



REHABILITATION STRATEGY

SPRINGVALE MINE

May 2024

DOCUMENT CONTROL

MANAGEMENT PLAN DETAILS	Title:	<i>Rehabilitation Strategy SSD-5594</i>
	Applicant:	Springvale Mine
	Revision No.:	0.4

Table of Contents

1	INTRODUCTION	1
1.1	HISTORY OF OPERATIONS.....	1
1.2	APPROVED DEVELOPMENT INFORMATION	4
1.2.1	<i>Springvale Mine Extension Project SSD-5594.....</i>	<i>4</i>
1.2.2	<i>Other Relevant Consents</i>	<i>5</i>
1.3	REHABILITATION STRATEGY REQUIREMENTS	7
1.4	REHABILITATION OBJECTIVES	8
2	SITE CONTEXT	10
2.1	LAND OWNERSHIP	10
2.2	LAND USE	10
2.2.1	<i>Historical Land Use.....</i>	<i>10</i>
2.2.2	<i>Current Land Use.....</i>	<i>10</i>
2.2.3	<i>Proposed Land Use.....</i>	<i>10</i>
2.3	NATURAL FEATURES AND TOPOGRAPHY.....	11
2.4	EXISTING VEGETATION	11
2.5	REGULATORY CONTEXT	15
3	LAND MANAGEMENT AND REHABILITATION	18
3.1	WATER MANAGEMENT AREAS	18
3.2	EXPLORATION	18
3.3	SUBSIDENCE MANAGEMENT	18
3.4	INFRASTRUCTURE	18
4	MINE CLOSURE PLANNING.....	21
4.1	STRATEGIC FRAMEWORK FOR MINE CLOSURE	21
4.2	INTEGRATION WITH MINE CLOSURE PLANNING PROCESS	23
4.3	TEMPORARY OR PREMATURE MINE CLOSURE.....	26
5	STAKEHOLDER CONSULTATION	27
5.1	STAKEHOLDER ENGAGEMENT PLANS.....	27
5.1.1	<i>Springvale Stakeholder Engagement Plan.....</i>	<i>27</i>
5.1.2	<i>Project Specific Stakeholder Engagement Plans</i>	<i>27</i>
5.2	COMMUNITY CONSULTATION COMMITTEE	28
5.3	STATUTORY AUTHORITY CONSULTATION	28
5.4	OTHER KEY STAKEHOLDERS	29
6	PROPOSED FUTURE USE OF REHABILITATED AREAS.....	30
7	REHABILITATION.....	37
7.1	REHABILITATION PHASES	37
7.2	INTEGRATION WITH THE WESTERN REGION BIODIVERSITY MANAGEMENT PLAN	38
8	INVESTIGATION AND PROGRAMMES.....	40
8.1	MINIMISING ADVERSE SOCIO-ECONOMIC EFFECTS	40
8.2	OPPORTUNITIES TO REFINE AND IMPROVE THE FINAL LANDFORM	40

9	REVIEW.....	41
10	REFERENCES.....	42

List of Figures

FIGURE 1.1	REGIONAL LOCALITY.....	2
FIGURE 1.2	SPRINGVALE MINE LAYOUT.....	3
FIGURE 2.1	LAND OWNERSHIP.....	12
FIGURE 2.2	LAND USE.....	13
FIGURE 2.3	VEGETATION COMMUNITIES AND HYDROLOGY.....	14
FIGURE 6.1A	FINAL LANDFORM AND REHABILITATION.....	32
FIGURE 6.1B	FINAL LANDFORM AND REHABILITATION.....	33
FIGURE 6.1C	FINAL LANDFORM AND REHABILITATION.....	34
FIGURE 6.1D	FINAL LANDFORM AND REHABILITATION.....	35
FIGURE 6.1E	FINAL LANDFORM AND REHABILITATION.....	36

List of Tables

TABLE 1.1	DEVELOPMENT CONSENTS.....	5
TABLE 1.2	REHABILITATION STRATEGY REQUIREMENTS SSD-5594.....	7
TABLE 1.3	SSD-5594 REHABILITATION OBJECTIVES.....	8
TABLE 1.4	SSD-7592 REHABILITATION OBJECTIVES.....	9
TABLE 2.1	REGULATORY REQUIREMENTS.....	15
TABLE 3.1	INFRASTRUCTURE TO BE DECOMMISSIONED.....	19
TABLE 4.1	STRATEGIC FRAMEWORK FOR MINE CLOSURE OBJECTIVES.....	21
TABLE 4.2	INDICATIVE MINE CLOSURE TIMELINE.....	25
TABLE 6.1	VEGETATION DESCRIPTIONS FOR RELEVANT MAP UNITS.....	30

Appendices

APPENDIX A	DPHI ENDORSEMENT OF SUITABLY QUALIFIED PERSONS
APPENDIX B	STAKEHOLDER ENGAGEMENT RECORDS

1 INTRODUCTION

Springvale Coal Mine (Springvale) is an existing underground coal mine located 15 kilometres (km) to the northwest of Lithgow and 120 km west-northwest of Sydney in New South Wales (NSW). Springvale is bordered by Angus Place to the north and Clarence Colliery to the south-east (refer to **Figure 1.1**). Springvale supplies thermal coal to both domestic and export markets and utilises the longwall retreat method of mining to extract coal from the Lithgow Seam.

Springvale is owned and operated on behalf of Centennial Springvale Pty Ltd (Centennial Springvale), a subsidiary of Centennial Coal Company Limited (Centennial). Centennial was purchased by Banpu Public Company Limited in October 2010.

This Rehabilitation Strategy has been developed in accordance with Schedule 4, Condition 31A of Development Consent SSD-5594 (MOD 4). This Rehabilitation Strategy has been prepared by Adam Williams and assisted by Joshua Wheatley and Aidan Wright from Umwelt. Adam Williams was endorsed by the Department of Planning, Housing and Infrastructure (DPHI) as a suitably qualified and experienced person to prepare the Rehabilitation Strategy for the Springvale Mine Extension Project (SSD-5594) (refer **Appendix A**). This Rehabilitation Strategy relates to operations at Springvale (refer **Figure 1.2**) and aspects of the Springvale Water Treatment Project (SWTP) (SSD-7592) which includes raw water transfer pipelines on the Newnes Plateau. The water treatment plant (located at Mount Piper Power Station) and the residuals transfer pipeline (located on the Western Coal Services site) have been excluded, however operational context has been included where required.

Additional detail regarding rehabilitation methodologies, implementation, monitoring and management is outlined within the Springvale Mine Rehabilitation Management Plan (RMP). The RMP has been prepared in accordance with the Mining Exploration and Geoscience – Resources Regulator's (RR) *Form and Way: Rehabilitation Management Plan for Large Mines* (RR, 2024), associated guidelines and to satisfy Schedule 4, Condition 32 of SSD-5594 which requires Springvale to prepare and implement a RMP in accordance with the conditions imposed on mining leases associated with the mine under the *NSW Mining Act 1992*.

