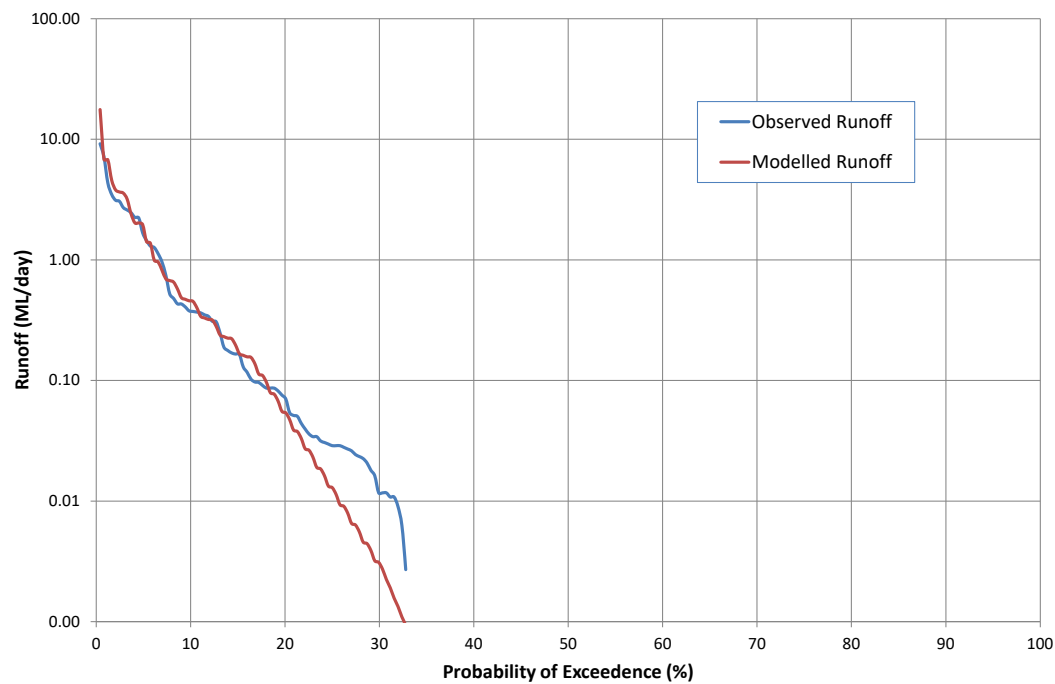


Figure 16: Comparison of Modelled and Observed Flow Duration Curves, Bora Creek at Ulan Road

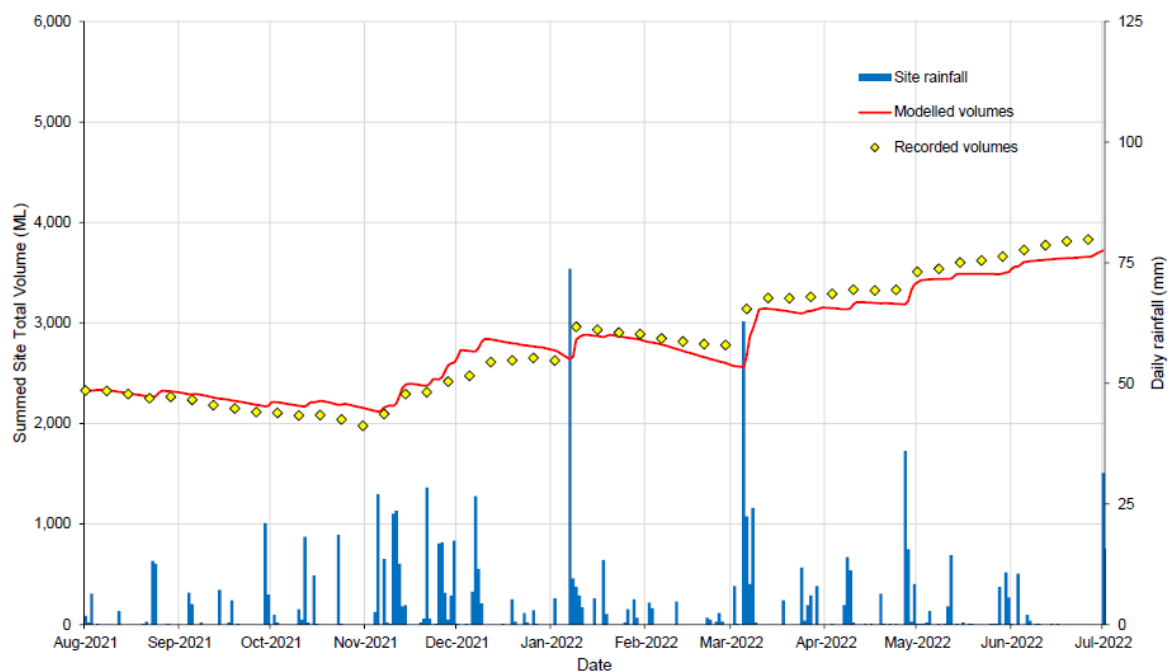


Figure 17: Comparison of Modelled and Observed Combined Site Inventory, 2021/2022

