Austar Coal Mine Rehabilitation Management Plan

September 2023

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Name of Lease Holder	Austar Coal Mine Pty Limited
Location:	Middle Road, Paxton NSW

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Tenement	**Grant Date**	**Expiry Date**	**Holder**
CCL 728	10/10/1989	30/12/2044	Austar Coal Mine Pty Limited
CCL 752	23/05/1990	30/12/2044	Austar Coal Mine Pty Limited
CML 2	24/03/1993	06/07/2025	Austar Coal Mine Pty Limited
DSL 89 (index title)	04/04/1908	04/04/2030	Austar Coal Mine Pty Limited
ML 1157	08/07/1949	08/07/2028	Austar Coal Mine Pty Limited
ML 1283	13/07/1961	13/07/2042	Austar Coal Mine Pty Limited
ML 1345	23/03/1995	30/12/2044	Austar Coal Mine Pty Limited
ML 1388	02/04/1996	02/04/2038	Austar Coal Mine Pty Limited
ML 1550	24/06/2004	23/06/2025	Austar Coal Mine Pty Limited
ML 1661	22/11/2011	22/11/2032	Austar Coal Mine Pty Limited
ML 1666	25/01/2012	25/01/2033	Austar Coal Mine Pty Limited
ML 1677	23/08/2012	22/08/2032	Austar Coal Mine Pty Limited
MPL 1364	28/10/1968	28/10/2029	Austar Coal Mine Pty Limited
MPL 204	03/02/1916	03/02/2039	Austar Coal Mine Pty Limited
MPL 217	12/04/1916	03/02/2039	Austar Coal Mine Pty Limited
MPL 23	17/05/1909	17/05/2030	Austar Coal Mine Pty Limited
MPL 233	01/08/1916	01/08/2036	Austar Coal Mine Pty Limited
MPL 269	07/12/1917	07/12/2039	Austar Coal Mine Pty Limited
EL 6598	13/07/2006	13/07/2024	Austar Coal Mine Pty Limited
ML1851	16/05/2023	16/05/2044	Austar Coal Mine Pty Limited

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1. INTRODUCTION

This Rehabilitation Management Plan (RMP) has been prepared to satisfy the relevant conditions of Austar's Mining Leases (MLs) as introduced in the Mining Amendment (Standard Conditions of Mining Leases – Rehabilitation) Regulation 2021 under the *Mining Act 1992*. This RMP has been prepared in accordance with the Department of NSW Resources Regulator (RR) *Form and Way - Rehabilitation Management Plan for Large Mines* (RR, 2021) and associated guidelines (refer to **Section 2.1**).

On 26 February 2021, a decision was made by the Yancoal board to transition the Austar Coal Mine from care and maintenance to closure. Austar is currently in the closure planning stage with investigations and studies being undertaken to inform the closure process. This RMP has been prepared based on the current knowledge base and to identify the closure planning activities. The RMP will require an update as closure studies progress, and the specific closure activities and schedules are determined. At this time, the site is focused on planning for closure.

1.1. History of Operations

Austar Coal Mine Pty Limited (Austar), a subsidiary of Yancoal Australia Limited (Yancoal), operates the Austar Coal Mine, a closed underground coal mine located approximately 10 kilometres (km) southwest of Cessnock in the Lower Hunter Valley in NSW. Austar Coal Mine incorporates the former Pelton, Ellalong, Cessnock No. 1 (Kalingo) and Bellbird South Collieries and included coal extraction, handling, processing and rail and road transport facilities.

Pit top facilities are located on Middle Road, Paxton, and the Coal Handling and Preparation Plant (CHPP) is located at Wollombi Road, Pelton. Ancillary infrastructure (including underground dewatering infrastructure, ventilation fans, compressed air, nitrogen, electricity and water supply, and pump stations) are located at 2 Shaft, Dry Creek Rd Ellalong, and the Kalingo Infrastructure Area. Reject emplacement areas are located at the CHPP, Aberdare Extended Colliery and Bellbird Areas 12 and 13. There has been progressive rehabilitation undertaken at the reject emplacement areas.

There is a long history of mining at the Austar Coal Mine with mining operations commencing at the Pelton Colliery in 1916 and the Pelton CHPP constructed in 1960-1961. Underground mining began at the current pit top facilities in 1978 with coal delivered to the Pelton CHPP by an overland conveyor.

In 1998, Pelton and Ellalong Collieries amalgamated with Bellbird South and were renamed Southland Colliery. Southland Colliery was subsequently purchased by Yancoal and renamed Austar Coal Mine in 2004. Given its long history, a significant part of the mine's operational areas is listed under the Heritage provisions of the *Cessnock Local Environmental Plan 2011* (Cessnock LEP) (NSW Parliament, 2011).

Mining is approved under two major project approvals: Bellbird South (DA 29/95) and Stage 3 (PA 08_0111), along with numerous development approvals from Cessnock City Council (refer to **Section 1.2**). Bellbird South consent DA 29/95 expired on 14 February 2022[1] whilst the Stage 3 consent PA 08_0111 expires on 31 December 2030.

[1] Under Schedule 2 Condition 5, DA 29/95 continues to apply in all respects other than to permit the carrying out of mining operations, until the rehabilitation of the site is complete.

Within the Bellbird South Area, mining was completed in Stage 1 (Longwalls A1 and A2), Stage 2 (Longwalls A3-A5a) and Bellbird South Mining Area (Longwalls B2-B6). Within the approved Stage 3 area, mining was completed in Longwalls A7 and A8 only. No mining was undertaken in Longwalls B1 and B7 (Bellbird South Mining Area) or Longwalls A9 to A19 (Stage 3).

On 30 March 2020, the Austar Coal Mine transitioned to care and maintenance, with the cessation of mining and coal processing activities. On 26 February 2021, a decision was made by the Yancoal board to transition the Austar Coal Mine from care and maintenance to closure. Following Yancoal's announcement of permanent mine closure, Austar resourced the Austar Closure Planning Team and commissioned a team of subject matter experts (SMEs) to complete knowledge gap assessments and develop detailed study scopes to inform mine closure.

Austar is currently at the Pre-Feasibility Study stage of mine closure, undertaking technical studies and site investigations to address closure knowledge gaps and scope further works.

Table 1 summarises the history of development at the Austar Coal Mine.

TABLE 1 - HISTORY OF MINING ACTIVITIES AT AUSTAR COAL MINE

Year	Historical Details
1916	Underground mining commenced at Pelton Colliery
1921	Underground mining commenced at Cessnock No.1 (Kalingo) Colliery
1960/1961	Pelton CHPP constructed
1961	Underground mining ceased at Cessnock No.1 Colliery
Late 1960s	Cessnock No. 1 Colliery amalgamated into Pelton Colliery
1978	Underground mining commenced at Ellalong Colliery
1983	Longwall mining commenced at Ellalong Colliery
1992	Underground Mining ceased at Pelton Colliery
1995	Pelton Open Cut Coal Mine established
1998	Ellalong and Pelton Collieries amalgamated with Bellbird South Colliery and renamed Southland Colliery
2003	Spontaneous combustion event in Longwall SL4 and mine was placed on care and maintenance for 18 months
2004	Yancoal purchased Southland Colliery and changed the name to Austar Coal Mine
2006-2013	Production recommenced with Longwall Top Coal Caving in Stage 1 and Stage 2 Bellbird South mining areas under DA 29/95
2014-2015	Longwalls A7 and A8 mined in Stage 3 mining area under PA 08_0111
2016-2020	Longwalls B2-B6 mined in Bellbird South mining area under DA 29/95
2020	Austar Coal Mine enters care and maintenance
2021	Austar Coal Mine transitions to closure

The Austar mining complex includes approximately 10,300 hectares (ha) of sub-surface mining leases and 923 ha of surface leases. It measures approximately 17 km across and 16 km long. As such, for the purposes of closure planning, Yancoal has divided the mining areas at Austar into discrete Closure Management Areas (CMAs), representing key areas of the mine site. The CMAs were assigned to principally align with the geographical surface disturbance areas used to calculate the Rehabilitation Cost Estimate (RCE) for the site and relate to discrete areas rather than activities.

Final land use and mining domains, as specified in the *Form and Way - Rehabilitation Management Plan for Large Mines* (RR, 2021) and associated guidelines, have been defined within each CMA (refer to **Section 2.4.1**).

The CMAs have been adopted for the purpose of this RMP are shown in **Figure 1** and are as follows:

- CMA 1 – Austar Pit Top Facilities;
- CMA 2 – Pelton CHPP;
- CMA 3 – No. 1 Shaft;
- CMA 4 – No. 2 Shaft;
- CMA 5 – Cessnock No.1 Colliery / Kalingo Infrastructure Area;
- CMA 6 – Kitchener Surface Infrastructure Site (SIS);
- CMA 7 – Aberdare Extended Emplacement Area (EEA);
- CMA 8 – Bellbird Areas 12 and 13; and
- CMA 9 – Other.

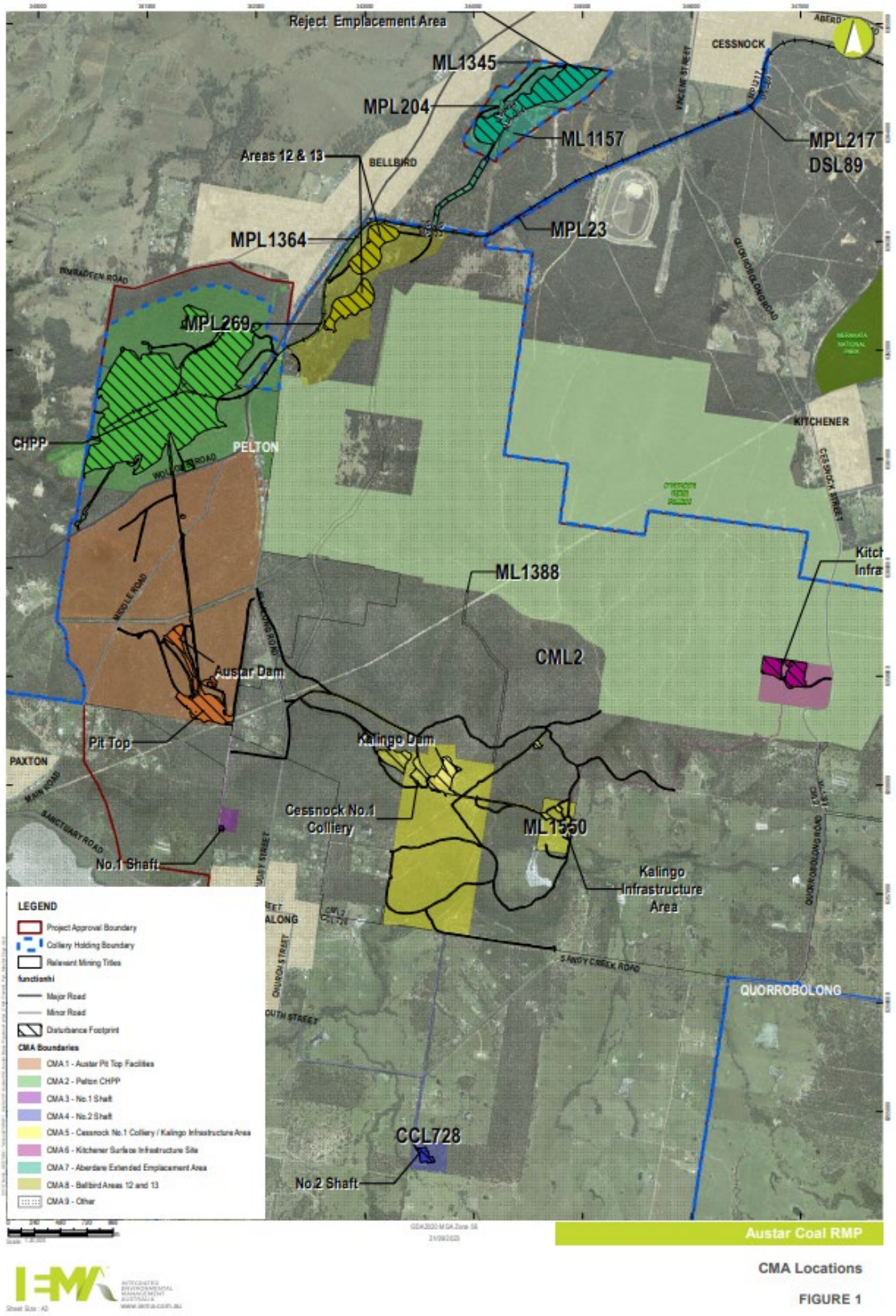


FIGURE 1 - CMA LOCATIONS

A summary of the history of operations within each CMA is provided in **Table 2.**

TABLE 2 - HISTORY OF OPERATIONS

CMA	Description
1 – Austar Pit Top Facilities	CMA 1 incorporates the Austar Pit Top Facilities located off Middle Road, Paxton. The current Austar Pit Top was developed in the 1970's. Production at the Austar Pit Top commenced in 1978 (when it was known as Ellalong Colliery) with coal being delivered by overland conveyor to the Pelton surface facilities (CMA2). Historically, mining was predominantly via bord and pillar mining methods until longwall mining was introduced into Ellalong Colliery in 1983. Operations at the Pit Top continued until March 2020 when Austar transitioned to care and maintenance. CMA 1 comprises the current Pit Top infrastructure including: • Austar's Main Drift; • Coal clearance infrastructure (drift conveyor, a surface bin and overland conveyor to the CHPP); • Offices, bathhouse, workshops, equipment and hydrocarbon storage, and main stores; CMA 1 also includes Austar Dam which receives mine water from the Pit Top by overland flow, and mine dewatering by pipeline from Kalingo Dam. Water from Austar Dam is pumped by pipeline to the CHPP for treatment or disposal. Historic sealed mine entries in CMA 1 include West Drift and the West Pelton Shaft associated with the historic Pelton Colliery. CMA 1 includes a portion of *The South Maitland Railway System, Item ID 1212* heritage listed curtilage.
2 – Pelton CHPP	CMA 2 incorporates the Pelton Coal Handling and Preparation Plant, associated conveyor systems and train loadout facilities located south-west of the township of Bellbird, off Wollombi Road, Pelton. The CHPP is located centrally within the mine facilities and is surrounded by clean and ROM coal stockpiles to the north and west, administration buildings, store and workshops to the south, and a series of mine water dams to the east. A reverse osmosis water treatment plant is also located adjacent the CHPP for treatment of mine water. Two small open cut pits used for overburden and coarse coal reject emplacement are located to the south of the site. Underground mining commenced at Pelton Colliery in 1916 and the Pelton CHPP was constructed in approximately 1960 for the washing of Pelton Colliery coal. Pelton Colliery was amalgamated with the neighbouring Cessnock No.1 Colliery (CMA5) in the late 1960s. Following the development of the Ellalong Colliery in the 1970's, coal was delivered by the overland conveyor from the Ellalong Drift (CMA 1) to the CHPP where the raw coal was washed, processed and stockpiled prior to transport by rail to the Port of Newcastle. Fine tailings were historically stored in tailings dams on site, however in modern times have been disposed to historic underground workings. CMA 2 is located within *The Collieries of the South Maitland Coalfields/Greta Coal Measures, Item ID 1215* heritage listed curtilage and includes a portion of *The South Maitland Railway System, Item ID 1212* heritage listed curtilage.
3 – No.1 Shaft	CMA 3 includes the No 1 Shaft which is located to the south of the Austar Pit Top off Truro Street, adjacent to the township of Ellalong. Development of the site was approved with the Austar Pit Top in the 1970's. The No.1 Shaft connects the surface to the underground workings and is approximately 272m deep. The site was originally an upcast shaft with a ventilation fan. With the completion of the No. 3 Shaft (CMA 5), the No. 1 Shaft is currently used for air intake and as a second egress from the mine.
4 – No.2 Shaft	CMA 4 comprises the No. 2 Shaft and the former Ellalong Pit Top. It is located on Dry Creek Road, Ellalong approximately 4 km to the south-east of Austar Pit Top Facilities.

CMA	Description
	Construction of the No. 2 Shaft and Ellalong Pit Top commenced in the 1980s. The No. 2 Shaft was the entry to Ellalong workings and was constructed for ventilation and mine access. It is approximately 474m deep and 5.4m wide and is currently used for pumping water from the underground to the surface. A pipeline from the No. 2 Shaft facility conveys mine water to Kalingo Dam at the Kalingo Infrastructure Area.
5 – Cessnock No.1 Colliery / Kalingo Infrastructure Area	CMA 5 includes the Cessnock No. 1 Colliery (also known as the Kalingo Colliery), Kalingo Dam, and the Kalingo Infrastructure Area (KIA) to the east. The Cessnock No. 1 Colliery operated from the 1920s until 1961 when it was amalgamated into the Pelton Colliery. This area includes two sealed shafts (Kalingo No.1 and Kalingo No.2) that are around 370 m deep. The Cessnock No. 1 Colliery is located within *The Collieries of the South Maitland Coalfields/Greta Coal Measures, Item ID 1215* heritage listed curtilage and includes a portion of *The South Maitland Railway System, Item ID 1212* heritage listed curtilage. Following its closure, most of the infrastructure at the Cessnock No. 1 Colliery were demolished. Today only two extant structures remain (the Upcast Shaft and Fan Building and the Engine Room), in addition to foundational evidence of a number of the former structures. The site also contains Kalingo Dam, which forms part of the Austar mine water system. Kalingo Dam receives mine dewatering from No. 2 Shaft (CMA 4) and from the Kitchener SIS (CMA 6) by pipeline. A pipeline conveys water from Kalingo Dam to Austar Dam (CMA1) at the Austar Pit Top surface facilities. The KIA to the east was constructed in the early 2000's. It includes the No. 3 and No. 4 shafts which provide ventilation, and services (electricity, water, compressed air and nitrogen (all services other than compressed air and nitrogen have now been disconnected as part of decommissioning works) to the mining operation.
6 – Kitchener SIS	The Kitchener Surface Infrastructure Site (SIS) is located within Austar owned land surrounded by Werakata State Conservation Area. The Kitchener SIS was constructed in late 2009 to early 2010 and is the most recent development at the Austar Coal Mine. Kitchener SIS is the site of the No. 5 upcast ventilation shaft, and No. 6 downcast shaft (both sealed at the surface in early 2022) and includes a fully grouted services borehole and water storage areas to manage sediment laden water from disturbed areas. Man-winder shafts and new pit top facilities were also approved at the Kitchener SIS but were not constructed.
7 – Aberdare Extended Emplacement Area	The Aberdare Extended Emplacement Area (EEA) is located east of Bellbird Heights and south of Cessnock. It is accessed via private haul road from the CHPP off Wollombi Road, Pelton. The site was formerly the Aberdare Extended open cut mine and was used as Austar's main coarse coal reject emplacement area until mining ceased in 2020. The southern portion of the Aberdare EEA was filled and capped with overburden and rehabilitated in 2012-2013. The northern portion has also been capped and rehabilitated with the most recent rehabilitation being undertaken in 2019-2020. Rehabilitation to date has involved the capping and revegetation of these areas of the emplacement and stabilising with open grassland. The central portion remains uncapped. The Aberdare EEA is located mainly on privately owned (non-Austar) land which is zoned for rural land use. Austar has committed to returning an open grassland area to the landholder. There is an approved subdivision being constructed directly adjacent to the south west of the Aberdare EEA. A portion of CMA 7 is located within *The Collieries of the South Maitland Coalfields/Greta Coal Measures, Item ID 1215* heritage listed curtilage. CMA 7 also includes a portion of *The South Maitland Railway System, Item ID 1212* heritage listed curtilage

CMA	Description
8 – Bellbird Areas 12 and 13	CMA 8 comprises the Bellbird Areas 12 and 13 emplacement areas. The area is located east of Bellbird and is accessed from Wollombi Road, Pelton. The former Bellbird pit top and open cut mines (Areas 12 and 13) were filled and rehabilitated in the late 1990's to early 2010's. Bellbird Area 12 Emplacement Area has been mostly capped and sown to pasture, except for the mine de-watering borehole infrastructure area. Area 13 has been capped and sown to pasture. Rehabilitation monitoring in both areas indicates these areas are self-sustaining, and weed management is required to progress this ecosystem further. CMA 8 is located within *The Collieries of the South Maitland Coalfields/Greta Coal Measures, Item ID 1215* heritage listed curtilage and includes a portion of *The South Maitland Railway System, Item ID 1212* heritage listed curtilage.
9 - Other	CMA 9 includes all other land above Austar's underground mining leases, including the area above mine workings. CMA 9 includes a portion of *The South Maitland Railway System, Item ID 1212* heritage listed curtilage

1.2. Current Development Consents, Leases and Licences

1.2.1. Development Consents

Austar Coal Mine operates under two major project approvals: Bellbird South (DA 29/95) and Stage 3 (PA 08_0111), along with numerous development consents issued by Cessnock City Council between 1974 and 2012.

DA 29/95 has been modified on seven occasions with the latest modification (Mod 7) being approved on 25 August 2017.

PA 08_0111 has been modified three times with Modification 3 (Mod 3) approved on 17 December 2013.

A summary of the development approvals and consents held by Austar is outlined in **Table 3** below.

TABLE 3 - DEVELOPMENT CONSENTS HELD BY AUSTAR

Consent Description	Date	Expiry	Approval Authority	Summary of Approved Development
DA 29/95	14 Feb 1996	14 Feb 2022	Minister for Urban Affairs and Planning	Ellalong Colliery Extension into Bellbird South. Extension of underground mining activities into Bellbird South area (CML 2). Mine life of 21 years with a production of 3 Million tonnes per annum (Mtpa). Reject emplacement. Construction and operation of a new infrastructure site including new ventilation shaft and fan(s) (No. 2 Shaft) adjacent to Sandy Creek Road. Use of Pelton CHPP for washing and handling of coal. Provision of a maximum raw coal stockpile of 100,000 t. Reopening of disused Cessnock No. 1 Colliery shafts for ventilation and access, or the sinking of new shafts, as required. Construction of various water management devices including sedimentation and clean water dams and drainage systems.
DA 29/95	27 September 2006 (MOD 1)	14 Feb 2022	Minister for Planning	Use of longwall top coal caving (LTCC) mining methods in two longwall panels. Installation of a larger capacity fan at the site approved for DA 8/1999/1658. Installation of a new downcast ventilation shaft. Installation of a new 10 MVA substation. Installation of a nitrogen inertisation plant with a 2,000 m^3 capacity.
	8 Jun 2008 (MOD 2)			Increase in the maximum allowable extraction height from 4.5 m to 6.5 m
	28 May 2009 (MOD 3)			To allow longer and wider panels A4 and A5.
	7 Dec 2010 (MOD 4)			Extract one additional Longwall Panel A5a (LW A5a)
	27 April 2012 (MOD 5)			Extension of Longwall Panel A5a
	29 January 2016 (MOD 6)			Extension to Bellbird South development consent area to include Longwall panels LWB1 to LWB3 Extension of consent to 14 February 2022
	25 August 2017 (MOD 7)			Extension to Bellbird South development consent area to include Longwall panels LWB4 to LWB37

Consent Description	Date	Expiry	Approval Authority	Summary of Approved Development
Project Approval 08_0111	6 Sep 2009	31 Dec 2030	Minister for Planning	Stage 3 Expansion Project - extension to longwall mining area to east of existing operations. Key features: Longwall production from the Greta coal seam from panels A6 to A17 using LTCC. Construction of a new surface infrastructure site south west of Kitchener including ventilation shafts and fans, winders, bath house facilities, a workshop, electricity substation, store and offices. Construction of a new road and intersection at Quorrobolong Road. Coal will continue to be brought to the surface at Austar's existing surface facilities at Paxton. These facilities will continue to be used to take large mining equipment into and out of the mine. Continued use of Austar's existing water management, coal transport systems, coal preparation plant and rejects emplacement areas.
Project Approval 08_0111 (Modifications)	4 May 2010 (MOD 1)	31 Dec 2030	Delegate for Minister for Planning	Minor change to subsidence impact performance measures to built features in Table 1 of Project Approval. The key performance indicator which was amended in the Project Approval requires the project does not cause built features to go beyond safe, serviceable and repairable criteria, unless the landowner agrees in writing.
	13 March 2012 (MOD 2)			Reorientation of the Stage 3 longwalls. Removal of longwall A6, and extraction of coal in longwalls A7 to A19, which are a reorientation of previously approved longwalls A7 to A17 to more closely align with the direction of principal stress. In addition, the chain pillar widths are increased from 45m to 55m to reduce roadway failure risks which in turn further minimises subsidence. The modification will enable more efficient and safer extraction of coal from the Stage 3 area.
	17 Dec 2013 (MOD3)			Extension of Stage 3 longwalls A7 to A10.
DA 74/75/79	4 Dec 1975	Nil expiry	Cessnock City Council (CCC)	Development Consent for a coal mine at Ellalong including: Approval for underground coal mining. Construction of a new access drift, upcast shaft and ventilation shaft. Expansion of the Pelton CHPP. Conveyance of coal from the Ellalong pit top to the Pelton CHPP Operation for the washing and handling of coal. Water management systems. Upgrade of the Pelton rail loading facility and railway spur. reject emplacement underground, open cut areas adjoining Pelton and other abandoned mine sites.
DA 118/680/93	8 Oct 1980	Nil expiry	CCC	Downcast Ventilation Shaft and Man Access Shaft, Bathhouse and Offices at Ellalong Colliery.
DA 118/691/181	26 Nov 1992	Nil expiry	CCC	Pelton Open Cut Coal Mine. Approval of an open cut coal mine adjoining Pelton Colliery up to 300,000 tonnes of coal and underground mining of approximately 27,000 tonnes of coal from a section of prior workings south of the proposed open cut.
DA 118/691/181	11 Jan 1993	Nil expiry	CCC	Pelton Open Cut Coal Mine – Modification. Extension of open cut mining area. Infrastructure and water management modifications.

Consent Description	Date	Expiry	Approval Authority	Summary of Approved Development
DA 118/691/229	7 Jan 1993	Nil expiry	CCC	Pelton Coal Handling Preparation Plant – Raw Coal Handling Facility, Washed Coal Facility and Upgrading of the Water Management System. Upgrade and replacement of coal handling infrastructure such as surge bin, automatic stacking system, reclaim facilities and skyline conveyor. Increase in stockpile capacity. Upgrade to water management system. Extension of the reclaim tunnel. Construction of a mine water transfer pipeline from Ellalong Colliery to Pelton. Provision of underground workings for emergency mine water disposal. Upgrade of lime treatment plant.
DA 118/693/42	26 Nov 1993	Nil expiry	CCC	Extension of Pelton Open Cut Mine. Extension of open cut mining area including emplacement of overburden in previously mined blocks and extension of the mine's water management system.
DA 118/694/120	27 Jun 1994	Nil expiry	CCC	Approves the extraction of longwall panels LW13 and LW14 as a minor extension to the Ellalong Colliery within CML2.
DA 118/694/152	7 Jul 1994	Nil expiry	CCC	Relocatable Office and Temporary Bathhouse at Pelton Colliery.
DA 118/695/22	12 Jul 1995	Nil expiry	CCC	Establishment of an overburden stockpile for the Pelton Open Cut Operations.
DA 118/695/81	12 Jul 1995	Nil expiry	CCC	Additions for Bathhouse, office and car park at Ellalong Colliery. Extension to the bathhouse at the Ellalong drift site. Extension of existing offices or construction of portable offices. Construction of a 4000 square metre car park.
DA 8/1999/1658	18 Feb 2000	Nil expiry	CCC	Relocation of Ventilation Facilities at Bellbird South Underground Mine. Installation of a ventilation shaft and fan house. Upgrading of the existing access track to the site from the Pelton - Ellalong Road.
DA 8/2002/655/1	16 Oct 2002	Nil expiry	CCC	Compressor and Pump Enclosure Buildings at Ellalong Colliery.
DA 118/695/18	21 Feb 1995	Nil expiry	CCC	Relocatable Office at Pelton Colliery.
DA 8/2012/503/1	19 Dec 2012	Nil expiry	CCC	Extension of car parking area associated with Austar Coal Mine

1.2.2. EPBC Approvals

The *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) is the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities, and heritage places which are defined in the EPBC Act as matters of national environmental significance.

Austar has no current EPBC Act approvals.

1.2.3. Mining Authorisations

The Mining Act 1992 prohibits the carrying out of prospecting or mining activities in NSW without the necessary authority. There are several types of authorities granted under this Act namely the Exploration Licence (EL), Consolidated Coal Lease (CCL), Assessment Lease (AL), Mining Purposes Lease (MPL) and Mining Lease (ML). Austar currently holds the following mining authorisations as summarised in **Table 4.**

TABLE 4 - MINING AUTHORISATIONS HELD BY AUSTAR

Mining Title (Act)	Date Granted	Expiry Date	Area (ha)	Surface	Depth Restriction
EL 6598 (1992)	13/07/2006	13/7/2024	7,370	Yes	Various
Dam Site Lease 89 (1901)	04/04/1908	04/04/2030	3.961	Yes	Surface to 15.24 metres
Mineral Lease No. 1157 (1906)	8/07/1949	08/07/2028	10.24	Yes	Surface to 15.24 metres
Mineral Lease No. 1283 (1906)	13/07/1961	13/07/2042	1.973	No (sub-surface)	7.62 to 15.24 metres
Mining Purposes Lease No. 23 (1906)	17/05/1909	17/05/2030	2.421	Yes	Surface to 15.24 metres
Mining Purposes Lease No. 204 (1906)	03/02/1916	03/02/2039	1.2	Yes	Surface to 15.24 metres
Mining Purposes Lease No. 217 (1906)	12/04/1916	03/02/2039	0.6298	Yes	Surface to 15.24 metres
Mining Purposes Lease No. 233 (1906)	01/08/1916	01/08/2036	1.973	Yes	Surface to 7.62 metres
Mining Purposes Lease No. 269 (1906)	07/12/1917	07/12/2039	2.79	Yes	Surface to 6.1 metres below the level of the rails when laid
Mining Purposes Lease No. 1364 (1906)	28/10/1968	28/10/2029	0.4527	Yes	Surface to 15.24 metres
Consolidated Coal Lease No. 728 (1973)	10/10/1989	30/12/2044	3296.8	Various	Various
Consolidated Coal Lease No. 752 (1973)	23/05/1990	30/12/2044	3802	No (Sub-surface)	Various
Consolidated Mining Lease No. 2 (1992)	24/03/1993	06/07/2025	ML -3406 ha AMA - 2.528 ha	Various	Various
Mining Lease No. 1345 (1992)	23/03/1995	30/12/2044	ML - 41.9 ha AMA - 0.5659 ha	Yes	Surface to 900 metres depth
Mining Lease No. 1388 (1992)	02/04/1996	02/04/2038	15.12	No (sub-surface)	30.48 to unlimited depth
Mining Lease No. 1550 (1992)	24/06/2004	23/06/2025	14.11	Yes	Surface to 20 metres
Mining Lease No. 1661 (1992)	22/11/2011	22/11/2032	469.32	No (sub-surface)	20 to 900 metres
Mining Lease No. 1666 (1992)	25/01/2012	25/01/2033	34.13	No (sub-surface)	30.48 to 900 metres
Mining Lease No. 1677 (1992)	23/08/2012	22/08/2032	9.16	Yes	Surface to 30.48 metres
Mining Lease No. 1851 (1992)	16/05/2023	16/05/2044	115	Yes	Surface to 50m

1.2.4. Licences

Environment Protection Licence

Austar operates in accordance with Environment Protection Licence 416 (EPL 416), issued on 5 April 2000 by the NSW Environment Protection Authority (EPA), under the authority of the *Protection of the Environment Operations Act 1997* (POEO Act).

Water Licences

Austar holds water licences for monitoring and dewatering bores across the operation. Austar's current water licences issued under Part 5 of the Water Act 1912 or s87B of the Water Management Act 2000 are provided in **Table 5.**

TABLE 5 - WATER LICENCES HELD BY AUSTAR

Licence Held	Licence Number	Validity of Licence	Purpose of Licence	Extraction Limit
Bore Licence Certificate	20BL171361	17 May 2007 - Perpetuity	Monitoring Bore (AQD1077)	N/A
Bore Licence Certificate	20BL172524	20 July 2010 - Perpetuity	Monitoring Bore (NER1010)	N/A
Bore Licence Certificate	20BL172852	7 June 2011 - Perpetuity	Monitoring Bore (WBH1, WBH2, WBH3)	N/A
Bore Licence Certificate	20BL173843	1 Oct 2014 - Perpetuity	Monitoring Bore (BB1, BB2, BB3)	N/A
Bore Licence Certificate	20BL173878	8 Dec 2014 - Perpetuity	Monitoring Bore (MB01)	N/A
Bore Licence Certificate	20BL173891	19 Mar 2015 - Perpetuity	Monitoring Bore (MB02)	N/A
Water Access Licence / Associated Works	WAL19181 / 20AL210298*	Continuing	Unregulated River Water Licence	Hunter Unregulated and Alluvial Water Sources - Upper Wollombi Water Source - Congewai Creek Management Zone. 10 shares
Water Access Licence / Associated Works	WAL41504 / 20AL217003	Continuing	Aquifer -Industrial dewatering 16CT pump station No 2 Shaft No 2 Shaft Borehole	Sydney Basin – North Coast Groundwater Source. North Coast Fractured and Porous Rock Groundwater Sources 2016. Extraction limit of 770ML in any 12-month period commencing 1 July

1.2.5. Extraction Plan Approvals

The relevant Extraction Plan Approvals for Austar Coal Mine are summarised in **Table 6.**

TABLE 6 - SUBSIDENCE MANAGEMENT PLAN / EXTRACTION PLAN APPROVALS HELD BY AUSTAR

Description	Date	Expiry Date	Approval Authority	Approval Summary
Extraction Plan Approval	30 May 2013	31 Dec 2030	Department of Planning and Environment (DP&E) now Department of Planning, Industry and Environment (DPIE))	Extraction Plan approval for Austar Longwalls A7 to A10
SMP Approval 13/1876	3 June 2013	31 May 2020	Division of Resources and Energy (DRE)	Subsidence Management Plan approval for Austar Longwalls A7 to A10.
Extraction Plan Approval	6 Jan 2014	31 Dec 2030	DPIE	Extraction Plan approval for Austar Longwalls A7 to A10 to correspond to PA08_0111 MOD3 and retraction to LWA8 start position.
SMP Variation Approval 13/1876	7 Jan 2014	31 May 2020	DRE	Subsidence Management Plan approval for Austar Longwalls A7 to A10 to correspond to PA08_0111 MOD and retraction to LWA8 start position.
SMP Variation Approval 13/1876	19 Feb 2014	31 May 2020	DRE	Subsidence Management Plan approval for retraction to LWA9 commencing end
Extraction Plan LWB1 to LWB3	16 May 2016	Not specified	DPIE	Extraction Plan for Bellbird South Longwalls B1 to B3 was approved by DP&E on 4 July 2016
Extraction Plan LWB4 to LWB7	1 February 2019	Not specified	DPIE	Extraction Plan for Bellbird South Longwalls B4 to B7 approved by DP&E on 20 September 2017. Updated to include the shortening of LWB4 was approved by DP&E on 18 September 2018 and again on 12 February 2019. Other variations to Longwalls B5-B7 were approved by DP&E on 7 August 2019

1.2.6. Applicable Guidelines

In addition to the regulatory requirements above, this RMP has been prepared with consideration of the following guidelines and standards:

- Form and way: Rehabilitation Management Plan (large mines);
- Form and way: Rehabilitation objectives, rehabilitation completion criteria and final landform and rehabilitation plan for large mines;
- Guideline: Rehabilitation risk assessment;
- Guideline: Rehabilitation objectives and rehabilitation completion criteria;
- Planning for Integrated Mine Closure Toolkit (ICMM, 2008);
- Mining Amendment (Standard Condition of Mining Leases – Rehabilitation) Regulation 2021;
- Strategic Framework for Mine Closure (ANZMEC 2000);

- Leading Practice Sustainable Development Program for the Mining Industry – Mine Closure and Completion, Mine Rehabilitation (Commonwealth Department of Industry, Tourism and Resources);
- Best Practice Environmental Management in the Mining Industry Series;
- Enduring Value (Mineral Council of Australia 2015);
- State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP).

1.3. Land Ownership and Land Use

1.3.1. Land Ownership

Land ownership, land use and vegetation communities at and surrounding Austar are shown on **Figure A** to **2C**, with a schedule of lands provided in **Appendix A**.

Most land on which Austar operates surface facilities is owned by Austar with the exception of:

- No. 2 Shaft (CMA 2) located on Crown Land,
- Aberdare EEA (CMA 7) which is located on privately owned (non-Austar) and Crown Land; and
- Bellbird Areas 12 and 13 (CMA 8) are located on Crown Land.

The Stage 3 underground mining area is primarily located beneath private rural land holdings. The northern portion of the Stage 3 extraction area extends underneath the Werakata State Conservation Area (SCA) and sections of Crown land, as well as an area of Austar owned land to the west of the approved Kitchener Surface Infrastructure Site (CMA 6). Land ownership above the Bellbird South longwall panels LWB1 to LWB7 is a mix of privately owned and Austar owned land.

A summary of land ownership by CMA is presented in **Table 7.**

TABLE 7 - LAND OWNERSHIP BY CMA

CMA	Land Ownership	Adjacent land ownership
1 – Austar Pit Top Facilities	Austar owned	Land surrounding CMA1 is predominantly Austar owned, bounded by rural residential land.
2 – Pelton CHPP	Austar owned	Land surrounding CMA2 is predominantly Austar owned, bounded by the suburbs of Bellbird and Pelton.
3 – No. 1 Shaft	Austar owned	No.1 Shaft is in proximity to the village of Ellalong
4 – No. 2 Shaft	Crown Land	No. 2 Shaft is bounded by small farm holdings and crown land.
5 – Cessnock No. 1 Colliery / Kalingo Infrastructure Area	Austar owned	Land surrounding Kalingo Infrastructure Area is farmland and State Conservation Area.
6 – Kitchener SIS	Austar owned	Land surrounding Kitchener SIS is State Conservation Area.
7 – Aberdare EEA	Privately owned (non-Austar) and Crown Land	Aberdare EEA is bounded by residential lots, a subdivision under construction and Crown Land.
8 – Bellbird Areas 12 and 13	Crown Land	Crown Land and Bellbird residential areas

CMA	Land Ownership	Adjacent land ownership
9 - Other	NSW Government, Crown Land, privately owned (non-Austar), and Austar owned.	NSW Government, Crown Land, privately owned (non-Austar), and Austar owned.

1.3.2. Historic and Current Land Use

Surrounding land uses include grazing, poultry production, state conservation area, residential and historic mining.

The villages of Kitchener, Abernethy, Bellbird, Paxton, Pelton and Ellalong are also located in proximity to Austar.

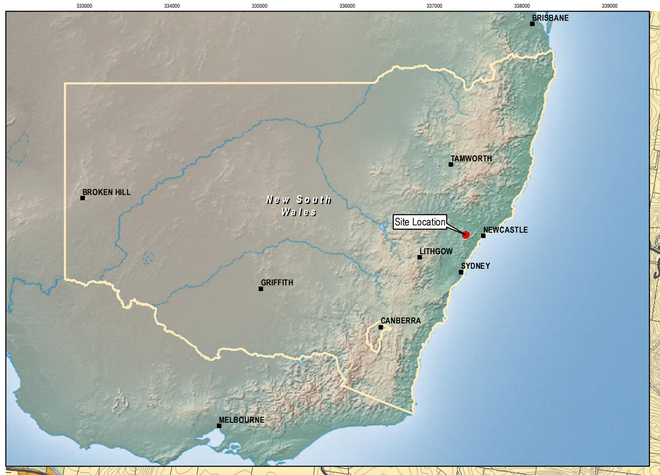
Austar Coal Mine was the last operating coal mine in the Cessnock area, and is bounded by many historic coal mine workings, including those on Austar owned land and within Austar mining leases, as well as others in the surrounding locale. Historically the area to the South and West of Cessnock has been used for grazing, mining, forestry and conservation.

1.3.3. Future Land Use

In general, the currently proposed final land use for areas disturbed by Austar mining activities is either a grassland or native woodland vegetation community, similar to that existing prior to mining, and consistent with those approved in Austar's various Development Consents and Project Approvals.

At this stage of the closure process, these are indicative and will be further refined during closure planning as final land use options assessments are progressed and finalised. The proposed final land use options assessment is discussed in **Section 2.2**.

There are no current stewardship or conservation agreements in place for Austar Coal Mine.