1.1 History of Operations

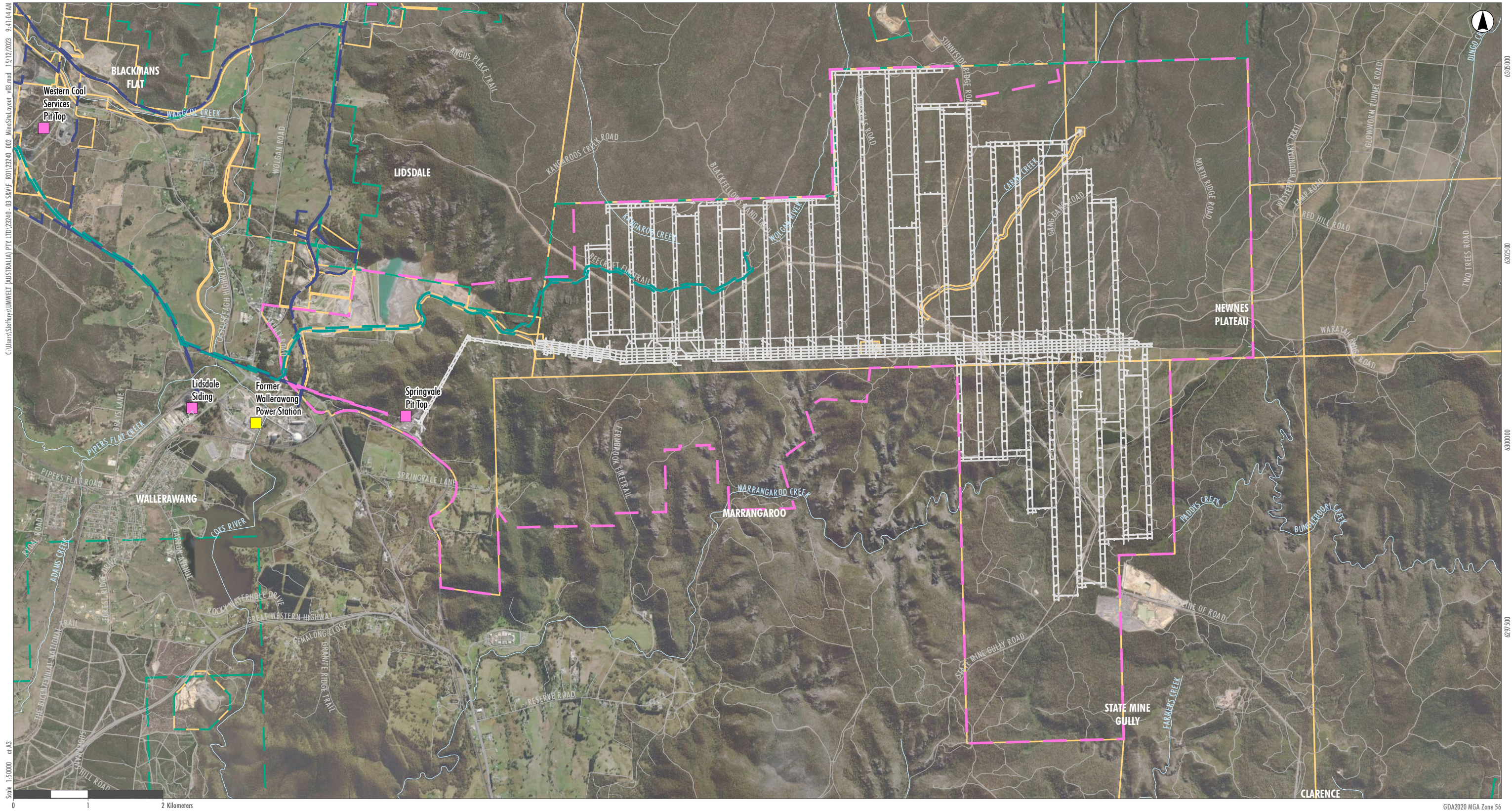
Springvale Mine was originally granted Development Consent (DA 11/92) by the then Minister for Planning, on 27 July 1992, pursuant to Section 101 under Part 4 of the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act). The Development Consent permitted the construction and operation of an underground coal mine to extract up to 3.4 million tonnes per annum (Mtpa) of run of mine (ROM) coal, along with an overland conveyor system and a coal preparation plant (CPP).

Development Consent DA 11/92 was subsequently modified on four occasions. Modification 1 (Mod 1) was approved on 29 June 1993 and allowed for several amendments including changes to the pit top layout, a new mine entry, relocation of a conveyor route and use of the existing Western Main Colliery Washery (now known as the Springvale Coal Services site). Modification 2 (Mod 2) was approved on 11 April 1994 and related to a change in the schedule of lands and tenements associated with the Development Consent. Modification 3 (Mod 3) was approved 8 March 2013 and allowed for the construction and operation of an additional surface mine dewatering facility (Bore 8). Modification 4 (Mod 4) was approved on 5 December 2013 and allowed for a coal production increase up to 4.5 Mtpa, an increase in workforce to 310 full time employees, an extension of time to 30 September 2015 and connection of the pit top to the Council sewer system. DA 11/92 expired on 30 September 2015.

On 21 September 2015, Development Consent SSD-5594 was approved by the Planning Assessment Commission (PAC) (under delegation from the Minister of Planning). The approval allowed for continuation of underground mining operations at Springvale at existing production rates until 31 December 2028. SSD-5594 has subsequently been modified on four occasions which is further detailed in **Section 1.2.1**.



Regional Locality



- Legend
- Project Approval Boundary – SSD-5579
 - Project Approval Boundary – SSD-5594 (Springvale)
 - Project Approval Boundary – SSD-7592 (Springvale WTF)
 - Railway Line
 - Road
 - Drainage Line
 - Power Station
 - Pit Top
 - Underground Workings
 - Exploration Licence
 - Mining Lease

FIGURE 1.2

Springvale Mine Site Layout

1.2 Approved Development Information

1.2.1 Springvale Mine Extension Project SSD-5594

On 7 April 2014 Springvale submitted the Environmental Impact Statement (EIS) titled Springvale Mine Extension Project State Significant Development 5594 (Golders, 2014) to support an application seeking Development Consent under Part 4, Division 4.1 of the EP&A Act to allow the continuation of underground mining operations at Springvale. The exhibition period for the EIS commenced on 12 April 2014 and ended on 26 May 2014. Following the receipt of submissions Springvale submitted a response to submissions in October 2014 titled Response to Submissions Springvale Mine Extension Project – State Significant Development 5594 (RTS) (Springvale, 2014). Following the distribution of the RTS report, a number of submissions were made by various government agencies to the DPHI, a final document titled Angus Place and Springvale Mine Extension Projects – State Significant Developments SSD-5602 and SSD-5594 Response to Response to Submissions (RTRTS) (Centennial Coal, 2014) was submitted to the DPHI on 19 December 2014.

On 27 April 2015, the Minister of Planning referred the Springvale Mine Extension Project to the PAC to review the merits of the project, with a subsequent public hearing held 27 May 2015. Following the review the PAC made a total of 15 recommendations in the Review Report, with subsequent responses provided by Centennial on 9 July 2015 in the letter titled Springvale Mine Extension Project – Response to PAC Review Report (Centennial Coal, 2015). This report addressed the majority of recommendations outlined by the first PAC review. On 13 August 2015, a second PAC review was requested by the Minister of Planning with a public hearing held 3 September 2015. The PAC identified four recommendations for amending the conditions of consent which were outlined within the Second Review Report. The PAC indicated that they were satisfied that the project can be approved, subject to conditions, and provided that the four recommendations within the Second Review Report are adequately addressed. Subsequently, the DPHI issued recommended Development Consent conditions, addressing the recommendations of the PAC review on 18 September 2015. Development Consent SSD-5594 was granted to Springvale on 21 September 2015.