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Table 9: Adopted AWBM Parameters

Parameter	Natural/ Undisturbed	Roads/Industrial/ Hardstand	Mining Pit	Unrehabilitated Spoil	Rehabilitated Spoil	Cleared
A1	0.2	0.3	0.3	0.3	0.2	0.3
A2	0.2	0.2	0.2	0.2	0.2	0.2
A3	0.6	0.5	0.5	0.5	0.6	0.5
C1	90	2	3	10	90	4
C2	170	30	12	100	160	25
C3	200	200	70	350	250	220
BFI	0.55	0	0	0.2	0.6	0
Kb	0.7	0	0	0.7	0.7	0
Ks	0	0	0	0	0	0
Long term volumetric runoff co- efficient	2.3%	22.5%	29.7%	13.7%	2.0%	5.7%

8.5 OVERALL WATER BALANCE

The water balance model is run for 129 climatic realisations, based on historical rainfall data. The results presented are the average of all realisations and will include wet and dry periods distributed throughout the mine life (WRM Water & Environment, 2026). Water balance results for all modelled realisations are presented in **Table 10**, averaged over the years within the stages of mine life (**Table 8**). The results show inflows, outflows and overall water balance for each of the mine stages for a representative climate sequence. It should be recognised that the following items are subject to climatic variability:

- rainfall runoff;
- evaporation;
- mine water imported from UCML;
- external water requirements; and
- licensed site releases (including licensed sediment dam spills).

Rainfall yield for each phase is affected by the variation in climatic conditions within the adopted climate sequence.

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Water management contingencies include the storage of additional water on-site, reducing the water sourced externally during extended wet periods and sourcing additional water from neighbouring mines or ground water during dry periods. Additional contingencies and response measures are discussed in **Section 6** and **Section 7** of the SWMP.

Table 10: Average Annual Water Balance

Average Annual Water Balance			
Description	Stage 1 Oct 2025 - Dec 2026	Stage 2 Jan 2027 - Dec 2029	Stage 3 Jan 2030 – Dec 2032
Inflows (ML/a)			
Rainfall Runoff	2,501	2,619	2,985
Groundwater Inflows	3,650	3,217	1,623
Ulan Coal Water Import*	0	0	163
Total Inflows	6,150	5,835	4,771
Outflows (ML/a)			
Evaporation	737	768	706
Sediment Water Release (overflows offsite) †	33	44	39
Haul Road Dust Suppression demand	1,270	1,228	1,390
CHPP Demand	1,279	1,279	1,274
Underground Demand	262	262	262
Potable Demand	182	182	182
Controlled release† (RO plant release)	1,507	1,819	952
Brine to Underground Storage	0	9	6
Miscellaneous Water Demand	156	156	155
Total Outflows	5,427	5,749	4,966
Change in volume (ML/a)			
Change in Site Water Inventory	724	87	-195

* The volume of water sourced externally under the UWSA (or from dewatering/production bores) will be managed to the available on-site storage capacity.

† EPL 12932 permits up to 20ML/day of controlled water release from licensed discharge points. While water sourced externally will be managed to the available on-site storage capacity, the ability for MCO to discharge under licence provides a contingency for managing surplus water (of a suitable quality) in the event storage capacity becomes constrained as a result of intensive or prolonged rainfall conditions.

The water balance results for three selected climate realizations, representing low (90%ile), median (50%ile) and high (10%ile) rainfall and runoff scenarios, are presented in **Table 11**.

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Table 11: Climate Sensitivity Water Balance

Water Balance – Climate Sensitivity			
Description	Low Rainfall (90 th %ile)	Median Rainfall (50 th %ile)	High Rainfall (10 th %ile)
Inflows (ML/a)			
Rainfall Runoff	1,822	2,731	3,734
Groundwater Inflows	2,634	2,634	2,634
Ulan Coal Water Import	33	28	71
Gross Water Input	4,489	5,394	6,440
Outflows (ML/a)			
Description	Low Rainfall (90 th %ile)	Median Rainfall (50 th %ile)	High Rainfall (10 th %ile)
Evaporation	611	711	796
Sediment Water Release (overflows offsite)	8	13	82
Haul Road Dust Suppression Demand	1,240	1,391	1,269
CHPP Demand	1,280	1,280	1,273
Underground Demand	262	262	262
Potable Water Demand	183	183	182
Controlled release (RO plant release)	716	1,286	2,064
Brine to Underground Storage	0	0	3
Miscellaneous water demand	156	156	156
Total Output	4,456	5,282	6,087
Change in Volume (ML/a)			
Change in Site Water Inventory	33	111	352

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9 REVIEW AND IMPROVEMENT OF ENVIRONMENTAL PERFORMANCE

9.1 ANNUAL REVIEW

Annual Review reporting and revision protocols are described in Section 4 of the WAMP.