LEGEND

- Project Approval Boundary
- Colliery Holding Boundary
- Contour - 10m
- Road
- Electricity Transmission Line
- Railway
- Major Waterways
- Waterbody
- Major Population Areas

Reserves

- State Forest
- NPWS Reserves

Land Ownership

- Crown
- Freehold
- Local Government Authority
- Unknown
- Austar Owned Land

Note: Subject site within Cessnock City Council Local Government Area and the Hunter Catchment Area

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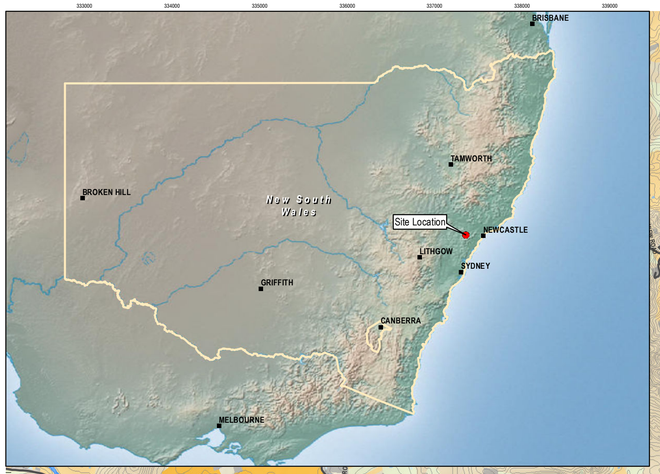
Land Ownership

FIGURE 2A

Mine name	Austar Coal Mine
Plan name	Rehabilitation Management Plan 2022
Year of anticipated relinquishment	TBA on file submission
Data theme submission ID No.	2488
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023



LEGEND

- Project Approval Boundary
- Colliery Holding Boundary
- Austar Owned Land
- Road
- Railway
- Electricity Transmission Line
- Contour - 10m
- Major Waterways
- Waterbody
- Major Population Areas

Land Use*

- 1.1.0 Nature conservation
- 1.3.0 Other minimal use
- 2.1.0 Grazing native vegetation
- 3.2.0 Grazing modified pastures
- 3.6.0 Land in transition
- 4.2.0 Grazing irrigated modified pastures
- 5.4.0 Residential and farm infrastructure
- 5.5.0 Services
- 5.6.0 Utilities
- 5.7.0 Transport and communication
- 5.8.0 Mining
- 5.9.0 Waste treatment and disposal
- 6.2.0 Reservoir/dam
- 6.3.0 River

Note: Subject site within Cessnock City Council Local Government Area and the Hunter Catchment Area
***Landuse sourced from SEED (2017)**

0 420 840 1,260 1,680 m
Scale: 1:35,000

GDA2020 MGA Zone 56

Source: Landuse Cessnock LEP 2017

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Austar Coal RMP 2022 - Update

Land Use

FIGURE 2B

Mine name	Austar Coal Mine
Plan name	Rehabilitation Management Plan 2022
Year of anticipated relinquishment	TBA on file submission
Data theme submission ID No.	XXXXXX
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

LEGEND

- Project Approval
- Colliery Holding Boundary
- Road
- Railway
- Electricity Transmission
- Contour - 10m
- Major Waterways
- Waterbody
- Major Population
- State Forest

- MU000 - Non Native Vegetation
- MU047 - Turpentine/ Rough-barked Apple/ Forest Oak moist shrubby tall open forest of the Central Coast
- MU054 - Grey Myrtle/ Mountain Blue Gum/ Rough-barked Apple ferny tall open forest in sandstone gullies of the Sydney Basin
- MU055 - Sydney Blue Gum/ Lilly Pilly mesic tall open forest of coastal ranges and tablelands escarpment
- MU067 - Grey Gum/ Grey Box shrub/ grass open forest on sandstone ranges of the Sydney Basin
- MU072 - Spotted Gum/ Broad-leaved Mahogany/ Red Ironbark shrubby open forest
- MU074 - Spotted Gum/ Red Ironbark/ Grey Gum shrub/ grass open forest of the lower Hunter
- MU076 - Cabbage Gum/ +-Rough-barked Apple grassy woodland on alluvial floodplains of the lower Hunter
- MU082 - Spotted Gum/ Red Ironbark/ Narrow-leaved Ironbark/ Grey Box shrub/grass open forest of the lower Hunter
- MU104 - Grey Gum/ Smooth-barked Apple/ Blue-leaved Stringybark shrub/ grass open forest on coastal ranges of the Sydney Basin
- MU110 - Turpentine/ Smooth-barked Apple/ Broad-leaved Mahogany shrubby open forest on sandstone ranges of the Central Coast
- MU115 - Parramatta Red Gum/ Narrow-leaved Apple/ Prickly-leaved Paperbark shrubby woodland in the Cessnock-Kurri Kurri area
- MU116 - Yellow Bloodwood/ Red Bloodwood/ Brown Stringybark shrub/ grass open forest in the Cessnock-Kurri Kurri area
- MU121 - Scribbly Gum/ Sydney Peppermint/ Smooth-barked Apple heathy woodland on residual sands of the Quorrobolong area
- MU213 - Swamp Oak/ Weeping Grass grassy riparian forest of the Hunter Valley

Note: Subject site within Cessnock City Council Local Government Area and the Hunter Catchment Area

0 420 840 1,260 1,680
Scale: 1:35,000

GDA2020 MGA Zone 56

Source: Vegetation sourced from Seed: HunterGreater v4 E 3855

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Austar Coal RMP 2022 - Update

Vegetation

FIGURE 2C

Mine name	Austar Coal Mine
Plan name	Rehabilitation Management Plan 2022
Year of anticipated relinquishment	TBA on file submission
Data theme submission ID No.	XXXXXX
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

2. FINAL LAND USE

2.1. Regulatory Requirements for Rehabilitation

Table 8 provides a summary of regulatory requirements relevant to rehabilitation, closure and post-mining land use at Austar. Due to the age and specific nature of some of the regulatory requirements in **Table 8,** some of the timeframes associated with specific conditions have passed, and/or the relevant agency has changed from that specified in development consent conditions.

On 2 July 2021, the RR legislated the *Mining Amendment (Standard Conditions of Mining Leases—Rehabilitation) Regulation 2021* (the Amendment) under the Mining Act 1992. The Amendment prescribes new mining lease conditions relating to rehabilitation and sets clear, achievable, and enforceable requirements for rehabilitation. The new standard rehabilitation conditions will apply to all new mining leases issued from this date. These new rehabilitation conditions will replace existing rehabilitation and environmental management conditions on current leases.

As such, all rehabilitation requirements of Austar's mining leases will be replaced by the standard mining lease conditions and any retained special conditions stipulated under the Amendment.

TABLE 8 - REGULATORY REQUIREMENTS RELATING TO REHABILITATION

<table>
<tr><th>Source</th><th>Detail of Regulatory Requirement</th><th>Area of Relevance</th><th>Section Addressed</th></tr>
<tr><td>Project Approval (PA 08_0111) Schedule 6, Condition 1</td><td>The Proponent shall achieve the rehabilitation objectives in Table 6 to the satisfaction of the Executive Director, Mineral Resources.
Table 6: Rehabilitation Objectives
<table>
<tr><th>Domain</th><th>Rehabilitation Objective</th></tr>
<tr><td>Surface Infrastructure Site</td><td>• Revegetate the cleared portion of the site with a structured native vegetation community similar to that existing pre-mining, or other landuse approved by the Director-General</td></tr>
<tr><td>Biodiversity offset area</td><td>• Implement the offset strategy described in the EA and shown conceptually in Appendix 5</td></tr>
<tr><td>Land affected by the project (including watercourses and steep slopes)</td><td>• Rehabilitate landform, landuse and ecosystem function to that existing pre-mining and consistent with the surrounding landform
• Reduce safety hazards to no more than those existing pre-mining
• Minimise erosion risk</td></tr>
<tr><td>Built features</td><td>• Repair/restore/replace to pre-mining condition or better, unless a claim under the Mine Subsidence Compensation Act 1961 is made for the repairs, restoration or replacement</td></tr>
<tr><td>Community</td><td>• Minimise the adverse socio-economic effects associated with mine closure</td></tr>
</table></td><td>Stage 3 Mining Area (CMA 9), Kitchener SIS (CMA 6)</td><td>Section 4</td></tr>
<tr><td>Project Approval (PA 08_0111) Schedule 6, Condition 2</td><td>To the extent that mining operations permit, the Proponent shall carry out rehabilitation progressively, that is, as soon as reasonably practicable following the disturbance.</td><td>Stage 3 Mining Area, (CMA 9), Kitchener SIS (CMA 6)</td><td>Section 6</td></tr>
<tr><td>Project Approval (PA 08_0111) Schedule 6, Condition 4</td><td>The Proponent shall prepare and implement a Landscape Management Plan for the project to the
satisfaction of the Director-General and the Executive Director, Mineral Resources. This plan must:
(a) be prepared in consultation with the relevant stakeholders by suitably qualified expert/s whose appointment/s have been endorsed by the Director-General, and be submitted to the Director-General for approval prior to the commencement of second workings in Stage 3 and construction of the Surface Infrastructure Site (other than shaft construction referred to in condition 1 of schedule 4);
(b) in addition to the standard requirements for management plans (see condition 2 of</td><td>Stage 3 Kitchener SIS (CMA 6).</td><td>N/A
Landscape Management Plan has been prepared, approved and implemented for the Kitchener SIS. Completion criteria for the Kitchener SIS are included in Section 4 of</td></tr>
</table>

<table>
<tr><th>Source</th><th>Detail of Regulatory Requirement</th><th>Area of Relevance</th><th>Section Addressed</th></tr>
<tr><td></td><td>schedule 7), include:
(i) the rehabilitation objectives for the site and offset area;
(ii) a description of the short, medium, and long term measures that would be implemented to:
• rehabilitate the site;
• implement the offset strategy; and
• manage the remnant vegetation and habitat on the site and in the offset area;
(i) performance and completion criteria for the rehabilitation of the site and implementation of the offset strategy;
(ii) a detailed description of the measures would be implemented over the next 3 years, including the procedures to be implemented for:
• minimising and rehabilitating disturbed areas;
• implementing the offset strategy;
• protecting vegetation and soil outside the disturbance areas;
• undertaking pre-clearance surveys;
• managing impacts on fauna;
• landscaping the site to minimise visual impacts;
• conserving and reusing topsoil;
• collecting and propagating seed for rehabilitation works;
• salvaging and reusing material from the site for habitat enhancement;
• controlling weeds and feral pests;
• controlling access; and
• bushfire management.</td><td></td><td>this RMP and rehabilitation methodologies have been included as relevant in Section 6.</td></tr>
<tr><td>Project Approval (PA 08_0111) Commitment 1.14.1</td><td>A decommissioning plan will be prepared for the Surface Infrastructure Site as part of the MOP process and submitted to the DRE for approval approximately five years prior to the commencement of decommissioning works.</td><td>CMA 6 Kitchener SIS (CMA 6)</td><td>Section 6.2.2</td></tr>
<tr><td>DA 29/95 Schedule 3 Condition 28</td><td>The Applicant must rehabilitate the site to the satisfaction of DRG. This rehabilitation must be generally consistent with the proposed rehabilitation strategy described in the documents listed in Schedule 2, Condition 2, and comply with the objectives in Table 6.
<table>
<tr><th>Feature</th><th>Objective</th></tr>
<tr><td>All areas affected by the development</td><td>• Safe
• Hydraulically and geotechnically stable
• Non-polluting
• Fit for the intended post-mining land use(s)</td></tr>
<tr><td>Areas proposed for native ecosystem re-establishment</td><td>• Establish self-sustaining ecosystems comprising flora species selected to re-establish and complement local and regional biodiversity</td></tr>
</table></td><td>Bellbird South Mining Area (CMA 9)
DA29/95 Reject Emplacement Areas (CMA 2, 7) and DA29/95 Infrastructure Areas (CMA 1, 2, 3, 4, 5)</td><td>Section 4</td></tr>
</table>

Source	Detail of Regulatory Requirement		Area of Relevance	Section Addressed
	Areas proposed for agricultural or pastoral use	• Nominated land capability classification is achieved and is self-sustaining		
	Other areas affected by the development	• Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems comprised of local native plant species appropriate for the intended post mining land use(s) (unless DRG agrees otherwise)		
	Surface Infrastructure of the development	• To be decommissioned and removed, unless DRG agree otherwise or development consent is obtained from the relevant consent authority for their retention and post-mining use		
	Portals and vent shafts of the development	• To be decommissioned and made safe and stable		
	Built features damaged by mining operations	• Repair/restore/replace to pre-mining condition or equivalent unless the: • owner agrees otherwise; or • damage is fully restored, repaired or compensated for under the Mine Subsidence Compensation Act 1961		
	Final Landforms	• Consistent with surrounding topography to minimise visual impacts • Incorporate relief patterns and design principles consistent with natural drainage		
	All watercourses subject to mine-water discharges and/or subsidence impacts from the development	• Hydraulically and geomorphologically stable • Aquatic ecology and riparian vegetation that is the same or better than prior to mining		
	Water Quality	• Surface water retained onsite is fit for the intended post mining land use(s)		
	Cliffs, minor cliffs and steep slopes	• No additional risk to public safety compared to prior to mining		
	Community	• Ensure public safety • Minimise adverse socio-economic effects associated with mine closure		
	Note: These rehabilitation objectives apply to all subsidence impacts and environmental consequences caused by the development and to all surface infrastructure components of the development. Where remediation of watercourses is likely to cause environmental			

Source	Detail of Regulatory Requirement	Area of Relevance	Section Addressed
	consequences greater than those that require rehabilitation, alternative equivalent works may be undertaken within the affected watercourse.		
DA 29/95 Schedule 3 Condition 29	The Applicant must rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance, to the satisfaction of DRG. All reasonable steps must be taken to minimise the total area exposed at any time. Interim stabilisation and temporary vegetation strategies must be employed when areas prone to dust generation, soil erosion and weed incursion cannot be permanently rehabilitated. *Note: It is accepted that some parts of the site that are progressively rehabilitated may be subject to further disturbance at some later stage of the development.*	Bellbird South Mining Area (CMA 9) DA29/95 Reject Emplacement Areas (CMA 2, 7) and DA29/95 Infrastructure Areas (CMA 1, 2, 3, 4, 5)	Section 6
Development Consent (DA 118/691/181) Condition 9	All rehabilitated areas will be maintained until such time as the surface has developed a density of vegetative cover that minimises surface erosion to the satisfaction of Council. In this regard, a report from the Soil Conservation Service shall be lodged.	Pelton Colliery (**CMA 2**)	Section 6.2.5
DA 118/695/22 Consent Condition for Establishment of Overburden Stockpile on Part Lot 1 DP 69968 Main Road 218, Pelton	Once the stockpile is removed its area will be rehabilitated in accordance with the requirements of the Department of Mineral Resources and the provisions of the Statement of Environmental Effects approved for the Pelton Open Cut Mine.	Pelton Colliery Open Cut – Overburden Stockpile (**CMA 2**)	Section 6
Mining Lease (Consolidated Coal Lease No. 2 (1992)) Condition 7	Disturbed land must be rehabilitated to a sustainable/agreed end land use to the satisfaction of the Director-General.	CML2	This RMP
Mining Lease (Consolidated Coal Lease No. 728 (1973)) Condition A-2-5	The Aberdare Extended area (6ha) is to be rehabilitated with capping material and maintained, with work to be carried out as scheduled (or earlier) in the Rehabilitation Plan. Earthworks are to commence by the end of the first quarter 1999 and are to be completed by 1 July 2000.	Aberdare Extended Emplacement Area (Timing has passed) Aberdare Emplacement Area	Section 6.2
Mining Lease (Consolidated Coal Lease No. 728 (1973)) Condition 22	Upon completion of operations on the surface of the subject area or upon the expiry or sooner determination of this authority or any renewal thereof, the lease holder shall remove from such surface such buildings, machinery, plant, equipment, constructions and works as may be directed by the Minister and such surface shall be rehabilitated and left in a clean, tidy and safe condition to the satisfaction of the Minister.	CCL728	Section 6.2
Mining Lease (Consolidated Coal Lease No. 752 (1973)) Condition 22	Upon completion of operations on the surface of the subject area or upon the expiry or sooner determination of this authority or any renewal thereof, the lease holder shall remove from such surface such buildings, machinery, plant, equipment, constructions and works as may be	CCL752	Section 6.2

Source	Detail of Regulatory Requirement	Area of Relevance	Section Addressed
	directed by the Minister and such surface shall be rehabilitated and left in a clean, tidy and safe condition to the satisfaction of the Minister.		
Mining Lease (Dam Site Lease 89 (1901)) Condition 5	Upon completion of operations on the surface of the subject area or upon the expiry or sooner determination of this lease or any renewal thereof, the registered holder shall remove from such surface such buildings, machinery, plant, equipment, constructions and works as may be directed by the Minister and such surface shall be rehabilitated and left in a clean, tidy and safe condition to the satisfaction of the Minister.	DSL89 - Portion of rail line	Section 6.2
Mining Lease (Mineral Lease No. 1157 (1906)) Condition 13	(a) Land disturbed must be rehabilitated to a stable and permanent form suitable for a subsequent land use acceptable to the Director-General and in accordance with the Mining Operations Plan so that:- • there is no adverse environmental effect outside the disturbed area and that the land is properly drained and protected from soil erosion. • the state of the land is compatible with the surrounding land and land use requirements. • the landforms, soils, hydrology and flora require no greater maintenance than that in the surrounding land. • in cases where revegetation is required and native vegetation has been removed or damaged, the original species must be re-established with close reference to the flora survey included in the Mining Operations Plan. If the original vegetation was not native, any re-established vegetation must be appropriate to the area and at an acceptable density. • the land does not pose a threat to public safety. (b) Any topsoil that is removed must be stored and maintained in a manner acceptable to the Director-General.	Aberdare Extended Emplacement Area (CMA7)	This RMP (noting that the RMP supersedes MOP requirements)
Mining Lease (Mineral Lease No. 1283 (1906)) Condition 22	Upon completion of operations on the surface of the subject area or upon the expiry or sooner determination of this authority or any renewal thereof, the lease holder shall remove from such surface such buildings, machinery, plant, equipment, constructions and works as may be directed by the Minister and such surface shall be rehabilitated and left in a clean, tidy and safe condition to the satisfaction of the Minister.	Aberdare Extended Emplacement Area (CMA 7)	Section 6.2
Mining Lease (Mineral Lease No. 1283 (1906)) Special Condition Annexure 1: Condition 1	a) The leaseholder shall proceed with rehabilitation works at the Pelton Site (Coal Preparation Plant and Open Cut Mining Areas) and Aberdare Extended Site (Coal Washery Rejects Emplacement) in general accordance with those works documented in: ELLALONG/PELTON COLLIERY REHABILITATION PLAN SOUTHLAND COAL JUNE 1998 b) Rehabilitation works documented in 1(a) above are to be varied in accordance with the variations specified in Annexure A-2. c) Rehabilitation works as documented in 1(a) above and as may be varied in 1(b) above are to be integrated and documented in the Mining Operations Plan referred to in 2 under.	Aberdare Extended Emplacement Area (CMA 7)	Section 6.2

Source	Detail of Regulatory Requirement	Area of Relevance	Section Addressed
Mining Lease (Mineral Lease No. 1283 (1906)) Special Condition Annexure 2: Condition 5	The Aberdare Extended area (6ha) is to be rehabilitated with capping material and maintained, with work to be carried out as scheduled (or earlier) in the Rehabilitation Plan. Earthworks are to commence by the end of the first quarter 1999 and are to be completed by 1 July 2000.	Aberdare Extended Emplacement Area (CMA 7)	N/A Timing past
Mining Lease (Mining Lease 1345 (1992)) Condition 9	Subject to any specific condition of this authority providing for rehabilitation of any particular part of the subject area affected by mining or activities associated therewith, the lease holder shall; (a) shape and revegetate to the satisfaction of the Minister, any part of the subject area that may, in the opinion of the Minister have been damaged or deleteriously affected by mining operations and ensure such areas are permanently stabilised, and, (b) reinstate and make safe, including sealing and/ or fencing, any excavation within the subject area.	Aberdare Extended Emplacement Area (CMA 7)	Section 6.2
Mining Lease (Mining Lease 1345 (1992)) Condition 13	Upon completion of operations on the surface of the subject area or upon the expiry or sooner determination of this authority or any renewal thereof, the lease holder shall remove from such surface such buildings, machinery, plant, equipment, constructions and - works as may be directed by the Minister and such surface shall be rehabilitated and left in a clean, tidy and safe condition to the satisfaction of the Minister.	Aberdare Extended Emplacement Area (CMA 7)	Section 6.2
Mining Lease (Mining Lease 1550 (1992)) Condition 22	Upon completion of operations on the surface of the subject area or upon the expiry or sooner determination of this authority or any renewal thereof, the lease holder shall remove from such surface such buildings, machinery, plant, equipment, constructions and works as may be directed by the Minister and such surface shall be rehabilitated and left in a clean, tidy and safe condition to the satisfaction of the Minister.	Kalingo Infrastructure Area (No. 3 Shaft area) (CMA 5)	Section 6.2
Mining Lease (Mining Lease 1661 (1992)) Condition 7	Any disturbance as a result of activities under this lease must be rehabilitated to the satisfaction of the Director-General.	Stage 3 Mining Area (CMA 9)	Section 6.2
Mining Lease (Mining Lease 1666 (1992)) Condition 7	Any disturbance as a result of activities under this lease must be rehabilitated to the satisfaction of the Director-General.	Stage 3 Mining Area (CMA 9)	Section 6.2
Mining Lease (Mining Lease 1677 (1992)) Condition 7	Any disturbance as a result of activities under this lease must be rehabilitated to the satisfaction of the Director-General.	Stage 3 Kitchener SIS (CMA 6)	Section 6.2
Mining Lease (Mining Purposes Lease No. 1364 (1906)) Condition 7	Disturbed land must be rehabilitated to a sustainable/agreed end land use to the satisfaction of the Director-General.	Austar rail line (CMA 2)	Section 6.2
Mining Lease (Mining Purposes Lease No. 204 (1906)) Condition 22	Upon completion of operations on the surface of the subject area or upon the expiry or sooner determination at this authority or any renewal thereof, the lease holder shall remove from such surface such buildings, machinery, plant, equipment, constructions and works as may be directed by the Minister and such surface shall be rehabilitated and left in a clean, tidy and safe condition to the satisfaction of the Minister.	Aberdare Extended Emplacement Area (CMA 7)	Section 6.2

Source	Detail of Regulatory Requirement	Area of Relevance	Section Addressed
Mining Lease (Mining Purposes Lease No. 23 (1906)) Condition 7	Disturbed land must be rehabilitated to a sustainable/agreed end land use to the satisfaction of the Director-General.	Austar rail line (CMA 2)	Section 6.2
Mining Lease (Mining Purposes Lease No. 233 (1906)) Schedule 2, Condition 2	Rehabilitation Any disturbance resulting from the activities carried out under this mining lease must be rehabilitated to the satisfaction of the Minister.	Aberdare Extended Emplacement Area CMA 7)	Section 6.2
Mining Lease (Mining Purposes Lease No. 269(1906)) Condition 15	Upon the completion of operations on the surface of the subject area or upon the expiry or sooner determination of this lease or any renewal thereof the registered holder shall remove from such surface such works and other constructions as may be required by the Minister and such surface shall be rehabilitated and left in a clean, tidy and safe condition to the satisfaction of the Minister.	Austar rail line (CMA 2)	Section 6.2

2.2. Final Land Use Options Assessment

This RMP has been prepared based on the final land use domains presented in the approved *Mining Operations Plan Amendment A* dated 23 February 2021, as modified to align with the required final land use domains specified in the *Form and Way: Rehabilitation Management Plan (large mines)* (RR, 2021a) (refer **Section 2.4**).

The final land uses presented in this RMP are broadly consistent with those approved within Austar's various development consents and have been determined through the environmental assessment process associated with PA 08_0111 and DA 29/95. Notwithstanding this, as part of the closure planning process, Austar has engaged a suitably qualified planning specialist to undertake a Final Land Use Options Assessment for the various surface sites post closure.

The Final Land Use Options Assessment will assess potential alternative beneficial post-mining land use options for the various sites with consideration to:

- Population and property context including:
  - Historic and future population growth for the LGA;
  - Socio-demographic profile;
  - Existing and proposed infrastructure mapping;
  - Proposed developments in the area.
- Planning context including:
  - Current land use zoning;
  - Constraints mapping; and
  - Strategic planning context.

Any proposed alternative final land uses will be considered in consultation with the relevant government agencies including Cessnock City Council and private landowners.

Should the Final Land Use Options Assessment result in the refinement of the currently proposed final land use, then this RMP will be revised as necessary and the Rehabilitation Outcomes Documents resubmitted.

2.3. Final Land Use Statement

The primary goal for mine closure at Austar is to rehabilitate the site to:

- Achieve safe, stable landforms with beneficial post mining land uses; and
- Satisfy all regulatory requirements under development consents, mining leases and licences.

The proposed final land uses presented in this RMP are consistent with those approved within Austar's various development consents and have been determined through the environmental assessment process associated with PA 08_0111 and DA 29/95.

Notwithstanding this, the rehabilitated final landform objective is to be safe, stable and non-polluting so as to not hinder or impede potential alternative land uses pursued in the future, subject to appropriate development consent and approvals pathways.

The final land uses will be refined during detailed closure planning as informed by the Final Land Use Options Assessment detailed in **Section 2.2** and consultation with relevant landowners.

For the purpose of this RMP, the proposed final land uses for each CMA are presented in **Table 9.**

TABLE 9 - FINAL LAND USE STATEMENT BY CMA

CMA	Proposed Final Land Use
1 – Austar Pit Top Facilities	Generally, CMA 1 will be revegetated with grassland species to create a managed grassland suitable for small rural acreage. Tracks and pipeline corridors will be revegetated to comprise woodland communities which are commensurate with surrounding land uses or maintained for bushfire management.
2 – Pelton CHPP	CMA 2 will be revegetated to comprise woodland or grassland communities which are commensurate with surrounding land uses.
3 – No. 1 Shaft	CMA 3 will be revegetated with grassland species to create a managed grassland suitable for small rural acreage.
4 – No. 2 Shaft	CMA 4 will be revegetated with grassland species to create a managed grassland suitable for small rural acreage.
5 – Cessnock No. 1 Colliery / Kalingo Infrastructure Area	CMA 5 will be revegetated with grassland species to create a managed grassland suitable for small rural acreage. Tracks and pipeline corridors will be revegetated to comprise woodland communities which are commensurate with surrounding land uses, or maintained for bushfire management.
6 – Kitchener SIS	In accordance with Schedule 6 Condition 1 of PA 08_0111 the cleared portion of the Kitchener SIS will be revegetated to a structured native vegetation community similar to that existing pre-mining. Austar proposes to establish native bushland (forest) at the Kitchener SIS.
7 – Aberdare EEA	CMA 7 is mainly privately owned land which is zoned for rural land use. Austar has committed to returning an open grassland area to the landholder. The final land use for that area will be at the landowner's discretion within that land zoning.
8 – Bellbird Areas 12 and 13	Bellbird Areas 12 and 13 have been substantially rehabilitated to a grassland final land use.
9 - Other	All lands above Austar's underground workings impacted by the project will be rehabilitated to restore the pre-mining land use.

2.4. Final Land Use and Mining Domains

Final land use and mining domains to be considered in the preparation of this RMP are specified in the *Form and Way: Rehabilitation Management Plan (large mines)* (RR, 2021a) and are summarised in **Table 10**. The domains highlighted in grey are not applicable to this RMP but have been included in this table for context.

TABLE 10 - SUMMARY OF FINAL LAND USE AND MINING DOMAINS SPECIFIED IN THE RMP FORM AND WAY

Final Land Use Domain	Code	Mining Domain	Code
Native Ecosystem	A	Infrastructure Area	1
Agricultural – Grazing	B	Tailings Storage Facility	2
Agricultural – Cropping	C	Water Management Area	3
Rehabilitation Biodiversity Offset Area	D	Overburden Emplacement Area	4
Industrial	E	Active Mining Area (Open cut void)	5
Water Management Areas	F	Underground Mining Area (SMP)	6
Water Storage (Excluding Final Void)	G	Beneficiation Facility	7
Heritage Area	H	Other	8
Infrastructure	I		
Final Void	J		
Other	K		

The domains highlighted grey are not applicable to Austar but have been included in this table for context

2.4.1. Final Land Use Domains

Final land use domains are defined as land management units characterised by similar final land use objectives. Each final land use domain will require specific rehabilitation methods.

As detailed in **Section 2.2**, the proposed final land uses presented in this RMP are based on the final land use domains presented in the approved Mining *Operations Plan Amendment A* dated 23 February 2021, as modified to align with the required final land use domains specified in the *Form and way: Rehabilitation Management Plan (large mines)* (RR, 2021a).

Final land uses may be refined based on the outcomes of the final land use options assessment detailed in **Section 2.2**, and any appropriate landowner consultation and agreements.

The proposed final land use domains within each CMA at Austar are presented in **Table 11** along with the previous MOP final land use for reference.

The final land use domains are shown on the final land use plans in **Section 5**.

TABLE 11 - FINAL LAND USE DOMAINS

Code	Final Land Use Domain	MOP Final Land Use Reference (Superseded but included for context)	Description
CMA 1 – Austar Pit Top Facilities			
A	Native Ecosystem	N/A	Several access tracks and pipeline corridors within CMA 1 will be rehabilitated to a native vegetation community similar to the existing pre-mining.
B	Agricultural Grazing	Rehabilitation Area - Grassland	Disturbed areas at the pit top are proposed revegetated with pasture species to create a managed grassland suitable for small rural acreage.
CMA 2 – Pelton CHPP			
A	Native Ecosystem	Rehabilitation Area – Forest Rehabilitation Area – Riparian Zone	The majority of the infrastructure area at CMA 2 will be revegetated to achieve a native ecosystem land use (including a riparian zone of reinstated Bellbird Creek at the CHPP area). The remaining areas will be revegetated to achieve an agricultural grassland.
B	Agricultural Grazing	Rehabilitation Area - Grassland	
F	Water Management	N/A	This domain includes the Bellbird Creek.
G	Water Storage	N/A	Clean water dams will be retained in the final landform.
CMA 3 – No. 1 Shaft			
B	Agricultural Grazing	Rehabilitation Area - Grassland	Shaft No. 1 will be revegetated with pasture species to create a managed grassland suitable for small rural acreage.
CMA 4 – No. 2 Shaft			
B	Agricultural Grazing	Rehabilitation Area - Grassland	Shaft No. 2 will be revegetated with a mix of pasture species to create a managed grassland suitable for small rural acreage.
CMA 5 – Cessnock No. 1 Colliery / Kalingo Infrastructure Area			
B	Agricultural Grazing	Rehabilitation Area - Grassland	CMA 5 will be revegetated with pasture species to create a managed grassland suitable for small rural acreage.
G	Water Storage	N/A	Clean water dams will be retained in the final landform.
CMA 6 – Kitchener SIS			
A	Native Ecosystem	Rehabilitation Area - Forest	In accordance with the requirements of Schedule 6 Condition 1 of PA 08_0111, disturbed areas in CMA 6 will be revegetated

Code	Final Land Use Domain	MOP Final Land Use Reference (Superseded but included for context)	Description
			with a structured native vegetation community similar to the existing pre-mining landuse.
G	Water Storage	N/A	Clean water dams will be retained in the final landform.
CMA 7 – Aberdare EEA			
B	Agricultural Grazing	Rehabilitation Area - Grassland	As per the landowner agreement, the Aberdare EEA will be rehabilitated to an open grassland. The final land use for this area will be at the landowner's discretion in accordance with relevant land zoning and development approvals.
CMA 8 – Bellbird Areas 12 and 13			
B	Agricultural Grazing	Rehabilitation Area - Grassland	Bellbird Areas 12 and 13 have been substantially rehabilitated to a grassland final land use.
CMA 9 – Other			
K1	Other (A1 Subsidence Management Area)	N/A	Includes the approved underground mining areas in Stage 3 and the Bellbird South which will be managed and rehabilitated in accordance with the relevant Extraction Plan requirements. Rehabilitation will be undertaken as required to return the land to the existing land use which will generally be consistent with either native ecosystem (domain A) or agricultural (domain B) objectives.

2.4.2. Mining Domains

Mining domains identify the footprint of areas disturbed for project-related activities. Mining domains are defined as the set of discrete areas that have a particular operational or functional purpose, therefore having similar geophysical and geochemical characteristics that will have similar rehabilitation requirements.

The mining domains within each CMA at Austar are presented in **Table 12**. The mining domains at the commencement of this RMP are presented spatially in **Figure 3**. Insets are included in **Appendix B**.

TABLE 12 - MINING DOMAINS

Code	Mining Domain	MOP Mining Domain Reference (Superseded but included for context)	Description
CMA 1 – Austar Pit Top Facilities			
1	Infrastructure Area	1 – Infrastructure Area	Includes the major existing infrastructure, hardstand and buildings at the Pit Top including access roads and tracks.
3	Water Management Area	3 – Water Management	Includes water management infrastructure including the Austar Dam, the Effluent Dam and drainage lines.
CMA 2 – Pelton CHPP			
1	Infrastructure Area	1 – Infrastructure Area	Includes the major existing infrastructure, hardstand, and buildings at the CHPP including access roads and tracks.
		5 – Stockpiled Material	Includes the ROM and product stockpiles and tailings drying area
		7 – Rehabilitation Area - Pasture	Includes previously disturbed areas of the CHPP which have been previously rehabilitated.
2	Tailings Storage Facility	2 – Tailings and Reject Emplacement Area	Includes tailings storage facilities (TSFs) and reject emplacement areas (REAs) at the CHPP area including: - NW Emplacement Area (including noise bund) - No. 9 Tailings Storage Area - East Pit Emplacement Area
3	Water Management Area	3 – Water Management Area	Includes the network of dams at the CHPP including the: - Process water dams - Water pollution control dam and cells - Emergency overflow dam - Lime loop / Precipitate dam
4	Overburden Emplacement Area	2 – Tailings and Reject Emplacement Area	Includes overburden emplacement areas at the CHPP area including: - West Pit Emplacement Area
5	Active Mining	N/A	Includes the previously rehabilitated areas to the south of the East Pit.
CMA 3 – No. 1 Shaft			
1	Infrastructure Area	1 – Infrastructure Area	Includes the No. 1 Shaft existing infrastructure, hardstand, and buildings.

Code	Mining Domain	MOP Mining Domain Reference (Superseded but included for context)	Description
CMA 4 – No. 2 Shaft			
1	Infrastructure Area	1 – Infrastructure Area	Includes the existing infrastructure, hardstand and buildings at the No. 2 shaft and former Ellalong Pit Top.
CMA 5 – Cessnock No. 1 Colliery / Kalingo Infrastructure Area			
1	Infrastructure Area	1 – Infrastructure Area	Includes the existing infrastructure, hardstand and buildings in CMA 5 including the No. 3 and No. 4 ventilation shafts and services. Also includes access roads and tracks.
3	Water Management Area	3 – Water Management	Includes the Kalingo Dam
CMA 6 – Kitchener SIS			
1	Infrastructure Area	1 – Infrastructure Area	Includes the disturbed area of the Kitchener SIS site.
3	Water Management Area	N/A	Includes the sediment basins at the Kitchener SIS.
4	Overburden emplacement area	N/A	Includes the stockpiles of fine rock from shaft cutting at the Kitchener SIS
CMA 7 – Aberdare EEA			
2	Tailings Storage Facility	2 – Tailings and Reject Emplacement Area	Includes the footprint of the Aberdare EEA.
CMA 8 – Bellbird Areas 12 and 13			
1	Infrastructure Area	1 – Infrastructure Area	Includes the access road and disturbance footprint surrounding the brine boreholes.
2	Tailings Storage Facility	2 – Tailings and Reject Emplacement Area	Includes the footprint of Area 12 and Area 13 historic reject emplacement areas
CMA 9 – Other			
6	Underground Mining Area (SMP)	8 - Underground Mining Area	Includes the approved underground mining areas in Stage 3 and the Bellbird South.

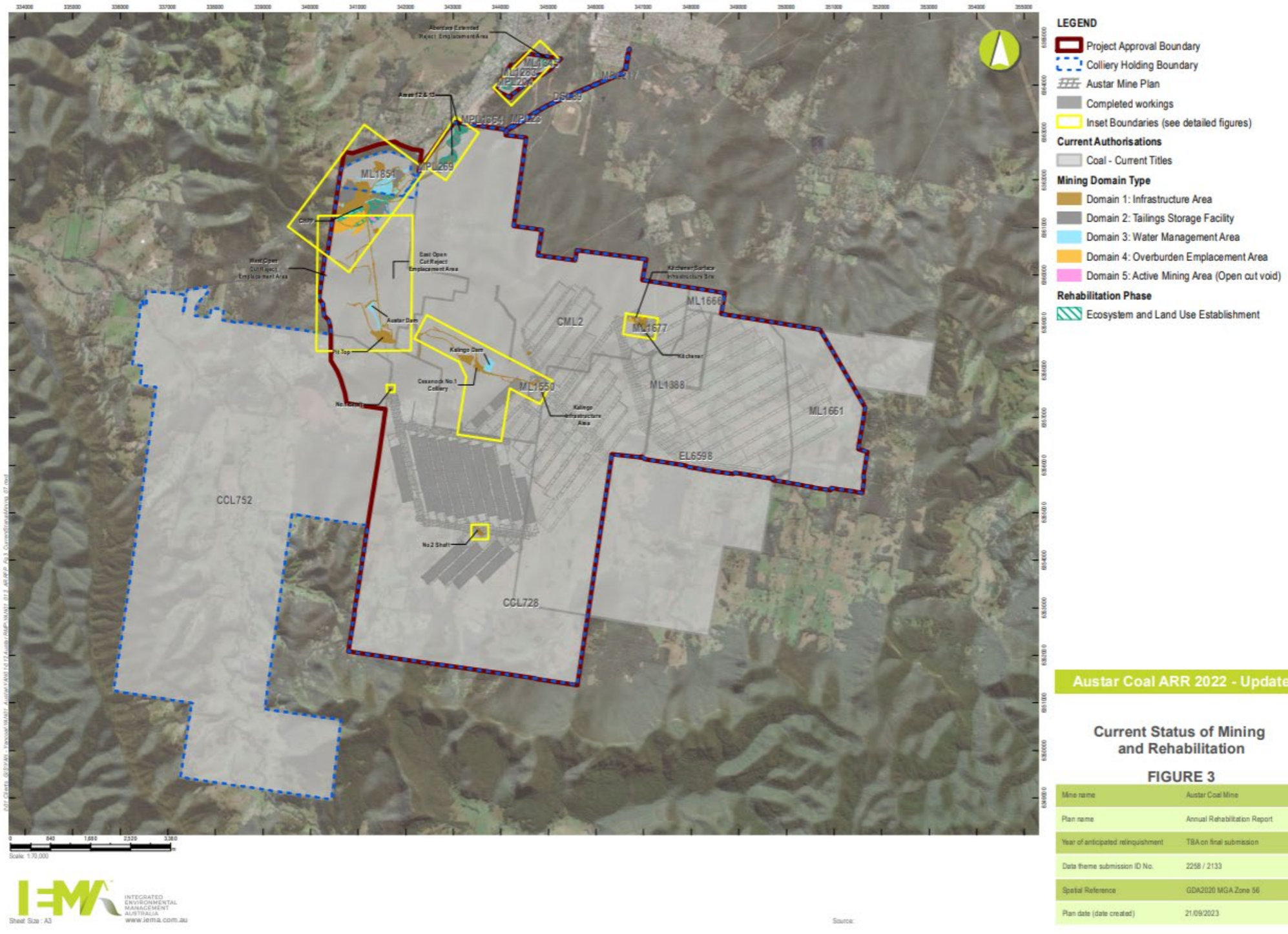

FIGURE 3 - MINING DOMAINS

3. REHABILITATION RISK ASSESSMENT

3.1. Summary of Risk Assessments

As part of the mine closure planning program, Austar has undertaken several Risk Assessments focussing on risks associated with mine closure. Risk assessments have included all life of mine considerations, as well as separate risk assessments for the key rehabilitation phases.

The outcomes of these risk assessments will inform the closure strategies and will assist in identifying if there is a need for additional technical or environmental assessments. The Closure Risk Assessment will be updated as required through closure planning.

A summary of the key rehabilitation and closure risk assessments undertaken by Austar is included in **Table 13.**

TABLE 13 - SUMMARY OF RISK ASSESSMENTS

Date	Risk Assessment	Details
2017	MOP Environmental Risk Assessment	Austar Coal Mine has undertaken an Environmental Risk Assessment (2017) which addresses Section 3.0 of the *ESG3: Mining Operations Plan (MOP) Guidelines* (DRE, 2013). The Risk Assessment was undertaken in accordance with *ISO 31000:2990 - Risk Management* and focused on risks associated with mining operations.
5 June 2020	Care-and-Maintenance MOP Risk Assessment	On 5 June 2020, Austar undertook an Environmental Risk Assessment focused on environmental risks associated with care and maintenance. The key identified risks included: - Reduced staffing leads to inadequate environmental management; - Increased trespassing/theft/vandalism leading to asset damage, environmental impacts or personal injury; - Suspended coal processing/reject emplacement leading to delayed filling, capping and rehabilitation of the reject emplacement areas; - Inadequate inspection/maintenance of water management infrastructure (i.e. erosion and sediment controls, pipelines, dams and drainages) leading to run-off of sediment-laden or contaminated water and surface water quality impacts; and - Increased potential for acid mine drainage from active reject emplacement areas.
September 2020	Initial Closure Risk Assessment	As part of the mine closure planning program, Austar undertook an Environmental Risk Assessment in September 2020, utilising the Bowtie methodology focussing on environmental risks associated with mine closure. It included a risk assessment for all life of mine considerations, as well as separate risk assessments for the key rehabilitation phases.
September 2021	Mid-term Closure Risk Assessment	In September 2021, Austar reviewed the Initial Closure Risk Assessment to reassess the risks based on the findings of Phase 1 Closure Planning Studies.
March 2022	RMP Risk Assessment	In March 2022, Austar undertook a rehabilitation risk assessment to identify and assess the rehabilitation and closure risks for the site in accordance with the Rehabilitation Risk Assessment Guideline (NSW Resources Regulator, 2021). Further detail is included in **Section 3.2**.