Modification 1 (Mod 1) to SSD-5594 was subsequently approved by the PAC (under delegation from the Minister of Planning) on 19 April 2017 to allow for:

- An increase in the workforce from the approved 310 full time equivalent, including contractors, to 450 full time equivalent personnel;
- An increase in ROM production from the approved 4.5 Mtpa to 5.5 Mtpa; and
- An increase in ROM coal stockpile capacity at the pit top from the approved 85,000 t to 200,000 t, and an increase in the coal stockpile footprint by 0.3 ha northeast of the existing area.

Modification 2 (Mod 2) to SSD-5594 was approved by the PAC (under delegation from the Minister of Planning) on 19 June 2017 to:

- Remove the requirement to meet limits for salinity of 700 (50th percentile), 900 (90th percentile) and 1,000 (100th percentile) µS/cm by 30 June 2017; and
- Defer to 30 June 2019 the requirement to eliminate acute and chronic toxicity from LDP007 (previously LDP009) discharges to aquatic species by 30 June 2017, with acute toxicity defined as >10% effect relative to the control group and chronic toxicity defined as >20% effect relative to the control group.

Mod 2 relates to the Development Consent granted for the SWTP in that it was required to defer the salinity limits until the SWTP is constructed and operational. SSD-7592 is discussed further in **Section 1.2.2**.

Modification 3 (Mod 3) to SSD-5594 was approved by the Director – Resource Assessments on 2 June 2021 to allow for the management of newly identified Aboriginal cultural heritage sites.

Modification 4 (Mod 4) to SSD-5594 was approved by the Director – Resource Assessments on 25 November 2022 to amend approval conditions to align the rehabilitation management and performance conditions with the contemporary requirements under the *Mining Act 1992*.

1.2.2 Other Relevant Consents

Springvale Water Treatment Project

The SWTP is approved under Development Consent SSD-7592 which was granted by the PAC on 19 June 2017.

The SWTP is a collaborative project between Springvale and Energy Australia and is integral to the achievement of the Springvale mine water quality performance measures required by SSD-5594. It involves the establishment of a pipeline and ancillary facilities to transfer mine water from the existing or approved dewatering facilities on the Newnes Plateau for treatment and reuse at the Mount Piper Power Station. The SWTP commenced operations on 30 June 2019, while the consent has been modified on eight occasions.

Aspects of the SWTP located within the Springvale project approval area, namely the raw water transfer pipelines on the Newnes Plateau, have been included in Rehabilitation Strategy. However, those components of the SWTP outside of the project approval area, including the water treatment plant (located at Mount Piper Power Station) and the residuals transfer pipeline (located on the Western Coal Services site) have been included in the Springvale Coal Services RMP.

EPBC Approvals

Springvale also operate in accordance with two federal approvals under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) granted by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW). Approval EPBC 2011/5949 was granted on 14 March 2012 and allows Springvale to extract coal from Longwalls 415 – 417. A second approval (EPBC 2013/6881) was issued on 15 October 2015 to allow secondary extraction associated with the Springvale Mine Extension Project SSD-5594.

A summary of the various development consents and their modifications are outlined in **Table 1.1**.

Table 1.1 Development Consents

Issuing/ Responsible Authority	Development Consent	Description	Date of Issue	Expiry
DPHI	SSD-5594	Springvale Mine Extension Project.	21 September 2015	31 December 2028
		Mod 1 – Increase in staffing to 450 full time equivalent employees, increase in ROM production to 5.5 Mtpa and increase of ROM coal stockpile capacity and stockpile footprint to 200,000 and 0.3 hectares respectively.	19 April 2017	
		Mod 2 – Modification to remove the requirement to meet limits for salinity of 700 (50th percentile), 900 (90th percentile) and 1,000 (100th percentile) µS/cm by 30 June 2017 and defer to 30 June 2019 the requirement to eliminate acute and chronic toxicity from LDP007 (previously LDP009) discharges to aquatic species by 30 June 2017, with acute toxicity defined as >10% effect relative to the control group and chronic toxicity defined as >20% effect relative to the control group.	19 June 2017	

Issuing/ Responsible Authority	Development Consent	Description	Date of Issue	Expiry
		Mod 3 – Modification to include management measures for newly identified Aboriginal cultural heritage sites.	2 June 2021	
		Mod 4 – Modification to align the rehabilitation management and reporting requirements within the Development Consent with regulatory requirements commenced as part of the Rehabilitation Reforms under the <i>Mining Act 1992</i> .	25 November 2022	
DPHI	SSD-7592	Springvale Water Treatment Project.	19 June 2017	N/A
		Mod 1 – Minor amendments to the project description.	12 January 2018	
		Mod 2 – Minor amendments to the project description including returning the pipeline alignment near Skelly Road to the original designed outlined in the EIS.	29 October 2018	
		Mod 3 – Minor amendments to the project description which includes changes to sequence of water treatment in regard to the bypass of desalination units during progressive commissioning of the water treatment plant. Additionally, MOD 3 allows for an interim water management strategy which provides a contingency for the potential delay in commissioning of the water treatment plant beyond 30 June 2019.	31 May 2019	
		Mod 4 – Minor amendments to approve the transfer of up to 5,760 ML of filtered mine water to Thompsons Creek Reservoir during the approved period for operation of the interim water management strategy to 31 January 2020.	5 November 2019	
		Mod 5 – Transfer of up to 5,760 ML of filtered mine water to Thompsons Creek Reservoir to 30 June 2020.	30 January 2020	
		Mod 6 – receipt of water from Angus Place Colliery into Pond D at Mount Piper Power Station, prior to treatment in its existing brine concentrators.	19 March 2021	
		Mod 7 – Minor amendment to allow the transfer of up to a maximum of 5,760 megalitres of partially treated mine water to Thompsons Creek Reservoir, until 31 October 2021.	8 June 2021	
		Mod 8 – Extend timeframe for implementation of interim water management strategy until 31 October 2023.	21 October 2022	
DPHI	DA 11/92	Development consent permitting the construction and operation of an underground coal mine and associated infrastructure.	27 July 1992	19 September 2023

Issuing/ Responsible Authority	Development Consent	Description	Date of Issue	Expiry
		Mod 1 – Modification to the pit top layout, storm water control, new mine entry point, relocation of mine ventilation shafts, extension of existing road to access shafts, utilisation of existing of existing CPP, relocation of existing overland conveyor route.	29 June 1993	
		Mod 2 – Modification to DA 11/92 associated with land descriptions and schedule of lands.	11 April 2004	
		Mod 3 – Construction and operation of Bore 8 dewatering facility and associated infrastructure.	11 March 2013	
		Mod 4 – Production increase from 3.4 Mtpa to 4.5 Mtpa, increase in staffing to 310 full time employees and extension of time on the consent from 28 September 2014 to 30 September 2015.	5 December 2013	
DPHI	DA 461/02	Construction and operation of Ventilation Shaft 3 Facility on the Newnes Plateau.	23 January 2003	N/A
		Mod 1 – Upgrade of Ventilation Shaft 3 Facility.	30 May 2012	
DCCEEW	EPBC 2011/5949	Mining of Longwalls 415 – 417.	14 March 2012	19 March 2032
	EPBC 2013/6881	Mining associated with the Springvale Mine Extension Project.	15 October 2015	8 October 2035

1.3 Rehabilitation Strategy Requirements

Development Consent SSD-5594 contains conditions relevant to the preparation of this Rehabilitation Strategy. Relevant conditions have been summarised in **Table 1.2** along with where the condition has been addressed within this document.