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11 DEFINITIONS

CHPP	Coal Handling and Preparation Plant
EA	Environmental Assessment
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i> , the primary legislation for the regulation of land use, planning and development within NSW
EPL	Environment Protection Licence
Incident	A set of circumstances that causes or threatens to cause material harm to the environment and/or breaches or exceeds the limits or performance measures/criteria in the Part 3A Approval
MCO	Moolarben Coal Operations Pty Limited
MIA	Main Infrastructure Area
ML	Megalitre
MOP	Mining Operations Plan
Mt	Million tonnes
OC	Open Cut
POEO Act	<i>NSW Protection of the Environment Operations Act 1997</i> , principal piece of legislation governing environmental protection in NSW
ROM	Run of Mine coal
UCML	Ulan Coal Mines Limited
UWSA	Ulan Water Sharing Agreement
UG	Underground
WAMP	Water Management Plan (in relation to the Moolarben Coal Project - this Plan)

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ATTACHMENT 1: PROJECT APPROVAL (05_0117) AND (08_0135) RECONCILIATION

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Table A-1: Site Water Balance Requirements in Project Approvals (05_0117 and 08_0135)

NSW Project Approval Condition	SWB Section
Water Management Plan 33 (b) and 29 e) in addition to the standard requirements for management plans (see condition 3 of Schedule 6), this plan must include a: (i) <u>Site Water Balance</u> that: - includes details of: - sources and security of water supply, including contingency planning for future reporting periods; - water use and management on site, including details of water sharing between neighbouring mining operations; - reporting procedures, including the preparation of a site water balance for each calendar year; - describes the measures that would be implemented to: - minimise clean water use on site; - maximise water sharing with the other mines in the region; ...	Section 7 Sections 4 to 7 Section 8 Section 4 Section 7.3

Table A-2: Management Plan Requirements Project Approval (08_0135)

NSW Project Approval Condition	SWB Section
3. The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include: (a) detailed baseline data; (b) a description of: - the relevant statutory requirements (including any relevant approval, licence or lease conditions); - any relevant limits or performance measures/criteria; - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures; (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria; (d) a program to monitor and report on the: - impacts and environmental performance of the project; - effectiveness of any management measures (see c above); (e) a contingency plan to manage any unpredicted impacts and their consequences;	Section 3 Section 2 and Attachment 1 WAMP WAMP WAMP WAMP WAMP

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NSW Project Approval Condition	SWB Section
<i>(f) a program to investigate and implement ways to improve the environmental performance of the project over time;</i>	Section 9
<i>(g) a protocol for managing and reporting any:</i> <i>• incidents;</i> <i>• complaints;</i> <i>• non-compliances with statutory requirements; and</i> <i>• exceedances of the impact assessment criteria and/or performance criteria; and</i>	WAMP
<i>(h) a protocol for periodic review of the plan.</i>	Section 9