3.2. Rehabilitation Risk Assessment Workshop

A Rehabilitation Risk Assessment was conducted in March 2022. The objective of the risk assessment was to identify and assess the risks associated with the rehabilitation and closure of Austar and the successful achievement of the post-mining land use and rehabilitation objectives.

The workshop was guided by the *Guideline - Rehabilitation Risk Assessment* (RR 2021) and with consideration to *ISO 31000:2009 Risk Management Principles and Guidelines.* The risk assessment considered the previous risk assessments listed in **Table 13** as relevant to this RMP and was completed with the Yancoal Risk Matrix.

The rehabilitation workshop was split into two (2) sessions to focus on different phases of rehabilitation and to include key Austar personnel, consultants, demolition, and rehabilitation specialists.

The risk assessment workshop assessed a total of 83 key rehabilitation risks, with the risk rankings summarised as follows:

- 51 risks were ranked as low;
- 13 risks were ranked as moderate;
- 18 risks were ranked as high; and
- 1 risk was ranked as extreme.

The implementation of the identified rehabilitation controls is detailed in **Section 6**.

Risks identified as high to extreme for each phase are as follows.

Active Phase:

- Inadequate capping material quantity available for use in rehabilitation;
- Less than adequate soil/materials characterisation to inform rehabilitation;
- Adverse geochemical/chemical composition of materials (e.g. overburden and processing wastes);
- Less than adequate management of potentially acid-forming materials on site;
- Less than adequate handling of and containment of geochemically and geotechnically unsuitable tailings and reject materials;
- Sink holes from historic mine workings result in the need for rehabilitation; and
- Underground mine fills with water and surfaces.

Decommissioning Phase:

- Unplanned consequences on third parties or site essential services caused by the demolition of infrastructure on site;
- Unexpected requirement to dispose of specific waste streams offsite;
- Use of incorrect waste materials to fill voids/shafts; and
- Groundwater accumulation in former underground workings increases the potential for mine to fill and surface.

Landform Establishment Phase:

- Less than adequate infrastructure in place to manage water during closure;
- Less than adequate rehabilitation of water management infrastructure;
- Less than adequate augmentation of existing water management will be retained;
- Geotechnical and geochemical risks associated with landform establishment;
- Lack of availability of suitable materials for encapsulation/capping of adverse materials;
- Less than adequate construction of historic tailings and reject emplacements resulting in environmental impacts;
- Final voids, highwalls, rail cuttings, and low walls pose a risk to public safety and/or sterilises land available for future final land uses; and
- Less than adequate geomorphological and hydraulic modelling and aquatic ecological assessments associated with creeks diversions or reinstatements.

There were no high – extreme risks identified for growth medium development, ecosystem and land use establishment, and ecosystem and land use development phases.

All identified risk controls have been addressed and included in rehabilitations methodologies in **Section 6.2.**

4. REHABILITATION OBJECTIVES AND REHABILITATION COMPLETION CRITERIA

4.1. Rehabilitation Objectives and Rehabilitation Completion Criteria

4.1.1. General Mine Closure Objectives

The primary goal for mine closure at Austar is to rehabilitate the impacts of mining to:

- Achieve safe, stable landforms with beneficial land uses; and
- Satisfy all regulatory requirements under development consents, mining leases and licences.

The primary objective for the mine closure planning phase is to identify the most appropriate landform(s) and rehabilitation outcomes for executing closure that:

- Are credible, reliable, achievable; and
- Consider optimising beneficial land use(s) post-closure.

4.1.2. Approved Rehabilitation Objectives

In accordance with Clause 12, Schedule 8A of the Mining Regulation 2016, proposed rehabilitation objectives were submitted to the NSW Resources Regulator for approval. The rehabilitation objectives for Austar Coal Mine were subsequently approved by the Regulator on 22 August 2023 (reference ROBJ0001199).

4.1.3. Rehabilitation Completion Criteria

Completion criteria will be utilised to demonstrate the achievement of rehabilitation objectives.

Completion criteria will be subject to change throughout the detailed mine closure process as a result of ongoing consultation with the relevant stakeholders, findings and recommendations of technical studies and a continuous improvement process informed by rehabilitation monitoring results.

The achievement and progression towards (or otherwise) of the completion criteria will be monitored and reported as required.

Data from existing Austar ecological monitoring programs have been utilised in the development of draft ecological performance indicators, in conjunction with NSW Resources Regulator guideline documents.

The approved rehabilitation objectives with proposed rehabilitation completion criteria are presented in **Table 14**.

TABLE 144 – APPROVED REHABILITATION OBJECTIVES AND PROPOSED COMPLETION CRITERIA

Spatial Reference	Final Landuse	Mining Domain	Rehabilitation Objective Category	Rehabilitation Objectives	Indicator	Proposed Rehabilitation Completion Criteria	Validation Method
A1 A2 A3 A6 A7	Native Ecosystem	Infrastructure Tailings Storage Facility Water Management Areas Underground Mining Area (SMP) Beneficiation Facility	Removal of infrastructure	All non-heritage infrastructure removed to ensure the site is safe and free of hazardous materials	Removal of all services (power, water, communications, roads) that have been connected on site as part of the operation.	Services not required for post mining land use have been removed. Any services remaining are documented on a plan.	□ Demolition records □ Final landform plan
					Removal of all plant, equipment and associated infrastructure including processing facilities, stockpile areas, rail infrastructure and loading facilities, hydrocarbon storage tanks, office complex, portable buildings, exploration core samples, storage racks and samples.	Infrastructure not required for post mining land use has been removed. Any infrastructure remaining is documented on a plan	□ Demolition records □ Hazmat clearance records □ Waste disposal records □ As constructed final landform plan □ Photos
					Removal of all footings	Footings removed and/or removed to a specified depth to avoid exposure pathways to subsequent final land use.	□ Surveyed and marked on the as-constructed final landform plan
					Removal of water management infrastructure (including pumps, pipes and power)	Infrastructure removed. Any infrastructure remaining are documented on a plan.	□ Demolition records □ Photos
					Surveying and sealing of all drill holes and boreholes in accordance with departmental guidelines and relevant standards	Sealing completed and verified. Rehabilitation in accordance with EDG 01 Borehole Sealing Requirements.	□ Engineering report/statement □ Records of fill materials and grouting □ Photos □ ESF2 forms
					Surveying and sealing of all underground mine entries in accordance with departmental guidelines and relevant standards.	Shafts and mine openings filled and capped in accordance with DRE Guideline MDG 6001 ‘Guideline for the Permanent Filling and Capping of Surface Entries to Coal Seams (Feb, 2012)’.	□ Engineering report/statement □ Records of fill materials and concreting □ Photos
					Historic mine entries and boreholes investigated to assess any residual hazards and remediation requirements	Historic entries do not present any unacceptable residual risk	□ Documented inspection reports and photos

					All drill cores have been removed and taken to an authorised storage or a disposal location	Cores removed and relocated	□ Statement provided □ Receipt records from storage or disposal location
B1 B2 B3 B4 B6	Agricultural Grazing	Infrastructure Tailings Storage Facility Water Management Areas Overburden Emplacement Area Underground Mining Area	Removal of infrastructure	All non-heritage infrastructure removed to ensure the site is safe and free of hazardous materials	Removal of all services (power, water, communications, roads) that have been connected on site as part of the operation.	Services not required for post mining land use have been removed. Any services remaining are documented on a plan.	□ Demolition records □ Final landform plan
					Removal of all plant, equipment and associated infrastructure including processing facilities, stockpile areas, rail infrastructure and loading facilities, hydrocarbon storage tanks, office complex, portable buildings, exploration core samples, storage racks and samples.	Infrastructure not required for post mining land use has been removed. Any infrastructure remaining is documented on a plan	□ Demolition records □ Hazmat clearance records □ Waste disposal records □ As constructed final landform plan □ Photos
					Removal of all footings	Footings removed and/or removed to a specified depth to avoid exposure pathways to subsequent final land use.	□ Surveyed and marked on the as-constructed final landform plan
					Removal of water management infrastructure (including pumps, pipes and power)	Infrastructure removed. Any infrastructure remaining are documented on a plan.	□ Demolition records □ Photos
					Surveying and sealing of all drill holes and boreholes in accordance with departmental guidelines and relevant standards	Sealing completed and verified. Rehabilitation in accordance with EDG 01 Borehole Sealing Requirements.	□ Engineering report/statement □ Records of fill materials and grouting □ Photos □ ESF2 forms
					Surveying and sealing of all underground mine entries in accordance with departmental guidelines and relevant standards.	Shafts and mine openings filled and capped in accordance with DRE Guideline MDG 6001 ‘Guideline for the Permanent Filling and Capping of Surface Entries to Coal Seams (Feb, 2012)’.	□ Engineering report/statement □ Records of fill materials and concreting □ Photos
					Historic mine entries and boreholes investigated to assess any residual hazards and remediation requirements	Historic entries do not present any unacceptable residual risk	□ Documented inspection reports and photos
					All drill cores have been removed and taken to an authorised storage or a disposal location	Cores removed and relocated	□ Statement provided □ Receipt records from storage or disposal location

F3	Water Management Areas	Water Management Area	Removal of infrastructure	All non-heritage infrastructure removed to ensure the site is safe and free of hazardous materials	Removal of all services (power, water, communications, roads) that have been connected on site as part of the operation.	Services not required for post mining land use have been removed. Any services remaining are documented on a plan.	□ Demolition records □ Final landform plan
					Removal of all plant, equipment and associated infrastructure including processing facilities, stockpile areas, rail infrastructure and loading facilities, hydrocarbon storage tanks, office complex, portable buildings, exploration core samples, storage racks and samples.	Infrastructure not required for post mining land use has been removed. Any infrastructure remaining is documented on a plan	□ Demolition records □ Hazmat clearance records □ Waste disposal records □ As constructed final landform plan □ Photos
					Removal of all footings	Footings removed and/or removed to a specified depth to avoid exposure pathways to subsequent final land use.	□ Surveyed and marked on the as-constructed final landform plan
					Removal of water management infrastructure (including pumps, pipes and power)	Infrastructure removed. Any infrastructure remaining are documented on a plan.	□ Demolition records □ Photos
					Surveying and sealing of all drill holes and boreholes in accordance with departmental guidelines and relevant standards	Sealing completed and verified. Rehabilitation in accordance with EDG 01 Borehole Sealing Requirements.	□ Engineering report/statement □ Records of fill materials and grouting □ Photos □ ESF2 forms
					Surveying and sealing of all underground mine entries in accordance with departmental guidelines and relevant standards.	Shafts and mine openings filled and capped in accordance with DRE Guideline MDG 6001 ‘Guideline for the Permanent Filling and Capping of Surface Entries to Coal Seams (Feb, 2012)’.	□ Engineering report/statement □ Records of fill materials and concreting □ Photos
					All drill cores have been removed and taken to an authorised storage or a disposal location	Cores removed and relocated	□ Statement provided □ Receipt records from storage or disposal location
G3	Water Storage	Water Management Area	Removal of infrastructure	All non-heritage infrastructure removed to ensure the site is safe and free of hazardous materials	Removal of all services (power, water, communications, roads) that have been connected on site as part of the operation.	Services not required for post mining land use have been removed. Any services remaining are documented on a plan.	□ Demolition records □ Final landform plan
					Removal of all plant, equipment and associated infrastructure including processing facilities, stockpile areas, rail infrastructure and loading facilities, hydrocarbon storage tanks, office complex, portable buildings,	Infrastructure not required for post mining land use has been removed. Any infrastructure remaining is documented on a plan.	□ Demolition records □ Hazmat clearance records □ Waste disposal records □ As constructed final

					exploration core samples, storage racks and samples.		landform plan □ Photos
					Removal of all footings	Footings removed and/or removed to a specified depth to avoid exposure pathways to subsequent final land use.	□ Surveyed and marked on the as-constructed final landform plan
					Removal of water management infrastructure (including pumps, pipes and power)	Infrastructure removed. Any infrastructure remaining are documented on a plan.	□ Demolition records □ Photos
					Surveying and sealing of all drill holes and boreholes in accordance with departmental guidelines and relevant standards	Sealing completed and verified. Rehabilitation in accordance with EDG 01 Borehole Sealing Requirements.	□ Engineering report/statement □ Records of fill materials and grouting □ Photos □ ESF2 forms
					Surveying and sealing of all underground mine entries in accordance with departmental guidelines and relevant standards.	Shafts and mine openings filled and capped in accordance with DRE Guideline MDG 6001 ‘Guideline for the Permanent Filling and Capping of Surface Entries to Coal Seams (Feb, 2012)’.	□ Engineering report/statement □ Records of fill materials and concreting □ Photos
					All drill cores have been removed and taken to an authorised storage or a disposal location	Cores removed and relocated	□ Statement provided □ Receipt records from storage or disposal location
A1 A7	Native Ecosystem	Infrastructure Beneficiation Facility	Removal of infrastructure	Heritage infrastructure has been appropriately assessed and approved for removal	Heritage obligations (e.g. development consent under the Environmental Planning and Assessment Act 1979, approvals under the Heritage Act 1977, etc.) have been met (e.g. archival recording, building retention or building demolition with footings preserved).	Permits and approval documents issued. All archival reports required are complete and submitted.	□ Copy of any relevant approval documentation and archival reports/records.
B1	Agricultural Grazing	Infrastructure	Removal of infrastructure	Heritage infrastructure has been appropriately assessed and approved for removal	Heritage obligations (e.g. development consent under the Environmental Planning and Assessment Act 1979, approvals under the Heritage Act 1977, etc.) have been met (e.g. archival recording, building retention or building demolition with footings preserved).	Permits and approval documents issued. All archival reports required are complete and submitted.	□ Copy of any relevant Approval documentation and archival reports/records.

A1 A2 A3 A6 A7	Native Ecosystem	Infrastructure Tailings Storage Facility Water Management Area Underground Mining area Beneficiation Facility	Removal of infrastructure	All shafts mine openings and boreholes are sealed in accordance with the relevant guidelines to make safe and stable.	Surveying and sealing of all drill holes, boreholes and gas wells in accordance with departmental guidelines and relevant standards.	Sealing completed and verified.	□ Engineering report/statement, plug and abandonment log, photos, as-constructed drawings, records of fill materials and concrete plugs, filling methods etc.
					Surveying and sealing of all underground mine entries in accordance with departmental guidelines and relevant standards	Sealing completed and verified by suitably qualified engineer.	□ Engineering report/statement, plug and abandonment log, photos, as-constructed drawings, records of fill materials and concrete plugs, filling methods etc.
B1 B2 B3 B4 B6	Agricultural Grazing	Infrastructure Tailings Storage Facility Water Management Area Overburden Emplacement Area Underground Mining Area	Removal of infrastructure	All shafts mine openings and boreholes are sealed in accordance with the relevant guidelines to make safe and stable.	Surveying and sealing of all drill holes, boreholes and gas wells in accordance with departmental guidelines and relevant standards.	Sealing completed and verified.	□ Engineering report/statement, plug and abandonment log, photos, as-constructed drawings, records of fill materials and concrete plugs, filling methods etc.
					Surveying and sealing of all underground mine entries in accordance with departmental guidelines and relevant standards	Sealing completed and verified by suitably qualified engineer.	□ Engineering report/statement, plug and abandonment log, photos, as-constructed drawings, records of fill materials and concrete plugs, filling methods etc.
A1 A7	Native Ecosystem	Infrastructure Beneficiation Facility	Retention of infrastructure	All infrastructure that is to remain as part of the final land use is safe, does not pose any hazard to the community.	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured	Hazards isolated and secured.	□ Statement provided by suitably qualified engineer.
					Damage to access tracks has been repaired and stabilised.	Repairs complete.	□ As-constructed final landform plan, photos etc.
					Where applicable, necessary approvals are in place (e.g. development consent under the Environmental Planning and Assessment Act 1979) where buildings and infrastructure are to be retained as part of final land use	Permits and approval documents issued.	□ Copy of any relevant approvals.

					Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc. have been met (e.g. archival recording, building retention and restoration).	Permits and approval documents issued; archival reports (where required) complete and submitted.	□ Copy of any relevant approvals.
					The structural integrity of the infrastructure is suitable and safe for use as part of the intended final land use	The structural integrity of the infrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use.	□ Engineering report/statement, photos, risk assessment verifying modes of failure are adequately addressed to minimise risks to public safety or the environment.
					Infrastructure is in a condition (e.g. structural, electrical, other hazards) that is suitable for the intended final land use.	Formal acceptance from the subsequent landowner that infrastructure is in a condition that is suitable for the intended final land use in accordance with formal agreement.	□ Formal acceptance from landowner.
					If any underground pipelines or other infrastructure are to remain in situ, they do not pose a hazard for the intended final land use.	The location of the infrastructure has been marked on a plan and registered with the relevant local authority (e.g. local Council) and Dial Before You Dig. Formal acceptance from the subsequent landowner that underground infrastructure has been left in a condition that is suitable for the intended final land use in accordance with formal agreement.	□ Surveyed and marked on the as-constructed final landform plan. □ Copy of notification to local Council and Dial Before You Dig □ Formal acceptance from landowner. Identified on an appropriate legal instrument associated with the land title.
B1	Agricultural Grazing	Infrastructure	Retention of infrastructure	All infrastructure that is to remain as part of the final land use is safe, does not pose any hazard to the community.	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured	Hazards isolated and secured.	□ Statement provided by suitably qualified engineer.
					Damage to access tracks has been repaired and stabilised.	Repairs complete.	□ As-constructed final landform plan, photos etc.

					Where applicable, necessary approvals are in place (e.g. development consent under the Environmental Planning and Assessment Act 1979) where buildings and infrastructure are to be retained as part of final land use	Permits and approval documents issued.	□ Copy of any relevant approvals.
					Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc. have been met (e.g. archival recording, building retention and restoration).	Permits and approval documents issued; archival reports (where required) complete and submitted.	□ Copy of any relevant approvals.
					The structural integrity of the infrastructure is suitable and safe for use as part of the intended final land use	The structural integrity of the infrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use.	□ Engineering report/statement, photos, risk assessment verifying modes of failure are adequately addressed to minimise risks to public safety or the environment.
					Infrastructure is in a condition (e.g. structural, electrical, other hazards) that is suitable for the intended final land use.	Formal acceptance from the subsequent landowner that infrastructure is in a condition that is suitable for the intended final land use in accordance with formal agreement.	□ Formal acceptance from landowner.
					If any underground pipelines or other infrastructure are to remain in situ, they do not pose a hazard for the intended final land use.	The location of the infrastructure has been marked on a plan and registered with the relevant local authority (e.g. local Council) and Dial Before You Dig. Formal acceptance from the subsequent landowner that underground infrastructure has been left in a condition that is suitable for the intended final land use in accordance with formal agreement.	□ Surveyed and marked on the as-constructed final landform plan. □ Copy of notification to local Council and Dial Before You Dig □ Formal acceptance from landowner. Identified on an appropriate legal instrument associated with the land title.
A1 A7	Native Ecosystem	Infrastructure Beneficiation facility	Retention of infrastructure	All infrastructure that is to remain as part of the final land use benefits from the relevant approvals (e.g. development consent and /	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured	Hazards isolated and secured.	□ Statement provided by suitably qualified engineer.

				or licence/lease/binding agreement, etc)	Damage to access tracks has been repaired and stabilised.	Repairs complete.	□ As-constructed final landform plan, photos etc.
					Where applicable, necessary approvals are in place (e.g. development consent under the Environmental Planning and Assessment Act 1979) where buildings and infrastructure are to be retained as part of final land use	Permits and approval documents issued.	□ Copy of any relevant approvals.
					Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc. have been met (e.g. archival recording, building retention and restoration).	Permits and approval documents issued; archival reports (where required) complete and submitted.	□ Copy of any relevant approvals.
					The structural integrity of the infrastructure is suitable and safe for use as part of the intended final land use	The structural integrity of the infrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use.	□ Engineering report/statement, photos, risk assessment verifying modes of failure are adequately addressed to minimise risks to public safety or the environment.
					Infrastructure is in a condition (e.g. structural, electrical, other hazards) that is suitable for the intended final land use.	Formal acceptance from the subsequent landowner that infrastructure is in a condition that is suitable for the intended final land use in accordance with formal agreement.	□ Formal acceptance from landowner.
					If any underground pipelines or other infrastructure are to remain in situ, they do not pose a hazard for the intended final land use.	The location of the infrastructure has been marked on a plan and registered with the relevant local authority (e.g. local Council) and Dial Before You Dig. Formal acceptance from the subsequent landowner that underground infrastructure has been left in a condition that is suitable for the intended final land use in accordance with formal agreement.	□ Surveyed and marked on the as-constructed final landform plan. □ Copy of notification to local Council and Dial Before You Dig □ Formal acceptance from landowner. Identified on an appropriate legal instrument associated with the land title.

B1	Agricultural Grazing	Infrastructure	Retention of infrastructure	All infrastructure that is to remain as part of the final land use benefits from the relevant approvals (e.g. development consent and / or licence/lease/binding agreement, etc)	Potential hazards (e.g. electrical, mechanical) have been effectively isolated and secured	Hazards isolated and secured.	□ Statement provided by suitably qualified engineer.
					Damage to access tracks has been repaired and stabilised.	Repairs complete.	□ As-constructed final landform plan, photos etc.
					Where applicable, necessary approvals are in place (e.g. development consent under the Environmental Planning and Assessment Act 1979) where buildings and infrastructure are to be retained as part of final land use	Permits and approval documents issued.	□ Copy of any relevant approvals.
					Heritage obligations as required under the Environmental Planning and Assessment Act 1979, Heritage Act 1977, etc. have been met (e.g. archival recording, building retention and restoration).	Permits and approval documents issued; archival reports (where required) complete and submitted.	□ Copy of any relevant approvals.
					The structural integrity of the infrastructure is suitable and safe for use as part of the intended final land use	The structural integrity of the infrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use.	□ Engineering report/statement, photos, risk assessment verifying modes of failure are adequately addressed to minimise risks to public safety or the environment.
					Infrastructure is in a condition (e.g. structural, electrical, other hazards) that is suitable for the intended final land use.	Formal acceptance from the subsequent landowner that infrastructure is in a condition that is suitable for the intended final land use in accordance with formal agreement.	□ Formal acceptance from landowner.
					If any underground pipelines or other infrastructure are to remain in situ, they do not pose a hazard for the intended final land use.	The location of the infrastructure has been marked on a plan and registered with the relevant local authority (e.g. local Council) and Dial Before You Dig. Formal acceptance from the subsequent landowner that underground infrastructure has been left in a condition that is suitable for the intended final land use in accordance with formal agreement.	□ Surveyed and marked on the as-constructed final landform plan. □ Copy of notification to local Council and Dial Before You Dig □ Formal acceptance from landowner. Identified on an appropriate legal instrument associated with the land title.

A1 A2 A3 A7	Native Ecosystem	Infrastructure Tailing Storage Facility Water Management Area Beneficiation Facility	Land contamination	Ensure the site is safe and levels of hazardous materials are appropriate for final land use	Waste material and/or visible contamination areas on site surface.	There are no visible signs of contamination following the removal of plant, equipment and materials. All rubbish/ waste materials removed from site.	□ Statement provided and before/after photos.
					Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999) applicable to land use type.	Contamination will be appropriately remediated so that appropriate guidelines for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999). Excess sludge/material has been removed from surface water dams.	□ Contamination Remediation Report prepared by Land □ Contamination Validation Report □ Clearance Certificates
					Carbonaceous Material	Carbonaceous material has been emplaced or capped in accordance with the final land use plan or removed from the site.	□ Capping study report □ As-built survey
					Desilting of mine water management structures	All mine water management structures have been de-silted and material buried and capped onsite or material transferred to a licensed waste disposal facility.	□ Site inspection records □ Waste disposal records
B1 B2 B3 B4	Agricultural Grazing	Infrastructure Tailings Storage Facility Water Management Area Overburden Emplacement Area	Land contamination	Ensure the site is safe and levels of hazardous materials are appropriate for final land use	Waste material and/or visible contamination areas on site surface.	There are no visible signs of contamination following the removal of plant, equipment and materials. All rubbish/ waste materials removed from site.	□ Statement provided and before/after photos. □
					Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999) applicable to land use type.	Contamination will be appropriately remediated so that appropriate guidelines for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999). Excess sludge/material has been removed from surface water dams.	□ Contamination Remediation Report prepared by Land □ Contamination Validation Report □ Clearance Certificates
					Carbonaceous Material	Carbonaceous material has been emplaced or capped in accordance with the final land use plan or removed from the site.	□ Capping study report □ As-built survey
					Desilting of mine water management structures	All mine water management structures have been de-silted and material buried and capped onsite or material transferred to a licensed waste disposal facility.	□ Site inspection records □ Waste disposal records
F3	Water Management Areas	Water Management Area	Land contamination	Ensure the site is safe and levels of hazardous materials are appropriate for final land use	Desilting of mine water management structures	All mine water management structures have been de-silted and material buried and capped onsite or material transferred to a licensed waste disposal facility.	□ Site inspection records □ Waste disposal records

G3	Water Storage	Water Management Area	Land contamination	Ensure the site is safe and levels of hazardous materials are appropriate for final land use	Desilting of mine water management structures	All mine water management structures have been de-silted and material buried and capped onsite or material transferred to a licensed waste disposal facility.	□ Site inspection records □ Waste disposal records
A1 A2 A3 A4 A7	Native Ecosystem	Infrastructure Tailings Storage Water Management Area Overburden Emplacement Area Beneficiation Facility	Land contamination	Contaminated areas and/or hazardous materials are identified and remediated, removed or otherwise managed to a level that is compatible with the final land use and does not pose a threat of environmental harm.	Waste material and/or visible contamination areas on site surface.	There are no visible signs of contamination following the removal of plant, equipment and materials. All rubbish/ waste materials removed from site.	□ Statement provided and before/after photos.
					Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999) applicable to land use type.	Contamination will be appropriately remediated so that appropriate guidelines for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999). Excess sludge/material has been removed from surface water dams.	□ Contamination Remediation Report prepared by Land □ Contamination Validation Report □ Clearance Certificates
B1 B2 B3 B4	Agricultural Grazing	Infrastructure Tailings Storage Water Management Area Overburden Emplacement Area	Land contamination	Contaminated areas and/or hazardous materials are identified and remediated, removed or otherwise managed to a level that is compatible with the final land use and does not pose a threat of environmental harm.	Waste material and/or visible contamination areas on site surface.	There are no visible signs of contamination following the removal of plant, equipment and materials. All rubbish/ waste materials removed from site.	□ Statement provided and before/after photos.
					Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999) applicable to land use type.	Contamination will be appropriately remediated so that appropriate guidelines for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999). Excess sludge/material has been removed from surface water dams.	□ Contamination Remediation Report prepared by Land □ Contamination Validation Report □ Clearance Certificates
F3	Water Management Areas	Water Management Area	Land contamination	Contaminated areas and/or hazardous materials are identified and remediated, removed or otherwise managed to a level that is compatible with the final land use and does not	Waste material and/or visible contamination areas on site surface.	There are no visible signs of contamination following the removal of plant, equipment and materials. All rubbish/ waste materials removed from site.	□ Statement provided and before/after photos.

				pose a threat of environmental harm.	Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999) applicable to land use type.	Contamination will be appropriately remediated so that appropriate guidelines for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999). Excess sludge/material has been removed from surface water dams.	□ Contamination Remediation Report prepared by Land □ Contamination Validation Report □ Clearance Certificates
G3	Water Storage	Water Management Area	Land contamination	Contaminated areas and/or hazardous materials are identified and remediated, removed or otherwise managed to a level that is compatible with the final land use and does not pose a threat of environmental harm.	Waste material and/or visible contamination areas on site surface.	There are no visible signs of contamination following the removal of plant, equipment and materials. All rubbish/ waste materials removed from site.	□ Statement provided and before/after photos.
					Soil testing for contaminants of concern as listed by Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999) applicable to land use type.	Contamination will be appropriately remediated so that appropriate guidelines for land use are met, e.g. Health Investigation Level of the National Environment Protection (Assessment of Site Contamination) Measure (1999). Excess sludge/material has been removed from surface water dams.	□ Contamination Remediation Report prepared by Land □ Contamination Validation Report □ Clearance Certificates
A2	Native Ecosystem	Tailings Storage Facility	Management of waste and process materials	Residual waste materials stored on site (eg tailings, coarse rejects and other wastes) have been appropriately encapsulated or otherwise managed so they do not pose any hazards or constraints to the post mining land use	Visual –capping material placement, type across emplacement Visual – indication of capping performance on final landform – vegetation health Visual – emplacement seepage and other indicators of groundwater issues – wet spots etc. Measured - survey of emplacement capping to verify construction and to monitor settlement. Quality assurance records for the construction of the emplacement material including (where relevant) capping material, liner system, seepage control etc Measured- surface and groundwater levels to verify water balance modelling and capping function Measured – contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplaced.	Visual – verification that capping, type and placement consistent with design Visual – no signs of compromised capping performance indicated by vegetation health – such as tree death (deeper root systems) Visual – no areas of unexpected seepage Survey verifies that capping placement consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordance with design specifications relevant to site risks and target final land use	□ Photos, rehabilitation monitoring reports, as constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. □ The structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained

B2	Agricultural Grazing	Tailings Storage Facility	Management of waste and process materials	Residual waste materials stored on site (eg tailings, coarse rejects and other wastes) have been appropriately encapsulated or otherwise managed so they do not pose any hazards or constraints to the post mining land use	Visual –capping material placement, type across emplacement Visual – indication of capping performance on final landform – vegetation health Visual – emplacement seepage and other indicators of groundwater issues – wet spots etc. Measured - survey of emplacement capping to verify construction and to monitor settlement. Quality assurance records for the construction of the emplacement material including (where relevant) capping material, liner system, seepage control etc Measured- surface and groundwater levels to verify water balance modelling and capping function. Measured – contamination levels in surface and groundwater surrounding emplacement for contaminants of concern associated with waste material emplaced.	Visual – verification that capping, type and placement consistent with design Visual – no signs of compromised capping performance indicated by vegetation health – such as tree death (deeper root systems) Visual – no areas of unexpected seepage Survey verifies that capping placement consistent with design and settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Quality assurance records verify capping constructed and in accordance with design specifications relevant to site risks and target final land use.	□ Photos, rehabilitation monitoring reports, as constructed surveys, quality assurance records for construction, erosion surveys, independent geotechnical reports (where required), groundwater/surface water monitoring reports. □ The structural integrity of the infrastructure and capping has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use and water material adequately contained
A1 A2 A3 A4 A7	Native Ecosystem	Infrastructure Tailings Storage Facility Water Management Area Overburden Emplacement Area Beneficiation Facility	Landform stability	The final landform is commensurate with the surrounding natural landform and has been designed and constructed in accordance with appropriate final landform design principles.	Visual assessment conducted to verify that landforms developed are compatible with surrounding landscape.	Inspection confirms landform is compatible with surrounding landscape. Photographic record.	□ Final landform approval documentation □ As-built survey □ Visual assessment
					Final landform shaped	Survey complete to confirm landform is generally in accordance with final landform design.	□ As-built survey
					Erosion	Minor rilling only within areas that landform works have been undertaken.	□ Rehabilitation monitoring report
B1 B2 B3 B4	Agricultural Grazing	Infrastructure Tailings Storage Facility	Landform stability	The final landform is commensurate with the surrounding natural landform and has been designed and constructed in accordance with	Suitable capping thickness is applied to meet the final landform	Tailings will be capped in accordance with the capping design specifications determined by suitably qualified and experienced engineers.	□ Capping design □ Inspection and Test Plans □ As-built survey

		Water Management Overburden Emplacement		appropriate final landform design principles.	Visual assessment conducted to verify that landforms developed are compatible with surrounding landscape.	Inspection confirms landform is compatible with surrounding landscape. Photographic record.	□ Final landform approval documentation □ As-built survey □ Visual assessment
					Final landform shaped and rehabilitated	Survey complete to confirm landform is generally in accordance with the final landform design.	□ As-built survey
					Erosion	Minor rilling only within areas that landform works have been undertaken.	□ Rehabilitation monitoring report
F3	Water Management Areas	Water Management Area	Landform stability	The final landform is commensurate with the surrounding natural landform and has been designed and constructed in accordance with appropriate final landform design principles.	Suitable capping thickness is applied to meet the final landform	Tailings will be capped in accordance with the capping design specifications determined by suitably qualified and experienced engineers.	□ Capping design □ Inspection and Test Plans □ As-built survey
					Visual assessment conducted to verify that landforms developed are compatible with surrounding landscape.	Inspection confirms landform is compatible with surrounding landscape. Photographic record.	□ Final landform approval documentation □ As-built survey □ Visual assessment
					Final landform shaped and rehabilitated	Survey complete to confirm landform is generally in accordance with the final landform design.	□ As-built survey
					Erosion	Minor rilling only (less than 30 cm deep by 30 cm wide, whilst also maintaining the minimum compacted capping material depth) within areas that landform works have been undertaken.	□ Rehabilitation monitoring report

G3	Water Storage	Water Management Area	Landform stability	The final landform is commensurate with the surrounding natural landform and has been designed and constructed in accordance with appropriate final landform design principles.	Suitable capping thickness is applied to meet the final landform	Rejects will be covered in accordance with the specifications determined from the technical studies.	□ Capping design □ As-built survey
					Visual assessment conducted to verify that landforms developed are compatible with surrounding landscape.	Inspection confirms landform is compatible with surrounding landscape. Photographic record.	□ Final landform approval documentation □ As-built survey □ Visual assessment
					Final landform shaped and rehabilitated	Survey complete to confirm landform is generally in accordance with the final landform design.	□ As-built survey
					Erosion	Minor rilling only (less than 30 cm deep by 30 cm wide, whilst also maintaining the minimum compacted capping material depth) within areas that landform works have been undertaken.	□ Rehabilitation monitoring report
A1 A2 A3 A4 A6 A7	Native Ecosystem	Infrastructure Tailings Storage Facility Water Management Area Overburden Emplacement Area Underground Mining Area Beneficiation Facility	Landform stability	The final landform is stable for the long term and does not present a risk of environmental harm downstream / downslope of the site or a safety risk to the public/stock/native fauna.	Visual - indicators of erosion and land instability. Visual - indicators that surface water management structure are functioning as designed. Measured – erosion rates from field trials and or surveys on both target analogue sites (representative of final land use) and rehabilitated profiles (tonnes / ha). Measured - Survey of rehabilitated landform to verify final landform construction in accordance with Final Landform and Rehabilitation Plan. Measured - survey of rehabilitated landform to specifically monitor settlement and/or material loss via erosion. Modelled – long term erosional stability (e.g. Landform Evolution Modelling) to verify the long-term stability of rehabilitated landform. Modelled – long term geotechnical stability (e.g. stability analysis) to verify the long-	Visual- minimal erosion that would not require moderate to significant ongoing management and maintenance works. Visual – no signs of land instability such as mass movement. Visual - no areas of active gully erosion. Visual - no evidence of tunnel erosion. Visual – no evidence of active scour likely to compromise surface water management structure. Survey verifies final landform complies with final landform construction in accordance with Final Landform and Rehabilitation Plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Erosion rate monitoring verifies that erosion levels are within the range of target analogue sites representative of final land use. Significant surface water management structures (e.g. spillways, drop structures, major drains and creek diversions) have been constructed in accordance with hydrological design.	□ Before and after photos, rehabilitation monitoring reports, as constructed surveys, erosion surveys, independent geotechnical reports (where required) and or erosion modelling reports (where required) that indicate long-term stability of rehabilitated landform.

					term stability of rehabilitated landform.	High risk landforms (such as steep slopes, high walls) have been constructed in accordance with geotechnical design.	
B1 B2 B3 B4 B6	Agricultural Grazing	Infrastructure Tailings Storage Facility Water Management Area Overburden Emplacement Area Underground Mining Area	Landform stability	The final landform is stable for the long term and does not present a risk of environmental harm downstream / downslope of the site or a safety risk to the public/stock/native fauna.	Visual - indicators of erosion and land instability. Visual - indicators that surface water management structure are functioning as designed. Measured – erosion rates from field trials and or surveys on both target analogue sites (representative of final land use) and rehabilitated profiles (tonnes / ha). Measured - Survey of rehabilitated landform to verify final landform construction in accordance with Final Landform and Rehabilitation Plan. Measured - survey of rehabilitated landform to specifically monitor settlement and/or material loss via erosion. Modelled – long term erosional stability (e.g. Landform Evolution Modelling) to verify the long-term stability of rehabilitated landform. Modelled – long term geotechnical stability (e.g. stability analysis) to verify the long-term stability of rehabilitated landform.	Visual- minimal erosion that would not require moderate to significant ongoing management and maintenance works. Visual – no signs of land instability such as mass movement. Visual - no areas of active gully erosion. Visual - no evidence of tunnel erosion. Visual – no evidence of active scour likely to compromise surface water management structure. Survey verifies final landform complies with final landform construction in accordance with Final Landform and Rehabilitation Plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Erosion rate monitoring verifies that erosion levels are within the range of target analogue sites representative of final land use. Significant surface water management structures (e.g. spillways, drop structures, major drains and creek diversions) have been constructed in accordance with hydrological design. High risk landforms (such as steep slopes, high walls) have been constructed in accordance with geotechnical design.	□ Before and after photos, rehabilitation monitoring reports, as constructed surveys, erosion surveys, independent geotechnical reports (where required) and or erosion modelling reports (where required) that indicate long-term stability of rehabilitated landform.
F3	Water Management Areas	Water Management Area	Landform stability	The final landform is stable for the long term and does not present a risk of environmental harm downstream / downslope of the site or a safety risk to the public/stock/native fauna.	Visual - indicators of erosion and land instability. Visual - indicators that surface water management structure are functioning as designed. Measured – erosion rates from field trials and or surveys on both target analogue sites (representative of final land use) and rehabilitated profiles (tonnes / ha). Measured - Survey of rehabilitated landform to verify final landform construction in accordance with Final Landform and Rehabilitation Plan. Measured - survey of rehabilitated landform to specifically monitor settlement and/or material loss via erosion. Modelled – long	Visual- minimal erosion that would not require moderate to significant ongoing management and maintenance works. Visual – no signs of land instability such as mass movement. Visual - no areas of active gully erosion. Visual - no evidence of tunnel erosion. Visual – no evidence of active scour likely to compromise surface water management structure. Survey verifies final landform complies with final landform construction in accordance with Final Landform and Rehabilitation Plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Erosion rate monitoring verifies that erosion levels are within the range of target analogue sites representative of final land use.	□ Before and after photos, rehabilitation monitoring reports, as constructed surveys, erosion surveys, independent geotechnical reports (where required) and or erosion modelling reports (where required) that indicate long-term stability of rehabilitated landform.