Table 1.2 Rehabilitation Strategy Requirements SSD-5594

Condition	Requirement	Section Addressed
SSD-5594 Schedule 4, Condition 31A	Rehabilitation Strategy The Applicant must prepare a Rehabilitation Strategy for the development, to the satisfaction of the Secretary. The Rehabilitation Strategy must: (a) be prepared by a suitably qualified and experienced person(s) whose appointment has been endorsed by the Secretary;	Section 1 and Appendix A
	(b) be prepared in consultation with Resources Regulator, BCD, DPE Water, WaterNSW, NSW National Parks and Wildlife Service, Council and the CCC;	Section 5 and Appendix B
	(c) be submitted to the Secretary for approval within 6 months of the date of determination of SSD-5594 MOD 4, or as otherwise agreed by the Secretary;	Section 1.2 and Section 5
	(d) build upon the Rehabilitation Objectives in Table 7 and describe the strategic rehabilitation outcomes for the site, including mine closure, final landform, post-mining land use/s and water management;	Section 1.4 and Section 3 to Section 6

Condition	Requirement	Section Addressed
	(e) align with the strategic rehabilitation and mine closure objectives and address the principles of the Strategic Framework for Mine Closure (ANZMEC and MCA, 2000), or its latest version;	Section 4
	(f) describe how rehabilitation will be integrated with the mine planning process, including a plan to address premature or temporary mine closure;	Section 3 and Section 4
	(g) include details of: (i) target vegetation communities and species to be established within the proposed revegetation areas; (ii) a post-mining land use strategy to investigate and facilitate post-mining beneficial land uses for the site and/or infrastructure; and (iii) stakeholder engagement plan to guide rehabilitation and mine closure planning processes and outcomes.	Sections 2 and 6 Section 6 Section 5
	(h) investigate opportunities to refine and improve the final landform over time.	Section 8.2
	Note: The Rehabilitation Strategy must address all land impacted by the development, whether prior to or following the date of this consent. The Biodiversity Management Plan and Rehabilitation Strategy require substantial integration to achieve biodiversity objectives for the rehabilitated site.	Section 6 and Section 7
SSD-5594 Schedule 4, Condition 31B	The Applicant must implement the approved Rehabilitation Strategy.	Noted

1.4 Rehabilitation Objectives

In accordance with Schedule 4, Condition 30 of SSD-5594 (as modified) Springvale will rehabilitate the site in accordance with the conditions imposed on the mining lease(s) associated with the development under the *Mining Act 1992*. This rehabilitation will be generally consistent with the proposed *Springvale Mine Extension Project Decommissioning and Rehabilitation Strategy* (SLR 2014) and comply with the objectives in Table 7 of SSD-5594 which has been reproduced in **Table 1.3**. Rehabilitation objectives associated with the SWTP have been included in **Table 1.4**, which have also been considered within this Rehabilitation Strategy, to ensure alignment with the RMP and Springvale mining tenement obligations.

Table 1.3 SSD-5594 Rehabilitation Objectives

Feature	Objective
Mine site (as a whole)	Safe, stable & non-polluting.
Surface infrastructure	- To be decommissioned and removed unless the Resources Regulator agrees otherwise. - All surface infrastructure sites are to be revegetated with suitable local native plant species to a landform consistent with the surrounding environment.
Portals and vent shafts	- To be decommissioned and made safe and stable. - Retain habitat for threatened species (e.g. bats), where practicable.
Revegetated final landforms	- Stable and sustain the intended land use. - Consistent with surrounding topography to minimise visual impacts. - Incorporate relief patterns and design principles consistent with natural drainage.

Feature	Objective
Native flora and fauna	- Flora species used in rehabilitation selected to re-establish and complement local and regional biodiversity. - Rehabilitated areas contribute to achieving self-sustaining biodiversity habitats.
All watercourses subject to mine water discharges and/or subsidence impacts	Hydraulically and geomorphologically stable, with aquatic ecology and riparian vegetation that is the same, or better than prior to grant of this consent.
Cliffs, minor cliffs and steep slopes	No additional risk to public safety compared to prior to mining.
Other land affected by the development	Restore ecosystem function, including maintaining or establishing self-sustaining ecosystems comprised of local native plant species (unless the Resources Regulator agrees otherwise).
Built features damaged by mining operations	- Repair to pre-mining condition or equivalent unless the: - owner agrees otherwise; or - damage is fully restored, repaired or compensated for under the <i>Mine Subsidence Compensation Act 1961</i>.
Community	- Ensure public safety. - Minimise the adverse socio-economic effects associated with mine closure.

Notes: These rehabilitation objectives apply to all subsidence impacts and environmental consequences caused by mining taking place after the date of this consent; and to all surface infrastructure parts of the development, whether constructed prior to or following the date of this consent.

Table 1.4 SSD-7592 Rehabilitation Objectives

Feature	Objective
Development site (as a whole)	- Safe stable and non-polluting. - Minimize the visual impact of any above ground ancillary infrastructure agreed to be retained for an alternative use as far as is reasonable and feasible.
Surface infrastructure, including pipelines	- To be decommissioned and removed, unless the Secretary agrees otherwise. - All surface infrastructure sites (including pipeline routes) are to be revegetated with suitable local native species to a landform consistent with the surrounding environment.
Land use	Restore land capability to pre-existing uses.
Community	Ensure public safety.

In accordance with the requirements of the NSW Rehabilitation Reforms, Centennial have developed specific rehabilitation objectives and criteria which have been included in the Springvale RMP. These objectives and criteria will be provided to relevant stakeholders as part of the consultation program, prior to seeking approval from RR. The rehabilitation objectives and criteria will continue to be refined as required during the life of mine. This will be undertaken in consultation with relevant stakeholders and for approval by RR in accordance with NSW Rehabilitation Reform requirements.

2 SITE CONTEXT

2.1 Land Ownership

Land ownership within and surrounding the Springvale holding consists of Crown Land, privately owned land and land owned and managed by the National Parks and Wildlife Service (NPWS). Parcels of freehold land are located within the western boundaries of the holding and in the vicinity of the Springvale pit top. Land ownership is shown on **Figure 2.1**.

2.2 Land Use

2.2.1 Historical Land Use

Lithgow Valley's first European settlers arrived in 1824 however settlement in the area was slow (RPS, 2014). It was not until 1869 when the western railway line was extended to Lithgow the town began to thrive. Construction of the railway line into the Lithgow Valley commenced in 1866 and was completed in 1869.

In 1868 the Hermitage Colliery was opened and was the first commercial mine to engage in mining and selling coal. By 1874, there were four mines producing – Eskbank Colliery (at the eastern end of Main Street near the present Hoskins Church), the Lithgow Valley Colliery, Vale of Clywdd Colliery and the Hermitage Colliery. The exportation of coal also became commercially viable with the construction of the railway line (RPS, 2014).

Following the arrival of the railway, other heavy industries began appearing in the area, such as iron making, copper-smelting and brickworks however over these industries faded out over time, although light industry continued to prosper.

Historic land uses in the vicinity of Springvale included residential uses, agriculture, open cut and underground coal mining, coal handling infrastructure, transport infrastructure, commercial forestry and power generation.

For more detail on historic land use of the Springvale locality please refer to the Western Region Historic Heritage Management Plan (2018).