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ATTACHMENT 2: WATER MANAGEMENT SYSTEM – INDICATIVE STAGE PLANS

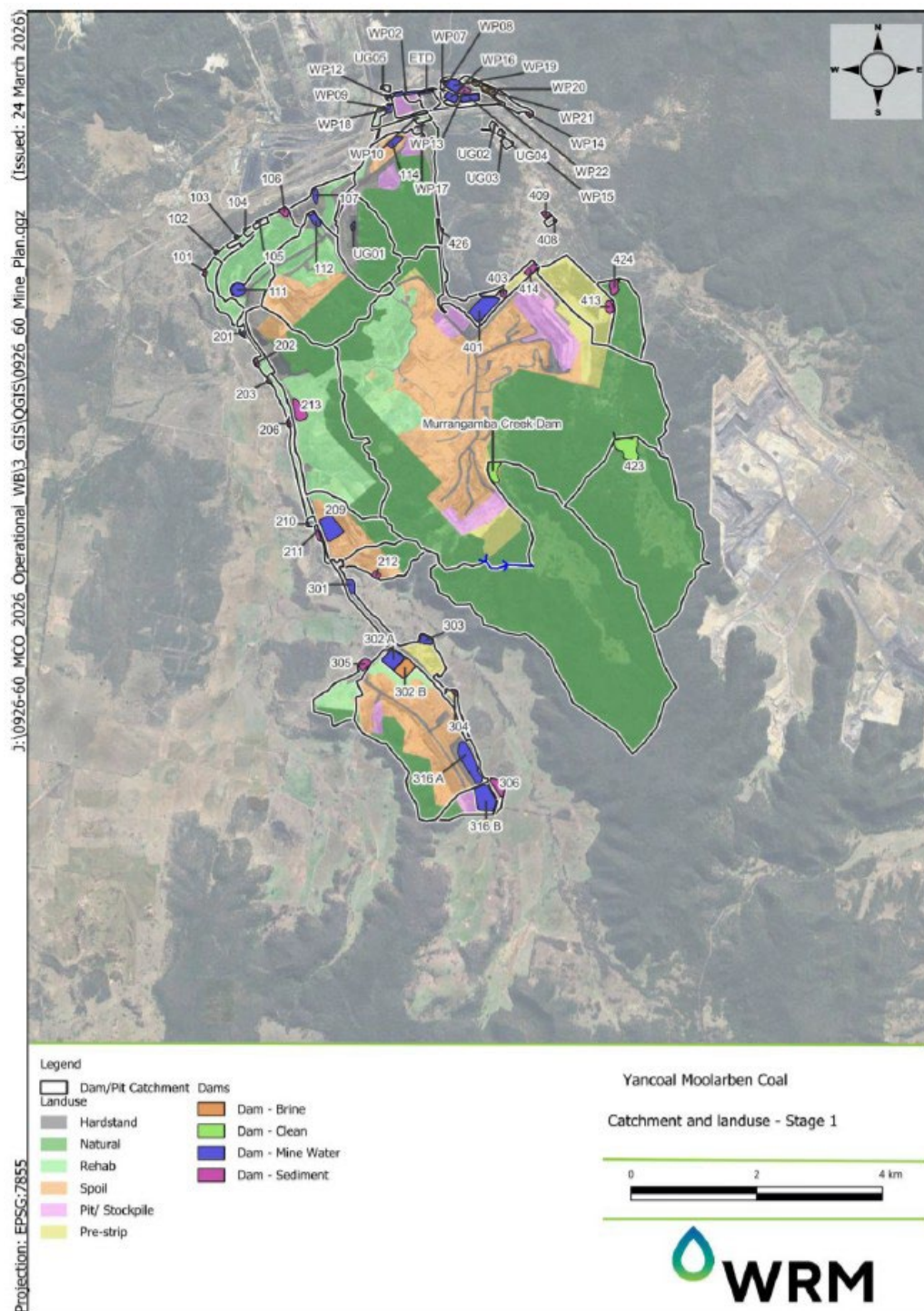


Figure 18 – MCO Stage 1 Catchment -and Landuse Plan