					term erosional stability (e.g. Landform Evolution Modelling) to verify the long-term stability of rehabilitated landform. Modelled – long term geotechnical stability (e.g. stability analysis) to verify the long-term stability of rehabilitated landform.	Significant surface water management structures (e.g. spillways, drop structures, major drains and creek diversions) have been constructed in accordance with hydrological design. High risk landforms (such as steep slopes, high walls) have been constructed in accordance with geotechnical design.	
G3	Water Storage	Water Management Area	Landform stability	The final landform is stable for the long term and does not present a risk of environmental harm downstream / downslope of the site or a safety risk to the public/stock/native fauna.	Visual - indicators of erosion and land instability. Visual - indicators that surface water management structure are functioning as designed. Measured – erosion rates from field trials and or surveys on both target analogue sites (representative of final land use) and rehabilitated profiles (tonnes / ha). Measured - Survey of rehabilitated landform to verify final landform construction in accordance with Final Landform and Rehabilitation Plan. Measured - survey of rehabilitated landform to specifically monitor settlement and/or material loss via erosion. Modelled – long term erosional stability (e.g. Landform Evolution Modelling) to verify the long-term stability of rehabilitated landform. Modelled – long term geotechnical stability (e.g. stability analysis) to verify the long-term stability of rehabilitated landform.	Visual- minimal erosion that would not require moderate to significant ongoing management and maintenance works. Visual – no signs of land instability such as mass movement. Visual - no areas of active gully erosion. Visual - no evidence of tunnel erosion. Visual – no evidence of active scour likely to compromise surface water management structure. Survey verifies final landform complies with final landform construction in accordance with Final Landform and Rehabilitation Plan. Survey verifies that settlement and/or material loss is within predicted limits and will not compromise final landform drainage via differential settlement. Erosion rate monitoring verifies that erosion levels are within the range of target analogue sites representative of final land use. Significant surface water management structures (e.g. spillways, drop structures, major drains and creek diversions) have been constructed in accordance with hydrological design. High risk landforms (such as steep slopes, high walls) have been constructed in accordance with geotechnical design.	□ Before and after photos, rehabilitation monitoring reports, as constructed surveys, erosion surveys, independent geotechnical reports (where required) and or erosion modelling reports (where required) that indicate long-term stability of rehabilitated landform.
A6	Native Ecosystem	Underground Mining Area (SMP)	Landform stability	Public Safety hazards above LW extraction area are managed and reduced to no more than those existing pre-mining	General landform public safety impacts are remediated. Identified slope instability issues are managed.	Subsidence Monitoring Program inspection results indicate no public safety hazards post mining.	□ SM monitoring reports □ End of Panel reports.
B6	Agricultural Grazing	Underground Mining Area (SMP)	Landform stability	Public Safety hazards above LW extraction area are managed and reduced to no more than those existing pre-mining	General landform public safety impacts are remediated. Identified slope instability issues are managed.	Subsidence Monitoring Program inspection results indicate no public safety hazards post mining.	□ SM monitoring reports □ End of Panel reports.
A6	Native Ecosystem	Underground Mining Area (SMP)	Landform stability	Built features damaged by mining operations have been repaired, restored or replaced in accordance	The structural integrity of the infrastructure is suitable and safe for use as part of the intended final land use	The structural integrity of the infrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use.	□ Engineering report/statement, photos, risk assessment verifying modes of failure are adequately addressed to

				with Extraction Plan requirements			minimise risks to public safety or the environment.
					Infrastructure is in a condition (e.g. structural, electrical, other hazards) that is suitable for the intended final land use.	Formal acceptance from the subsequent landowner that infrastructure is in a condition that is suitable for the intended final land use in accordance with formal agreement.	□ Formal acceptance from landowner.
B6	Agricultural Grazing	Underground Mining Area (SMP)	Landform stability	Built features damaged by mining operations have been repaired, restored or replaced in accordance with Extraction Plan requirements	The structural integrity of the infrastructure is suitable and safe for use as part of the intended final land use	The structural integrity of the infrastructure has been inspected by a suitably qualified engineer and determined to be suitable and safe as part of the intended final land use.	□ Engineering report/statement, photos, risk assessment verifying modes of failure are adequately addressed to minimise risks to public safety or the environment.
					Infrastructure is in a condition (e.g. structural, electrical, other hazards) that is suitable for the intended final land use.	Formal acceptance from the subsequent landowner that infrastructure is in a condition that is suitable for the intended final land use in accordance with formal agreement.	□ Formal acceptance from landowner.
A1 A2 A3 A4 A7	Native Ecosystem	Infrastructure Tailings Storage Facility Water Management Area Overburden Emplacement Area Beneficiation Facility	Bushfire	The area does not present an unreasonable bushfire hazard to surrounding areas.	NSW Fire Service to provide comments on Bushfire Management Plan or the bushfire management plan has been developed using relevant NSW Fire Service guidelines.	Appropriate bushfire hazard controls have been implemented with advice from the NSW Rural Fire Service.	□ Bushfire management inspection □ Records of fire trail maintenance and clearing of understory
B1 B2 B3 B4	Agricultural Grazing	Infrastructure Tailings Storage Facility Water Management Area Overburden Emplacement Area	Bushfire	The area does not present an unreasonable bushfire hazard to surrounding areas.	NSW Fire Service to provide comments on Bushfire Management Plan or the bushfire management plan has been developed using relevant NSW Fire Service guidelines.	Appropriate bushfire hazard controls have been implemented with advice from the NSW Rural Fire Service.	□ Bushfire management inspection □ Records of fire trail maintenance and clearing of understory

F3	Water Management Areas	Water Management Area	Bushfire	The area does not present an unreasonable bushfire hazard to surrounding areas.	NSW Fire Service to provide comments on Bushfire Management Plan or the bushfire management plan has been developed using relevant NSW Fire Service guidelines.	Appropriate bushfire hazard controls have been implemented with advice from the NSW Rural Fire Service.	□ Bushfire management inspection □ Records of fire trail maintenance and clearing of understory
G3	Water Storage	Water Management Area	Bushfire	The area does not present an unreasonable bushfire hazard to surrounding areas.	NSW Fire Service to provide comments on Bushfire Management Plan or the bushfire management plan has been developed using relevant NSW Fire Service guidelines.	Appropriate bushfire hazard controls have been implemented with advice from the NSW Rural Fire Service.	□ Bushfire management inspection □ Records of fire trail maintenance and clearing of understory
F3	Water Management Areas	Water Management Area	Surface water	Surface water retained on site is fit for the intended post-mining land use(s)	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence (further guidance available on NSW Environment Protection Authority website).	Water quality discharged from rehabilitated mining operation meet specifications in Environment Protection Licence and or ANZECC guidelines for specific environment.	□ Water quality monitoring reports. □ Environment Protection Licence relinquished by Environment Protection Authority. □ Independent hydrological assessment report.
G3	Water Storage	Water Management Area	Surface water	Surface water retained on site is fit for the intended post-mining land use(s)	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence (further guidance available on NSW Environment Protection Authority website).	Water quality discharged from rehabilitated mining operation meet specifications in Environment Protection Licence and or ANZECC guidelines for specific environment.	□ Water quality monitoring reports. □ Environment Protection Licence relinquished by Environment Protection Authority. □ Independent hydrological assessment report.
F3	Water Management Areas	Water Management Area	Surface water	Runoff water from the rehabilitation areas is not having an adverse downstream impact on downstream water quality	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence (further guidance available on NSW Environment Protection Authority website).	Water quality discharged from rehabilitated mining operation meet specifications in Environment Protection Licence and or ANZECC guidelines for specific environment.	□ Water quality monitoring reports. □ Environment Protection Licence relinquished by Environment Protection Authority. □ Independent hydrological assessment report.
F3	Water Management Areas	Water Management Area	Surface water	Reinstatement of the sections of creek that are currently piped underground through the CHPP area are stable for final land use and compatible with the surrounding landscape.	The final landform contains existing creek and realigned sections through the CHPP area as identified on the final landform plan for the CHPP.	Inspection conducted by a suitably qualified person to verify that the final creek alignment is effective and generally in accordance with final landform design.	□ Surface water engineering assessment report □ Surface water monitoring results
					Erosion	Erosion rills of less than 30 cm deep by 30 cm wide for the creek line	□ Rehabilitation monitoring

					Surface layer is free of any hazardous materials.	Inspection conducted to verify that the surface layer is free of any hazardous materials.	□ Clearance certificate
					Creek realignment designed to prevent interaction with potentially hostile sediments	Creek realignment constructed in accordance with detailed design prepared by a suitably qualified expert and constructed to design.	□ As-built survey
A1 A2 A3 A4 A7	Native Ecosystem	Infrastructure Tailings Storage Facility Water Management Area Overburden Emplacement Area Beneficiation Facility	Surface water	Runoff water from the rehabilitation areas is not having an adverse downstream impact on downstream water quality	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence (further guidance available on NSW Environment Protection Authority website).	Water quality discharged from rehabilitated mining operation meet specifications in Environment Protection Licence and or ANZECC guidelines for specific environment.	□ Water quality monitoring reports. □ Environment Protection Licence relinquished by Environment Protection Authority. □ Independent hydrological assessment report.
B1 B2 B3 B4	Agricultural Grazing	Infrastructure Tailings Storage Facility Water Management Area Overburden Emplacement Area	Surface water	Runoff water from the rehabilitation areas is not having an adverse downstream impact on downstream water quality	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence (further guidance available on NSW Environment Protection Authority website).	Water quality discharged from rehabilitated mining operation meet specifications in Environment Protection Licence and or ANZECC guidelines for specific environment.	□ Water quality monitoring reports. □ Environment Protection Licence relinquished by Environment Protection Authority. □ Independent hydrological assessment report.
F3	Water Management Areas	Water Management Area	Water approvals	Structures that take or divert water such as retained dams are appropriately licensed (e.g. under the Water Management Act 2000) and where required ensure sufficient licence shares are held in the water	Final landform considers advice from relevant Government Agency whether sufficient licence shares are available in the water source to account for water stored in voids and dams in the proposed final landform.	Water approvals / licences are granted by relevant NSW Government Agency.	□ Confirmation from relevant Government Agency that relevant water approvals / licences are able to be granted.

				source(s) to account for water take.			
G3	Water Storage	Water Management Area	Water approvals	Structures that take or divert water such as retained dams are appropriately licensed (e.g. under the Water Management Act 2000) and where required ensure sufficient licence shares are held in the water source(s) to account for water take.	Final landform considers advice from relevant Government Agency whether sufficient licence shares are available in the water source to account for water stored in voids and dams in the proposed final landform.	Water approvals / licences are granted by relevant NSW Government Agency.	□ Confirmation from relevant Government Agency that relevant water approvals / licences are able to be granted.
A1 A2 A3 A6 A7	Native Ecosystem	Infrastructure Tailings Storage Facility Water Management Area Underground Mining Area (SMP) Beneficiation Facility	Groundwater	Groundwater quality is within the range predicted in the relevant Austar environmental assessments and does not present a risk of environmental harm	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence (further guidance available on the NSW Environment Protection Authority website).	Water quality discharged from rehabilitated mining operation meet specifications in Environment Protection Licence and or ANZECC guidelines for specific environment.	□ independent hydrological assessment report. Depending on the nature, scale and risks associated with a specific site, achievement of criteria may need to be evaluated over a number of years
B1 B2 B3 B4 B6	Agricultural Grazing	Infrastructure Tailings Storage Facility Water Management Area Overburden Emplacement Area Underground Mining Area (SMP)	Groundwater	Groundwater quality is within the range predicted in the relevant Austar environmental assessments and does not present a risk of environmental harm	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence (further guidance available on the NSW Environment Protection Authority website).	Water quality discharged from rehabilitated mining operation meet specifications in Environment Protection Licence and or ANZECC guidelines for specific environment.	□ independent hydrological assessment report. Depending on the nature, scale and risks associated with a specific site, achievement of criteria may need to be evaluated over a number of years

F3	Water Management Areas	Water Management Area	Groundwater	Groundwater quality is within the range predicted in the relevant Austar environmental assessments and does not present a risk of environmental harm	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence (further guidance available on the NSW Environment Protection Authority website).	Water quality discharged from rehabilitated mining operation meet specifications in Environment Protection Licence and or ANZECC guidelines for specific environment.	□ independent hydrological assessment report. Depending on the nature, scale and risks associated with a specific site, achievement of criteria may need to be evaluated over a number of years
G3	Water Storage	Water Management Area	Groundwater	Groundwater quality is within the range predicted in the relevant Austar environmental assessments and does not present a risk of environmental harm	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence (further guidance available on the NSW Environment Protection Authority website).	Water quality discharged from rehabilitated mining operation meet specifications in Environment Protection Licence and or ANZECC guidelines for specific environment.	□ independent hydrological assessment report. Depending on the nature, scale and risks associated with a specific site, achievement of criteria may need to be evaluated over a number of years
A1 A2 A3 A6 A7	Native Ecosystem	Infrastructure Tailings Storage Facility Water Management Area Underground Mining Area (SMP) Beneficiation Facility	Groundwater	Impacts to groundwater regime are within the range of the groundwater predictions in the relevant Austar environmental assessments	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence (further guidance available on the NSW Environment Protection Authority website).	Water quality discharged from rehabilitated mining operation meet specifications in Environment Protection Licence and or ANZECC guidelines for specific environment.	□ independent hydrological assessment report. Depending on the nature, scale and risks associated with a specific site, achievement of criteria may need to be evaluated over a number of years
B1 B2 B3 B4 B6	Agricultural Grazing	Infrastructure Tailings Storage Facility Water Management Area Overburden Emplacement Area Underground Mining Area (SMP)	Groundwater	Impacts to groundwater regime are within the range of the groundwater predictions in the relevant Austar environmental assessments	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence (further guidance available on the NSW Environment Protection Authority website).	Water quality discharged from rehabilitated mining operation meet specifications in Environment Protection Licence and or ANZECC guidelines for specific environment.	□ independent hydrological assessment report. Depending on the nature, scale and risks associated with a specific site, achievement of criteria may need to be evaluated over a number of years

F3	Water Management Areas	Water Management Area	Groundwater	Impacts to groundwater regime are within the range of the groundwater predictions in the relevant Austar environmental assessments	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence (further guidance available on the NSW Environment Protection Authority website).	Water quality discharged from rehabilitated mining operation meet specifications in Environment Protection Licence and or ANZECC guidelines for specific environment.	□ independent hydrological assessment report. Depending on the nature, scale and risks associated with a specific site, achievement of criteria may need to be evaluated over a number of years
G3	Water Storage	Water Management Area	Groundwater	Impacts to groundwater regime are within the range of the groundwater predictions in the relevant Austar environmental assessments	Water quality parameters selected from Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 and or Environment Protection Licence (further guidance available on the NSW Environment Protection Authority website).	Water quality discharged from rehabilitated mining operation meet specifications in Environment Protection Licence and or ANZECC guidelines for specific environment.	□ independent hydrological assessment report. Depending on the nature, scale and risks associated with a specific site, achievement of criteria may need to be evaluated over a number of years
A1 A2 A3 A4 A7	Native Ecosystem	Infrastructure Tailings Storage Facility Water Management Area Overburden emplacement area Beneficiation Facility	Ecological rehabilitation	The vegetation composition of the rehabilitation contains species that are commensurate with native vegetation communities of the Lower Hunter Spotted Gum-Ironbark Forest and Hunter Coast Foothills Spotted Gum-Ironbark Forest found in the local area	Native plant species recorded from 0.04-hectare fixed monitoring plots are characteristic of the target vegetation community (e.g. target PCT)	Native plant species are characteristic of the target vegetation community(s) when compared to analogue sites.	□ Rehabilitation monitoring reports □ Photos □ Independent ecological monitoring reports that validates completion criteria have been met
				The vegetation structure of the rehabilitation is similar to that of native vegetation communities of the Lower Hunter Spotted Gum-Ironbark Forest and Hunter Coast Foothills Spotted Gum-Ironbark Forest found in the local area	Cover and abundance of plant growth forms recorded from 0.04-hectare fixed monitoring plots are characteristic of the target vegetation community, or an ongoing trend toward becoming characteristic is evident from the monitoring data	Cover, abundance and height range of native plant growth forms are characteristic of, or trending towards, the target vegetation community type(s).	□ Rehabilitation monitoring reports □ Photos □ Independent ecological monitoring reports that validates completion criteria have been met
				Levels of ecosystem function have been established to demonstrate the ecosystem is self-sustainable	Indicators of nutrient cycling are suitable for sustaining the target vegetation community	Litter cover is within 10th-90th percentile variation range of reference sites/data	□ Rehabilitation monitoring reports □ Photos □ Independent ecological monitoring reports that validates completion criteria have been met

					Evidence of plant regeneration from 0.04 hectare fixed monitoring plots or a walk over of the ecological rehabilitation area	Second generation individuals of trees are within the 10th-90th percentile variation range of reference sites/data approved by the consent authority	□ Rehabilitation monitoring reports □ Photos □ Independent ecological monitoring reports that validates completion criteria have been met
					Cover of exotic species within 0.04 hectare fixed monitoring plots is low	Foliage cover of 'high threat exotic' (HTE) weeds is within 10th-90th percentile variation range of reference sites/data or at a level that does not cause significant risk to rehabilitation.	□ Rehabilitation monitoring reports □ Photos\ □ Independent ecological monitoring reports that validates completion criteria have been met
					Resilience demonstrated by the effects of drought and fire on composition, structure and other function attributes.	Resilience to drought and fire	□ Rehabilitation monitoring reports □ Environmental monitoring records
					Threats to rehabilitation	Vertebrate pest species – presence and damage is recorded at a level that does not cause significant risk to rehabilitation. Domesticated stock - presence and damage is recorded at a level that does not cause significant risk to rehabilitation.	□ Rehabilitation monitoring reports
B1 B2 B3 B4 B6	Agricultural Grazing	Infrastructure Tailings Storage Facility Water Management Area Overburden Emplacement Area	Agricultural revegetation	Land use capability is capable of supporting the target final land use	Revegetation is progressing towards a sustainable ecosystem and only requires maintenance that is consistent with the intended final land use.	For Grassland areas, groundcover targets: - 0-20% canopy - 70-100% Groundcover	□ Rehabilitation monitoring report

		Underground Mining Area					
B1 B2 B3 B4 B6	Agricultural Grazing	Infrastructure Tailings Storage Facility Water Management Area Overburden Emplacement Area Underground Mining Area (SMP)	Agricultural revegetation	Agricultural / pastoral revegetation is sustainable for the long term and only requires maintenance that is consistent with the final land use	Revegetation is progressing towards a sustainable ecosystem and only requires maintenance that is consistent with the intended final land use.	For Grassland areas, groundcover targets: - 0-20% canopy - 70-100% Groundcover	□ Rehabilitation monitoring report
A1	Native Ecosystem	Infrastructure	Ecological rehabilitation	The vegetation structure of the rehabilitation is similar to that of the riparian zone of native vegetation communities of the Lower Hunter Spotted Gum-Ironbark Forest found in the local area (applicable to the reinstatement of Bellbird Creek at the CHPP area that is currently piped underground)	Cover and abundance of plant growth forms recorded from 0.04-hectare fixed monitoring plots are characteristic of the target vegetation community, or an ongoing trend toward becoming characteristic is evident from the monitoring data	Cover, abundance and height range of native plant growth forms are characteristic of, or trending towards, the target vegetation community type(s).	□ Rehabilitation monitoring reports □ Photos □ Independent ecological monitoring reports that validates completion criteria have been met
				The vegetation composition of the rehabilitation contains species that are commensurate with the riparian zone of native vegetation communities of the Lower Hunter Spotted Gum-Ironbark Forest found in the local area (applicable to the reinstatement of Bellbird Creek at the CHPP area that is currently piped underground)	Native plant species recorded from 0.04-hectare fixed monitoring plots are characteristic of the target vegetation community (e.g. target PCT)	Native plant species are characteristic of the target vegetation community(s) when compared to analogue sites.	□ Rehabilitation monitoring reports □ Photos □ Independent ecological monitoring reports that validates completion criteria have been met

4.2. Rehabilitation Objectives and Rehabilitation Completion Criteria – Stakeholder Consultation

4.2.1. Stakeholder Engagement Plan

Austar has prepared a *Stakeholder Engagement Plan* to manage consultation through the closure of the Austar Coal Mine. This details Austar's stakeholders and the strategies used to involve or communicate with them and provides the foundation for working with stakeholders during the closure process. The *Stakeholder Engagement Plan* will be regularly revised to reflect the outcomes of technical investigations and the ongoing development of the detailed closure plan as well as the outcomes of ongoing engagement.

4.2.2. Summary of Stakeholder Consultation

Rehabilitation objectives were approved by the Resources Regulator on 22 August 2023, and the approved objectives are listed in **Table 14**.

Since the commencement of closure planning, Austar has regularly consulted with regulatory authorities including DPE, Resources Regulator, EPA, Cessnock City Council and Crown Lands as well as relevant landholders and the Community Consultative Committee (CCC) regarding mine closure activities.

Table 17 presents a high-level summary of the key consultation undertaken for the project to date.

TABLE 15 - CONSULTATION SUMMARY FOR AUSTAR MINE CLOSURE

Stakeholder	Summary of Engagement
Resources Regulator	Ongoing quarterly update meetings Ongoing 6 monthly closure planning & execution multi-agency workshops undertaken to summarise progress and detail upcoming activities.
DPE	6 monthly closure planning & execution multi-agency workshops undertaken to summarise progress and detail upcoming activities.
EPA	6 monthly closure planning & execution multi-agency workshops undertaken to summarise progress and detail upcoming activities.
Cessnock City Council	Consultation with Cessnock City Council Heritage Officer commenced in June 2022 to discuss heritage studies and strategy.
Crown Lands	Consultation with Crown Lands commenced in June 2022 to discuss rehabilitation and closure activities on Crown Land managed land.
CCC	Ongoing CCC meetings. Since the transition to care and maintenance in 2020, the CCC meetings have been reduced from quarterly to 6-monthly.
Landholders	Meetings with landholders have been undertaken as required. Consultation topics have included noise from short term closure activities, remediation of exploration boreholes, proposed subdivision works adjacent to mine areas requiring rehabilitation. Closure update letters were sent to near neighbours in July 2022.

4.3. Completion Criteria Refinement

Austar will continue to refine the criteria during the detailed mine closure plan. The closure completion criteria for the site will be refined and revised in future revisions of the RMP in consideration of the following:

- outcomes of detailed technical studies undertaken during mine closure planning;
- final land use assessments and any refinement to the proposed final land use and/or landform;
- government stakeholder expectations following any further consultation with government agencies;

- results of ongoing monitoring programs including rehabilitation and ecological monitoring;
- research and development from relevant industry trials or site experiences; and
- long term sustainability in relation to both landform stability and ecosystem functionality.

5. FINAL LANDFORM AND REHABILITATION PLAN

In accordance with the requirements of the *Form and Way: Rehabilitation Management Plan for Large Mines* (RR, 2021a), Final Landform and Rehabilitation Plans (FLRP) have been prepared to show the proposed final land use and final landform of the Austar Coal Mine Project Area.

As discussed in **Section 1** the site has been divided into discrete CMAs for closure planning purposes. The FLRP Plan 1: Final Landform Features are presented in **Figure 4.** CMA focused inset maps for Plan 1 are included in **Appendix C**. The FLRP Plan 2: Final Landform Contours are presented in **Figure 5.**

Pursuant with Clause 10, Schedule 8A of the Mining Regulation 2016, the FLRPs were submitted to the NSW Resources Regulator for approval. The FLRPs for Austar Coal Mine were subsequently approved by the Regulator on 22 August 2023 (reference FLRP0001155).

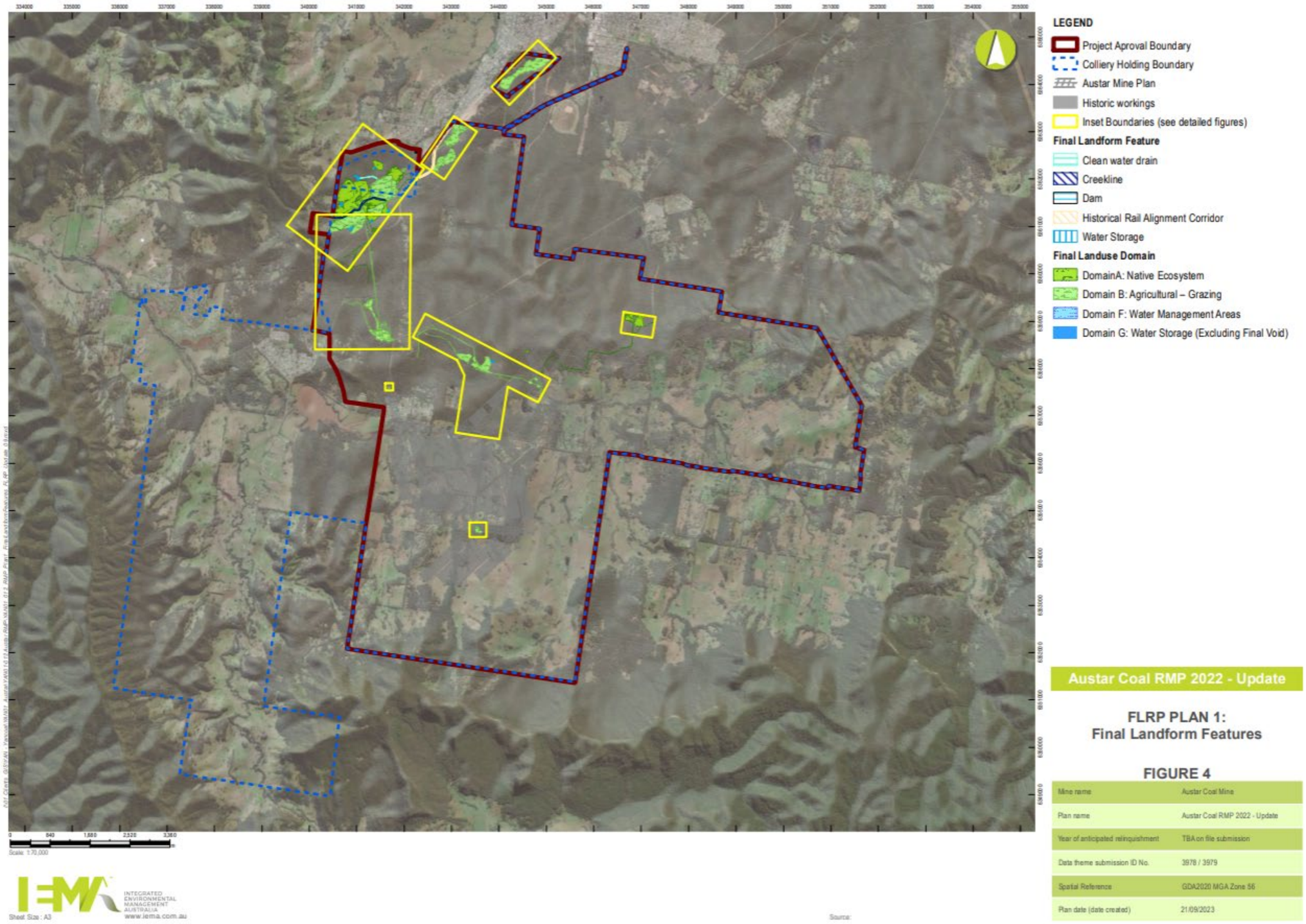

FIGURE 4 - FLRP PLAN 1: FINAL LANDFORM FEATURES

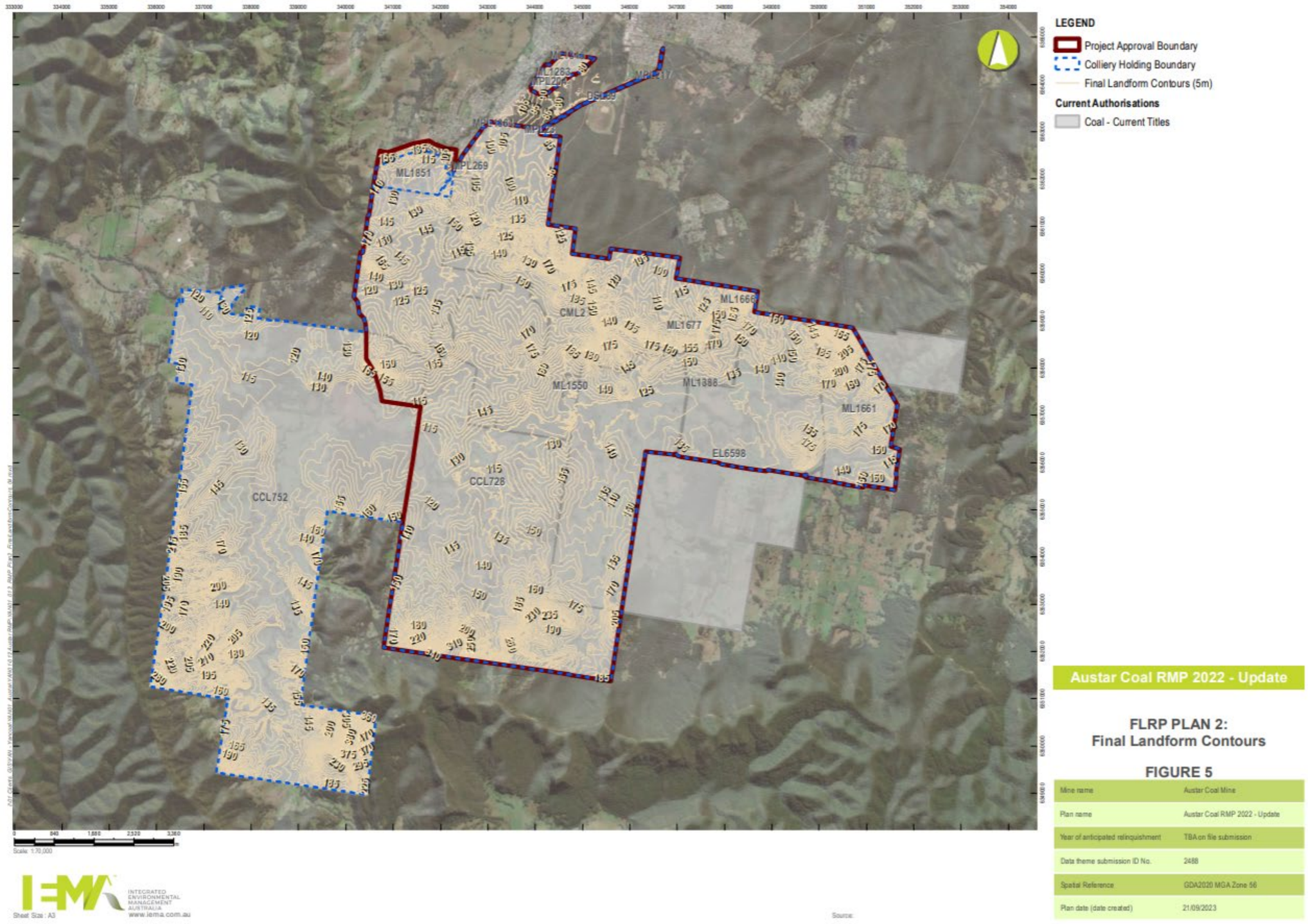

FIGURE 5 - FLRP PLAN 2: FINAL LANDFORM CONTOURS

6. REHABILITATION IMPLEMENTATION

6.1. Life of Mine Rehabilitation Schedule

6.1.1. Closure Execution Timeline

In March 2020, Austar transitioned to care and maintenance and commenced initial detailed mine closure planning works including the preparation of the Austar Mine Closure Base Case Assessment (IEMA 2021). Following Yancoal's announcement of permanent mine closure in February 2021, Austar resourced the Austar Closure Planning Team and commissioned a team of subject matter experts (SMEs) to complete knowledge gap assessments and develop detailed study scopes to inform mine closure.

Austar is currently at the Pre-Feasibility Study stage of mine closure, undertaking technical studies and site investigations to address closure knowledge gaps and scope further works.

The overview of the mine closure execution timeline is presented in **Figure 6**.

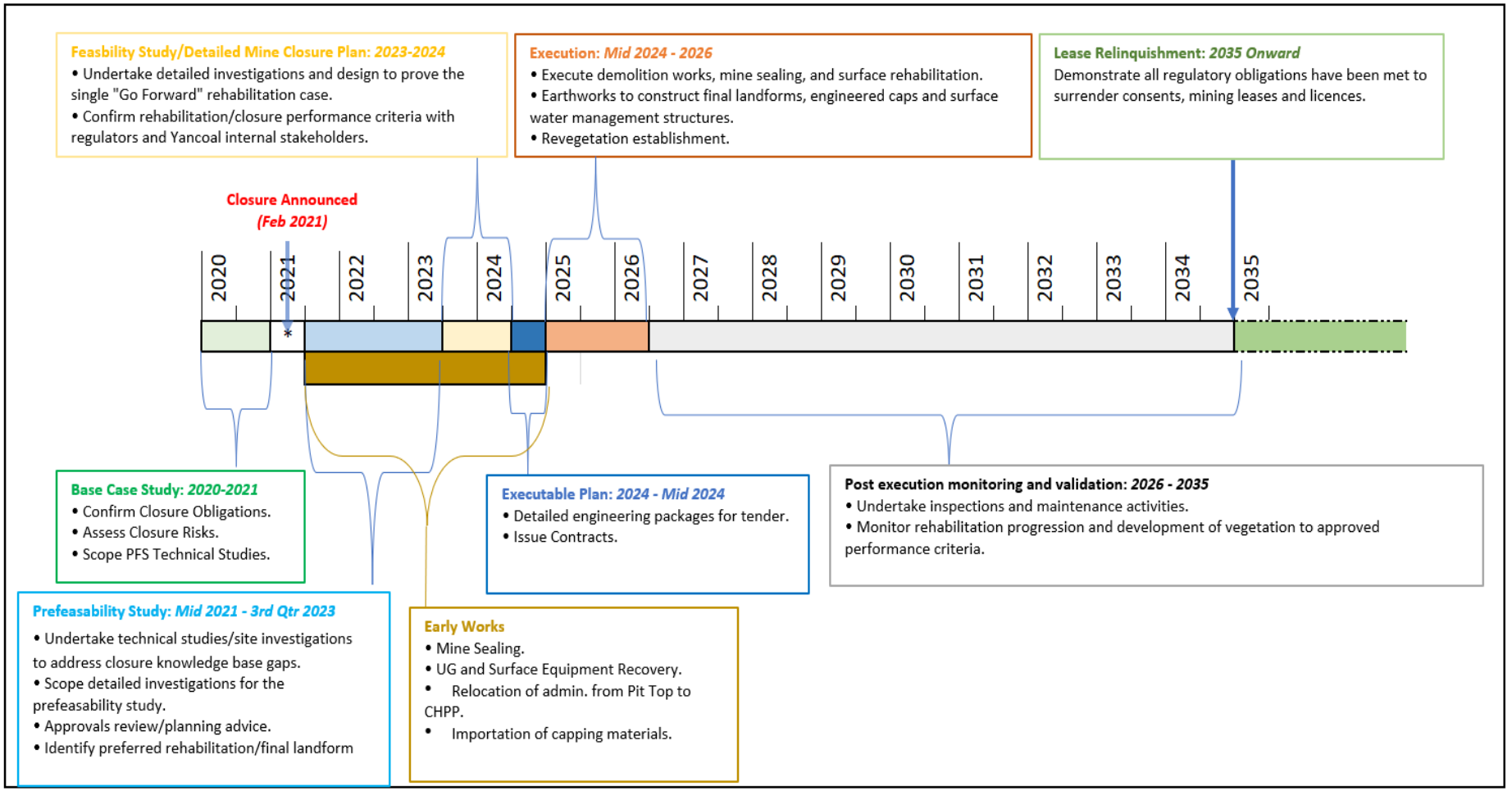

FIGURE 6 - CLOSURE PROJECT TIMELINE

6.1.2. Mine Closure Planning Commitments

In March 2021, the Resources Regulator approved the *Austar Coal Mine Mining Operations Plan 2019-2026 Amendment A* (Austar 2021) (MOP Amendment). The MOP Amendment presented the mine closure planning strategy, which outlined the technical and environmental assessments required to inform the final rehabilitation planning and closure of Austar. The planning strategy was designed to inform the preparation of the Detailed Mine Closure Plan.

Closure planning is ongoing with additional technical studies being scoped or underway to continue to address knowledge gaps and to inform the development of an executable closure plan.

The current status of the commitments made in the MOP Amendment is presented in **Table 16.**

TABLE 156 - MINE CLOSURE PLANNING STRATEGY

#	Aspect	Description	Nominated Timing in MOP Amendment A	Status as at June 2022
Base Case: Final Land Use, Completion Criteria and Rehabilitation Objectives				
1	Final land use assessment	Undertake a final land use assessment. Final land uses are those approved in Austar's various consents, however, may be refined prior to mine closure.	Q3, 2021	A consultant has been engaged to undertake a final land use options assessment (Refer to **Section 2**).
2	Mine closure risk assessment	Undertake an Environmental Risk Assessment focused on mine closure preparedness and specific risks to achieving the final land use, as described in **Section 3.2.** NB the risk register will be reviewed following completion of the mine closure risk assessment	Completed	Initial and midterm risk assessments have been completed) (refer to **Section 3**)
3	Completion criteria and rehabilitation objectives	Refine the completion criteria and objectives in **Table 16** after final land uses are confirmed.	Q3, 2021	Completion criteria will continue to be refined during the closure planning process (refer to **Section 4**)
4	Final landform design	Review the final landform designs to ensure they can sustain the nominated final land uses and meet the rehabilitation objectives.	Q4, 2022	Final landform design is dependent upon the findings of the initial mine closure planning studies listed below, in particular #5, 9, 10 and 11. Detailed final landform design will be progressed throughout closure planning to ensure that the final landform is fully informed.
		Prepare detailed slope and drainage designs for the final landform to ensure long-term stability.	Q4, 2022	
Knowledge Base: Gap analysis and initial mine closure planning studies				
5	Rehabilitation resources balance	Establish an inventory of materials available for capping and rehabilitation (in an appropriate spatial format).	End of February 2021	Completed
		Characterise available materials to confirm suitability for rehabilitation.	Q4, 2022	• Phase 1: ○ Desktop assessment and site inspections completed.

#	Aspect	Description	Nominated Timing in MOP Amendment A	Status as at June 2022
		In the case of a material deficit, develop a strategy to investigate and procure alternative sources of materials such as topsoils (and/or substitutes) and other rehabilitation materials such as clays, suitable weathered rock, hard rock, etc.	Q4, 2022	• Phase 2: ○ Site investigation plan developed (volumes, characterisation) ○ Site Investigation Sampling and Quality Plan (SAQP) finalised ○ Site investigations programmed commenced June 2022.
		The material balance will be reviewed following confirmation of rejects and tailings capping designs prior to decommissioning.	Prior to decommissioning	
6	Historic heritage assessments	Undertake/review heritage assessments for known or potential historic heritage items at Austar Coal Mine to guide retention/demolition decisions.	Q4, 2021	Completed
		Consult with Cessnock City Council heritage advisors and or the NSW Heritage Office (if required) to confirm the approach and to seek appropriate heritage approvals prior to demolishing heritage items.	Q4, 2021	Consultation with the Cessnock City Council Heritage officer undertaken 7 June 2022.
7	Derelict / redundant infrastructure decommissioning strategy	Prepare an infrastructure decommissioning strategy for progressive decommissioning of redundant, derelict or hazardous buildings, structures, machinery, plant and equipment.	Q4, 2021	Hazmat/demolition specialist engaged. Strategy under development. Hazardous Materials Survey completed in February 2022.
		Consult with Cessnock City Council heritage advisors and or the NSW Heritage Office (if required) to confirm the approach and to seek appropriate heritage approvals prior to demolishing heritage items.	Q4, 2021	Consultation ongoing
8	Infrastructure retention strategy	Identify infrastructure that could be retained post-closure (i.e. internal roads, access tracks, dams,	Q4, 2021	Hazmat/demolition specialist engaged. Strategy under development.

#	Aspect	Description	Nominated Timing in MOP Amendment A	Status as at June 2022
		buildings, services), subject to approval, to support the final land use or to retain heritage value.		
9	Mine water dam decommissioning strategy	Prepare a preliminary strategy for decommissioning redundant mine water dams.	Q4, 2022	• Phase 1: ○ Desktop assessment, site inspection and workshop completed. • Phase 2: ○ In progress
		Prepare a strategy, in consultation with Dams Safety NSW, for decommissioning prescribed dams (i.e. Kalingo Dam).	Q4, 2022	
10	Tailings storage facilities and reject emplacement area decommissioning and capping strategy	Prepare a strategy for progressive decommissioning of the tailings storage facilities and reject emplacement areas.	Q4, 2022	• Phase 1: ○ Desktop assessment completed. ○ Currently engaging additional specialist input (geochemistry, combustibility). ○ Independent auditor engaged. • Phase 2: ○ Detailed site investigation in progress
		Review capping techniques.	Q4, 2022	
11	Water management	Review the existing groundwater information to consider aspects related to the closure of the mine.	Q4, 2022	• Stage 1 Knowledge Gap Assessment complete • Model Plan complete • Forward Works Program complete - monitoring network reviewed with recommendations for long term monitoring requirements
		Review the site water balance and any post-closure water management requirements, including management of acid mine drainage.	Q4, 2022	• Phase 1: ○ Surface water desktop assessment and site inspection completed. • Phase 2: ○ Scope being prepared for detailed assessment.
		Review post-closure water licensing requirements.	Q4, 2022	
12	Exploration borehole sealing	Undertake desktop and field surveys of borehole sealing status.	Q1, 2021	Completed

#	Aspect	Description	Nominated Timing in MOP Amendment A	Status as at June 2022
		Prepare and commence implementation of the exploration borehole sealing strategy.	Q1, 2022	Audit and sealing complete. ESF2 applications were submitted for all but three holes, which are waiting on landholder signoff or access for final rehabilitation photos. Further historic boreholes drilled from the 1890's to the 1990s were identified during the audit, with desktop assessments and some site inspection completed in Q1 2022. A borehole sealing strategy will be developed during detailed closure planning.
13	Underground mine sealing	Prepare mine sealing designs for all shafts, portals and operational boreholes	Prior to decommissioning	• Review of historic and current entries completed. • Specialist engaged; concept sealing designs completed. • Site geotechnical investigations are in progress.
14	Subsidence remediation works	Prepare a plan for post-closure remediation of subsidence-related impacts to natural and built features.	As per the approved Extraction Plan.	Consultant engaged for a subsidence assessment which will include: • ID and mapping. • Analysis and model development. • Monitoring and management.
15	Contaminated land assessments	Undertake a Phase 1 contaminated lands assessment focusing on surface infrastructure areas to identify any remediation requirements.	Q4, 2021	Desktop Assessment (Preliminary Site Investigation - PSI) completed.
		Undertake full Land Quality investigations and prepare a remediation action plan	Prior to mine closure – to be included in the final mine closure plan	• Contamination auditor engaged. • Contamination sampling plan commenced development (SAQP). • Detailed site investigation is in progress.
16	Hazardous materials assessment	Undertake assessments of hazardous materials and chemicals and develop registers and management strategies.	Q4, 2021	Hazardous Material survey complete

#	Aspect	Description	Nominated Timing in MOP Amendment A	Status as at June 2022
17	Demolition waste disposal strategy	Identify volumes of waste streams and options to dispose on site or at licensed facilities.	Prior to decommissioning – to be included in the final mine closure plan	Commenced
		Develop a strategy to segregate and manage waste streams on-site during demolition.		
18	Environmental Management Plans	Review/ update the environmental management plans to reflect mine closure activities.	Prior to mine closure – to be included in final mine closure plan	Commenced – initial revisions submitted to DPE. To be updated as required during closure planning and execution
19	Post-closure Monitoring and Maintenance	Identify post-closure environmental monitoring requirements, including monitoring of rehabilitation, subsidence, and water quality.	Prior to mine closure – to be included in final mine closure plan	Commenced – development of execution QA/QC and post-closure monitoring is included in the scope of all specialist studies.
		Identify post-closure maintenance requirements such as weed and feral animal control, bushfire management and maintenance of safety signage/fencing to control public access.		Commenced – development of execution QA/QC and post-closure monitoring is included in the scope of all specialist studies.
20	Approvals and mining lease relinquishment strategy	Prepare an approvals and mining lease relinquishment strategy that considers the timing and process for relinquishing approvals following mine closure (e.g. EPL, Project Approval and MLs).	Prior to mine closure – to be included in final mine closure plan	Commenced
21	Human resources strategy	Prepare a human resources strategy to identify opportunities to stage the release of employees and contractors and to support redeployment where appropriate.	Prior to mine closure – to be included in final mine closure plan	Completed.
22	Community management strategy	Prepare a community management strategy to minimise any adverse socio-economic effects of mine closure.	Q2, 2021	Integrated with stakeholder engagement strategy.