2.2.2 Current Land Use

Land use within the Springvale holding predominantly consists of historical and existing mining operations in the former Newnes State Forest. The former Newnes State Forest has now been designated as the Gardens of Stone State Conservation Area and will be used to protect heritage values, ecology and to promote eco-tourism. In addition the former Newnes State Forest supports several recreational land uses including recreation activities consisting of motorcycle riding, four-wheel driving, bushwalking, camping, mountain bike riding, canyoning, photography, bird watching and other recreational and adventure activities.

As shown in **Figure 2.2** additional land uses within the Springvale holding also include agriculture. Agriculture practices are undertaken within a small portion of land along the western boundary of the holding which is cleared. There is no intensive cropping within this area.

2.2.3 Proposed Land Use

Following the cessation of mining operations at Springvale, the pit top and all major infrastructure on the Newnes Plateau will be rehabilitated to woodland commensurate with the adjacent remnant vegetation. Tracks to infrastructure facilities on the Newnes Plateau will be retained in the final landform for use as fire trails or access by recreational users. It is noted that many of the trails are not a result of mining activities. However, unless retention for future use, including management responsibility, has been accepted by NPWS access roads associated with mining disturbance will be rehabilitated following the cessation of mining activities.

The *Springvale Mine Extension Project Decommissioning and Rehabilitation Strategy* (SLR 2014) prepared as a component of the EIS commits to the final land use for these areas becoming 'environmental protection works' which is consistent with the surrounding land use.

Additionally, the final land use aligns with the current Lithgow Local Environmental Plan and the Lithgow Draft Land Use Strategy 2010–2030 (Lithgow City Council, 2010). However it is noted that land zoning under the Lithgow Local Environmental Plan is anticipated to change in the near future to C1 – National Parks and Nature Reserves to align with the Gardens of Stone State Conservation Area.

The Gardens of Stone State Conservation Area was formally proclaimed on 6 May 2022. The State Conservation Area encompasses the Newnes Plateau (as Newnes State Forest), Ben Bullen State Forest, Wolgan State Forest as well as other crown lands. Centennial is committed to work collaboratively with NPWS to achieve the objectives for the State Conservation Area.

The water management structures at the Springvale pit top will be retained in the post-mining landform for use as stock water supply.

2.3 Natural Features and Topography

Springvale's topography can be split into Newnes Plateau and areas of lower elevation around the pit top. Most land within Springvale colliery holding falls within the Newnes Plateau at elevations from 900 m to greater than 1,175 m AHD. Topography within the Newnes Plateau encompasses narrow gorges with high undulating ridgelines and steep sided slopes of sandstone cliffs, which range between 10 m and 40 m in height.

The Wolgan River, Coxs River and Colo River are the main catchments in the region. The surface water catchments within Springvale consist of the Coxs River in the west, Marrangaroo Creek in the centre, Wolgan River East and West in the northeast, Nine Mile and Bungleboori to the east and a small part of Farmers Creek catchment to the southeast.

2.4 Existing Vegetation

Existing vegetation of Springvale consist of bushland comprising of various woodland and forest types, non-native vegetation (e.g. exotic pasture), pine plantation interspersed with swamps and watercourses. These swamps comprise of both shrub swamps that occur in valley floors and hanging swamps that occur on hillsides.

Vegetation communities mapped within the Springvale area are presented in **Figure 2.3**.