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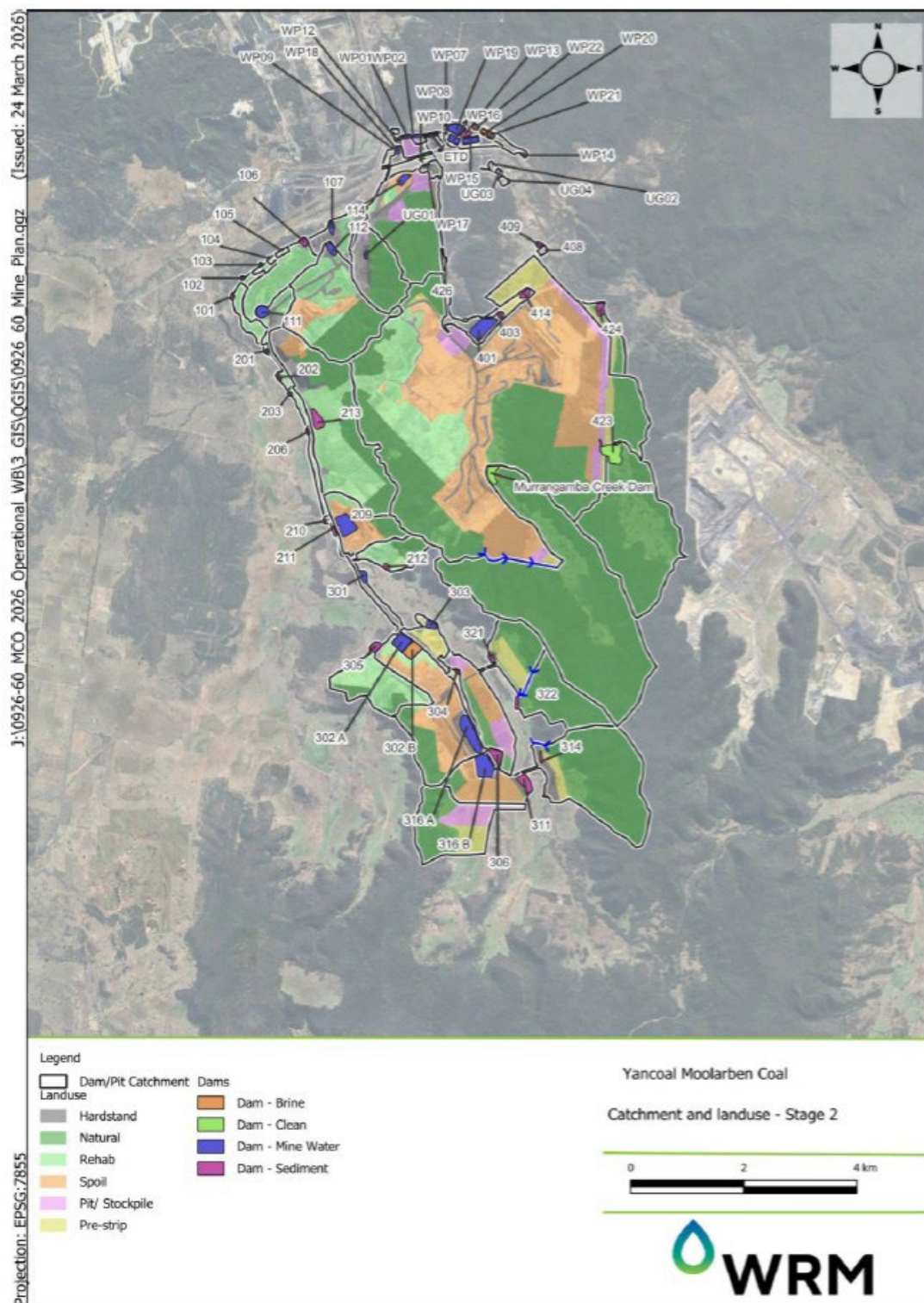


Figure 19 – MCO Stage 2 Catchment -and Landuse Plan

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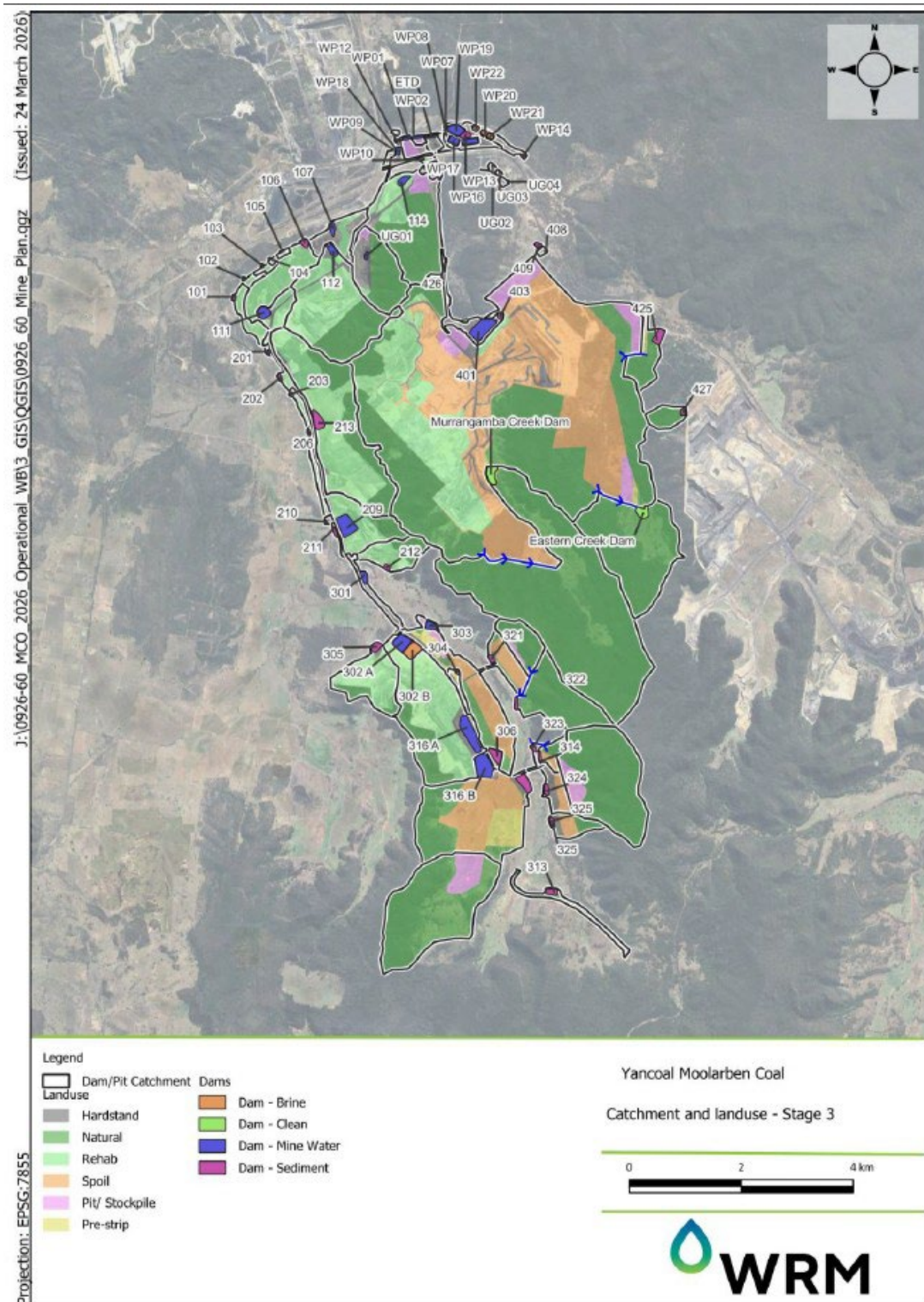