#	Aspect	Description	Nominated Timing in MOP Amendment A	Status as at June 2022
23	Stakeholder engagement strategy	Prepare a stakeholder engagement strategy to guide communication and engagement during mine closure.	Q2, 2021	Completed

6.2. Phases of Rehabilitation and General Methodologies

The final land use objectives will be achieved through a series of conceptual rehabilitation phases. As defined by the *Form and Way: Rehabilitation Management Plan (large mines)* (RR 2021) the rehabilitation phases are presented in **Table 17**.

TABLE 167 - REHABILITATION PHASES

Phase	Description
Active Mining	Activities undertaken during mining operations such as land clearing, salvaging and managing soil resources, salvaging habitat resources, and native seed collection. This phase also includes management actions taken during operations to manage risks to rehabilitation and enhance rehabilitation outcomes such as selective handling of waste rock and management of tailings emplacements.
Decommissioning	This phase includes activities associated with the removal of mining infrastructure and removal and/or remediation of contaminants and hazardous materials. This phase of rehabilitation may also include studies and assessments associated with decommissioning and demolition of infrastructure or works carried out to make safe or 'fit for purpose' built infrastructure to be retained for future use(s) following lease relinquishment.
Landform Establishment	This phase of rehabilitation consists of the processes and activities required to construct the approved final landform. In addition to profiling the surface of rehabilitation areas to the approved final landform profile this phase may include works to construct surface water drainage features, encapsulate problematic materials such as tailings, and prepare a substrate with the desired physical and chemical characteristics (that is, rock raking or ameliorating sodic materials).
Growth Medium Development	This phase of rehabilitation consists of activities required to establish the physical, chemical and biological components of the substrate required to establish the desired vegetation community (including short-lived pioneer species) to ensure achievement of the rehabilitation objectives and completion criteria. This phase may include spreading the prepared landform with topsoil and/or subsoil and/or soil substitutes, applying soil ameliorants to enhance the physical, chemical and biological characteristics of the growth media, and actions to minimise loss of growth media due to erosion.
Ecosystem and Land Use Establishment	This phase of rehabilitation consists of the processes to establish the approved final land use following construction of the final landform. For vegetated land uses this rehabilitation phase includes establishing the desired vegetation community and implementing land management activities such as weed control.
Ecosystem and Land Use Development	This phase of rehabilitation consists of the activities to manage maturing rehabilitation areas on a trajectory to achieving the rehabilitation objectives and completion criteria. For vegetated land uses this phase may include processes to develop characteristics of functional self-sustaining ecosystems, such as nutrient recycling, vegetation flowering and reproduction, and increasing habitat complexity, and development of a productive, self-sustaining soil profile. This phase of rehabilitation may include specific vegetation management strategies and maintenance such as tree thinning, supplementary plantings and weed management.

Phase	Description
Rehabilitation Completion (sign off)	The final phase of rehabilitation when a rehabilitation area has achieved the final land use for the mining area and met the rehabilitation objectives and completion criteria. Rehabilitation areas may be classified as complete when the NSW Resources Regulator has determined in writing that rehabilitation has achieved the final land use following submission of the relevant application by the lease holder

6.2.1. Active Mining Phase

Austar commenced the transition from care and maintenance to closure in February 2021. As such, there is no active mining undertaken at the site.

For the purpose of this RMP, the active mining phase has been considered as it relates to active closure works and rehabilitation and closure activities, as well as the ongoing management of remaining disturbance areas.

6.2.1.1. Soils and Materials

Soil types over the underground mining areas were identified in:

- the Stage 3 Modification 2 Environmental Assessment (Umwelt, 2011);
- LWB1-B3 Modification 6 Environmental Assessment (Umwelt, 2015); and
- LWB4-B7 Modification 7 Environmental Assessment (Umwelt, 2017).

This information has been used to assist in the management of any topsoil reserves onsite and the management of any ground disturbance works (with respect to the erosion potential of exposed soils).

Austar will continue to manage topsoil reserves onsite and investigate soil viability and treatment options to support successful revegetation.

During detailed closure planning, Austar will consider, where appropriate, opportunities that may assist in enhancing rehabilitation areas where a native vegetation community is to be established post-mining. These include:

- the use of the topsoil seedbank (where appropriate) to improve species richness;
- undertaking ecological enhancement activities (weed control etc) ahead of clearing, noting that any future clearing is likely to be minimal; and
- management of topsoil stockpiles, including maintaining native species diversity.

Implementation of such opportunities will be on a case-by-case basis and will need to consider all other relevant aspects, such as safety and asset protection.

As part of detailed closure planning investigations, Austar has undertaken a review of materials currently available onsite suitable for use in capping and rehabilitation activities at the site. **Table 18** provides a summary of the material types and volumes.

TABLE 18 - MATERIALS INVENTORY

Stockpile Name	Material Type & Volume (m^3)				Comments
	Capping Material	Shaft Cuttings (Overburden Material)	Growth Media	Topsoil	
Area 12	-	-	2,101	-	Material is suitable as growth media over capping.
West Pit W2	1,338,284	-	-	-	Further investigation is planned to verify material type and volume and assess suitability for use as capping material.
Kitchener 1 - A	-	18,324	-	-	Combined stockpile of shaft cuttings (overburden) material and topsoil.
Kitchener 1 - B	-	-	-	1,428	
Kitchener 2	-	4,762	-	-	Stockpile of shaft cuttings (overburden) material.
Kitchener 3	-	-	-	1,960	Stockpile of topsoil.
Total	**1,338,284**	**23,086**	**2,101**	**3,388**	

West Pit provides a potential source of capping material however the volume of material available and its suitability for capping is currently uncertain and further investigations are required to characterise the material. Historic records indicate that coarse coal rejects emplacement has occurred within the pit and as such these indicative areas of emplacement have been excluded from the volumes provided in **Table 18**. Further, the floor contours of the backfilled pit are unknown and have been assumed based on available records for the purposes of calculating the volumes in **Table 18**.

Austar acknowledges that there is a potential deficit in suitable materials available for capping and rehabilitation activities at the site. Austar is carrying out investigations to review potential sources of material both on and off site. Should offsite material be required for rehabilitation, appropriate approval from the EPA will be sought for its import and use in accordance with the relevant resource recovery orders (orders) and resource recovery exemptions (exemptions).

Austar has completed a stage 1 study to identify landform capping options to be investigated.

During the RMP risk assessment the following treatment plans for soil and materials were proposed:

- A materials characterisation study to demonstrate suitability for achieving approved rehabilitation outcomes;
- Identifying amelioration requirements to achieve rehabilitation outcomes;
- Develop a QA/QC process for any imported materials to ensure suitability;
- Investigate suitable onsite cover material;
- Investigate appropriate landforms to optimise the use of available materials;
- Review opportunities to consolidate areas that require reshaping and/or capping material;
- Develop a capping strategy to determine appropriate capping depths for different spoil materials; and

- Investigate sources of ENM/VENM and develop a procedure for engaging potential suppliers.

6.2.1.2. Flora

Vegetation Clearing

As there will be no further underground mining at Austar, there will be no planned clearing of vegetation or ground disturbance relating to the mining process. However, minor clearing may be required to execute the planned rehabilitation and closure activities and to undertake required technical studies to inform mine closure.

Vegetation clearing during closure activities will be managed in accordance with the Austar Work Permit and preclearance procedures. The Work Permit procedure requires that:

- prior to any ground disturbance taking place, a Work Permit must be approved;
- an archaeological and ecological due diligence assessment of the area must be carried out before work commences and any recommendations be incorporated into the Work Permit as control measures;
- erosion and sediment controls and rehabilitation requirements are considered;
- work must be carried out in accordance with these control measures; and
- work areas must be demarcated and work is not permitted outside of these boundaries as defined in the Work Permit.

To further minimise adverse impacts to flora during mine closure activities, it was proposed in the RMP risk assessment that Austar will carry out the following:

- forward planning of Work Permit areas as part of the site investigation contract scheduling;
- include mapped EEC and threatened species areas in Austar's GIS systems; and
- a review of the Work Permit Procedure regarding demarcation standards.

Seed Collection and Management

Austar has engaged a rehabilitation expert to undertake a gap analysis of the ecological processes relating to mine closure. The gap analysis will inform the development of a rehabilitation and revegetation strategy aiming toward the relinquishment of the mining leases. As it relates to this phase of rehabilitation the strategy will detail how biological resources will be managed prior to the commencement of rehabilitation including methods and timing of seed collection, storage, and propagation.

In general, seeds will be sourced from target vegetation communities in the local area where possible and an experienced contractor will be engaged to handle, treat and store seeds appropriately. Seeds will be collected and stored in accordance with the NSW Government Florabank Guidelines (Florabank 2022).

Weed Management

Austar currently engages a suitable qualified and experienced contractor to undertake weed control activities and develop an annual weed action plan. Ongoing weed management is undertaken per the Weed Action Plan on an as needs basis.

6.2.1.3. Fauna

Habitat Clearing

Any clearing required during rehabilitation and closure activities will be undertaken in accordance with the Work Permit procedure summarised in **Section 6.2.1.2**. The ecological due diligence assessment undertaken for the Work Permit will identify:

- potential habitat features located within proposed disturbance areas (such as hollow-bearing trees) that may require special management during clearing;
- habitat features that can be salvaged for reuse in rehabilitation areas or in adjoining non-disturbed native vegetation areas;
- active nesting/roosting sites that may require active management prior to or during disturbance to minimise impacts on those fauna species; and
- threatened species that may be affected by the proposed disturbance.

The recommendations from the due diligence report are included as conditions in the Work Permit.

Pest Management

In accordance with the *Local Land Services Act 2013*, Austar is required to control all declared pest species on their land. Species currently declared pests in NSW that are potentially relevant to Austar include wild rabbits, wild dogs, feral pigs, and foxes.

During closure activities, Austar will continue to implement control actions to assist in the management of these species as necessary. Control actions may include baiting or trapping and will be conducted in consultation with the Local Land Services Offices where required. Due to the proximity of local landholders, baiting would not be conducted where there is a risk of harm to domestic pets.

6.2.1.4. Rock/Overburden Emplacement

Stockpiled overburden from old open cut operations is planned to be used as capping material and utilised as a growth medium where appropriate. West Pit Open Cut is Austar's key overburden emplacement area and potential onsite source of capping material.

Austar will utilise overburden material for capping of reject emplacement areas, where available. Prior to the utilisation of capping material, a geochemical analysis will be undertaken to determine the material's suitability for use as capping material and growth substrate. Ameliorants will be applied to the capping material surface as required to reduce the risk to vegetation establishment success.

Where there is an insufficient volume of capping material and topsoil for rehabilitation works, Austar will investigate the sourcing of appropriate material from an external provider. The emplacement of capping material will be undertaken in accordance with site-specific processes with all capping emplacement works being supervised by appropriately trained site personnel.

Capping material availability will continue to be reviewed to ensure there is sufficient material to support rehabilitation. If sufficient material cannot be sourced on site, Austar will explore the possibility of importing fill material from offsite and gaining the appropriate approvals to facilitate this.

6.2.1.5. Waste Management

Waste management streams at Austar are detailed below. All waste management is undertaken by a licensed waste management contractor who provides information to Austar regarding wastes removed each month. In addition, the licensed waste management contractor also undertakes waste tracking in accordance with the Protection of the Environment Operations (Waste) Regulation 2005.

Waste contractors undertake regular inspections of waste bins, oil storage areas and spill kits and report any issues to Austar staff. If cross-contamination is an ongoing issue, or a waste improvement opportunity is identified, employees and contractors can be educated through toolbox talks and inductions. There will be no change to waste management practices during closure.

Putrescible Waste

Putrescible waste is segregated into the following for disposal from site:

- General waste;
- Recyclable waste;
- Wastewater (septic system); and
- Hazardous wastes.

Hydrocarbon Waste Management

Hydrocarbon wastes include:

- Used oil filters;
- Waste oil; and
- Recovered oil (from oil-water separators).

The hydrocarbon wastes are managed by a licensed waste contractor, with hydrocarbon wastes recycled where possible. Hydrocarbon-contaminated soils are stockpiled in a hydrocarbon remediation area at the CHPP which contains three bunded cells. Any contaminated material held within this area is either managed using bioremediation techniques or removed from site by a licensed waste contractor to an appropriate regulated waste management facility.

A demolition study that considers suitable demolition methodology and an assessment of waste streams and volumes will be carried out as part of the Detailed Mine Closure Plan. A detailed site investigation is currently underway which will inform a Remediation Action Plan (RAP) for the treatment and management of contaminated soils.

6.2.1.6. Geology and Geochemistry

In accordance with Austar's development consents, Austar has several approved areas which may be utilised for waste rock and reject emplacement. These areas include:

- CMA 2 - East Open Cut Void (unrehabilitated);
- CMA 2 - West Open Cut Emplacement Area (unrehabilitated);
- CMA 7 - Aberdare Extended Reject Emplacement Area (Partially rehabilitated); and
- CMA 8 - Area 12 and Area 13 (rehabilitated).

Tailings at Austar have been disposed at:

- CMA 2 - No.9 Tailings Dam.
- CMA 2 - NW Tailings Dam; and

- CMA 9 - Underground workings.

Coarse reject material that has been produced by Austar is potentially acid-forming. This has been managed through the addition of lime at the surface before capping. Capping of the coarse reject material is also utilised to reduce the potential for acid leachate at the surface of the emplacement areas.

North-West (NW) Emplacement Area (CMA 2)

The NW Emplacement Area is an approved emplacement area comprised predominantly of dry tailings and coarse reject material from older mining operations. It also includes a noise bund installed as part of a noise pollution reduction program as directed by the EPA. It has been identified that dependent upon market availability, the reject material contains a sufficient energy value that could warrant either re-processing on site for blending with product coal or direct sale as an energy coal. Alternatively, the material may be capped in-situ or removed and emplaced in old underground workings or approved emplacement areas. These options will be assessed as part of the mine closure planning process.

No.9 Tailings Dam (CMA 2)

The No. 9 Tailings Dam has been identified as another area on site that contains suitable material that could be re-processed on site and blended with the product coal or transported offsite. Reuse of this material will be dependent upon market availability. If the material is not reprocessed, it will be capped in-situ and rehabilitated or removed and emplaced in old underground workings or emplacement areas. These options will be assessed as part of the mine closure planning process.

Aberdare Extended Emplacement Area (CMA 7) and East Pit and West Pit Emplacement Areas (CMA 2)

The overall rehabilitation strategy for the Aberdare Emplacement Area is provided below. The strategy for West Pit and East Pit Emplacement Areas will broadly be undertaken in accordance with the Aberdare Emplacement Area Strategy and will be refined to suit the East Pit and West Pit Emplacement Areas, as required. The strategy includes the following:

- emplacement of materials, compacted in layers in accordance with the final landform design height. It is noted that there will be no further generation of coarse rejects by mining activities. Some reject material may be rehandled and consolidated, this will be determined during detailed closure planning technical studies;
- confirmation of sub-surface drainage mechanism to convey acid-leachate to the former underground workings;
- application of lime to the coarse reject surface at a rate of 20 t/ha prior to capping;
- capping the area with inert material. The inert material is primarily sourced from old open cut overburden stockpiles and will be compacted in layers. The thickness of the capping will be a minimum of 1 m. The thickness may be refined based on updated estimates for overall reject emplacement, capping requirements for all emplacement areas and additional research into acid leachate and combustion potential will be undertaken as part of the closure planning process;
- reshaping the surface to be free draining and establishing an appropriate final drainage network to convey surface water runoff and prevent water ponding over the area. Light ripping will be undertaken to promote plant growth in the top layer of the cap; and

- progressively revegetate the areas to pastoral grassland.

As discussed in **Section 6.2.1.1**, due to Austar's material deficit, material may be sourced from offsite (with appropriate approvals sought) in order to achieve a free-draining landform at each of the emplacement areas.

Reject emplacement areas will be progressively rehabilitated in accordance with regulatory requirements. A site-specific Erosion and Sediment Control Plan has been developed for the Aberdare Emplacement Area. Erosion and sedimentation will be managed under the approved site water management plan for East and West Pits.

CMA 8 – Bellbird Areas 12 and 13

Bellbird Area 12 was rehabilitated by capping and revegetating with pasture and grasses, with the exception of a stockpile of capping material that may be used for future rehabilitation works. Maintenance of the rehabilitation area will occur as required.

The Bellbird Area 13 emplacement area has been mostly rehabilitated. Austar has identified a significant sinkhole in this area which captures a 340 ha catchment, sending runoff to underground workings. This is a legacy of previous operations. Austar is investigating sinkhole remediation methods and will continue working with relevant authorities to manage this area. Cessnock City Council has completed the Final Cessnock City (Black Creek) Floodplain Risk Management Study and Plan Report W4951 (February 2016) which applied sinkhole catchment flows to Bellbird Creek. Prior to reinstatement of this sinkhole alternate flood mitigation works within the Bellbird Creek catchment will be required.

Rehabilitation maintenance, such as weed management, will continue to be undertaken.

Detailed Site Investigation

Austar is undertaking a detailed site investigation program to inform mine rehabilitation and closure. The activities involve shallow soil sampling, test pitting, surface water collections, drilling of boreholes and installation of groundwater contamination bores and groundwater monitoring wells to inform contamination assessments, geotechnical investigations, and material characterisation assessments. Austar will implement outcomes from these investigations to ensure the appropriate management of hostile materials.

An Environmental Procedure has been developed for the detailed site investigation works to manage specific potential impacts including noise, traffic and erosion and sediment control. The works will also be undertaken in accordance with the Austar Work Permit process and include due diligence assessments for ecology and heritage impacts where required.

6.2.1.7. Material Prone to Spontaneous Combustion

Underground Spontaneous Combustion

A Spontaneous Combustion Principal Hazard Management Plan (SCPHMP) has been developed and implemented at Austar to manage spontaneous combustion risks. The SCPHMP utilises enhanced gas monitoring and management using a range of systems and data analysis methods to constantly monitor spontaneous combustion risks.

Austar will continue to monitor and manage spontaneous combustion risks in the underground until the mine is sealed (Refer to **Section 6.2.2.6**).

Surface Spontaneous Combustion

Spontaneous combustion risk from coal rejects material is considered to be low. Reject emplacement areas are maintained in accordance with the CHPP Reject Haulage and Emplacement Area Procedure. A geotechnical study on emplacement of reject for the management of potential combustion risk has informed the Austar CHPP Reject Haulage and Emplacement Area Procedure. The procedure requires tipped reject to be levelled and spread in layers no more than 300 mm and be compacted at no more than four weekly intervals on active placement areas to minimise the risk of spontaneous combustion.

An additional geotechnical study is proposed to be undertaken during closure planning to further understand combustion risk associated with the coarse reject emplacement areas to inform the capping process to ensure a long term safe and stable landform.

Spontaneous combustion remains a potential environmental risk during the closure phase. Austar will continue to implement the SCPHMP and CHPP Reject Haulage and Emplacement Area Procedure, including maintaining/compacting reject emplacement areas to reduce the potential for spontaneous combustion. Austar will also review opportunities to consolidate areas prone to spontaneous combustion to minimise required capping material.

6.2.1.8. Material Prone to Generating Acid Mine Drainage

Analysis of the waste materials undertaken at Austar indicates that it contains sulphur in the organic or pyritic form, and therefore has the potential for Acid Mine Drainage (AMD). The approved Austar Site Water Management Plan (SWMP) identifies the ongoing monitoring of surface water to identify any potential risk of AMD. In addition, rehabilitation strategies have been developed to reduce the potential for acid mine drainage and include:

- approved emplacement of reject material in available former open cut pits;
- direct connection of emplacement areas to underground workings with emplacement areas staged to drain to these areas;
- monitoring of historic underground workings;
- rehabilitated areas designed to direct surface water runoff away from emplaced material; and
- A geochemical assessment is currently being undertaken as part of the mine closure planning process to better understand acid leachate risk associated with the coarse reject emplacement areas. Austar will implement the outcomes of this geotechnical assessment to ensure appropriate management of hostile material.

AMD remains a potential environmental risk during closure. The reject emplacement areas are the primary source of AMD and therefore they have been designed so that leachate drains directly to old underground workings. Austar will continue to undertake water monitoring throughout the closure phase to ensure there are no impacts to the surface or groundwater systems/users.

Orange staining/residue was observed in a clean water drainage line at the CHPP during 2017 and reported as an incident to the EPA.

The drainage line is ephemeral and mainly dry. Austar commenced a monitoring program to investigate the source of the orange staining/residue and advised relevant regulators. Monitoring has continued during the reporting period in accordance with conditions U3 and E2 of EPL 416. These conditions were added on 15 December 2017 as part of a Pollution Reduction Program (PRP) specifically to address the orange staining issue in the drainage line at the CHPP.

Condition U3.3 requires the submission of an updated monthly report containing the monitoring results required by Condition U3.2. Condition U3.2 requirements include sampling of surface water in the Investigation Drainage Line; sampling of groundwater from the groundwater bore adjacent to the Investigation Drainage Line; and photos taken at specific locations along the Investigation Drainage Line.

As part of mine closure planning, Austar will carry a capping strategy that will determine the appropriate capping depth and treatment. Austar will also review opportunities to consolidate areas of material prone to AMD to minimise capping material requirements.

6.2.1.9. Ore Beneficiation Waste Management (Reject and Tailings Disposal)

There will be no further reject or tailings generated from mining activities. The management and rehabilitation of current reject and tailings emplacements have been described in **Section 6.2.1.6.**

6.2.1.10. Erosion and Sediment Control

As Austar progresses through closure, it is expected that additional surface disturbance will be minimal. Some disturbance will be required through the clearing of tracks and work areas required for intrusive site investigation studies required as part of the detailed mine closure plan or mine closure activities (e.g. mine sealing).

Erosion and sedimentation in areas disturbed by mining activities are managed through:

- The Austar Site Water Management Plan, which includes the details of the water management structures on site and the Erosion and Sediment Control Plan;
- The Work Permit process utilised at Austar prior to any clearance or ground disturbance activities identifies appropriate erosion and sediment controls to be established prior to the commencement of any works; and
- The erosion and sediment control requirements for the surface area above the underground mining areas was managed in accordance with a Land Management Plan included as part of an Extraction Plan for the specific mining area. There are no control devices still in place in these areas.

As part of periodic maintenance activities, sediment is removed from site water management structures to maintain their capacity. For mine water dams, the sediment is disposed at approved emplacement areas in accordance with Mining Lease conditions. For clean water sediment basins (e.g. Kitchener SIS), the sediment may be dried within the area that the sediment basin treats, prior to being used in landscaping at that site or disposed of in emplacement areas in accordance with mining lease conditions.

Erosion and sedimentation remain potential environmental risks during closure. Austar will continue to implement the Erosion and Sediment Control Plans and Land Management Plans to control erosion and sedimentation. As identified in the RMP risk assessment, Austar will review the Austar Site Water Management Plan to ensure it aligns with closure activities.

6.2.1.11. Ongoing Management of Biological Resources for Use in Rehabilitation

Austar has engaged a rehabilitation expert to undertake a gap analysis of the ecological processes relating to mine closure. The gap analysis will inform the development of a rehabilitation and revegetation strategy aiming toward the relinquishment of the mining leases. As it relates to this phase of rehabilitation the strategy will detail how biological resources will be managed prior to the

commencement of rehabilitation including methods and timing of seed collection, storage, and propagation.

Austar currently manages biological resources for use in rehabilitation through the GDP process, as detailed in **Section 6.2.1.1**, and **Section 6.2.1.2**. Resources are salvaged during clearing and used as required in rehabilitation. Topsoil reuse in rehabilitation is detailed in **Section 6.2.4**. As Austar is a closed mine, there is generally minimal topsoil stripping or stockpiling currently required.

6.2.1.12. Mine Subsidence

Underground mining at Austar has now ceased. A final subsidence survey was undertaken in February 2021, and the results were analysed by Mine Subsidence Engineering Consultant (MSEC). The written report concluded that the ongoing long-term residual subsidence effects are expected to be very small and unlikely to result in adverse physical impacts on the natural environment. MSEC considers that ground monitoring could be ceased as the ongoing subsidence is expected to be very small and similar to the order of natural ground movements and survey tolerance.

Austar has engaged a suitably qualified consultant to undertake a landform stability assessment. This assessment will determine Austar's knowledge base associated with surface impacts from historic and longwall subsidence, identify potential subsidence related residual risks and provide monitoring and management recommendations. Austar will implement recommendations from the landform stability assessment as part of the detailed mine closure plan.

6.2.1.13. Management of Potential Cultural and Heritage Issues

An Aboriginal Cultural Heritage Management Plan (ACHMP) and Historic Heritage Management Plan (HHMP) have been developed and implemented at Austar. Both documents provide the process for the management of unknown sites. Sites may be identified through rehabilitation activities such as topsoil stripping and are to be appropriately managed according to the ACHMP and HHMP.

Heritage impacts remain a potential environmental risk during closure. Austar will continue to implement the ACHMP and HHMP including managing known and unknown sites identified during ground disturbance works.

Before any ground disturbance occurs at Austar, a Work Permit must be completed. As part of the Work Permit process, an archaeological due diligence assessment of the area must be carried out before work commences and any recommendations are incorporated into the Work Permit as control measures. All unexpected finds will be managed per Austar's Unexpected Finds Protocol.

Austar has several buildings, remnant structures and features located within heritage curtilages listed on the Cessnock Local Environment Plan (LEP). The Cessnock City Council must approve a development application to modify or demolish any heritage-listed building or structure at Austar.

Austar is in the process of completing a historic heritage assessment for known heritage items. The outcomes of this assessment will inform Austar's position on the proposed fate of heritage items post-closure. Austar will consult with Cessnock City Council and Crown Lands to determine the management of heritage items after lease relinquishment.

6.2.1.14. Exploration Activities

Austar is no longer operational. Any future exploration activities will be for the purpose of mine closure studies. As part of detailed closure studies, an audit on the current status of Austar's boreholes has been undertaken.

Any boreholes drilled during closure studies will be sealed in accordance with *EDG 01 'Borehole Sealing Requirements on Land'*.

6.2.2. Decommissioning

Decommissioning is the removal of the infrastructure associated with mining activities including preparation plants, hardstand areas, buildings and associated foundations near surface, contaminated materials, and hazardous materials. The RMP Form and Way document states that this phase of rehabilitation may also include studies and assessments associated with decommissioning and demolition of infrastructure or works carried out to make safe or 'fit for purpose' built infrastructure to be retained for future use(s) following lease relinquishment.

6.2.2.1. Site Security

Site security and public safety have been identified as potential risks during decommissioning. Reduced activities on site have the potential to attract trespassing/theft/vandalism leading to asset damage, environmental impacts, or personal injury.

The mine site is fenced, clearly signed and patrolled by security contractors and mine personnel. There is video surveillance of infrastructure areas and unauthorised access to the site is prohibited. Austar may consider additional security measures from time to time to deter unauthorised access, such as increasing security patrols and installing additional fencing and signage in problem areas.

Prior to decommissioning Austar will develop a safety management plan which will detail safety controls specific to hazards associated with the decommissioning of infrastructure areas. Contractor specific site safety plans applicable to designated work areas are also be developed.

6.2.2.2. Infrastructure to be Removed or Demolished

Austar intends to remove all non-heritage significant above-ground infrastructure from the site. To reduce the risk of an unexpected failure of infrastructure resulting in spills and release of material to the environment, demolition will be undertaken in accordance with an engineering demolition method and will be carried out by a licensed competent contractor.

A licensed demolition contractor has been engaged to prepare a scope of work for the demolition of all above-ground infrastructure at Austar.

Any hazardous materials identified during pre-demolition intrusive hazmat surveys will be logged in Austar's hazardous materials register and removed.

Any waste generated from the demolition will be segregated and tracked as per a waste management strategy. Austar currently has a waste contract in place for the regular transportation of waste to a licensed offsite facility.

Spill kits are available to be utilised in accordance with Austar's spill response procedure in the event of a spill. Where decommissioning activities take place outside of Austar's water management system, localised environmental controls will be installed before the commencement of works.

To minimise the risk of affecting third parties during demolition, a site services plan has been developed. Before the commencement of decommissioning, Austar will determine if any critical services need to be retained; if so, Austar will develop an alternate energy source plan to maintain any essential services. For plant to be decommissioned Austar will implement a de-energisation plan. All fluids will be drained before the demolition of any structure.

Austar may also remove heritage structures if a heritage assessment concludes it is insignificant, or too structurally unstable to safely retain. Heritage structures will not be removed without consultation and approval from Cessnock City Council and, if required, NSW Heritage.

6.2.2.3. Buildings, Structure and Fixed Plant to be retained

Austar is committed to removing all surface infrastructure. However, heritage buildings onsite may be retained. Austar is currently undertaking heritage assessments for known and potential historic heritage items to guide retention/demolition decisions. Structural assessments of the heritage buildings are currently being undertaken by a qualified engineer to identify safety risks associated with the retention of heritage structures. Austar will use the recommendation from these assessments for consultation with Cessnock City Council heritage advisors and/or the NSW Heritage Office (if required) to confirm a position on whether individual each heritage item should be removed or retained.

Austar has also engaged a suitably qualified heritage consultant to carry out a heritage impact assessment regarding the effects of decommissioning on individual items, complexes of items, and statutory heritage listings.

Austar will seek the development approvals required to remove selected heritage infrastructure. Heritage items are demarcated to prevent damage during decommissioning activities. All Austar employees and contractors are educated on heritage aspects during the induction process. Regular toolbox talks are also carried out. Austar will develop a strategy for the responsibility of retained heritage structure as part of the detailed mine closure plan.

6.2.2.4. Management of Carbonaceous/Contaminated Material

To date, no significant areas of contaminated land have been identified at Austar. Preliminary site investigations have been undertaken and a detailed site investigation is currently underway.

During decommissioning, the contamination resulting from environmental incidents (e.g. spills) and areas of high risk associated with hydrocarbon storage infrastructure will be maintained and appropriately managed (e.g. remediated or disposed of off-site by an authorised waste contractor) as soon as possible after they occur. Monthly environmental inspections will continue to be undertaken by site personnel throughout the closure phase to identify and manage any potential contamination prior to mine closure works.

Contamination remains a potential environmental risk during closure. Austar will continue to undertake routine inspections of surface infrastructure areas where hydrocarbons or chemicals were used, including the CHPP, workshops and fuel storage areas.

Austar will continue to implement controls including bunding, concrete aprons and spill kits, and the waste management practices in **Section 6.2.1.5** to minimise the potential for contaminated surface water run-off.

A strategy for the management of remnant carbonaceous material in the surface footprint including former stockpile areas will be developed during the detailed mine closure plan.

It was identified in the RMP risk assessment that Austar should implement the following controls to further minimise the threat of contamination causing adverse environmental impacts:

- Develop an unexpected finds protocol; and
- Complete a detailed site investigation.

6.2.2.5. Hazardous Materials Management

The potential for land and water contamination is minimised through the correct handling, storage, and disposal of hazardous substances. These controls include storage within properly sealed containers and controlled areas, bunded for medium to long-term storage requirements. These storage and waste receival areas are isolated from clean water catchments to minimise the risk of land or water pollution should an unplanned spill occur.

Prior to the demolition of infrastructure areas, a hazardous materials assessment has been undertaken. A demolition study that considers suitable demolition methodology and an assessment of waste streams and volumes will be carried out as part of the Detailed Mine Closure Plan.

A hazardous materials assessment was carried out at CMAs 1, 2, 3, 4, 5, 6 and multiple heritage items across the site in February 2022. During the assessment hazardous materials were identified and recorded. The assessment includes recommendations for the management of these materials during demolition works. These recommendations will be included in Austar's demolition strategy.

Hazardous materials such as radiation devices or asbestos will be managed through specific management plans and registers. All chemicals used on site are registered through the ChemAlert database. The central database contains all information contained in the Material Safety Data Sheets (MSDS) and an inventory of chemicals held onsite. The information can be accessed at any computer terminal within the operation and provide guidance on storage, use and disposal.

Hazardous materials are transported and stored on site in accordance with the Hazardous Chemicals Management Procedure. Austar will continue to track the volumes of hazardous materials and hydrocarbons taken by authorised waste contractors.

Accidental spills or ground contamination will be assessed case-by-case and remediated using biodegradable spill absorbent. Hydrocarbon or chemical spills will be reported in the mine site incident reporting system with corrective and preventative measures taken as appropriate. A third-party clearance inspection of the area will be undertaken post demolition before progressing to the next rehabilitation phase.

6.2.2.6. Underground Infrastructure

Since the site transitioned to closure, underground assets (including the longwall) have been brought to the surface for storage or sale. Development plant, pumps and other infrastructure are progressively being recovered during withdrawal from the mine. Any assets to remain underground have been decommissioned appropriately (i.e. de-oiled, de-gassed, hydrocarbons removed) and surveyed and recorded on a plan as part of the site records.

Austar is currently undertaking partial sealing of multiple mine entries across site with a focus on regulatory requirements, public safety and mine security.

Temporary mine sealing of the No. 5 and No. 6 Shafts at the Kitchener SIS (CMA6) is complete. These shafts have been sealed at the surface using 140 kPa rated engineered designed steel lids. Final Sealing will occur after the final landform plan at Kitchener SIS has been finalised.

Partial mine sealing will be undertaken at:

- No. 3 and No. 4 Shaft and at the KIA
- No. 1 Shaft

Partial mine sealing will include the following activities:

- Removal of services infrastructure (cables, pipelines) from KIA services boreholes;

- Installation of lightning protection above steel-lined shafts and boreholes;
- Constructing seal at base of shafts with rubble and grout;
- Capping shafts with temporary steel caps; and

Services boreholes at the KIA will be fully sealed in accordance with EDG01.

The Austar drift will be permanently sealed from the surface to a depth with 15m competent rock cover using grout in accordance with MDG6001.

An Environmental Procedure has been developed for the partial mine sealing works to manage specific potential impacts including noise, traffic and erosion and sediment control. The works will also be undertaken in accordance with the Austar Work Permit process and include due diligence assessments for ecology and heritage impacts.

Permanent sealing will be carried out in accordance with *MDG 6001 'Guideline for Permanent Filling and Capping of Surface Entries to Coal Seams'* (Feb, 2012). The decommissioning and sealing of boreholes will be carried out in accordance with *EDG 01 'Borehole Sealing Requirements on Land'*.

To minimise risk to public safety, all permanent seals have been designed by a suitably qualified engineer and will be signed off as constructed through site inspections and verification of materials used. A public safety risk assessment will be conducted prior to the commencement of sealing works.

There are a number of historic mine entries at Austar which have been previously sealed. As part of detailed mine closure planning appropriate studies will be undertaken to assess the integrity of the seals of these entries.

Management of groundwater in the underground workings is being investigated as part of the groundwater investigations during detailed closure planning. Investigations will inform Austar of the potential for future ongoing discharge requirements.

During closure execution, Extraction Plan requirements will be completed and all subsidence pegs will be removed.

6.2.3. Landform Establishment

Landform establishment is the process of shaping the final landform to a safe, stable, and free-draining landform that is appropriate for the desired final land use and consistent with the surrounding landscape.

The final landform at Austar will be determined during the mine closure planning process. The early cessation of mining has resulted in some emplacement areas not achieving the anticipated final landform height. Detailed studies will be undertaken to determine rehandling and landform design requirements.

6.2.3.1. Water Management Infrastructure

Austar has engaged a suitably qualified consultant to complete a desktop Surface Water Assessment for the closure of the Austar Coal Mine. The assessment was undertaken to provide a clear roadmap of requirements for further mine closure studies and works. in accordance with the recommendations from the surface water assessment, Austar is currently undertaking a detailed site investigation to determine the most appropriate treatment or storage options for contaminated dam sediments. Austar has commenced consultation with the Dam Safety Committee regarding the requirements and expectations to decommission and de-prescribe Kalingo Dam.

Austar will undertake a staged review and update of the Site Water Management Plan throughout closure planning and execution. As part of the closure planning process, Austar will consult with

stakeholders about post-closure water management. Water infrastructure will be specifically considered for the individual closure management areas during mine closure planning.

For the purpose of this RMP, it has been assumed that all mine water dams will be removed and rehabilitated. Some clean water dams are proposed to remain in the final landform. Dams will be desilted and stabilised or rehabilitated. During closure works, Austar will ensure that retained dams are fit for purpose and appropriately licensed (if required) for the final land use.

6.2.3.2. Final Landform Construction: General Requirements

Austar's final landform plan will be determined during detailed mine closure planning. The final landform will consider identified geotechnical/geochemical and erosional issues as well as visual and water management aspects.

Austar has engaged a suitably qualified consultant to complete a preliminary desktop geotechnical assessment for each closure management area. From this preliminary study, Austar has developed a Sampling Analysis Quality Plan (SAQP) which outcomes will inform detailed mine closure planning to determine a suitable final landform. Austar will implement the following proposed studies into the final landform design:

- Site material balance and characterisation;
- Review of options to reprocess tailings and coarse rejects;
- Options assessment on capping in situ and consolidating the material;
- Cover design options analysis, including actual cover performance and final land use;
- Investigation of long-term erosion modelling and monitoring options; and
- Opportunities to import materials for fill and capping.

6.2.3.3. Final Landform Construction: Reject Emplacement Areas and Tailings Dams

Historically reject emplacement area and tailings storage facilities at Austar have been undertaken in accordance with the Austar CHPP Reject Haulage and Emplacement Procedure.

Prior to the capping of reject material, the following preparation has been undertaken:

- Compaction of coarse reject to minimise risk of oxygen infiltration through:
    - Placement in layers no greater than 300mm thickness; and
    - Compaction to at least 95% Standard Compaction using a vibratory roller
- Limiting batter slopes to <4H:1V;
- Contouring to shed water such that side slopes do not exceed 10° (6H:1V); and
- Liming final coarse reject layer at 30t/ha prior to capping to neutralise any potential leachate which may be generated.

During the landform establishment phase at the reject emplacement areas:

- Capping layers were placed at layers no greater than 300mm in thickness; and
- Capping material was compacted to 95% (relative to Standard Compaction) using a minimum dead weight 8-tonne smooth drum roller.

Austar has completed a preliminary desktop capping investigation for REAs and TSFs. This investigation included:

- Risk-focused gap analysis;
- Review of consents and commitments relevant to final landform design and capping activities;
- Consideration of requirements to establish the final landforms;
- Identification of treatment plans to develop effective controls to manage closure risks;
- Identification of typical capping profiles with an assessment of relative strengths;
- Recommendations for site investigation and testing to be carried out during Stage 2 of the capping assessment; and
- TSF and REA capping knowledge gap assessment and forward planning assessment report.