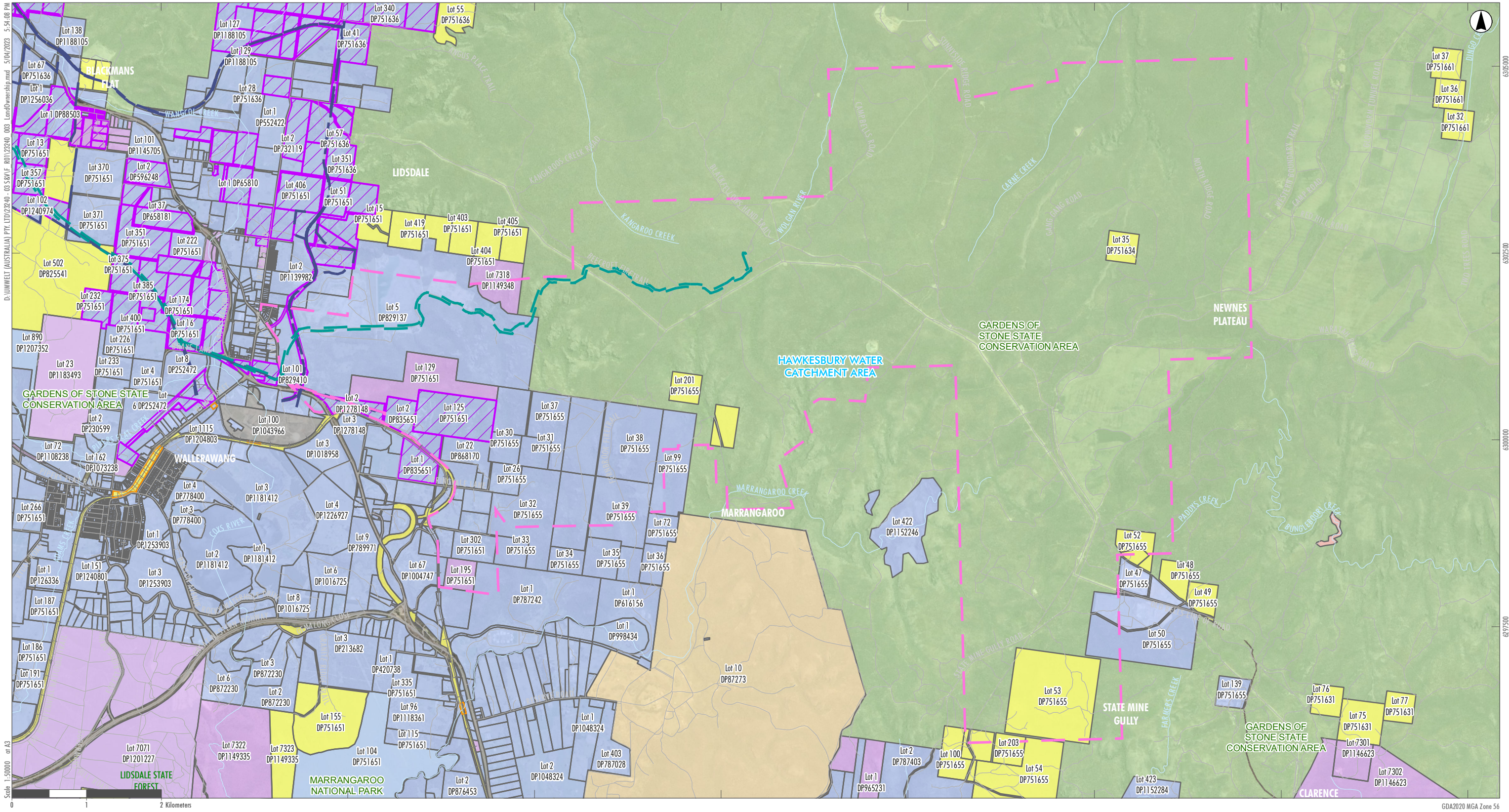


FIGURE 2.1

Land Ownership

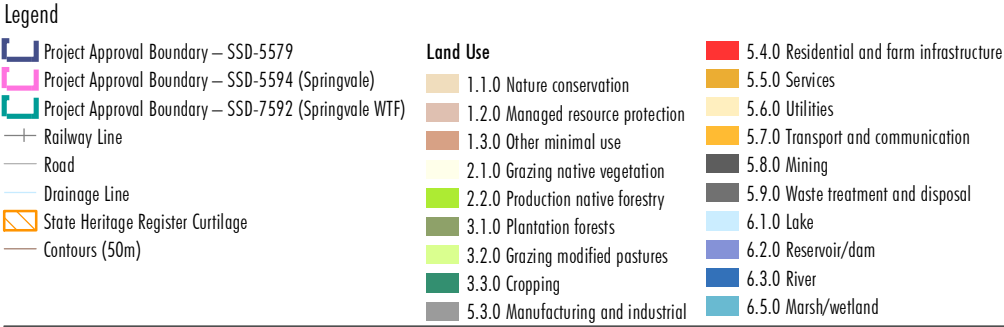
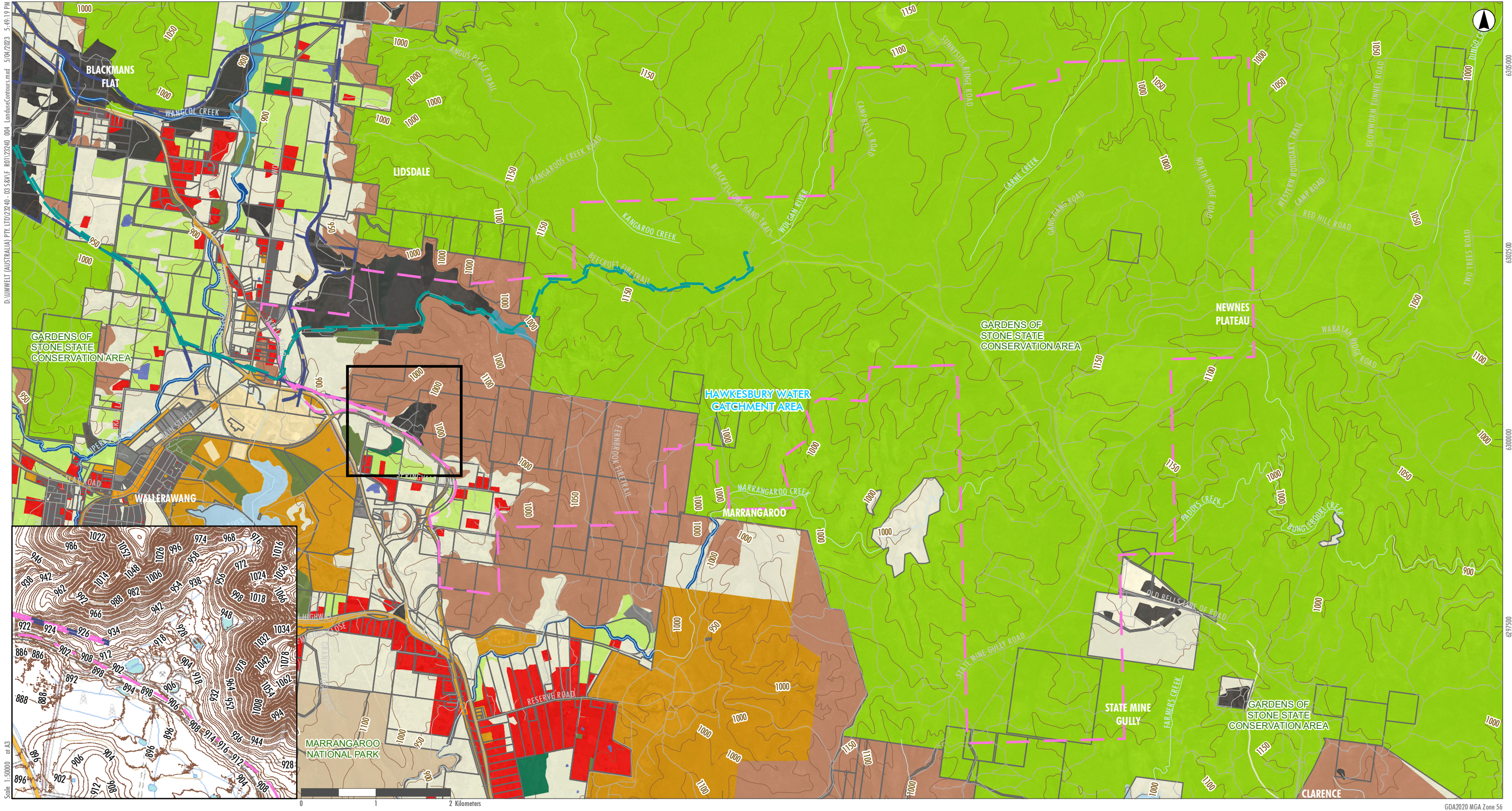


FIGURE 2.2
Land Use



-  Project Approval Boundary – SSD-5579
 Project Approval Boundary – SSD-5594 (Springvale)
 Project Approval Boundary – SSD-7592 (Springvale WTF)
 Railway Line
 Road
 Drainage Line

Vegetation Mapping

- | | |
|-----|---|
| 11 | Tableland Gully Snow Gum - Ribbon Gum Montane Grassy Forest |
| 14 | Tableland Mountain Gum - Snow Gum - Daviesia Montane Open Forest |
| 15 | Tableland Hollows Black Gum - Black Sally Open Forest |
| 26 | Newnes Plateau Narrow-leaved Peppermint - Silver-top Ash Layered Open Forest |
| 26a | Newnes Plateau Gum Hollows variant: Brittle Gum - Mountain Gum, Scribbly Gum - Snow Gum S |
| 28 | Sandstone Plateau and Ridge Scribbly Gum - Silvertop Ash Shrubby Woodland |
| 29 | Sandstone Slopes Sydney Peppermint Shrubby Forest |
| 3 | Hillslope Talus Mountain Gum - Brown Stringybark - Grey Gum - Brood-leaved Hickory Moist Forest |

- 30 Exposed Blue Mountains Sydney Peppermint - Silvertop Ash Shrubby Woodland
- 35 Tableland Gully Mountain Gum - Broad-leaved Peppermint Grassy Forest
- 36 Tableland Apple Box - Bursaria Grassy Open Forest
- 37 Cox's Permian Red Stringybark - Brittle Gum Woodland
- 43 Pagoda Rock Sparse Shrubland
- 44 Sandstone Plateaux Tea Tree - Dwarf Sheoak - Banksia Rocky Heath
- 45 Newnes Plateau Tea Tree - Banksia - Mallee Heath
- 46 Newnes Plateau Dwarf Sheoak - Banksia Heath
- 50 Newnes Plateau Shrub Swamp

- | | |
|----|---|
| 51 | Newnes Plateau Hanging Swamp |
| 52 | Newnes Plateau Rush - Sedge - Snow Gum Hollow Wooded Heath |
| 58 | Acacia Thickets |
| 59 | Non-native Vegetation - Pine plantation / woodlot / shelter |
| 60 | Non-native Vegetation - Other exotics (willow etc) |
| 61 | Unclassified (<1ha patch of remnant vegetation adjacent / within cleared lands) |
| 62 | Cleared and Severely Disturbed Lands |
| 7 | Newnes Plateau Narrow-leaved Peppermint - Mountain Gum - Brown Stringybark Layered Forest |
| 8 | Newnes Sheltered Peppermint - Brown Barrel Shrubby Forest |

FIGURE 2.3

Vegetation Communities and Hydrology

2.5 Regulatory Context

The regulatory requirements specific to post-mining land use and rehabilitation outcomes at Springvale are summarised in **Table 2.1**.