Figure 20 – MCO Stage 3 Catchment -and Landuse Plan

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ATTACHMENT 3: WATER MANAGEMENT SYSTEM OPERATING RULES

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The modelled water management system assumptions are summarised in the table below. Actual water management practices on-site may change as mining progresses. The overflows described in the table below represent stabilised spillways designed as a contingency for dam safety and do not indicate that these discharges or overflows are part of normal water management system operating practice.

Table A-3: Water Management System Operating Assumptions and Approval Requirements

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Water management domain	Node Name	Type	Pumps to	Receives	Overflows	Approval requirements
CHPP	UG02	Sediment	WP16, WP19	Catchment inflows from disturbed areas.	Wilpinjong Creek	None – excluded works exemption
	UG03	Sediment	UG04	Catchment inflows from disturbed areas.	Wilpinjong Creek	None – excluded works exemption
	UG04	Sediment	WP16, WP19	- Catchment inflows from disturbed areas. - Pump transfers from UG03.	Wilpinjong Creek	None – excluded works exemption
	UG05	Sediment	WP01	Catchment inflows from disturbed areas.	Bora Creek	None – excluded works exemption
	WP01	Mine water	ETD ¹ , WP16	- Catchment inflows from product stockpile. - Overflow from WP02, WP10. - Pump transfers from WP09, WP12, WP17, WP18, UG05	WP12	None – excluded works exemption
	WP02	Mine water	WP16	Overflow from ETD and CHPP.	WP01	None – excluded works exemption
	WP07	Sediment	WP13	Catchment inflows from disturbed areas.	Bora Creek	None – excluded works exemption
	WP08	Sediment	WP13, WP16	Receives catchment inflows from disturbed areas.	Bora Creek	None – excluded works exemption
	WP09	Sediment	WP01	Receives catchment inflows from Project Admin area and car park	Bora Creek	None – excluded works exemption

¹ ETD – Emergency Tailings Dam

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Water management domain	Node Name	Type	Pumps to	Receives	Overflows	Approval requirements
	WP10	Mine water		- Catchment inflows from ROM area and Rejects bin. - Overflow from WP17. - Pump transfers from WP17.	WP01	None – excluded works exemption
	WP12	Mine water	WP01	- Catchment inflows from disturbed areas - Overflow from WP01	Bora Creek	None – excluded works exemption
	WP13	Sediment	WP16, WP19	- Catchment inflows from disturbed and undisturbed areas - Pump transfers from WP07, WP08, WP14 - Overflow from WP19, WP20, WP21, WP22	Bora Creek	None – excluded works exemption
	WP14	Sediment	WP13	Catchment inflows from disturbed areas	Wilpinjong Creek	None – excluded works exemption
	WP15	Mine water	UG Demand	Pump transfers from Water Treatment Plant (WTP)	Bora Creek	None – excluded works exemption
	WP16	Mine water	107, 111, 112, 401, WP19, CHPP Demand	Pump transfers from Ulan Coal Mine, ETD, WP01, WP02, WP08, WP13, WP18, 111, 209, 401, UG02, UG04, LOM, UG4, WTP Waste	Bora Creek	None – excluded works exemption
	WP17	Mine water	WP01, WP10	Catchment inflows from ROM area and Reject bin area	WP10	None – excluded works exemption
	WP18	Mine water	WP01, WP16, WP19	Catchment inflows from disturbed areas, WTP	WP01	None – excluded works exemption
	WP19	Mine water	WTP Feed	Pump transfers from WP16, WP18, WP22, UG01, UG02, UG04, UG4, WP13, 209	WP13	None – excluded works exemption