Stage 2 of the capping investigations has now commenced and includes:

- Monitoring to demonstrate achievement of agreed closure objectives for existing facilities that have been previously capped and vegetated; and
- Development of materials placement, capping and landform designs for uncapped reject areas or existing rehabilitation areas where closure objectives are unable to be demonstrated.

Austar will implement the recommendations from these capping studies to address potential geotechnical/geochemical/erosional risks of achieving a sustainable rehabilitation outcome. Austar will also need to implement the outcomes from the proposed studies listed in **Section 6.2.3.2** to successfully develop a suitable capping design.

6.2.3.4. Final Landform Construction: Final Voids, Highwalls and Low Walls

There is no final void in Austar's engineered final landform.

Austar has undertaken a Stage 1 geotechnical assessment to scope detailed geotechnical studies (stage 2) for steep slopes proposed to be retained in the final landform. As part of the Stage 2 geotechnical assessment, Austar is undertaking a detailed assessment of key features proposed to be retained in the final landform including, rail cuttings, road cuttings, dam embankments and highwalls.

Austar is also preparing a strategy including monitoring and landform stability modelling to demonstrate that retained steep slopes/engineered structures will be long-term stable landforms. The findings from these assessments will be used to consider the risk of highwalls to public safety in the final landform design.

6.2.3.5. Construction of Creek/river Diversion Works

Bellbird Creek runs through CMA 2 (CHPP) and has been re-aligned from its natural alignment in some locations. The option of re-instating the original alignment or justifying the existing diversion will be assessed. It is Austar's preference to not reinstate the Bellbird Creek back to its original alignment provided that the final rehabilitated creek systems are long-term stable and free draining.

The current flow path through the CHPP appears to be generally stable and does not pass through reject emplacement or capping areas. If the original Bellbird creek alignment is reinstated, then it is likely that the channel will need to pass through these areas. As such, additional risk is associated with any Bellbird Creek re-alignment works.

As proposed in the RMP risk assessment, Austar will engage a suitably qualified specialist to review the Bellbird Creek concept design. The specialist will assess the current Bellbird Creek alignment through Austar's mining lease areas to confirm it meets rehabilitation and closure objectives. These investigations may include the following:

- Undertake a channel stability and stream health assessment of the sections of Bellbird Creek on Austar Mining leases to demonstrate that it is long term stable and meets the ecological objectives of the area;
- Undertake a contamination assessment of Austar's section of Bellbird Creek to demonstrate that it is, and will continue to be non-polluting;
- Undertake a flooding/drainage assessment of Bellbird Creek to demonstrate that it is hydraulically stable and meets current long term drainage stability criteria (Including hydraulic structures such as culverts and weirs);
- Ecological assessment (specific scope to be determined in consultation with a suitably qualified ecologist); and
- Additional water quality monitoring upstream, downstream and within Bellbird Creek in accordance with a revised Surface Water Monitoring Program.

6.2.4. Growth Medium Development

Austar has engaged a rehabilitation expert to undertake a gap analysis of the ecological processes relating to mine closure. The gap analysis will inform the development of a rehabilitation and revegetation strategy aiming toward the relinquishment of the mining leases. As it relates to this phase of rehabilitation the strategy will detail how growth medium development will be managed prior to the commencement of rehabilitation.

Based on the recommendation of the gap analysis the following general rehabilitation methodology will be implemented.

Topsoil and/or growth media will be spread uniformly onto areas requiring rehabilitation. Sampling will be undertaken to characterise the geochemical nature of the growth media used at Austar and recommendations for ameliorations will be provided by a suitably qualified agronomist or soil scientist.

Where topsoil is not available, a suitable organic soil substitute may be used. If Austar requires an alternative growth medium such as composted green waste or biosolids, the material will be used in accordance with the relevant EPA resource recovery order and exemption.

The spreading of soil (where available), the addition of soil ameliorants and fertiliser, and the application of seed will be carried out in consecutive operations (where possible) to reduce the potential for soil loss to wind and water erosion.

Following the spreading of topsoil, ameliorants and fertiliser will be applied to the surface using a mechanical spreader prior to ripping for incorporation into the seedbed. Ameliorant rates will be determined based on the results of topsoil and manure quality testing prior to spreading.

Cover crops will be used in revegetation, where necessary, to provide for an effective groundcover until the target seed species are established. This will minimise the likelihood of erosion during the initial establishment phase of the rehabilitation. To further minimise degradation of the substrate rehabilitation areas are progressively revegetated to reduce areas of exposed soil. Erosion and sediment control will be undertaken in accordance with the Blue Book.

Seedbed preparation will be undertaken to ensure optimum establishment and growth of vegetation. All top-dressed areas will be contour ripped to create a "key" between the soil and the subsoil/capping prior to the placement of materials. Ripping will be undertaken along the contour preferably when soil is moist and immediately prior to sowing. The spread top-dressed surface will be scarified with the contour immediately prior to seeding to reduce runoff and increase infiltration. Deep ripping lines every 20 m with the contour will occur in areas of poor water infiltration where capping won't be compromised. Where possible seeding will take place as soon as the ground preparation is complete and be undertaken in optimal seasonal conditions for the establishment of vegetation, i.e. not in hot dry conditions or extremely cold conditions.

Austar will continue to engage suitably qualified and experienced contractors to undertake weed control activities and develop an annual weed action plan.

6.2.5. Ecosystem and Land Use Establishment

Revegetation activities will be planned to occur after the completion of reshaping, topdressing with growth media and construction of drainage structures. Seeding should be undertaken in optimal seasonal conditions for the establishment of vegetation, i.e. not in hot dry conditions or extremely cold conditions.

As detailed in **Section 6.2.1.2** where possible seeds will be sourced from the target vegetation communities in the local area. An experienced contractor will handle, treat and store the seeds appropriated. Seeds will be collected and stored in accordance with the NSW Government Florabank Guidelines (Florabank 2022).

Native trees and shrubs will be established from either direct seeding or tube stock planting. Grasslands will generally be established via direct seeding but may also be planted as tube stock if required. Where appropriate, seeds will be treated i.e. inoculated and scarified prior to sowing to improve the chance of early and successful germination.

Austar will use a plant species mix compatible with the surrounding environment. **Table 19** and

Table 20 outline the indicative species lists for agricultural grazing and native ecosystem final land uses. As part of closure planning Austar will review the species mix to ensure it includes appropriate species for each targeted vegetation community, including indicative seeding and planting rates.

TABLE 19 - AGRICULTURAL GRASSLAND SPECIES LIST

Species List for Agricultural Grazing Rehabilitation Areas	
Japanese Millet (summer cover crop)	Haifa Clover
Coolabah Oats (winter cover crop)	Wimmera Rye
Couch	Perennial Rye
Kikuyu	Green Panic
Lucerne	Phalaris
Seaton Park Clover	

TABLE 20 - NATIVE ECOSYSTEM SPECIES LIST

Species List for Forest Areas	
Common Name	**Taxonomic Name**
Canopy Species	
Spotted gum	*Corymbia maculata*
Cabbage gum	*Eucalyptus amplifolia subsp. amplifolia*
Large-fruited grey gum	*Eucalyptus canaliculata*
Narrow-leaved ironbark	*Eucalyptus crebra*
Thin-leaved stringybark	*Eucalyptus eugenioides*
Broad-leaved ironbark	*Eucalyptus fibrosa*
Grey box	*Eucalyptus moluccana*
Grey gum	*Eucalyptus punctata*
Forest red gum	*Eucalyptus tereticornis*
Turpentine	*Syncarpia glomulifera subsp. glomulifera*
Shrub Stratum	
Silver-stemmed wattle	*Acacia parvipinnula*
Coffee bush	*Breynia oblongifolia*
Blackthorn	*Bursaria spinosa subsp. spinosa*
Broom bitter pea	*Daviesia genistifolia*
Gorse Bitter Pea	*Daviesia ulicifolia*
Healthy Parrot Pea	*Dillwynia retorta*
Ground Stratum	
Threeawn speargrass	*Aristida vagans*
Blue flax lily	*Dianella caerulea*
Wiry panic	*Entolasia stricta*
Love creeper	*Glycine tabacina*
Star Goodenia	*Goodenia rotundifolia*
Purple Coral Pea; Waraburra	*Hardenbergia violacea*
Blady grass	*Imperata cylindrica var. major*
Wattle Mat-rush	*Lomandra filiformis*
Many-flowered mat-rush	*Lomandra multiflora subsp. multiflora*
Kangaroo grass	*Themeda australis*

6.2.6. Ecosystem and Land Use Development

Following completion of revegetation, ongoing maintenance and land management activities, rehabilitation monitoring, and adaptive management will be undertaken. Maintenance at rehabilitated areas may include, but not be limited to:

- Weeds and pest/feral animal species control;
- Managing bushfire risks;
- Minor earthworks to remediate erosion features, including contour banks and diversion channels;
- Infill planting and/or seeding to improve rehabilitation based on monitoring recommendations; and

- Maintaining erosion and sediment controls.

Additional rehabilitation maintenance and management activities will be informed by the findings and recommendations of annual rehabilitation monitoring.

To improve the management of rehabilitated areas in the ecosystem and land use development phase it was proposed in the RMP risk assessment that Austar should implement the following:

- A review of the current Weed Action Plan to include a focus on revegetation areas; and
- A Trigger Action Response Plan for the maintenance of areas in the ecosystem and land use development phase.

During closure execution Austar will continue to undertake environmental monitoring including surface water, groundwater, air quality, and noise in accordance with the development consent and EPL requirements.

6.3. Rehabilitation of Areas Affected by Subsidence

Rehabilitation of areas affected by subsidence is managed in accordance with the relevant Austar extraction plans.

Underground mining at Austar has now ceased. A final subsidence survey was undertaken in February 2021, and the results were analysed by Mine Subsidence Engineering Consultant (MSEC). The written report concluded that the ongoing long-term residual subsidence effects are expected to be very small and unlikely to result in adverse physical impacts on the natural environment. MSEC considers that ground monitoring could be ceased as the ongoing subsidence is expected to be very small and similar to the order of natural ground movements and survey tolerance.

7. REHABILITATION QUALITY ASSURANCE PROCESS

A detailed Rehabilitation Quality Assurance Process (RQAP) will be developed and implemented throughout the mine closure planning and execution process. This will include details of inspections, monitoring and record-keeping which will be required to ensure that:

- Rehabilitation is being implemented in accordance with the nominated methodologies; and
- Identified risks to rehabilitation are being adequately addressed at each phase of rehabilitation.

Austar will implement the RQAP through every phase of rehabilitation and closure to confirm that the rehabilitation strategies outlined in this RMP have been completed in accordance with the nominated methodologies. The RQAP will also include inspections and documentation to verify that each phase of decommissioning, demolition and rehabilitation has been completed and has met the completion criteria detailed in **Section 4**.

The RQAP will be used to demonstrate to the relevant regulatory authorities, including Resources Regulator, that rehabilitation has been completed to an acceptable standard to achieve relinquishment.

Documentation to be recorded and retained includes, but is not limited to, the following:

Phase 1 – Active Mining

- Documentation of pre-clearance surveys;
- Completed Work Permits**;**
- Desktop study reports;
- Site environmental inspection records;
- Annual weed control reports;
- Extraction plan records; and
- Records of inventory.

Phase 1 – Demolition

- Documentation of pre-clearance surveys;
- Documentation of mine and boreholes sealing and sign off;
- Inspections and demolition reports to confirm all infrastructure to be demolished has been removed;
- Documentation to identify the future landowner responsible for the ongoing upkeep and management of retained infrastructure;
- Validation testing to ensure any contamination has been appropriately remediated and/or removed;
- Plans of infrastructure/plant to remain underground;
- Hazmat register;
- Records of decommissioning of infrastructure/plant to be left underground. (e.g. records of de-oiling);
- Heritage assessments;

- ESF2 documentation;
- MDG6001 documentation; and
- EDG01 documentation.

Phase 2 – Landform Establishment

- Survey and preparation of as-constructed drawings of final constructed slopes, landforms and water drainage structures;
- Verification reporting to confirm the specified depth of capping has been implemented (i.e. aerial surveys); and
- Geotechnical and geochemical assessment reports.

Phase 3 – Growth Medium Development

- Maintenance of a topsoil inventory to document stripped, stockpiled and re-spread resources;
- Site records of re-spread topsoil, ameliorants, fertiliser etc.;
- Soil testing results to confirm appropriate soil geochemical parameters for plant establishment; and
- Rehabilitation monitoring reports.

Phase 4 – Ecosystem and Land Use Establishment

- Documentation of reseeding or planting activities undertaken including:
    - Date of planting;
    - Weather conditions;
    - Seeding rate (kg/ha) and/or planting rate (tubestock/ha);
    - Ameliorant rate (kg/ha); and
- Site inspections of rehabilitated areas to allow early identification of any emerging threats to rehabilitation.

Phase 5 – Ecosystem and Land Use Sustainability

- Inspections of temporary and permanent erosion and sediment controls;
- Inspections to identify potential weed infestations;
- Documentation of Rehabilitation Monitoring; and
- Documentation of weed and feral animal management and eradication programs and follow-up inspections.

8. REHABILITATION MONITORING PROGRAM

8.1. Analogue Site Baseline Monitoring

Austar is currently undertaking rehabilitation monitoring at the Aberdare emplacement area, Bellbird Areas 12 and 13, and Kalingo areas. As part of rehabilitation monitoring two forest analogue sites have been established (one at Bellbird Areas 12 and 13, and one at Kalingo).

The forest analogue sites have been selected based on the following:

- located in undisturbed vegetation adjacent to the previously disturbed areas;
- containing vegetation types similar to the target rehabilitation; and
- are suitable as a basis for comparison to rehabilitation completion criteria.

At this stage there is no reference site for pasture areas, as to date these rehabilitated areas are not specifically required to be commensurate with native grassland vegetation.

Analogue rehabilitation monitoring sites will be reviewed during the detailed mine closure planning process. Additional analogue sites will be established as rehabilitation progresses.

8.2. Rehabilitation Establishment Monitoring

A walkover inspection is undertaken as part of the annual rehabilitation monitoring program to enable early identification of emerging issues, and threats to rehabilitation. The walkover inspection is comprised of a traverse of the rehabilitated area with the following documented on standard proformas.

- A general assessment of the health of the rehabilitated vegetation;
- Visual assessment of vegetation cover, species diversity and stage of growth (rate of growth will be assessed during subsequent events);
- Identification of weeds and pests including the density of infestation and impacts on rehabilitation;
- Evidence of erosion (rill, gully and tunnel);
- Stability and functioning of any erosion and sediment control and water management structures;
- Evidence of unauthorised access to the rehabilitated areas; and
- Evidence of use of rehabilitation area by native fauna species.

Upon the completion of the walkover, the results of the monitoring are compared to the Biodiversity Trigger Action Response Plan (TARP). If the TARP is triggered remediation action is recommended by the ecologist.

As Austar progresses towards closure a specific rehabilitation establishment Inspection Test Plan (ITP) will be developed to monitor rehabilitation areas at the commencement of the rehabilitation establishment phase. As new rehabilitation areas reach the ecosystem establishment phase, they will be added to the inspection regime.

8.3. Measuring Performance Against Rehabilitation Objectives and Rehabilitation Completion Criteria

Austar has engaged a suitably qualified ecologist to measure rehabilitation performance against rehabilitation objectives and rehabilitation completion criteria. Austar's final land uses are agricultural grazing and native ecosystem. To determine if rehabilitation is on a trajectory to achieve these final land uses, the following monitoring is carried out.

Native Ecosystem Monitoring

Native ecosystem monitoring is comprised of a 20 m by 20 m plot, as well as a 50 m transect. These plots have their coordinates recorded using a hand-held GPS and are demarcated with star-pickets in each corner.

The methodology of a 50 m transect is as follows:

- Monitoring photos at both ends of each transect, looking towards the opposite end of the transect.
- For every 5 m interval, the following is recorded:
    - Percentage native canopy cover; and
    - Percentage native mid-storey cover.
- For every 1 m interval, the following is recorded:
    - Presence of native groundcover (grass);
    - Presence of native groundcover (shrub);
    - Presence of native ground cover (other);
    - Presence of native groundcover (exotic);
    - Presence of bare ground; and
    - Presence of leaf litter

The methodology for using 20 m by 20 m plots is as follows:

- A full floristic survey including identification of all vascular plant species and their cover and abundance; and
- Photo monitoring.

Agricultural Grazing (Pasture) Monitoring

Pasture monitoring uses 5 m by 5 m plots. Each plot's coordinates are recorded using a hand-held GPS and is demarcated with a star-pickets. Assessments include:

- Percentage of plot which comprises vegetation;
- Percentage of plot which comprises introduced species;
- Percentage of plot which comprises canopy vegetation; and
- Documentation of all flora species present and their cover/abundance
- Photo monitoring.

Assignment of Action Priorities

Based on the data collected, each site is assigned an "Action Priority" comprising either "Action Required" or "Adequate Management" according to whether the parameters are in accordance with the completion or performance criteria.

- Action Required - either require intervention or have not yet developed to the stage where they are compliant with criteria (but are expected to naturally develop with time – such as the presence of fruiting/flowering of trees).
- Adequate Management – require no management, however, should continue to be monitored.

This categorisation system will be used in future for direct data comparability.

Assignment of an Action Priority is undertaken for both the ecosystem and land use establishment and development phases.

- Ecosystem and land use establishment phase – follows Growing Medium Development. Includes the initial germination and success of plantings. This phase must be achieved prior to moving to the sustainability phase.
- Ecosystem and land use development phase – This phase is required to be achieved prior to land relinquishment.

9. REHABILITATION RESEARCH, MODELLING AND TRIALS

9.1. Current Rehabilitation Research, Modelling and Trials

As detailed in **Section 6.1**, Austar is currently in the pre-feasibility study stage of mine closure planning. Extensive technical studies are being scoped and undertaken to

- address knowledge gaps identified in phase 1 desktop studies;
- address risks and opportunities identified in rehabilitation and closure risk assessments;
- inform the development of an executable detailed mine closure plan to meet the rehabilitation and closure objectives and achieve a safe and stable landform with beneficial post-mining land uses.

Outcomes of studies are reported in the Austar Annual Review.

9.2. Future Rehabilitation Research, Modelling and Trials

Additional technical studies and modelling will be informed by the findings of the currently scoped pre-feasibility studies. Future studies will be reported in the forward program.

10. INTERVENTION AND ADAPTIVE MANAGEMENT

Unpredictable events such as bushfires, droughts and floods may present risks to rehabilitation. These events generally have significant consequences for rehabilitation quality and are likely to require adaptive management in order to mitigate risks and achieve relinquishment of affected rehabilitation areas within a satisfactory timeframe.

Although these events may have a high degree of unpredictability, monitoring the status of contributing factors enables an assessment of the likelihood of a major impact on rehabilitation occurring.

Trigger Action Response Plan

The rehabilitation monitoring program as outlined in **Section 8** will be used to identify any maintenance actions required and whether further works are required to achieve the specific closure criteria (refer to **Section 4**). The rehabilitation maintenance program will be undertaken following the completion of rehabilitation activities at the site and will be utilised to manage the rehabilitation areas.

Table 21 details the rehabilitation Trigger Action Response Plan (TARP) Which has been developed to identify required containment and remediation actions in the case of unexpected events during rehabilitation activities. Further details on the proposed environmental management measures utilised by Austar are provided in **Section 6.2.**

TABLE 17 - TRIGGER ACTION RESPONSE PLAN

Trigger	Containment Action	Remediation Action
Hazardous Materials (asbestos) inappropriately removed during demolition of heritage structures, leading to soil contamination and/or health impact.	Undertake monitoring / engage specialist to understand extent of the impact. Install public safety management measures as required to minimise risk of harm.	Implement corrective actions as necessary based on outcomes of specialist reports. Remediate soils and validate to minimise potential for harm.
Landform not in accordance with completion criteria identified in **Section 4** including capping material depth.	Undertake survey of areas of concern to determine areas that do not meet requirements.	Monitor areas to assess performance. If rehabilitation performance is inadequate, undertake reshaping works and reseeding of the amended landform, utilising target species for the proposed final land use.
Erosion / poor water quality from rehabilitation areas in excess of target criteria identified in **Section 4.**	Install appropriate erosion and sedimentation controls such as sediment fences or similar.	Regrade and stabilise with target species for proposed final land use. Check (and repair if required) adequate drainage to underground workings to minimise runoff.
Lack of vegetation establishment or dieback of rehabilitated areas resulting in an inability to meet vegetation criteria targets specified in **Section 4.**	Undertake soil chemistry monitoring of target area to determine if growth medium is appropriate for vegetation establishment.	Apply ameliorants as required based on results of laboratory testing and re-seed utilising appropriate species as per target final land use
Weed infestation threatening rehabilitation success (weeds in excess of identified criteria level - refer to **Section 4**).	Undertake monitoring to understand weed location and abundance.	Implement weed management actions as required. Re-seed utilising appropriate species as per target final land use where necessary.
Significant damage to rehabilitation areas by feral animals, resulting in an inability to	Undertake monitoring to understand potential feral	Implement feral management actions as required.

Trigger	Containment Action	Remediation Action
meet vegetation criteria targets specified in **Section 4.**	animal habitat location and abundance	Re-seed utilising appropriate species as per target final land use where necessary.
Acid leachate identified from rehabilitated reject emplacement areas, potentially resulting in offsite water impact and/or dieback of revegetation, resulting in an inability to meet vegetation and water quality criteria targets specified in **Section 4.**	Undertake soil/water chemistry monitoring and landform/drainage investigation of target area to determine the source of the issue. Install containment measures to minimise risk associated with potential offsite impact.	Amend landform to remediate issue, as informed by containment investigations. Undertake water / soil testing post completion of corrective actions to confirm adequacy of remediation. Re-seed utilising appropriate species as per target final land use (where required).
Spontaneous combustion of rehabilitation area	Undertake monitoring to understand nature and extent of the event	Amend landform to remediate issue, as informed by containment investigations. Implement corrective actions as necessary in accordance with Spontaneous Combustion Principal Hazard Management Plan

The rehabilitation monitoring/inspection program will be continued as required until it can be demonstrated that the rehabilitation has satisfied the closure criteria.

In addition to the annual monitoring program, routine site inspections are also conducted monthly by Austar environmental personnel. Mining personnel also conduct inspections of the site which also include rehabilitation areas and inspections of subsidence repairs undertaken. If issues are identified during this inspection process, the Environment and Community Superintendent is advised, and corrective actions are implemented as required.

11. REVIEW, REVISION, AND IMPLEMENTATION

In accordance with Clause 11 of Schedule 8A to the Mining Regulation 2016, Austar will amend this RMP in the following circumstances:

- As a consequence of an amendment made to the rehabilitation objectives, rehabilitation completion criteria or final landform and rehabilitation plan;
- To reflect any changes to the risk control measures in the rehabilitation management plan that are identified in a rehabilitation risk assessment; and/or
- Whenever directed in writing to do so by the Secretary.

Austar will ensure the RMP remains current and relevant to ensure it defines the rehabilitation outcomes to be achieved in relation to the mining area and sets out the strategy to achieve those outcomes. As Austar progresses through the detailed closure planning process this RMP will be updated to reflect the outcomes of technical studies and any amendments to proposed rehabilitation and closure activities.

Whenever any foreseeable hazard is identified that presents a risk to achieving the rehabilitation objectives, the rehabilitation completion criteria and the final landform and rehabilitation plan, the lease holder is required to update the Rehabilitation Risk Assessment and the RMP.

Those responsible for the implementation and ongoing management of this RMP are identified in **Table 22.**

TABLE 18 - ROLES AND RESPONSIBILITIES

Role	Responsibilities
Mining Engineering Manager	Mine closure works and management including the environmental performance of the Austar Coal Mine in accordance with mining lease conditions and the outcomes of the RMP.
	CHPP closure works and management including decommissioning of the coal handling and processing plant, and management of the reject emplacement areas, tailings management, water treatment plant.
Environment & Community Superintendent	Prepare, review, and revise the RMP document where necessary. Rehabilitation activities on reject emplacement areas. Monitoring and reporting of progress against RMP in Annual Review.

APPENDIX: A
SCHEDULE OF LANDS

Land Ownership	Lot	DP
AUSTRALIAN TELECOMMUNICATIONS COMMISSION	25	DP11825
CESSNOCK CITY COUNCIL	1	DP1268618
CESSNOCK CITY COUNCIL	1	DP135945
CESSNOCK CITY COUNCIL	1	DP175536
CESSNOCK CITY COUNCIL	1	DP309362
CESSNOCK CITY COUNCIL	1	DP327619
CESSNOCK CITY COUNCIL	1	DP327620
CESSNOCK CITY COUNCIL	1	DP360790
CESSNOCK CITY COUNCIL	1	DP365734
CESSNOCK CITY COUNCIL	1	DP650540
CESSNOCK CITY COUNCIL	101	DP1219658
CESSNOCK CITY COUNCIL	127	DP1243665
CESSNOCK CITY COUNCIL	128	DP1243665
CESSNOCK CITY COUNCIL	129	DP1243665
CESSNOCK CITY COUNCIL	130	DP1243665
CESSNOCK CITY COUNCIL	136	DP1243665
CESSNOCK CITY COUNCIL	140	DP755225
CESSNOCK CITY COUNCIL	161	DP1257589
CESSNOCK CITY COUNCIL	162	DP1257589
CESSNOCK CITY COUNCIL	178	DP1257589
CESSNOCK CITY COUNCIL	311	DP1091621
CROWN	2	DP1219841
CROWN	4	DP1185571
CROWN	5	DP1185571
CROWN	8	DP758382
CROWN	9	DP758382
CROWN	12	DP758382
CROWN	13	DP758382
CROWN	15	DP755225
CROWN	20	DP755215
CROWN	21	DP755215
CROWN	47	DP1185567
CROWN	48	DP1185567
CROWN	150	DP755215
CROWN	215	DP1185596
CROWN	249	DP755225
CROWN	553	DP725104
CROWN	7004	DP93601
CROWN	7006	DP93602
CROWN	7300	DP1146455
CROWN	7320	DP1157260
CROWN	7321	DP1157260

Land Ownership	Lot	DP
CROWN	7322	DP1157260
ENERGY AUSTRALIA	1	DP1158786
ENERGY AUSTRALIA	1	DP1181682
ENERGY AUSTRALIA	20	DP608964
FREEHOLD	1	DP1010898
FREEHOLD	1	DP1016843
FREEHOLD	1	DP1034264
FREEHOLD	1	DP1035288
FREEHOLD	1	DP1038238
FREEHOLD	1	DP1038341
FREEHOLD	1	DP1042271
FREEHOLD	1	DP1044030
FREEHOLD	1	DP1045678
FREEHOLD	1	DP1047479
FREEHOLD	1	DP1061571
FREEHOLD	1	DP1065119
FREEHOLD	1	DP1065923
FREEHOLD	1	DP1066918
FREEHOLD	1	DP1068185
FREEHOLD	1	DP1069000
FREEHOLD	1	DP1071931
FREEHOLD	1	DP1076392
FREEHOLD	1	DP1078770
FREEHOLD	1	DP1079762
FREEHOLD	1	DP1090956
FREEHOLD	1	DP1094701
FREEHOLD	1	DP1101724
FREEHOLD	1	DP1116494
FREEHOLD	1	DP1129284
FREEHOLD	1	DP113363
FREEHOLD	1	DP1145356
FREEHOLD	1	DP11504
FREEHOLD	1	DP115675
FREEHOLD	1	DP11584
FREEHOLD	1	DP1158786
FREEHOLD	1	DP1168335
FREEHOLD	1	DP1168802
FREEHOLD	1	DP1173947
FREEHOLD	1	DP11747
FREEHOLD	1	DP1176054
FREEHOLD	1	DP1181682
FREEHOLD	1	DP1182363
FREEHOLD	1	DP11825

Land Ownership	Lot	DP
FREEHOLD	1	DP1184613
FREEHOLD	1	DP1212219
FREEHOLD	1	DP1212221
FREEHOLD	1	DP12136
FREEHOLD	1	DP1219841
FREEHOLD	1	DP1227159
FREEHOLD	1	DP122731
FREEHOLD	1	DP1228428
FREEHOLD	1	DP124547
FREEHOLD	1	DP124558
FREEHOLD	1	DP12493
FREEHOLD	1	DP1251187
FREEHOLD	1	DP1254436
FREEHOLD	1	DP1268618
FREEHOLD	1	DP1280491
FREEHOLD	1	DP13008
FREEHOLD	1	DP130986
FREEHOLD	1	DP131005
FREEHOLD	1	DP131054
FREEHOLD	1	DP131087
FREEHOLD	1	DP13687
FREEHOLD	1	DP159382
FREEHOLD	1	DP169281
FREEHOLD	1	DP170509
FREEHOLD	1	DP170894
FREEHOLD	1	DP171040
FREEHOLD	1	DP174028
FREEHOLD	1	DP175536
FREEHOLD	1	DP180954
FREEHOLD	1	DP185087
FREEHOLD	1	DP240664
FREEHOLD	1	DP301570
FREEHOLD	1	DP304170
FREEHOLD	1	DP305225
FREEHOLD	1	DP305728
FREEHOLD	1	DP308679
FREEHOLD	1	DP308680
FREEHOLD	1	DP309362
FREEHOLD	1	DP309628
FREEHOLD	1	DP309629
FREEHOLD	1	DP312349
FREEHOLD	1	DP312463
FREEHOLD	1	DP312611

Land Ownership	Lot	DP
FREEHOLD	1	DP314475
FREEHOLD	1	DP314679
FREEHOLD	1	DP315050
FREEHOLD	1	DP315530
FREEHOLD	1	DP318934
FREEHOLD	1	DP319279
FREEHOLD	1	DP324126
FREEHOLD	1	DP32572
FREEHOLD	1	DP327619
FREEHOLD	1	DP327620
FREEHOLD	1	DP339399
FREEHOLD	1	DP347691
FREEHOLD	1	DP360790
FREEHOLD	1	DP380331
FREEHOLD	1	DP391819
FREEHOLD	1	DP506445
FREEHOLD	1	DP598329
FREEHOLD	1	DP602482
FREEHOLD	1	DP602484
FREEHOLD	1	DP609075
FREEHOLD	1	DP614559
FREEHOLD	1	DP614784
FREEHOLD	1	DP616207
FREEHOLD	1	DP617927
FREEHOLD	1	DP619366
FREEHOLD	1	DP620099
FREEHOLD	1	DP650540
FREEHOLD	1	DP662527
FREEHOLD	1	DP69968
FREEHOLD	1	DP700364
FREEHOLD	1	DP709338
FREEHOLD	1	DP709474
FREEHOLD	1	DP726039
FREEHOLD	1	DP726861
FREEHOLD	1	DP727312
FREEHOLD	1	DP727397
FREEHOLD	1	DP727398
FREEHOLD	1	DP727399
FREEHOLD	1	DP727400
FREEHOLD	1	DP727401
FREEHOLD	1	DP738718
FREEHOLD	1	DP738726
FREEHOLD	1	DP740210

Land Ownership	Lot	DP
FREEHOLD	1	DP745336
FREEHOLD	1	DP758382
FREEHOLD	1	DP772226
FREEHOLD	1	DP772233
FREEHOLD	1	DP772352
FREEHOLD	1	DP775122
FREEHOLD	1	DP775718
FREEHOLD	1	DP778494
FREEHOLD	1	DP78128
FREEHOLD	1	DP786248
FREEHOLD	1	DP795298
FREEHOLD	1	DP798955
FREEHOLD	1	DP79957
FREEHOLD	1	DP805838
FREEHOLD	1	DP806246
FREEHOLD	1	DP807322
FREEHOLD	1	DP811962
FREEHOLD	1	DP819222
FREEHOLD	1	DP821138
FREEHOLD	1	DP823133
FREEHOLD	1	DP834726
FREEHOLD	1	DP834889
FREEHOLD	1	DP836487
FREEHOLD	1	DP837901
FREEHOLD	1	DP841360
FREEHOLD	1	DP843371
FREEHOLD	1	DP850336
FREEHOLD	1	DP851896
FREEHOLD	1	DP852328
FREEHOLD	1	DP858391
FREEHOLD	1	DP867260
FREEHOLD	1	DP8691
FREEHOLD	1	DP870512
FREEHOLD	1	DP87087
FREEHOLD	1	DP873717
FREEHOLD	1	DP880657
FREEHOLD	1	DP932739
FREEHOLD	1	DP950221
FREEHOLD	1	DP986104
FREEHOLD	1	DP986143
FREEHOLD	1	DP996145
FREEHOLD	1	DP998682
FREEHOLD	2	DP1010898

Land Ownership	Lot	DP
FREEHOLD	2	DP1033845
FREEHOLD	2	DP1034264
FREEHOLD	2	DP1035288
FREEHOLD	2	DP1044030
FREEHOLD	2	DP1045678
FREEHOLD	2	DP1055477
FREEHOLD	2	DP1061121
FREEHOLD	2	DP1061571
FREEHOLD	2	DP1065119
FREEHOLD	2	DP1065923
FREEHOLD	2	DP1069000
FREEHOLD	2	DP1076392
FREEHOLD	2	DP1090956
FREEHOLD	2	DP1101724
FREEHOLD	2	DP1115923
FREEHOLD	2	DP1129284
FREEHOLD	2	DP1145356
FREEHOLD	2	DP11584
FREEHOLD	2	DP1164334
FREEHOLD	2	DP1168335
FREEHOLD	2	DP1168802
FREEHOLD	2	DP1173947
FREEHOLD	2	DP11747
FREEHOLD	2	DP1176054
FREEHOLD	2	DP1181682
FREEHOLD	2	DP1182363
FREEHOLD	2	DP11825
FREEHOLD	2	DP1184613
FREEHOLD	2	DP1197775
FREEHOLD	2	DP12136
FREEHOLD	2	DP1214999
FREEHOLD	2	DP1227159
FREEHOLD	2	DP1228428
FREEHOLD	2	DP124547
FREEHOLD	2	DP12493
FREEHOLD	2	DP1268618
FREEHOLD	2	DP13008
FREEHOLD	2	DP130986
FREEHOLD	2	DP169281
FREEHOLD	2	DP240664
FREEHOLD	2	DP243366
FREEHOLD	2	DP304170
FREEHOLD	2	DP312611

Land Ownership	Lot	DP
FREEHOLD	2	DP314679
FREEHOLD	2	DP329463
FREEHOLD	2	DP347691
FREEHOLD	2	DP506445
FREEHOLD	2	DP589534
FREEHOLD	2	DP595102
FREEHOLD	2	DP602482
FREEHOLD	2	DP602484
FREEHOLD	2	DP614784
FREEHOLD	2	DP617927
FREEHOLD	2	DP619366
FREEHOLD	2	DP69968
FREEHOLD	2	DP709338
FREEHOLD	2	DP709474
FREEHOLD	2	DP714067
FREEHOLD	2	DP726861
FREEHOLD	2	DP727397
FREEHOLD	2	DP727398
FREEHOLD	2	DP727399
FREEHOLD	2	DP727400
FREEHOLD	2	DP747207
FREEHOLD	2	DP755225
FREEHOLD	2	DP758382
FREEHOLD	2	DP775122
FREEHOLD	2	DP775718
FREEHOLD	2	DP778494
FREEHOLD	2	DP78128
FREEHOLD	2	DP786248
FREEHOLD	2	DP805838
FREEHOLD	2	DP806246
FREEHOLD	2	DP807322
FREEHOLD	2	DP819222
FREEHOLD	2	DP828916
FREEHOLD	2	DP834726
FREEHOLD	2	DP834889
FREEHOLD	2	DP836487
FREEHOLD	2	DP841360
FREEHOLD	2	DP843371
FREEHOLD	2	DP851896
FREEHOLD	2	DP867260
FREEHOLD	2	DP8691
FREEHOLD	2	DP873717
FREEHOLD	2	DP880657

Land Ownership	Lot	DP
FREEHOLD	3	DP1003305
FREEHOLD	3	DP1035288
FREEHOLD	3	DP1055477
FREEHOLD	3	DP1061571
FREEHOLD	3	DP1065923
FREEHOLD	3	DP1069000
FREEHOLD	3	DP1115923
FREEHOLD	3	DP1129284
FREEHOLD	3	DP11584
FREEHOLD	3	DP11747
FREEHOLD	3	DP1176054
FREEHOLD	3	DP1181682
FREEHOLD	3	DP11825
FREEHOLD	3	DP1184613
FREEHOLD	3	DP12136
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FREEHOLD	3	DP12493
FREEHOLD	3	DP13008
FREEHOLD	3	DP132841
FREEHOLD	3	DP13897
FREEHOLD	3	DP240664
FREEHOLD	3	DP547566
FREEHOLD	3	DP575428
FREEHOLD	3	DP602482
FREEHOLD	3	DP617927
FREEHOLD	3	DP618957
FREEHOLD	3	DP709474
FREEHOLD	3	DP714067
FREEHOLD	3	DP727398
FREEHOLD	3	DP745656
FREEHOLD	3	DP755225
FREEHOLD	3	DP758382
FREEHOLD	3	DP786248
FREEHOLD	3	DP805838
FREEHOLD	3	DP807322
FREEHOLD	3	DP836487
FREEHOLD	3	DP867260
FREEHOLD	3	DP880657
FREEHOLD	4	DP1003305
FREEHOLD	4	DP1034264
FREEHOLD	4	DP1035288
FREEHOLD	4	DP1061121

Land Ownership	Lot	DP
FREEHOLD	4	DP1061571
FREEHOLD	4	DP1065923
FREEHOLD	4	DP1069000
FREEHOLD	4	DP1129284
FREEHOLD	4	DP11504
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FREEHOLD	4	DP1181682
FREEHOLD	4	DP11825
FREEHOLD	4	DP1184613
FREEHOLD	4	DP12136
FREEHOLD	4	DP1227159
FREEHOLD	4	DP12493
FREEHOLD	4	DP13008
FREEHOLD	4	DP13656
FREEHOLD	4	DP13687
FREEHOLD	4	DP13897
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FREEHOLD	4	DP589534
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FREEHOLD	4	DP709474
FREEHOLD	4	DP714067
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FREEHOLD	4	DP758382
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FREEHOLD	4	DP807322
FREEHOLD	4	DP836487
FREEHOLD	4	DP880657
FREEHOLD	4	DP1061121
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FREEHOLD	4	DP1063410
FREEHOLD	4	DP1069000
FREEHOLD	4	DP11504
FREEHOLD	4	DP11584
FREEHOLD	4	DP11747
FREEHOLD	4	DP1176054
FREEHOLD	4	DP1181682
FREEHOLD	4	DP11825
FREEHOLD	4	DP1184613
FREEHOLD	4	DP12136

Land Ownership	Lot	DP
FREEHOLD	4	DP1222967
FREEHOLD	4	DP12493
FREEHOLD	4	DP13008
FREEHOLD	4	DP13656
FREEHOLD	4	DP13687
FREEHOLD	4	DP13897
FREEHOLD	4	DP32572
FREEHOLD	4	DP619556
FREEHOLD	4	DP69968
FREEHOLD	4	DP709474
FREEHOLD	4	DP714067
FREEHOLD	4	DP727398
FREEHOLD	4	DP758382
FREEHOLD	4	DP775122
FREEHOLD	4	DP805838
FREEHOLD	4	DP807322
FREEHOLD	4	DP836487
FREEHOLD	4	DP8691
FREEHOLD	4	DP880657
FREEHOLD	6	DP1034264
FREEHOLD	6	DP1061571
FREEHOLD	6	DP1063410
FREEHOLD	6	DP1069000
FREEHOLD	6	DP11504
FREEHOLD	6	DP11584
FREEHOLD	6	DP11747
FREEHOLD	6	DP1181682
FREEHOLD	6	DP11825
FREEHOLD	6	DP1184613
FREEHOLD	6	DP12136
FREEHOLD	6	DP1222967
FREEHOLD	6	DP12493
FREEHOLD	6	DP13008
FREEHOLD	6	DP131087
FREEHOLD	6	DP13656
FREEHOLD	6	DP13687
FREEHOLD	6	DP709474
FREEHOLD	6	DP714067
FREEHOLD	6	DP727398
FREEHOLD	6	DP732181
FREEHOLD	6	DP758382
FREEHOLD	6	DP775122
FREEHOLD	6	DP805838

Land Ownership	Lot	DP
FREEHOLD	6	DP807322
FREEHOLD	6	DP836487
FREEHOLD	6	DP880657
FREEHOLD	7	DP1034264
FREEHOLD	7	DP1061571
FREEHOLD	7	DP1063410
FREEHOLD	7	DP1069000
FREEHOLD	7	DP11504
FREEHOLD	7	DP11584
FREEHOLD	7	DP11747
FREEHOLD	7	DP1181682
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FREEHOLD	7	DP727398
FREEHOLD	7	DP7396
FREEHOLD	7	DP758382
FREEHOLD	7	DP775122
FREEHOLD	7	DP805838
FREEHOLD	7	DP880657
FREEHOLD	8	DP1034264
FREEHOLD	8	DP1069000
FREEHOLD	8	DP11504
FREEHOLD	8	DP11584
FREEHOLD	8	DP11747
FREEHOLD	8	DP1181682
FREEHOLD	8	DP11825
FREEHOLD	8	DP1184613
FREEHOLD	8	DP12136
FREEHOLD	8	DP12493
FREEHOLD	8	DP13008
FREEHOLD	8	DP13656
FREEHOLD	8	DP13687
FREEHOLD	8	DP13897
FREEHOLD	8	DP240664
FREEHOLD	8	DP69968
FREEHOLD	8	DP727398
FREEHOLD	8	DP7396