Table 2.1 Regulatory Requirements

Condition	Requirement	Applicable Areas	Section Addressed
SSD-5594 Schedule 4, Condition 31	Progressive Rehabilitation The Applicant must rehabilitate the site progressively, that is, as soon as reasonably practicable following disturbance. All reasonable and feasible measures must be taken to minimise the total generation at any time.	SSD-5594 Project Application Area	Section 7.1
SSD-5594 Schedule 4, Condition 32	Rehabilitation Management Plan The Applicant must prepare a Rehabilitation Management Plan for the development, in accordance with the conditions imposed on the mining lease(s) associated with the development under the Mining Act 1992 NSW Government and Environment.	SSD-5594 Project Application Area	Springvale Mine RMP
Springvale Coal Mine Extension Project EIS Statement of Commitments (SSD-5594 Appendix 3)	Progressive rehabilitation will be undertaken in accordance with the Rehabilitation Strategy appended to this EIS. Within 6 months of approval, the Mining Operations Plan will be updated to include the rehabilitation requirements outlined in the Rehabilitation Strategy of this EIS.	SSD-5594 Project Application Area	Springvale Mine RMP Former Springvale Mining Operations Plan (MOP)
Springvale Mine Extension Project Decommissioning and Rehabilitation Strategy (Page – 35)	<i>Domain 1 – Infrastructure Area</i> The primary objective of landform establishment within infrastructure areas will be the stabilisation of batters, road verges, drains, banks, and cleared areas. Disturbed areas within this domain will be reprofiled to establish geotechnically stable and self-draining areas. In the case of disturbance areas associated with infrastructure sites on Newnes Plateau full rehabilitation will be undertaken in accordance with the Occupation Permit, and to FCNSW's standard and satisfaction.	SSD-5594 Project Application Area	Section 3 and Section 6
Springvale Mine Extension Project Decommissioning and Rehabilitation Strategy (Page – 32)	<i>Domain 1 – Infrastructure Area (Site Services)</i> <i>All services, including power, water, data and telephone, that are not required for demolition activities will be safely isolated, disconnected and terminated. Generally, all underground services will be made safe and left buried in-situ. Overhead powerline connections to the infrastructure sites will be isolated and removed, and the materials, including poles and wire, recovered for potential re-sale or recycling where practicable. The overhead 66 kV and 11 kV powerlines on Newnes Plateau will not be removed but will be made safe and left for future use by FCNSW and any other potential users on Newnes Plateau.</i> <i>Where also practicable, pipelines and cables, including those associated with the Springvale Delta Water Transfer Scheme, will be capped and will remain in-situ. The location of pipelines that are to remain in-situ will be recorded in an abandoned services register and signs will be erected where appropriate.</i>	SSD-5594 Project Application Area	Section 3 and Section 6

Condition	Requirement	Applicable Areas	Section Addressed
	<i>Pipelines located in critical locations, for example infrastructure crossings of environmentally sensitive areas and/or riparian zones, will be filled with inert material (such as concrete) to avoid additional disturbance of the environment.</i>		
Springvale Mine Extension Project Decommissioning and Rehabilitation Strategy (Page – 32)	Domain 1 – Infrastructure Area (Equipment and Buildings) <i>All demountable/transportable buildings will be removed from the surface facility sites, including the pit top. All remaining permanent buildings, including the administration buildings and workshops will then be demolished, with the component materials being recycled or re-sold.</i> <i>All sumps will be de-watered and de-silted prior to the commencement of demolition. In addition, all items of equipment will be de-oiled, degassed, depressurised and isolated, and all hazardous materials associated with the Springvale operations will be removed from the Project Application Area. Prior to disposal, all wastes will be assessed and classified in accordance with the relevant regulatory requirements.</i>	SSD-5594 Project Application Area	Section 3 and Section 6
Springvale Mine Extension Project Decommissioning and Rehabilitation Strategy (Page – 34)	Domain 1 – Infrastructure Area (Trenched Pipelines and Power Cables) <i>The trenched pipelines (Springvale Delta Water Transfer Scheme) and power cables supplying power to the dewatering bores will not be removed but will be isolated and made safe in accordance with the relevant guidelines.</i>	SSD-5594 Project Application Area	Section 3 and Section 6
Springvale Mine Extension Project Decommissioning and Rehabilitation Strategy (Page – 34)	Domain 1 – Infrastructure Area (Mine Access Portals and Coal Delivery Systems) <i>All services associated with the mine access portals and coal delivery systems will be disconnected and made safe. The conveyor and services from underground to the surface will be dismantled, removed from site and recycled at an appropriate facility. The decommissioning and demolition of the overland conveyor system used for the transfer of ROM coal to the Springvale Coal Services site will be undertaken as part of the proposed Centennial Western Coal Services Project and will also include the rehabilitation of the associated disturbed areas.</i>	SSD-5594 Project Application Area	Section 3 and Section 6
Springvale Mine Extension Project Decommissioning and Rehabilitation Strategy (Page – 33)	Domain 1 – Infrastructure Area <i>Springvale Coal will remediate (to the satisfaction of FCNSW) any damage caused to the part of the Project Application Area that lies within the Newnes State Forest including by the spillage of petroleum products or other pollutants within the area.</i>	SSD-5594 Project Application Area	Section 3 and Section 6
Springvale Mine Extension Project Decommissioning and Rehabilitation Strategy (Page – 35)	Domain 2 – Other lands <i>Should subsidence impacts occur to surface features, remediation and rehabilitation will be undertaken in accordance with the Trigger Action Response Plans, the existing Subsidence Management Plan, and future approved Extraction Plans that will be developed for the Project. Subsidence remediation and rehabilitation will be on-going throughout the life of the mine.</i>	SSD-5594 Project Application Area	Section 3.3

Condition	Requirement	Applicable Areas	Section Addressed
Springvale Mine Extension Project Decommissioning and Rehabilitation Strategy (Page – 35)	<i>Domain 3 – Water Management Area</i> The network of dams and associated water management infrastructure at Springvale pit top will not be decommissioned at the end of mine life but will be maintained for future use. Generally, all underground water management infrastructure will be made safe and left buried in-situ. The location of water management infrastructure that is to remain in-situ will be recorded in an abandoned services register and signs will be erected where appropriate.	SSD-5594 Project Application Area	Section 3 and Section 6
SWTP EIS (2016) Section 5.6 Rehabilitation	<i>The key rehabilitation objectives for the Project are:</i> - <i>To rehabilitate disturbed areas to be consistent with the land uses in the Lithgow LEP.</i>	SSD-7592 Project Application Area	Section 3 and Section 6
SWTP EIS (2016) Section 5.6 Rehabilitation	<i>At the water treatment plant buildings, fixed plant, fences, pipelines, roadways and water control systems would be demolished.</i>	SSD-7592 Project Application Area	Section 3 and Section 6
SWTP EIS (2016) Section 5.6 Rehabilitation	<i>The new LDP discharge weir is located within an area of the Springvale Coal Services site currently proposed to be rehabilitated as part of the western services coal project. The area impacts by the new weir will form part of the rehabilitation commitments of the project.</i>	SSD-7592 Project Application Area	Springvale Coal Services RMP
SWTP EIS (2016) Section 5.6 Rehabilitation	<i>All Newnes State Forest infrastructure including the gravity tank compound would be demolished, although to reduce additional disturbance underground pipelines and power lines would be capped and made safe but retained in ground.</i>	SSD-7592 Project Application Area	Section 3 and Section 6
SWTP EIS (2016) Section 5.6 Rehabilitation	<i>Following demolition of infrastructure, where appropriate, disturbed areas would be re-profiled to fit in with adjacent areas and to be geotechnically stable, self-draining and able to be topsoiled and revegetated. Temporary soil erosion and sediment control measures would be implemented as required.</i>	SSD-7592 Project Application Area	Section 3 and Section 6
SSD-7592 Schedule 3, Condition 25	<i>Rehabilitate all areas of the site not proposed for future disturbance (including pipeline routes) progressively, that is, as soon as reasonably practicable following construction or decommissioning;</i>	SSD-7592 Project Application Area	Springvale RMP, Springvale Coal Services RMP
SSD-7592 Schedule 3, Condition 25	<i>Minimise the total area exposed at any time; and</i>	SSD-7592 Project Application Area	Springvale RMP, Springvale Coal Services RMP
SSD-7592 Schedule 3, Condition 25	<i>Employ interim rehabilitation strategies to minimise dust generation, soil erosion and weed incursion on parts of the site that cannot yet be permanently rehabilitated.</i>	SSD-7592 Project Application Area	Springvale RMP, Springvale Coal Services RMP