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Water management domain	Node Name	Type	Pumps to	Receives	Overflows	Approval requirements
	WP20	Brine water	302B	Pump transfers from WTP, 302B	WP13	None – excluded works exemption
	WP21	Brine water	302B	Pump transfers from WTP, 302B	WP13	None – excluded works exemption
	WP22	Brine water	WP19	Pump transfers from UG4, LOM, 401, 209	WP13	None – excluded works exemption
	Emergency tailings dam (ETD)	Mine water	WP16	Pump transfers from WP01, CHPP	WP02	None – excluded works exemption
	Water Treatment Plant (WTP)		WP20, WP21, WP15, UG demand, CHPP demand (waste), Potable demand, Licensed discharge point (LDP)	Pump transfers from WP19		N/A
OC1	UG01	Mine water	WP16, WP19	Catchment inflows from disturbed areas	UG1 Portal	None – excluded works exemption
	101	Sediment	107, 111	Catchment inflows from rehabilitated areas	Moolarben Creek	None – excluded works exemption
	102	Sediment	106	Catchment inflows from rehabilitated areas	Moolarben Creek	None – excluded works exemption
	103	Sediment	106	Catchment inflows from rehabilitated areas	Goulburn River	None – excluded works exemption
	104	Sediment	106	Catchment inflows from rehabilitated areas	Goulburn River	None – excluded works exemption
	105	Sediment	106	Catchment inflows from rehabilitated areas	Goulburn River	None – excluded works exemption

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Water management domain	Node Name	Type	Pumps to	Receives	Overflows	Approval requirements
	106	Sediment	107, 111, 112, LDP EPA-02	- Catchment inflows from rehabilitated areas - Pump transfers from 102, 103, 104, 105 - Overflows from 111	Goulburn River	None – excluded works exemption
	107	Mine water	111	- Catchment inflows from disturbed areas and rehabilitated areas - Pump transfers from, WP16, 101, 106, 111, 114, 401 - Overflow from 112	Goulburn River	None – excluded works exemption
	111	Mine water	107, 112, 209, 401, WP16, HRDS ² demand, Misc demand	Pump transfers from 101, 106, 107, 112, 201, 202, 203, 209, 302A, 306, 316A, 316B, WP16	106	None – excluded works exemption
	112	Mine water	111	- Catchment inflows from disturbed areas and open cut wash down bay. - Pump transfer from 106, 111, 114, 209, WP16.	107	None – excluded works exemption
	114	Mine water	107, 112, 401	Catchment inflows from disturbed areas	Bora Creek	None – excluded works exemption
OC2	201	Mine water	111, 209	Catchment inflows from disturbed areas	Moolarben Creek	None – excluded works exemption

² HRDS – Haul Road Dust Suppression

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Water management domain	Node Name	Type	Pumps to	Receives	Overflows	Approval requirements
	202	Sediment	111, 209, 213, LDP EPA-28	- Catchment inflows from the out-of-pit-dump and rehabilitated areas - Overflow from 203	Moolarben Creek	None – excluded works exemption
	203	Sediment	111, 209, 213	- Catchment inflows from the out-of-pit dump and rehabilitated areas - Pump transfers from 206 - Overflows from 206	202	None – excluded works exemption
	206	Sediment	203, 209, 213	- Catchment inflows from the out-of-pit dump & rehabilitated areas - Overflows from 213	203	None – excluded works exemption
	209	Mine water	111, 112, 301, 316A, 316B, 401, WP16, WP19, WP22	- Catchment inflows from disturbed areas - Pumped transfers from 111, 112 201, 202, 203, 206, 210, 211, 213, 301, 302A, 303, 306, 316A, 316B	211	None – excluded works exemption
	210	Sediment	209	Catchment inflows from the out-of-pit dump & rehabilitated areas	Moolarben Creek	None – excluded works exemption
	211	Sediment	209	- Catchment inflows from the out-of-pit dump - Overflows from 209	Moolarben Creek	None – excluded works exemption
	212	Sediment	209	Catchment inflows from disturbed and rehabilitated areas	Moolarben Creek	None – excluded works exemption