Land Ownership	Lot	DP
FREEHOLD	8	DP755225
FREEHOLD	8	DP758382
FREEHOLD	8	DP805838
FREEHOLD	8	DP8691
FREEHOLD	8	DP880657
FREEHOLD	9	DP1034264
FREEHOLD	9	DP1069057
FREEHOLD	9	DP1118095
FREEHOLD	9	DP11504
FREEHOLD	9	DP11584
FREEHOLD	9	DP11747
FREEHOLD	9	DP1181682
FREEHOLD	9	DP11825
FREEHOLD	9	DP1184613
FREEHOLD	9	DP12136
FREEHOLD	9	DP12493
FREEHOLD	9	DP13008
FREEHOLD	9	DP13656
FREEHOLD	9	DP13687
FREEHOLD	9	DP13897
FREEHOLD	9	DP240664
FREEHOLD	9	DP32572
FREEHOLD	9	DP727398
FREEHOLD	9	DP755225
FREEHOLD	9	DP758382
FREEHOLD	9	DP775122
FREEHOLD	9	DP805838
FREEHOLD	9	DP8691
FREEHOLD	9	DP880657
FREEHOLD	10	DP1000136
FREEHOLD	10	DP1034264
FREEHOLD	10	DP1069000
FREEHOLD	10	DP1069057
FREEHOLD	10	DP1075943
FREEHOLD	10	DP11504
FREEHOLD	10	DP11584
FREEHOLD	10	DP11747
FREEHOLD	10	DP1181682
FREEHOLD	10	DP11825
FREEHOLD	10	DP1184613
FREEHOLD	10	DP12136
FREEHOLD	10	DP1232003
FREEHOLD	10	DP12493

Land Ownership	Lot	DP
FREEHOLD	17	DP13656
FREEHOLD	17	DP758082
FREEHOLD	17	DP758382
FREEHOLD	17	DP775122
FREEHOLD	18	DP1034264
FREEHOLD	18	DP11825
FREEHOLD	18	DP12136
FREEHOLD	18	DP12493
FREEHOLD	18	DP13008
FREEHOLD	18	DP13656
FREEHOLD	18	DP758082
FREEHOLD	18	DP758382
FREEHOLD	18	DP775122
FREEHOLD	18	DP779060
FREEHOLD	19	DP1034264
FREEHOLD	19	DP1052902
FREEHOLD	19	DP11747
FREEHOLD	19	DP11825
FREEHOLD	19	DP12136
FREEHOLD	19	DP13008
FREEHOLD	19	DP13656
FREEHOLD	19	DP7396
FREEHOLD	19	DP758082
FREEHOLD	19	DP758382
FREEHOLD	19	DP775122
FREEHOLD	20	DP1034264
FREEHOLD	20	DP11747
FREEHOLD	20	DP11825
FREEHOLD	20	DP12493
FREEHOLD	20	DP13008
FREEHOLD	20	DP13226
FREEHOLD	20	DP13656
FREEHOLD	20	DP608964
FREEHOLD	20	DP7396
FREEHOLD	20	DP758082
FREEHOLD	20	DP758382
FREEHOLD	20	DP775122
FREEHOLD	20	DP880922
FREEHOLD	21	DP1034264
FREEHOLD	21	DP1036379
FREEHOLD	21	DP1079609
FREEHOLD	21	DP1079917
FREEHOLD	21	DP11747

Land Ownership	Lot	DP
FREEHOLD	21	DP11825
FREEHOLD	21	DP1241986
FREEHOLD	21	DP12493
FREEHOLD	21	DP1277741
FREEHOLD	21	DP13008
FREEHOLD	21	DP13656
FREEHOLD	21	DP657097
FREEHOLD	21	DP758082
FREEHOLD	21	DP758382
FREEHOLD	21	DP775122
FREEHOLD	21	DP806588
FREEHOLD	21	DP833965
FREEHOLD	21	DP862340
FREEHOLD	22	DP1036379
FREEHOLD	22	DP1079609
FREEHOLD	22	DP1079917
FREEHOLD	22	DP11747
FREEHOLD	22	DP11825
FREEHOLD	22	DP1241986
FREEHOLD	22	DP12493
FREEHOLD	22	DP1277741
FREEHOLD	22	DP13008
FREEHOLD	22	DP13656
FREEHOLD	22	DP758082
FREEHOLD	22	DP758382
FREEHOLD	22	DP833965
FREEHOLD	22	DP862340
FREEHOLD	23	DP1163880
FREEHOLD	23	DP11747
FREEHOLD	23	DP11825
FREEHOLD	23	DP1241986
FREEHOLD	23	DP12493
FREEHOLD	23	DP13008
FREEHOLD	23	DP13656
FREEHOLD	23	DP758082
FREEHOLD	23	DP758382
FREEHOLD	24	DP11747
FREEHOLD	24	DP11825
FREEHOLD	24	DP1241986
FREEHOLD	24	DP12493
FREEHOLD	24	DP13008
FREEHOLD	24	DP13656
FREEHOLD	24	DP758082

Land Ownership	Lot	DP
FREEHOLD	24	DP758382
FREEHOLD	25	DP11747
FREEHOLD	25	DP11825
FREEHOLD	25	DP12493
FREEHOLD	25	DP1252031
FREEHOLD	25	DP13008
FREEHOLD	25	DP13656
FREEHOLD	25	DP758082
FREEHOLD	26	DP1005818
FREEHOLD	26	DP11747
FREEHOLD	26	DP12493
FREEHOLD	26	DP1252031
FREEHOLD	26	DP13008
FREEHOLD	26	DP13656
FREEHOLD	26	DP758082
FREEHOLD	27	DP1005818
FREEHOLD	27	DP11747
FREEHOLD	27	DP12136
FREEHOLD	27	DP12493
FREEHOLD	27	DP1252031
FREEHOLD	27	DP13008
FREEHOLD	27	DP13656
FREEHOLD	27	DP658523
FREEHOLD	27	DP7396
FREEHOLD	28	DP1005818
FREEHOLD	28	DP11747
FREEHOLD	28	DP11825
FREEHOLD	28	DP12136
FREEHOLD	28	DP12493
FREEHOLD	28	DP1252031
FREEHOLD	28	DP13008
FREEHOLD	28	DP13656
FREEHOLD	28	DP7396
FREEHOLD	29	DP1005818
FREEHOLD	29	DP11747
FREEHOLD	29	DP11825
FREEHOLD	29	DP12136
FREEHOLD	29	DP12493
FREEHOLD	29	DP1252031
FREEHOLD	29	DP13008
FREEHOLD	29	DP13656
FREEHOLD	30	DP1005818
FREEHOLD	30	DP1083169

Land Ownership	Lot	DP
FREEHOLD	10	DP13008
FREEHOLD	10	DP13656
FREEHOLD	10	DP13687
FREEHOLD	10	DP13897
FREEHOLD	10	DP240664
FREEHOLD	10	DP69968
FREEHOLD	10	DP708972
FREEHOLD	10	DP727398
FREEHOLD	10	DP7396
FREEHOLD	10	DP758382
FREEHOLD	10	DP853942
FREEHOLD	10	DP8691
FREEHOLD	11	DP1000136
FREEHOLD	11	DP1034264
FREEHOLD	11	DP1069000
FREEHOLD	11	DP1075943
FREEHOLD	11	DP1093269
FREEHOLD	11	DP11584
FREEHOLD	11	DP1159608
FREEHOLD	11	DP11747
FREEHOLD	11	DP11825
FREEHOLD	11	DP1184254
FREEHOLD	11	DP1184613
FREEHOLD	11	DP12136
FREEHOLD	11	DP12493
FREEHOLD	11	DP1280456
FREEHOLD	11	DP13008
FREEHOLD	11	DP13656
FREEHOLD	11	DP13897
FREEHOLD	11	DP601130
FREEHOLD	11	DP69968
FREEHOLD	11	DP733545
FREEHOLD	11	DP7396
FREEHOLD	11	DP758382
FREEHOLD	11	DP775122
FREEHOLD	11	DP840227
FREEHOLD	11	DP866231
FREEHOLD	11	DP8691
FREEHOLD	12	DP1034264
FREEHOLD	12	DP1075943
FREEHOLD	12	DP11584
FREEHOLD	12	DP1159608
FREEHOLD	12	DP11747

Land Ownership	Lot	DP
FREEHOLD	12	DP11825
FREEHOLD	12	DP1184613
FREEHOLD	12	DP1197817
FREEHOLD	12	DP12136
FREEHOLD	12	DP1219167
FREEHOLD	12	DP12493
FREEHOLD	12	DP1263587
FREEHOLD	12	DP1280456
FREEHOLD	12	DP13008
FREEHOLD	12	DP13656
FREEHOLD	12	DP634069
FREEHOLD	12	DP69968
FREEHOLD	12	DP7396
FREEHOLD	12	DP758382
FREEHOLD	12	DP866231
FREEHOLD	12	DP8691
FREEHOLD	13	DP1034264
FREEHOLD	13	DP11584
FREEHOLD	13	DP1159608
FREEHOLD	13	DP11747
FREEHOLD	13	DP11825
FREEHOLD	13	DP1184613
FREEHOLD	13	DP1194493
FREEHOLD	13	DP12136
FREEHOLD	13	DP1219167
FREEHOLD	13	DP12493
FREEHOLD	13	DP13008
FREEHOLD	13	DP13656
FREEHOLD	13	DP69968
FREEHOLD	13	DP758382
FREEHOLD	13	DP843329
FREEHOLD	13	DP866231
FREEHOLD	13	DP8691
FREEHOLD	14	DP1014546
FREEHOLD	14	DP1034264
FREEHOLD	14	DP1159608
FREEHOLD	14	DP11825
FREEHOLD	14	DP1184613
FREEHOLD	14	DP12136
FREEHOLD	14	DP1237761
FREEHOLD	14	DP12493
FREEHOLD	14	DP13008
FREEHOLD	14	DP13656

Land Ownership	Lot	DP
FREEHOLD	14	DP661009
FREEHOLD	14	DP758082
FREEHOLD	14	DP758382
FREEHOLD	14	DP775122
FREEHOLD	14	DP843329
FREEHOLD	14	DP8691
FREEHOLD	14	DP880138
FREEHOLD	15	DP1034264
FREEHOLD	15	DP1082788
FREEHOLD	15	DP1159608
FREEHOLD	15	DP11747
FREEHOLD	15	DP11825
FREEHOLD	15	DP1184613
FREEHOLD	15	DP12136
FREEHOLD	15	DP12493
FREEHOLD	15	DP13008
FREEHOLD	15	DP13656
FREEHOLD	15	DP758082
FREEHOLD	15	DP775122
FREEHOLD	15	DP843329
FREEHOLD	15	DP8691
FREEHOLD	15	DP875095
FREEHOLD	16	DP1014546
FREEHOLD	16	DP1034264
FREEHOLD	16	DP1095497
FREEHOLD	16	DP1130950
FREEHOLD	16	DP11747
FREEHOLD	16	DP11825
FREEHOLD	16	DP12136
FREEHOLD	16	DP12493
FREEHOLD	16	DP13008
FREEHOLD	16	DP13656
FREEHOLD	16	DP7396
FREEHOLD	16	DP758082
FREEHOLD	16	DP775122
FREEHOLD	16	DP8691
FREEHOLD	16	DP876894
FREEHOLD	17	DP1034264
FREEHOLD	17	DP11747
FREEHOLD	17	DP11825
FREEHOLD	17	DP12136
FREEHOLD	17	DP12493
FREEHOLD	17	DP13008

Land Ownership	Lot	DP
FREEHOLD	30	DP1144473
FREEHOLD	30	DP11747
FREEHOLD	30	DP11825
FREEHOLD	30	DP12136
FREEHOLD	30	DP12493
FREEHOLD	30	DP1252031
FREEHOLD	30	DP13008
FREEHOLD	30	DP13656
FREEHOLD	30	DP7396
FREEHOLD	30	DP849031
FREEHOLD	31	DP1083169
FREEHOLD	31	DP1144473
FREEHOLD	31	DP11747
FREEHOLD	31	DP11825
FREEHOLD	31	DP12136
FREEHOLD	31	DP12493
FREEHOLD	31	DP1252030
FREEHOLD	31	DP13008
FREEHOLD	31	DP13656
FREEHOLD	31	DP626738
FREEHOLD	31	DP7396
FREEHOLD	31	DP847374
FREEHOLD	31	DP849031
FREEHOLD	32	DP1144473
FREEHOLD	32	DP11825
FREEHOLD	32	DP12136
FREEHOLD	32	DP1252030
FREEHOLD	32	DP13008
FREEHOLD	32	DP13656
FREEHOLD	32	DP626738
FREEHOLD	32	DP7396
FREEHOLD	32	DP755215
FREEHOLD	32	DP755254
FREEHOLD	32	DP847374
FREEHOLD	33	DP1144473
FREEHOLD	33	DP11747
FREEHOLD	33	DP11825
FREEHOLD	33	DP12136
FREEHOLD	33	DP1252030
FREEHOLD	33	DP13008
FREEHOLD	34	DP1052033
FREEHOLD	34	DP1052062
FREEHOLD	34	DP11747
FREEHOLD	34	DP11825
FREEHOLD	34	DP12136
FREEHOLD	34	DP1252030
FREEHOLD	34	DP708501
FREEHOLD	34	DP801957
FREEHOLD	35	DP1045080
FREEHOLD	35	DP11747
FREEHOLD	35	DP11825
FREEHOLD	35	DP12136
FREEHOLD	35	DP1252028
FREEHOLD	35	DP13656
FREEHOLD	35	DP653974
FREEHOLD	35	DP755225
FREEHOLD	35	DP809095
FREEHOLD	36	DP11747
FREEHOLD	36	DP11825
FREEHOLD	36	DP12136
FREEHOLD	36	DP1252028
FREEHOLD	36	DP7396
FREEHOLD	36	DP809095
FREEHOLD	37	DP11825
FREEHOLD	37	DP12136
FREEHOLD	37	DP1252028
FREEHOLD	38	DP1148949
FREEHOLD	38	DP11747
FREEHOLD	38	DP11825
FREEHOLD	38	DP12136
FREEHOLD	39	DP11747
FREEHOLD	39	DP11825
FREEHOLD	39	DP7396
FREEHOLD	39	DP755225
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FREEHOLD	40	DP755225
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FREEHOLD	41	DP11825
FREEHOLD	41	DP12136
FREEHOLD	41	DP13656
FREEHOLD	41	DP809589
FREEHOLD	41	DP850188
FREEHOLD	42	DP11747
FREEHOLD	42	DP11825
FREEHOLD	42	DP12136
FREEHOLD	42	DP13226
FREEHOLD	42	DP13656
FREEHOLD	42	DP610808
FREEHOLD	42	DP809589
FREEHOLD	42	DP812815
FREEHOLD	42	DP850188
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FREEHOLD	43	DP12136
FREEHOLD	43	DP13226
FREEHOLD	43	DP13656
FREEHOLD	44	DP11747
FREEHOLD	44	DP12136
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FREEHOLD	45	DP11747
FREEHOLD	45	DP11825
FREEHOLD	45	DP12136
FREEHOLD	45	DP13656
FREEHOLD	45	DP635630
FREEHOLD	45	DP755225
FREEHOLD	46	DP11747
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FREEHOLD	46	DP12136
FREEHOLD	46	DP13656
FREEHOLD	46	DP755225
FREEHOLD	47	DP11747
FREEHOLD	47	DP11825
FREEHOLD	47	DP12136
FREEHOLD	47	DP13656
FREEHOLD	47	DP755225
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FREEHOLD	48	DP12136
FREEHOLD	48	DP755225
FREEHOLD	49	DP11747
FREEHOLD	49	DP11825
FREEHOLD	49	DP12136
FREEHOLD	49	DP755225
FREEHOLD	50	DP11747
FREEHOLD	50	DP12136
FREEHOLD	50	DP13656
FREEHOLD	50	DP755225
FREEHOLD	51	DP1093350

Land Ownership	Lot	DP
FREEHOLD	51	DP11747
FREEHOLD	51	DP12136
FREEHOLD	51	DP13656
FREEHOLD	51	DP599170
FREEHOLD	51	DP755225
FREEHOLD	51	DP794214
FREEHOLD	52	DP1093350
FREEHOLD	52	DP11747
FREEHOLD	52	DP12136
FREEHOLD	52	DP13656
FREEHOLD	52	DP599170
FREEHOLD	53	DP11747
FREEHOLD	53	DP12136
FREEHOLD	53	DP13656
FREEHOLD	54	DP11747
FREEHOLD	54	DP11825
FREEHOLD	54	DP12136
FREEHOLD	54	DP13656
FREEHOLD	54	DP755254
FREEHOLD	55	DP11747
FREEHOLD	55	DP11825
FREEHOLD	55	DP12136
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FREEHOLD	57	DP13656
FREEHOLD	58	DP11747
FREEHOLD	58	DP11825
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FREEHOLD	58	DP13656
FREEHOLD	59	DP1072712
FREEHOLD	59	DP11747
FREEHOLD	59	DP11825
FREEHOLD	59	DP12136
FREEHOLD	60	DP11825
FREEHOLD	60	DP1185153
FREEHOLD	60	DP12136
FREEHOLD	60	DP814379
FREEHOLD	61	DP11825
FREEHOLD	61	DP1185153

Land Ownership	Lot	DP
FREEHOLD	61	DP12136
FREEHOLD	61	DP814379
FREEHOLD	62	DP11825
FREEHOLD	62	DP12136
FREEHOLD	62	DP755225
FREEHOLD	63	DP11825
FREEHOLD	63	DP12136
FREEHOLD	63	DP755225
FREEHOLD	64	DP11825
FREEHOLD	64	DP12136
FREEHOLD	64	DP755225
FREEHOLD	65	DP11825
FREEHOLD	65	DP12136
FREEHOLD	65	DP755225
FREEHOLD	66	DP11825
FREEHOLD	66	DP12136
FREEHOLD	66	DP755225
FREEHOLD	67	DP11825
FREEHOLD	67	DP12136
FREEHOLD	67	DP627761
FREEHOLD	67	DP755225
FREEHOLD	68	DP1133266
FREEHOLD	68	DP11825
FREEHOLD	68	DP12136
FREEHOLD	69	DP11825
FREEHOLD	69	DP12136
FREEHOLD	70	DP11825
FREEHOLD	70	DP13226
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FREEHOLD	75	DP755254
FREEHOLD	76	DP11825
FREEHOLD	76	DP12136
FREEHOLD	77	DP11825
FREEHOLD	77	DP12136
FREEHOLD	78	DP11825

Land Ownership	Lot	DP
FREEHOLD	78	DP12136
FREEHOLD	79	DP11825
FREEHOLD	79	DP12136
FREEHOLD	80	DP11825
FREEHOLD	80	DP12136
FREEHOLD	81	DP1046758
FREEHOLD	81	DP1088750
FREEHOLD	81	DP11825
FREEHOLD	81	DP12136
FREEHOLD	81	DP755225
FREEHOLD	82	DP1046758
FREEHOLD	82	DP1088750
FREEHOLD	82	DP11825
FREEHOLD	82	DP12136
FREEHOLD	83	DP1046758
FREEHOLD	83	DP11825
FREEHOLD	84	DP11825
FREEHOLD	84	DP13687
FREEHOLD	84	DP755225
FREEHOLD	85	DP11825
FREEHOLD	85	DP12136
FREEHOLD	85	DP755225
FREEHOLD	86	DP11825
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FREEHOLD	91	DP11825
FREEHOLD	91	DP12136
FREEHOLD	91	DP1272564
FREEHOLD	91	DP13687
FREEHOLD	91	DP878153
FREEHOLD	92	DP11825

Land Ownership	Lot	DP
FREEHOLD	92	DP12136
FREEHOLD	92	DP1272564
FREEHOLD	92	DP878153
FREEHOLD	93	DP11825
FREEHOLD	93	DP12136
FREEHOLD	94	DP11825
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FREEHOLD	99	DP12136
FREEHOLD	99	DP755225
FREEHOLD	99	DP755254
FREEHOLD	100	DP11825
FREEHOLD	100	DP12136
FREEHOLD	100	DP11825
FREEHOLD	100	DP12136
FREEHOLD	100	DP1219658
FREEHOLD	100	DP255530
FREEHOLD	100	DP755254
FREEHOLD	101	DP1033985
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FREEHOLD	101	DP1231595
FREEHOLD	101	DP1243665
FREEHOLD	101	DP803246
FREEHOLD	101	DP817644
FREEHOLD	101	DP826687
FREEHOLD	101	DP853204
FREEHOLD	102	DP1033985
FREEHOLD	102	DP11825
FREEHOLD	102	DP12136
FREEHOLD	102	DP1228184
FREEHOLD	102	DP1243665
FREEHOLD	102	DP632933
FREEHOLD	102	DP826687
FREEHOLD	102	DP853204
FREEHOLD	103	DP11825
FREEHOLD	103	DP12136
FREEHOLD	103	DP1228184
FREEHOLD	103	DP1243665
FREEHOLD	103	DP853204
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FREEHOLD	104	DP12136
FREEHOLD	104	DP1228184
FREEHOLD	104	DP1243665
FREEHOLD	104	DP255530
FREEHOLD	104	DP853204
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FREEHOLD	105	DP1228184
FREEHOLD	105	DP1243665
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FREEHOLD	106	DP12136
FREEHOLD	106	DP1228184
FREEHOLD	106	DP1243665
FREEHOLD	106	DP853204
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FREEHOLD	107	DP1228184
FREEHOLD	107	DP1243665
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FREEHOLD	108	DP1228184
FREEHOLD	108	DP1243665
FREEHOLD	108	DP755225
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FREEHOLD	109	DP1243665
FREEHOLD	109	DP755225
FREEHOLD	110	DP11825
FREEHOLD	110	DP1228184
FREEHOLD	110	DP1243665
FREEHOLD	110	DP662217
FREEHOLD	110	DP859794
FREEHOLD	110	DP881097
FREEHOLD	111	DP11825
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FREEHOLD	111	DP12136
FREEHOLD	111	DP1228184
FREEHOLD	111	DP1243665
FREEHOLD	111	DP859794
FREEHOLD	111	DP881097
FREEHOLD	112	DP11825
FREEHOLD	112	DP1185747
FREEHOLD	112	DP12136
FREEHOLD	112	DP1243665
FREEHOLD	113	DP1013882
FREEHOLD	113	DP11825
FREEHOLD	113	DP1243665
FREEHOLD	114	DP1013882
FREEHOLD	114	DP11825
FREEHOLD	114	DP1243665
FREEHOLD	115	DP11825
FREEHOLD	115	DP1243665
FREEHOLD	115	DP666780
FREEHOLD	116	DP11825
FREEHOLD	116	DP12136
FREEHOLD	116	DP1243665
FREEHOLD	117	DP11825
FREEHOLD	117	DP1243665
FREEHOLD	117	DP755215
FREEHOLD	118	DP11825
FREEHOLD	118	DP1243665
FREEHOLD	119	DP11825
FREEHOLD	119	DP12136
FREEHOLD	119	DP1243665
FREEHOLD	120	DP1114826
FREEHOLD	120	DP12136
FREEHOLD	120	DP1243665
FREEHOLD	120	DP755225
FREEHOLD	121	DP1070821
FREEHOLD	121	DP1114826
FREEHOLD	121	DP1126842
FREEHOLD	121	DP12136
FREEHOLD	121	DP1243665
FREEHOLD	121	DP755225

Land Ownership	Lot	DP
FREEHOLD	121	DP805927
FREEHOLD	121	DP848796
FREEHOLD	121	DP861773
FREEHOLD	122	DP1070821
FREEHOLD	122	DP1126842
FREEHOLD	122	DP12136
FREEHOLD	122	DP1243665
FREEHOLD	122	DP848796
FREEHOLD	122	DP861773
FREEHOLD	123	DP12136
FREEHOLD	123	DP1243665
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FREEHOLD	125	DP1243665
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Land Ownership	Lot	DP
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FREEHOLD	140	DP1243665
FREEHOLD	140	DP755225
FREEHOLD	141	DP12136
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FREEHOLD	159	DP12136
FREEHOLD	159	DP1257589
FREEHOLD	160	DP12136
FREEHOLD	160	DP1257589
FREEHOLD	161	DP12136

Land Ownership	Lot	DP
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FREEHOLD	161	DP1257589
FREEHOLD	162	DP12136
FREEHOLD	162	DP1214464
FREEHOLD	162	DP1257589
FREEHOLD	163	DP12136
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Land Ownership	Lot	DP
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FREEHOLD	199	DP13226
FREEHOLD	200	DP13226
FREEHOLD	201	DP1062990
FREEHOLD	201	DP1136015
FREEHOLD	201	DP1232862
FREEHOLD	201	DP13226
FREEHOLD	202	DP1062990
FREEHOLD	202	DP1136015
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FREEHOLD	202	DP13226
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Land Ownership	Lot	DP
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FREEHOLD	211	DP1232862
FREEHOLD	211	DP13226
FREEHOLD	212	DP1044421
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FREEHOLD	233	DP808055
FREEHOLD	234	DP1232862
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FREEHOLD	235	DP1232862

Land Ownership	Lot	DP
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FREEHOLD	236	DP1232862
FREEHOLD	237	DP1232862
FREEHOLD	238	DP1017683
FREEHOLD	238	DP1232862
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FREEHOLD	255	DP755225
FREEHOLD	256	DP755225
FREEHOLD	258	DP820562
FREEHOLD	261	DP1142572
FREEHOLD	262	DP1142572
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FREEHOLD	307	DP1236971
FREEHOLD	308	DP1091621
FREEHOLD	308	DP1236971
FREEHOLD	309	DP1236971
FREEHOLD	310	DP1091621

Land Ownership	Lot	DP
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FREEHOLD	311	DP1091621
FREEHOLD	311	DP1236971
FREEHOLD	312	DP1091621
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FREEHOLD	331	DP1236971
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FREEHOLD	345	DP1087573

Land Ownership	Lot	DP
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FREEHOLD	352	DP808936
FREEHOLD	372	DP832114
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FREEHOLD	402	DP1239815
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FREEHOLD	409	DP1239815
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FREEHOLD	411	DP1127012
FREEHOLD	411	DP1239815
FREEHOLD	412	DP1239815
FREEHOLD	413	DP1239815
FREEHOLD	414	DP1239815
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FREEHOLD	432	DP1150174
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FREEHOLD	500	DP710475
FREEHOLD	501	DP1083188
FREEHOLD	502	DP1083188
FREEHOLD	521	DP1003186
FREEHOLD	522	DP1003186
FREEHOLD	523	DP708708
FREEHOLD	621	DP1124419
FREEHOLD	622	DP1124419
FREEHOLD	701	DP1182904
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FREEHOLD	836	DP1112858
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FREEHOLD	1001	DP1102332
FREEHOLD	1001	DP856790
FREEHOLD	1002	DP1102332
FREEHOLD	1003	DP1102332
FREEHOLD	1004	DP1102332

Land Ownership	Lot	DP
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FREEHOLD	1009	DP1112552
FREEHOLD	1010	DP1121795
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FREEHOLD	1012	DP1121795
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FREEHOLD	1016	DP1121795
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FREEHOLD	1018	DP1121795
FREEHOLD	1019	DP1167712
FREEHOLD	1020	DP1167712
FREEHOLD	1021	DP1167712
FREEHOLD	1131	DP1141419
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FREEHOLD	1242	DP1105946
FREEHOLD	1291	DP1113215
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FREEHOLD	1712	DP1121895
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FREEHOLD	2031	DP1141149
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FREEHOLD	2051	DP1145831
FREEHOLD	2052	DP1145831
FREEHOLD	2081	DP1219443
FREEHOLD	2082	DP1219443
FREEHOLD	2361	DP1233134
FREEHOLD	2362	DP1233134
FREEHOLD	2371	DP1170348
FREEHOLD	2372	DP1170348
FREEHOLD	2701	DP1219166
FREEHOLD	2702	DP1219166
FREEHOLD	3051	DP1264825
FREEHOLD	3052	DP1264825
FREEHOLD	3091	DP1182489

Land Ownership	Lot	DP
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FREEHOLD	3141	DP1189281
FREEHOLD	3142	DP1189281
FREEHOLD	63A	DP12136
FREEHOLD	A	DP105587
FREEHOLD	A	DP161957
FREEHOLD	A	DP19714
FREEHOLD	A	DP311973
FREEHOLD	A	DP318547
FREEHOLD	A	DP321307
FREEHOLD	A	DP350427
FREEHOLD	A	DP363723
FREEHOLD	A	DP412769
FREEHOLD	B	DP19714
FREEHOLD	B	DP318547
FREEHOLD	B	DP321307
FREEHOLD	B	DP350427
FREEHOLD	B	DP363723
FREEHOLD	C	DP19714
FREEHOLD	D	DP19714
FREEHOLD	E	DP19714
HUNTER WATER CORPORATION LIMITED	2	DP726861
HUNTER WATER CORPORATION LIMITED	10	DP1181682
HUNTER WATER CORPORATION LIMITED	20	DP608964
HUNTER WATER CORPORATION LIMITED	101	DP817644
HUNTER WATER CORPORATION LIMITED	121	DP848796
HUNTER WATER CORPORATION LIMITED	122	DP848796
HUNTER WATER CORPORATION LIMITED	136	DP1243665
HUNTER WATER CORPORATION LIMITED	310	DP1091621
LOCAL GOVERNMENT AUTHORITY	1	DP1182760
LOCAL GOVERNMENT AUTHORITY	38	DP1252028
LOCAL GOVERNMENT AUTHORITY	134	DP1243665
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MINE OWNED LAND	1	DP11747
MINE OWNED LAND	1	DP1182760
MINE OWNED LAND	1	DP124547

Land Ownership	Lot	DP
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MINE OWNED LAND	1	DP131087
MINE OWNED LAND	1	DP69968
MINE OWNED LAND	1	DP709338
MINE OWNED LAND	1	DP775718
MINE OWNED LAND	1	DP819222
MINE OWNED LAND	1	DP823133
MINE OWNED LAND	1	DP828916
MINE OWNED LAND	1	DP870512
MINE OWNED LAND	1	DP87087
MINE OWNED LAND	2	DP11747
MINE OWNED LAND	2	DP124547
MINE OWNED LAND	2	DP131087
MINE OWNED LAND	2	DP329463
MINE OWNED LAND	2	DP69968
MINE OWNED LAND	2	DP709338
MINE OWNED LAND	2	DP714067
MINE OWNED LAND	2	DP755225
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MINE OWNED LAND	2	DP819222
MINE OWNED LAND	2	DP828916
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Land Ownership	Lot	DP
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MINE OWNED LAND	11	DP866231
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MINE OWNED LAND	14	DP11747
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MINE OWNED LAND	30	DP13656
MINE OWNED LAND	31	DP11747

Land Ownership	Lot	DP
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MINE OWNED LAND	35	DP11747
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MINE OWNED LAND	43	DP11747
MINE OWNED LAND	44	DP11747
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MINE OWNED LAND	91	DP1064579
MINE OWNED LAND	96	DP755254
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MINE OWNED LAND	99	DP755254
MINE OWNED LAND	100	DP255530
MINE OWNED LAND	100	DP755254
MINE OWNED LAND	104	DP255530
MINE OWNED LAND	120	DP755225
MINE OWNED LAND	125	DP755225
MINE OWNED LAND	202	DP1136015

Land Ownership	Lot	DP
MINE OWNED LAND	215	DP755225
MINE OWNED LAND	216	DP192812
MINE OWNED LAND	223	DP755225
MINE OWNED LAND	255	DP755225
MINE OWNED LAND	256	DP755225
MINE OWNED LAND	973	DP804896
MINE OWNED LAND	2051	DP1145831
MINISTER FOR EDUCATION	1	DP122731
MINISTER FOR EDUCATION	1	DP175536
MINISTER FOR EDUCATION	1	DP309362
MINISTER FOR EDUCATION	1	DP795298
MINISTER FOR EDUCATION	4	DP758382
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MINISTER FOR EDUCATION	332	DP829406
NSW GOVERNMENT	1	DP1265041
NSW GOVERNMENT	4	DP1265041
NSW GOVERNMENT	5	DP1265041
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NSW GOVERNMENT	8	DP1265041
NSW GOVERNMENT	12	DP755215
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NSW GOVERNMENT	138	DP755215
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NSW GOVERNMENT	581	DP1017350
UNKNOWN	1	DP602482
UNKNOWN	2	DP602482
UNKNOWN	21	DP657097

APPENDIX: B
MINING DOMAINS BY CMA

LEGEND

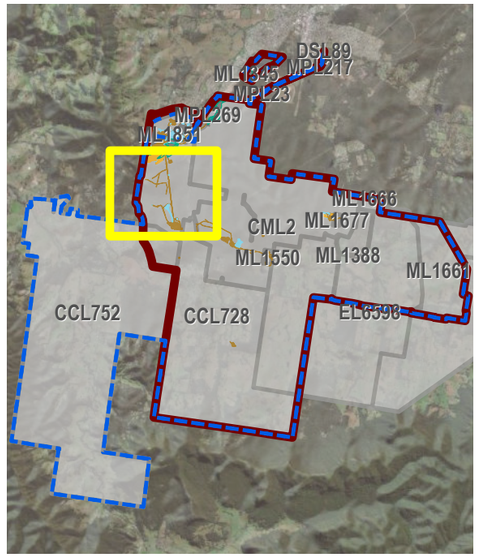
- Project Approval Boundary
- Colliery Holding Boundary
- Austar Mine Plan

Current Authorisations

- Coal - Current Titles

Mining Domain Type

- Domain 1: Infrastructure Area
- Domain 3: Water Management Area



Austar Coal ARR 2022 - Update

CMA 1 - Austar Pit Top Facilities

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	2133 | 2258
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

Sheet Size : A3

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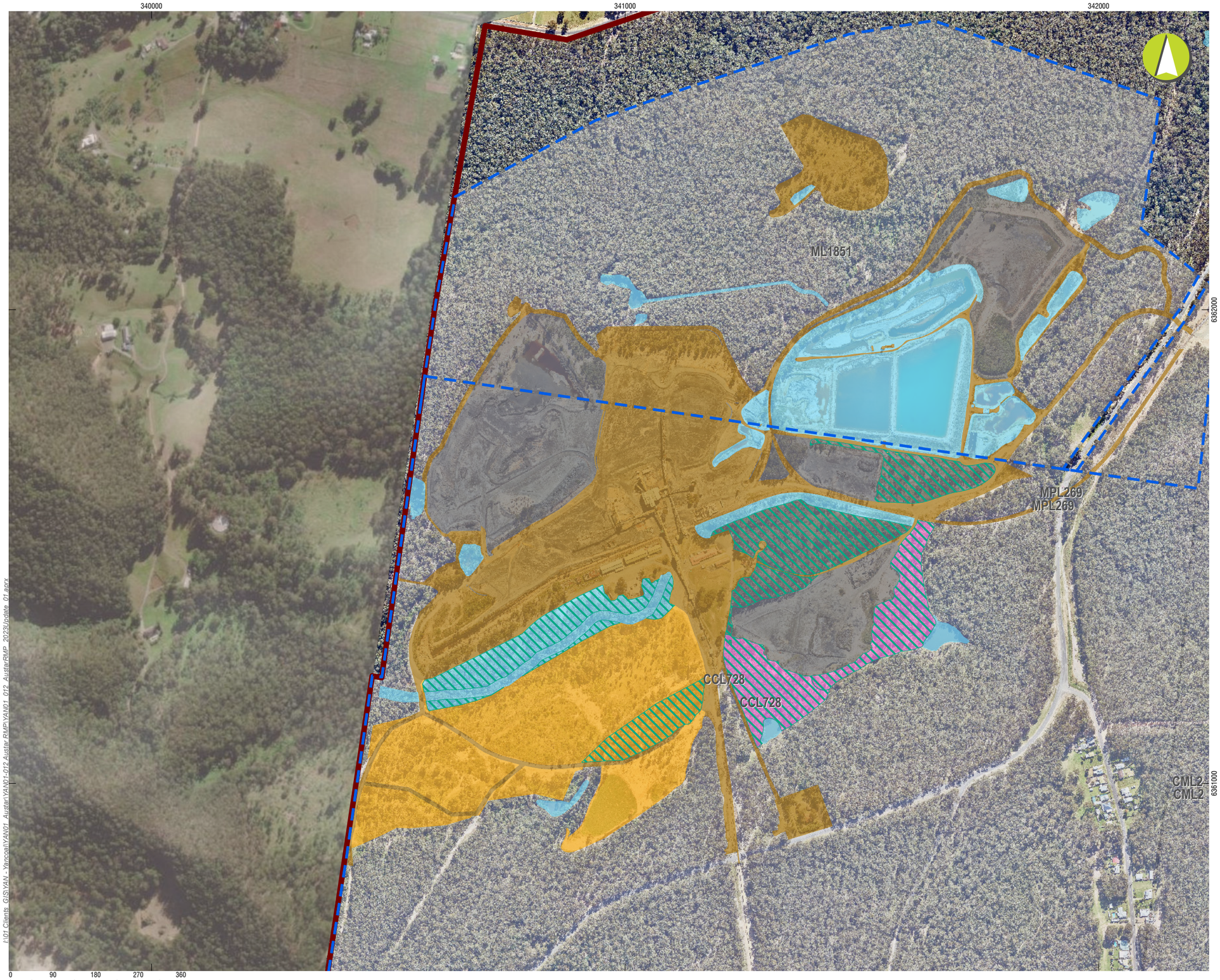
Source:



LEGEND

- Project Approval Boundary
- Colliery Holding Boundary

Current Authorisations

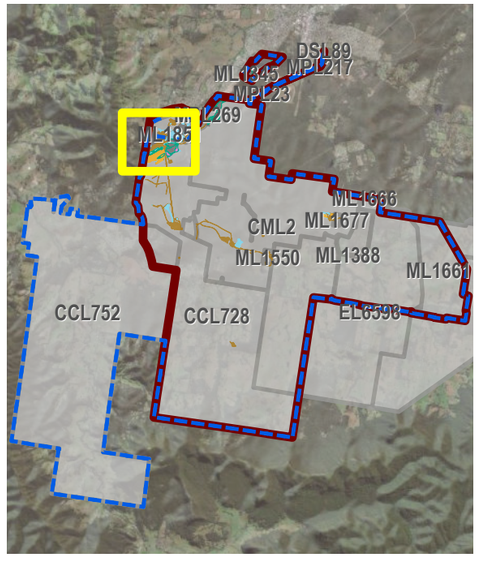
- Coal - Current Titles

Mining Domain Type

- Domain 1: Infrastructure Area
- Domain 2: Tailings Storage Facility
- Domain 3: Water Management Area
- Domain 4: Overburden Emplacement Area
- Domain 5: Active Mining Area (Open cut void)

Rehabilitation Phase

- Ecosystem and Land Use Establishment



Austar Coal ARR 2022 - Update

CMA 2 - Pelton CHPP - Inset 1

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	2133 | 2258
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

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Source:

LEGEND

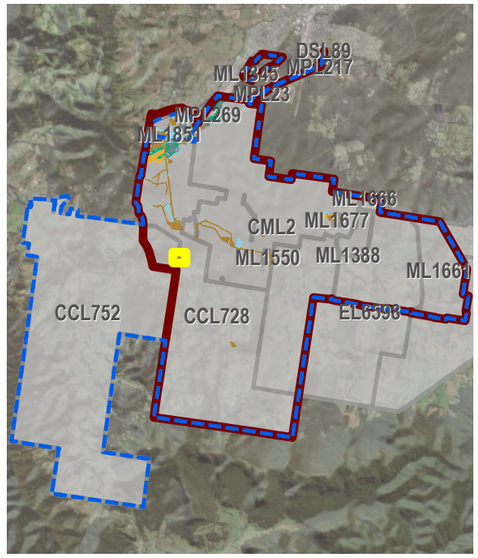
- Project Approval Boundary
- Colliery Holding Boundary
- Austar Mine Plan

Current Authorisations

- Coal - Current Titles

Mining Domain Type

- Domain 1: Infrastructure Area



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INTEGRATED ENVIRONMENTAL MANAGEMENT AUSTRALIA
www.iema.com.au

Source:

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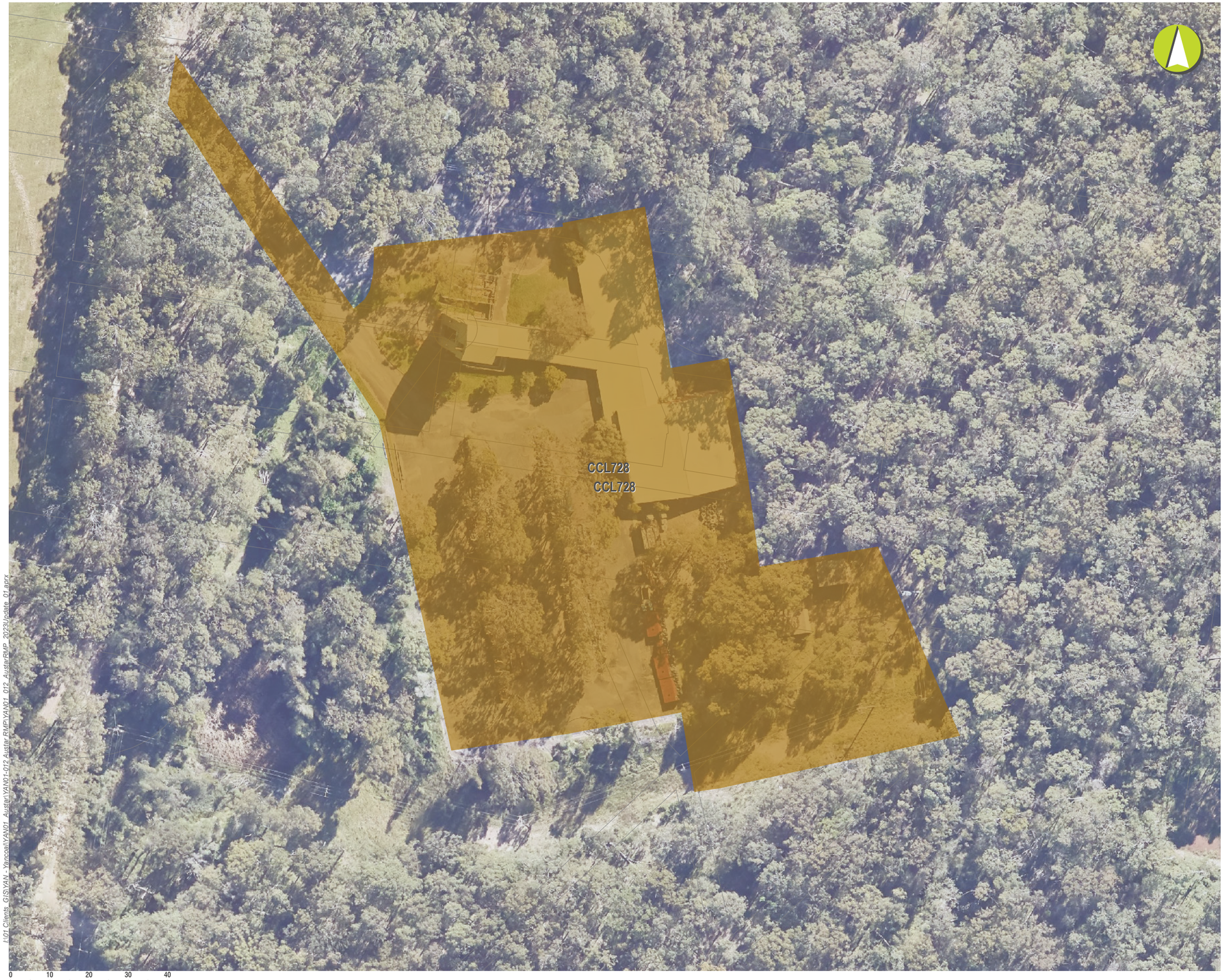
Austar Coal ARR 2022 - Update

CMA 3 - No.1 Shaft - Inset

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	2133 | 2258
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023



LEGEND

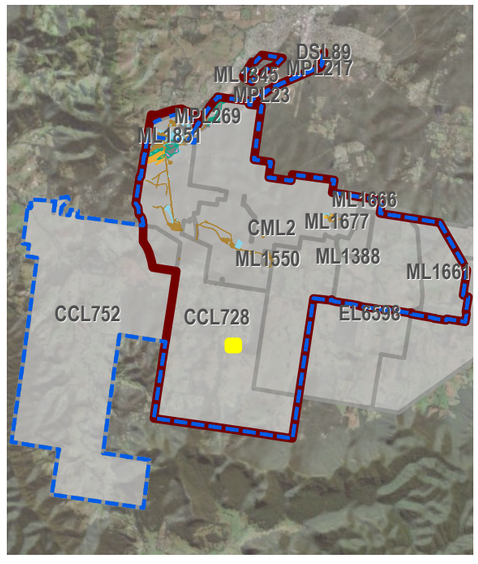
- Project Approval Boundary
- Colliery Holding Boundary
- Austar Mine Plan

Current Authorisations

- Coal - Current Titles

Mining Domain Type

- Domain 1: Infrastructure Area



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Source:

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Austar Coal ARR 2022 - Update

CMA 4 - No.2 Shaft - Inset

Current Status of Mining and Rehabilitation

PLAN 1A

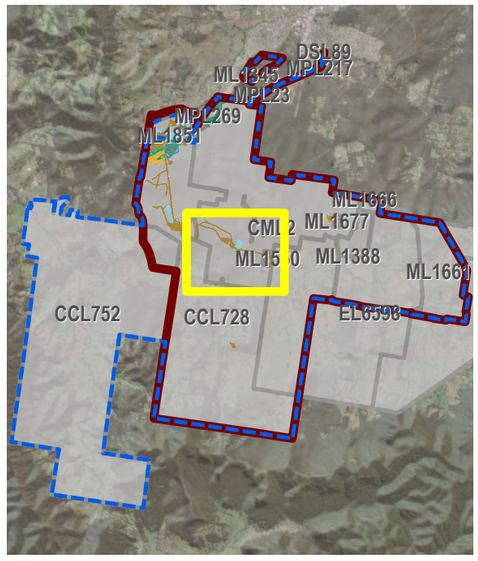
Mine name	Austar Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	2133 | 2258
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

LEGEND

- Project Approval Boundary
- Colliery Holding Boundary
- Austar Mine Plan
- Completed workings

Current Authorisations

- Coal - Current Titles



Austar Coal ARR 2022 - Update

CMA 5 - Cessnock No.1 Colliery / Kalingo Infrastructure Area

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	2133 | 2258
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

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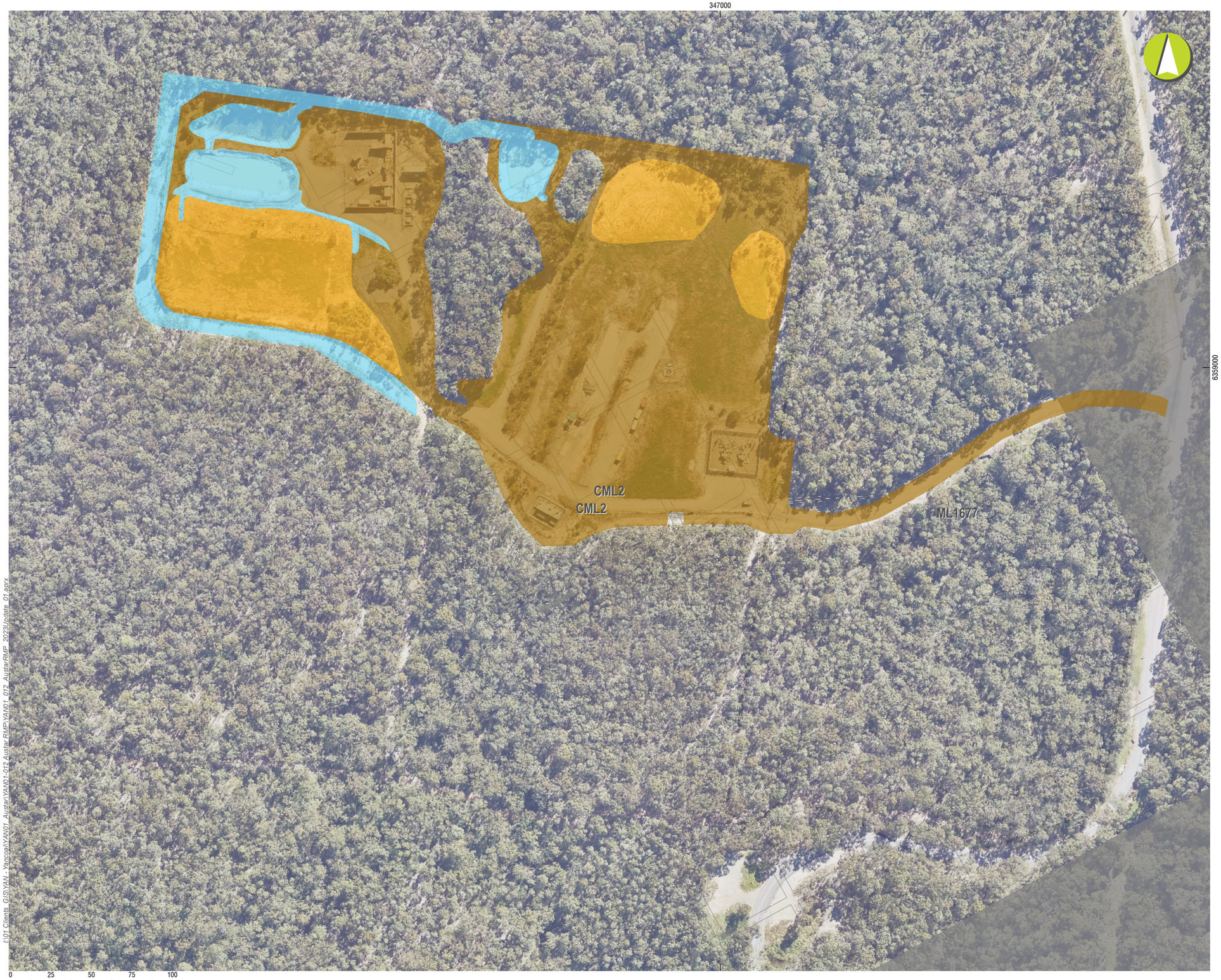


LEGEND

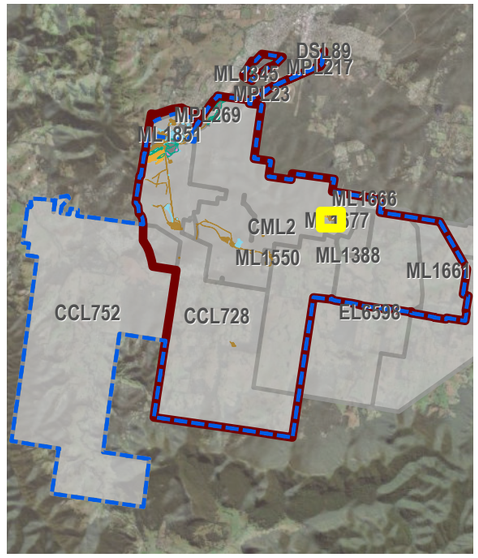
- Project Approval Boundary
- Colliery Holding Boundary
- Austar Mine Plan
- Completed workings

Current Authorisations

- Coal - Current Titles

Mining Domain Type

- Domain 1: Infrastructure Area
- Domain 3: Water Management Area
- Domain 4: Overburden Emplacement Area



Austar Coal ARR 2022 - Update

CMA 6 - Kitchener Surface Infrastructure Site

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	2133 | 2258
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

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345000

6384000

ML1345

ML1345

MPL233

MPL233

ML1283

ML1283

MPL204

ML1157

ML1157

0 50 100 150 200 m

Scale: 1:4,500

LEGEND

- Project Approval Boundary
- Colliery Holding Boundary

Current Authorisations

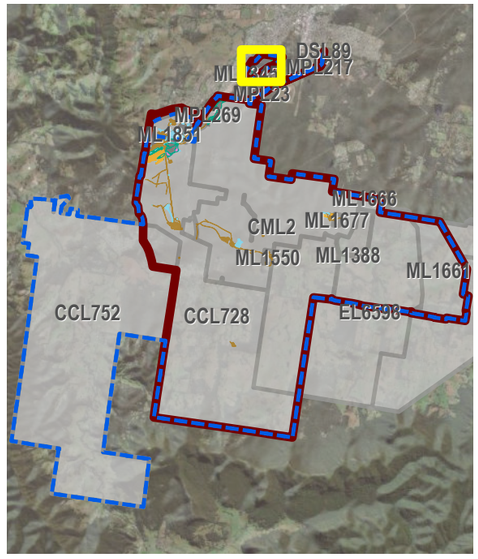
- Coal - Current Titles

Mining Domain Type

- Domain 2: Tailings Storage Facility

Rehabilitation Phase

- Ecosystem and Land Use Establishment



Austar Coal ARR 2022 - Update

CMA 7 - Aberdare Extended Emplacement Area

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	2133 | 2258
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

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LEGEND

- Project Approval Boundary
- Colliery Holding Boundary

Current Authorisations

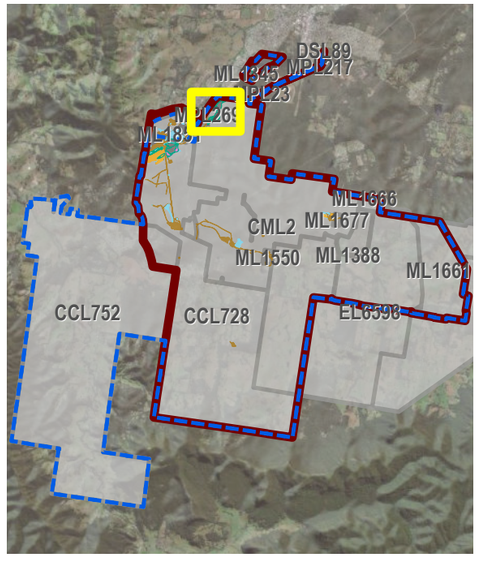
- Coal - Current Titles

Mining Domain Type

- Domain 1: Infrastructure Area
- Domain 2: Tailings Storage Facility

Rehabilitation Phase

- Ecosystem and Land Use Establishment



Austar Coal ARR 2022 - Update

CMA 8 - Bellbird Areas 12 and 13 - Inset

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	2133 | 2258
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

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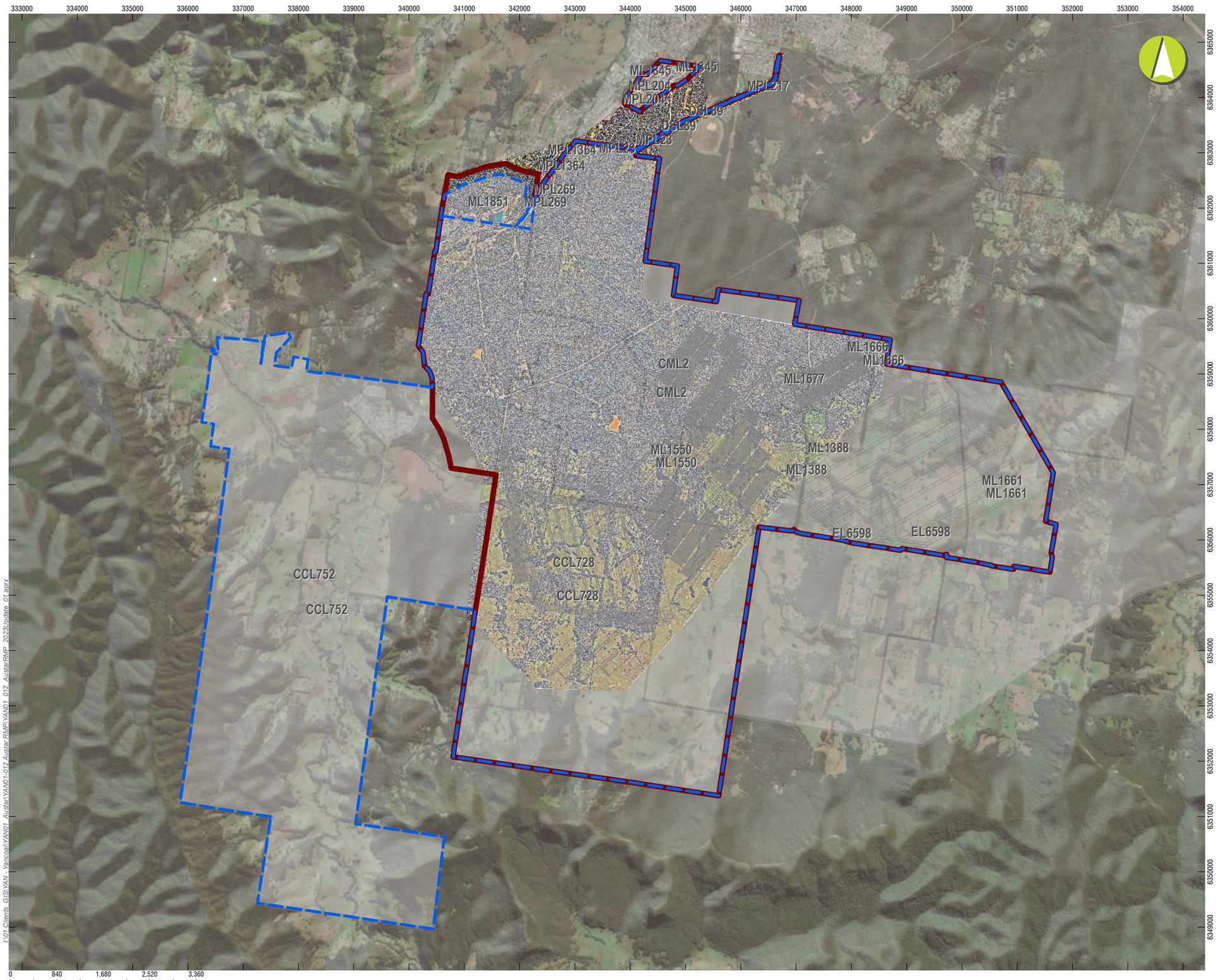

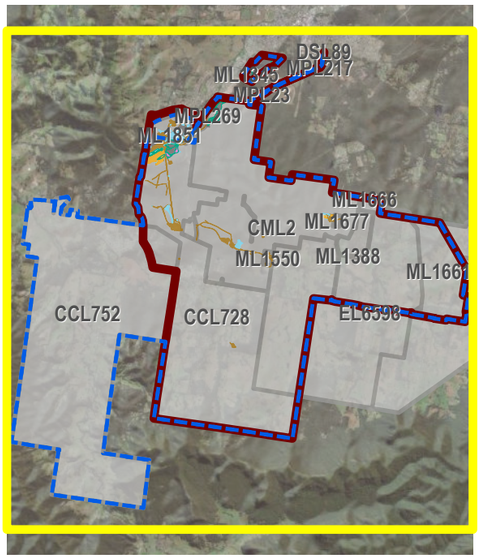

LEGEND

- Project Approval Boundary
- Colliery Holding Boundary
- Austar Mine Plan
- Completed workings

Current Authorisations

- Coal - Current Titles

Austar Coal ARR 2022 - Update

CMA 9 - Other

Current Status of Mining and Rehabilitation

PLAN 1A

Mine name	Austar Coal Mine
Plan name	
Year of anticipated relinquishment	TBA on final submission
Data theme submission ID No.	2133 | 2258
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

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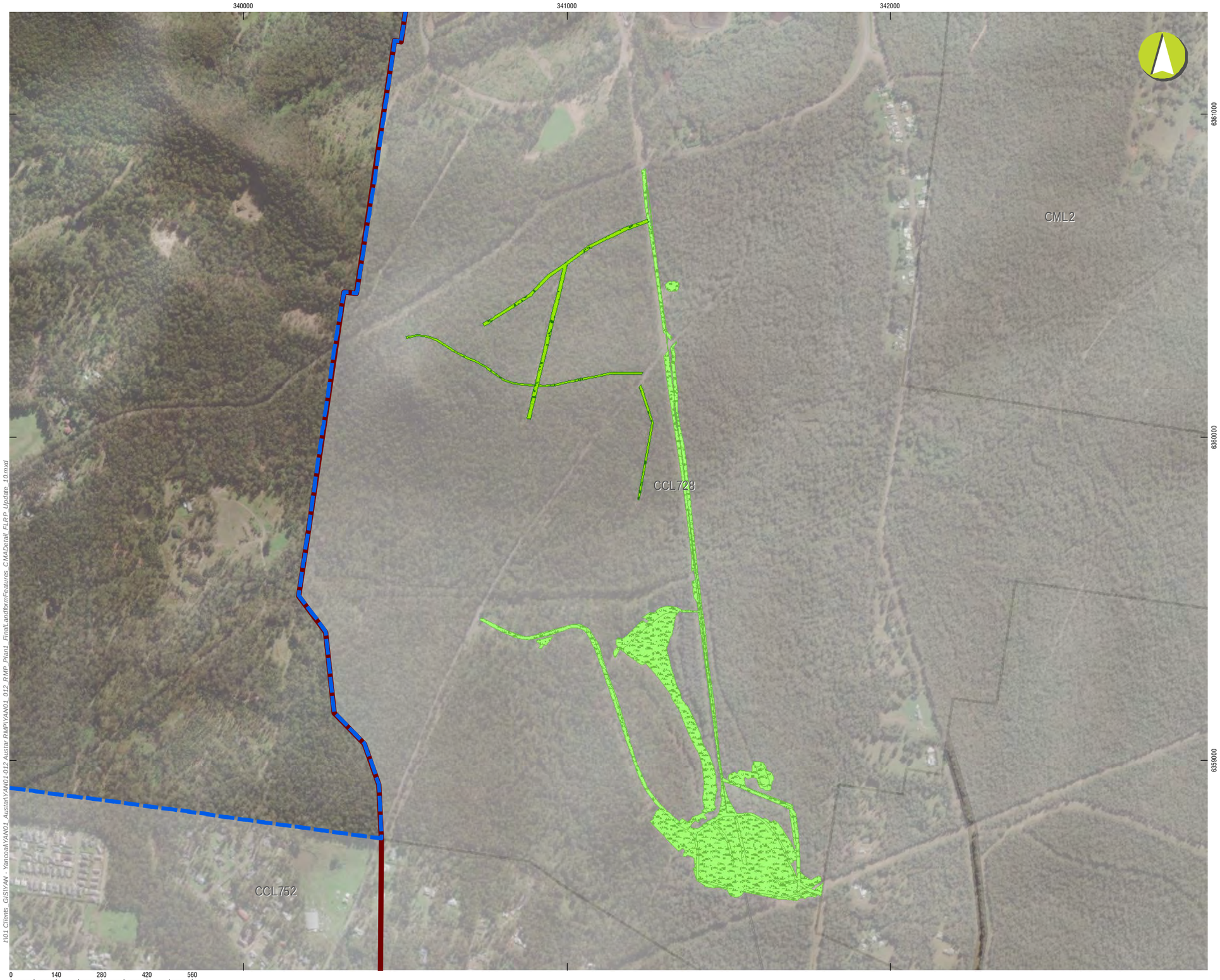
APPENDIX: C
FINAL LAND USE DOMAINS BY CMA



LEGEND

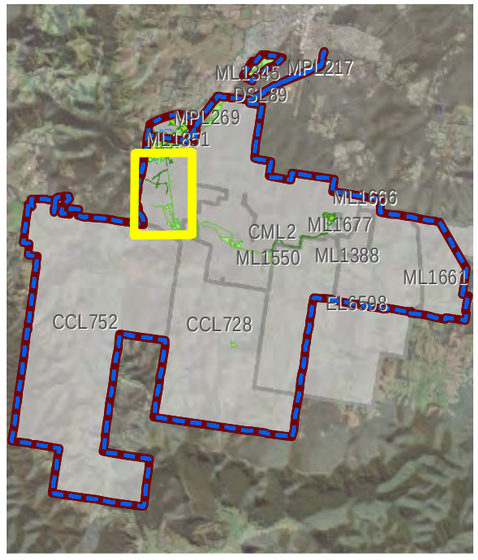
- Project Aproval Boundary
- Colliery Holding Boundary
- Austar Mine Plan

Current Authorisations

- Coal - Current Titles

Final Landuse Domain

- Domain A: Native Ecosystem
- Domain B: Agricultural – Grazing



Austar Coal RMP 2022

CMA 1 - Austar Pit Top Facilities

Final Landform and Rehabilitation Plan Final Landform Features

PLAN 1

Mine name	Austar Coal Mine
Plan name	Austar Coal RMP 2022
Year of anticipated relinquishment	TBA on file submission
Data theme submission ID No.	3978 / 3979
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

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www.iema.com.au

Source:

340000
341000
342000
6362000
6361000
Dam
Water Storage
Clean water drain
Water Storage
Water Storage
ML1851
Water Storage
Creekline
MPL269
Water Storage
Water Storage
Water Storage
Water Storage
Water Storage
CML2
CCL728
0 100 200 300 400 m
Scale: 1:8,200

LEGEND

Project Aproval Boundary
Colliery Holding Boundary

Current Authorisations

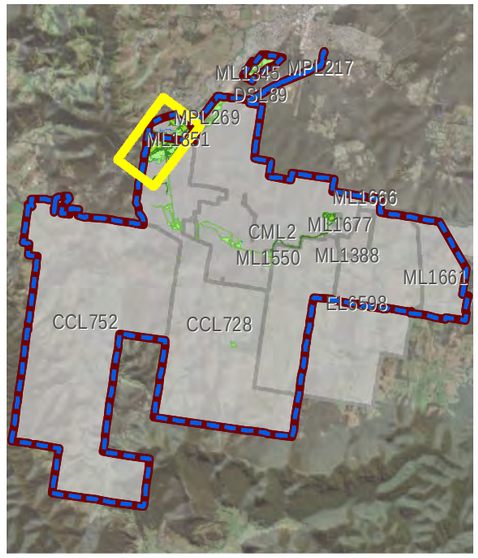
Coal - Current Titles

Final Landform Feature

Clean water drain
Creekline
Dam
Water Storage

Final Landuse Domain

Domain A: Native Ecosystem
Domain B: Agricultural – Grazing
Domain F: Water Management Areas
Domain G: Water Storage (Excluding Final Void)



Austar Coal RMP 2022

CMA 2 - Pelton CHPP - Inset 1

Final Landform and Rehabilitation Plan Final Landform Features

PLAN 1

Mine name	Austar Coal Mine
Plan name	Austar Coal RMP 2022
Year of anticipated relinquishment	TBA on file submission
Data theme submission ID No.	3978 / 3979
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

Sheet Size : A3

INTEGRATED ENVIRONMENTAL MANAGEMENT AUSTRALIA
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LEGEND

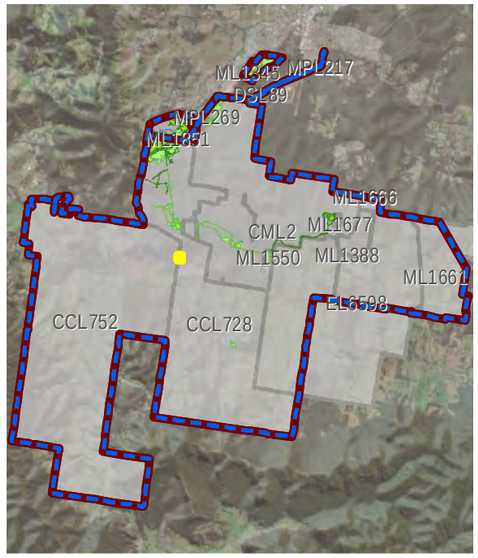
- Project Aproval Boundary
- Colliery Holding Boundary
- Austar Mine Plan

Current Authorisations

- Coal - Current Titles

Final Landuse Domain

- Domain B: Agricultural – Grazing



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Scale: 1:1,500

Sheet Size : A3

INTEGRATED ENVIRONMENTAL MANAGEMENT AUSTRALIA
www.iema.com.au

Source:

Austar Coal RMP 2022

CMA 3 - No.1 Shaft - Inset

Final Landform and Rehabilitation Plan Final Landform Features

PLAN 1

Mine name	Austar Coal Mine
Plan name	Austar Coal RMP 2022
Year of anticipated relinquishment	TBA on file submission
Data theme submission ID No.	3978 / 3979
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

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LEGEND

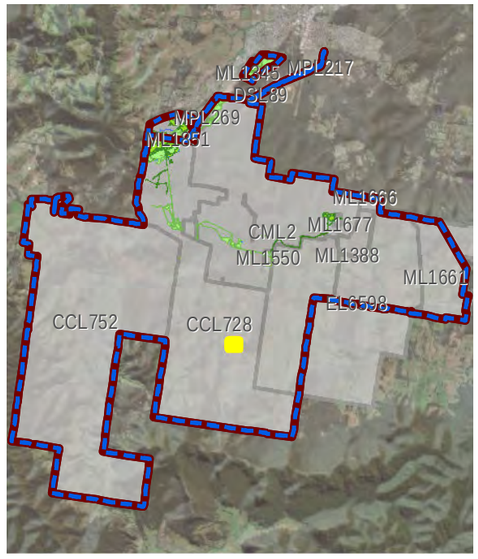
- Project Aproval Boundary
- Colliery Holding Boundary
- Austar Mine Plan

Current Authorisations

- Coal - Current Titles

Final Landuse Domain

- Domain B: Agricultural – Grazing



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INTEGRATED ENVIRONMENTAL MANAGEMENT AUSTRALIA
www.iema.com.au

Source:

Austar Coal RMP 2022

CMA 4 - No.2 Shaft - Inset

Final Landform and Rehabilitation Plan Final Landform Features

PLAN 1

Mine name	Austar Coal Mine
Plan name	Austar Coal RMP 2022
Year of anticipated relinquishment	TBA on file submission
Data theme submission ID No.	3978 / 3979
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

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342000
343000
344000
345000
6359000
6358000
6357000

ML1388
Water Storage
ML1550
CML2
CCL728
EL6598

0 130 260 390 520 m
Scale: 1:11,000

LEGEND

- Project Aproval Boundary
- Colliery Holding Boundary
- Austar Mine Plan
- Completed workings

Current Authorisations

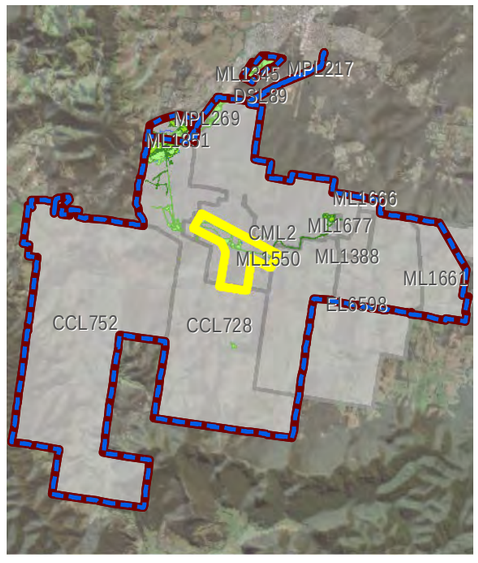
- Coal - Current Titles

Final Landform Feature

- Water Storage

Final Landuse Domain

- Domain A: Native Ecosystem
- Domain B: Agricultural – Grazing
- Domain G: Water Storage (Excluding Final Void)



Austar Coal RMP 2022

CMA 5 - Cessnock No.1 Colliery / Kalingo Infrastructure Area

Final Landform and Rehabilitation Plan Final Landform Features

PLAN 1

Mine name	Austar Coal Mine
Plan name	Austar Coal RMP 2022
Year of anticipated relinquishment	TBA on file submission
Data theme submission ID No.	3978 / 3979
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

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347000

6359000

CML2

ML1677

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Scale: 1:2,400

Sheet Size : A3

INTEGRATED ENVIRONMENTAL MANAGEMENT AUSTRALIA
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LEGEND

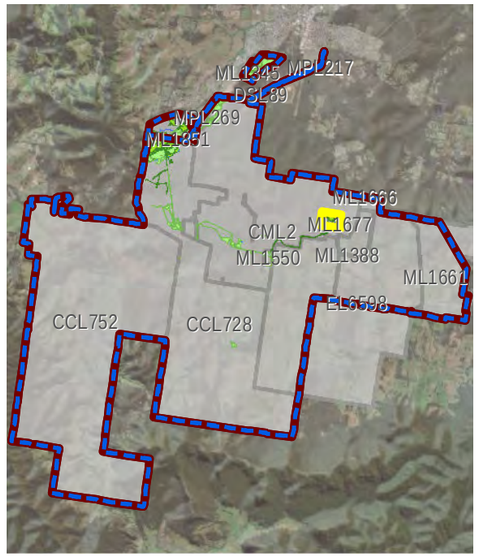
- Project Aproval Boundary
- Colliery Holding Boundary
- Austar Mine Plan

Current Authorisations

- Coal - Current Titles

Final Landuse Domain

- Domain A: Native Ecosystem



Austar Coal RMP 2022

CMA 6 - Kitchener Surface Infrastructure Site

Final Landform and Rehabilitation Plan Final Landform Features

PLAN 1

Mine name	Austar Coal Mine
Plan name	Austar Coal RMP 2022
Year of anticipated relinquishment	TBA on file submission
Data theme submission ID No.	3978 / 3979
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

344000

345000

6364000

ML1345

MPL233

MPL204

ML1283

ML1157

0 50 100 150 200 m

Scale: 1:4,500

LEGEND

Project Aproval Boundary

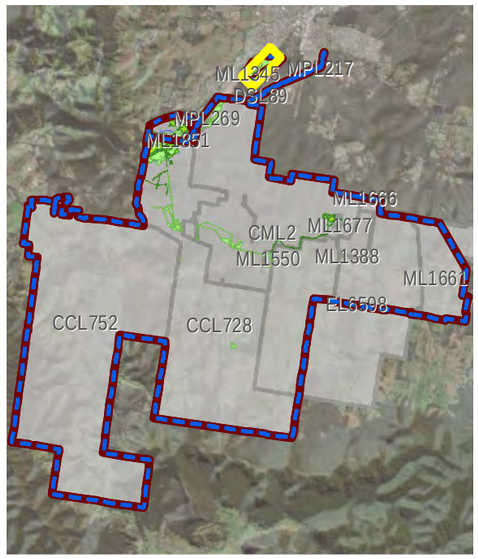
Colliery Holding Boundary

Current Authorisations

Coal - Current Titles

Final Landuse Domain

Domain B: Agricultural – Grazing



Austar Coal RMP 2022

CMA 7 - Aberdare Extended Emplacement Area

Final Landform and Rehabilitation Plan Final Landform Features

PLAN 1

Mine name	Austar Coal Mine
Plan name	Austar Coal RMP 2022
Year of anticipated relinquishment	TBA on file submission
Data theme submission ID No.	3978 / 3979
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

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343000

6363000

6362000

Historical Rail Alignment Corridor

MPL1364

DSL89

MPL23

CML2

MPL269

ML1851

0 60 120 180 240 m

Scale: 1:5,500

LEGEND

Project Aproval Boundary

Colliery Holding Boundary

Current Authorisations

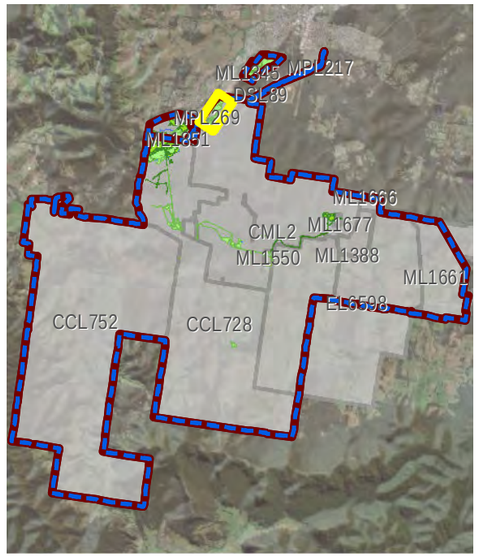
Coal - Current Titles

Final Landform Feature

Historical Rail Alignment Corridor

Final Landuse Domain

Domain B: Agricultural – Grazing



Austar Coal RMP 2022

CMA 8 - Bellbird Areas 12 and 13 - Inset

Final Landform and Rehabilitation Plan Final Landform Features

PLAN 1

Mine name	Austar Coal Mine
Plan name	Austar Coal RMP 2022
Year of anticipated relinquishment	TBA on file submission
Data theme submission ID No.	3978 / 3979
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

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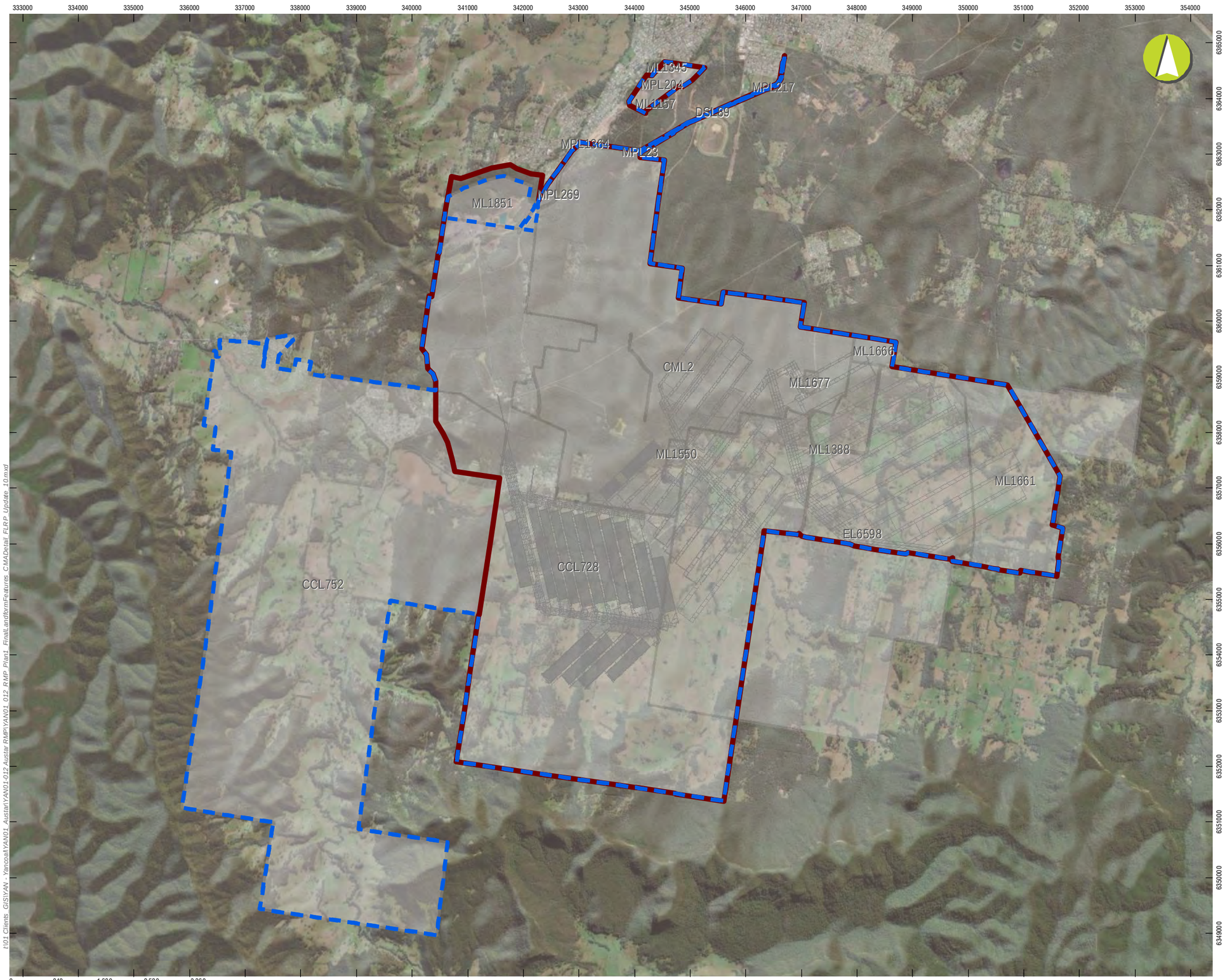

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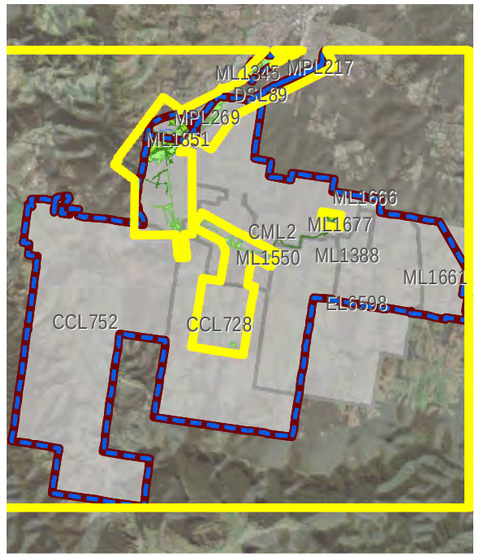

LEGEND

- Project Aproval Boundary
- Colliery Holding Boundary
- Austar Mine Plan
- Completed workings

Current Authorisations

- Coal - Current Titles

Austar Coal RMP 2022

CMA 9 - Other

Final Landform and Rehabilitation Plan Final Landform Features

PLAN 1

Mine name	Austar Coal Mine
Plan name	Austar Coal RMP 2022
Year of anticipated relinquishment	TBA on file submission
Data theme submission ID No.	3978 / 3979
Spatial Reference	GDA2020 MGA Zone 56
Plan date (date created)	21/09/2023

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