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Water management domain	Node Name	Type	Pumps to	Receives	Overflows	Approval requirements
	213	Sediment	209	- Catchment inflows from the out-of-pit dump & rehabilitated areas - Pumped transfers from 202, 203, 206,	206	None – excluded works exemption
OC3	301	Mine water	302A, 209	- Catchment inflows from disturbed areas - Pumped transfers from 209	Moolarben Creek	None – excluded works exemption
	302A	Mine water	111, 209, 316A, 316B, 401, HRDS demand	- Catchment inflows from disturbed areas, & haul road - Pump transfers from OC3 Pit, 301, 303, 304, 305, 316A, 316B, 311, 321, 323, 324, 325	Moolarben Creek	None – excluded works exemption
	302B ³	Brine water	WP20, WP21, HRDS demand	Pump transfers from WP20, WP21	Moolarben Creek	None – excluded works exemption
	303	Mine water	209, 302A	Catchment inflows from disturbed areas	Moolarben Creek	None – excluded works exemption
	304	Sediment	302A, 306	Catchment inflows from disturbed areas	Moolarben Creek	None – excluded works exemption
	305	Sediment	302A, 306	Catchment inflows from rehabilitated areas	Lagoons Creek	None – excluded works exemption
	306	Sediment	111, 209	Pump transfers from 304, 305	Moolarben Creek	None – excluded works exemption
	311	Sediment	302A, 316A, 316B	Catchment inflows from disturbed areas	Moolarben Creek	None – excluded works exemption
	313	Sediment	323	Catchment inflows from undisturbed areas	Moolarben Creek	SSD approval (SSD-33083358)

³ Pumping rules reflective of when Dam 302B is a Brine water dam

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Water management domain	Node Name	Type	Pumps to	Receives	Overflows	Approval requirements
	314	Sediment	323	Catchment inflows from disturbed areas and undisturbed areas	Moolarben Creek	None – excluded works exemption
	316A	Mine water	111, 209, 302A, 401, HRDS demand	Pump transfers from 209, 302A, 311, 321, 323, 324, 325	Moolarben Creek	None – excluded works exemption
	316B	Mine water	111, 209, 302A, 401, HRDS demand	Pump transfers from 209, 302A, 311, 321, 323, 324, 325	Moolarben Creek	None – excluded works exemption
	321	Sediment	302A, 316A	Catchment inflows from disturbed areas	Moolarben Creek	None – excluded works exemption
	323	Sediment	302A, 316A	Pump transfers from 313, 314	Moolarben Creek	None – excluded works exemption
	324	Sediment	302A, 316A	Catchment inflows from disturbed areas	Moolarben Creek	None – excluded works exemption
	325	Sediment	302A, 316A	Catchment inflows from disturbed areas	Moolarben Creek	None – excluded works exemption
	OC3 Pit	Mine Water	302A	- Groundwater inflows at varying rates dependent on mine stage - Stormwater runoff from disturbed and undisturbed areas	Moolarben Creek	SSD approval (MP05_0117)
OC4	401	Mine water	107, 111, WP16, WP19, WP22, HRDS demand	- Catchment inflows from disturbed areas, OC4 MIA & conveyor trace - Pump transfers from OC4 Pit, WP16, 114, 302A, 316A, 316B, 423, 424, 425, 426, 427, Eastern Creek Dam	Murragamba Creek	None – excluded works exemption
	403	Sediment	401	Catchment inflows from disturbed areas	Murragamba Creek	None – excluded works exemption

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Water management domain	Node Name	Type	Pumps to	Receives	Overflows	Approval requirements
	408	Sediment	401	Catchment inflows from disturbed areas	Murragamba Creek	None – excluded works exemption
	414	Sediment	401	Catchment inflows from disturbed areas	Murragamba Creek	SSD approval (MP08_0135)
	423 ⁴	Clean water	Murragamba Creek	Catchment inflows from undisturbed areas	OC4 Pit	SSD approval (MP05_0117)
	424	Sediment	401	- Catchment inflows from disturbed areas - Overflow from 413	Eastern Creek	SSD approval (MP05_0117)
	425	Sediment	401	Catchment inflows from disturbed areas	Wilpinjong Creek	None – excluded works exemption
	426	Sediment	401	Catchment inflows from disturbed areas	Wilpinjong Creek	None – excluded works exemption
	427	Sediment	401	Catchment inflows from disturbed areas	Wilpinjong Creek	None – excluded works exemption
	‘Eastern’ Creek Dam	Clean Water	Murragamba Creek	Catchment inflows from undisturbed areas	OC4 Pit	SSD approval (MP08_0135)
	Murragamba Creek Dam (CWD01)	Clean water	Murragamba Creek	Catchment inflows from undisturbed areas	OC4 Pit	SSD approval (MP08_0135)

⁴ With pit progression Dam 423 will be replaced with ‘Eastern’ Creek Dam

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Water management domain	Node Name	Type	Pumps to	Receives	Overflows	Approval requirements
	OC4 Pit	Mine Water	401	- Groundwater inflows at varying rates dependent on mine stage - Stormwater runoff from disturbed and undisturbed areas	Wilpinjong Creek	SSD approval (MP08_0135)

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