3 LAND MANAGEMENT AND REHABILITATION

As an underground coal mine, infrastructure at Springvale is required life of mine. Subsequently, land associated with key surface infrastructure will generally not become available for rehabilitation until the cessation of mining operations. **Section 3.1** to **Section 3.4** provide details regarding key relevant activities at Springvale.

3.1 Water Management Areas

Final landform drainage will integrate with surrounding catchments and will achieve long term geomorphic stability and minimise erosion. Water management structures will be constructed in accordance with *Managing Urban Stormwater: Soils and construction (the Blue Book) Volume 1* (Landcom, 2004).

In accordance with SSD-5594, the network of dams and associated water management infrastructure at Springvale pit top will not be decommissioned at the end of mine life but will be maintained for future use. The water storages will provide a valuable water resource to surrounding fauna and an asset to the final land use. For more detailed water management focused rehabilitation outcomes, refer to the Springvale RMP.

3.2 Exploration

Springvale will continue to undertake exploration activities for the duration of the life of mine (LOM). The exploration will be used to obtain specific geological information in terms of geotechnical conditions, coal seam quality and thickness, through core sampling. Information obtained is used for the ongoing refinement of the site's existing geological model which then allows detailed mine planning. The exploration programme also allows the installation of piezometers in the aquifers of interest for ongoing groundwater monitoring.

In accordance with the requirements of Schedule 4, Condition 28 of SSD-5594 Springvale has prepared an Exploration Activities and Minor Surface Infrastructure Management Plan (EAMSIMP) to outline measures that will be implemented to mitigate potential environmental impacts during the construction and operation of surface infrastructure (refer **Section 3.4**) and approved exploration and/or groundwater monitoring activities. All exploration activities within the Project Application Area will be undertaken in accordance with the EAMSIMP.

Following the completion of drilling and associated activities, all exploration drill holes will be sealed in accordance with relevant RR guidelines at the time. Completed and proposed exploration and/or groundwater monitoring activities will be reported in the Annual Review / Annual Rehabilitation Report.

Following the completion of rehabilitation and prior to lease relinquishment, Springvale will submit a Rehabilitation Completion form to RR. This report will include details to demonstrate that rehabilitation has been completed and complies with mining tenement requirements.

3.3 Subsidence Management

Centennial Springvale undertakes management and monitoring of subsidence resulting from secondary extraction in accordance with approved Extraction Plans. Subsidence management at Springvale Mine follows the risk hierarchy approach of risk elimination (impact avoidance), substitution and mitigation, engineering controls, management and monitoring.

Should subsidence impacts occur to surface features, remediation and rehabilitation will be undertaken in accordance with the approved Extraction Plan(s). Subsidence remediation and rehabilitation will be on-going throughout the life of mine, as required.

3.4 Infrastructure

Infrastructure includes existing and proposed infrastructure and facilities at the Pit Top on Newnes Plateau. Infrastructure includes workshops, administration buildings, pipelines (trenched), substations, car parks, access roads, hardstand/laydown areas, underground infrastructure including mine access, ventilation shafts and dewatering bore facilities and associated water management structures. All sealing of mine openings (e.g. shafts, drifts) will be sealed in accordance with relevant RR guidelines.

Springvale also undertake activities in accordance with the EAMSIMP. The EAMSIMP a has been prepared to outline measures that will be implemented by Springvale to mitigate potential environmental impacts during the construction and operation of surface infrastructure (including the Bore 9 and Bore 10 Dewatering Facilities, Mine Services Borehole Compound, booster pump stations and associated infrastructure corridors), the operation of existing surface infrastructure, and approved exploration and/or groundwater monitoring activities.

A list of infrastructure which will be decommissioned and the associated activities prior to rehabilitation can be found in **Table 3.1**.

Table 3.1 Infrastructure to be Decommissioned

Major Assets	Demolition / Rehabilitation Activities
Pit Top Infrastructure	
Administration buildings, bathhouse and portable offices	Disconnect services; demolish and remove infrastructure; and remove concrete pads.
Sewage treatment and irrigation facilities	Disconnect services; demolish and remove water treatment plant; remove concrete pads; remove potentially contaminated material.
Coal crushing and screening plant	Disconnect and terminate all services; demolish and remove buildings; demolish and remove coal crushing and screening plant; remove carbonaceous material. -
Coal stockpile	Remove carbonaceous material.
Workshops, service buildings and material storage sheds	Disconnect services; demolish and remove small buildings; remove concrete pads; remove potentially contaminated material; on site remediation of contaminated soil.
Hardstand/Laydown Areas	Remove plant and material; and remove concrete pads.
Access Road	Remove roadside markers/signs; and remove bitumen.
Visitor and employee parking areas	Remove concrete pads, footings and bitumen.
Personnel and materials drift	The drift will be filled with non-contaminated materials.
Coal conveyor drift and coal conveyor drive	Demolish and remove conveyors and gantries.
Electrical distribution network comprising Substation 0 (located at Lidsdale) and Substations 1 – 3	Remove substation transformers and/or switchyards. Concrete pads belonging to substations/switchyards would also be removed.
LDP006 (previously LDP001)	Drain dam; demolish and remove concrete; remove material; fill dam void.
Sewage Treatment Ponds (LDP002)	Drain and remove sediments from the floor of the dams to be decommissioned and dispose of material appropriately; fill dam voids.
Pit Top Collection System	Remove pipes and pumping system.
Tanks	Tanks would be demolished and any concrete pads or other footings that support these tanks would be removed.
Newnes Plateau Infrastructure	
Ventilation Shaft 1 and 2 Facilities	Remove ventilation fans and equipment; backfill and seal shafts; construct engineered plug; disconnect services; demolish and remove infrastructure; and remove concrete pads.
Dewatering Bore 6 and 8 Facilities	Remove dewatering bore and compounds and grout with concrete, cap and seal.
Ventilation Shaft 3 Facility	Remove ventilation fans and equipment; backfill and seal shafts; construct engineered plug; disconnect services; demolish and remove infrastructure; and remove concrete pads.

Major Assets	Demolition / Rehabilitation Activities
Substations 4 and 5	Remove substation transformers and/or switchyards. Concrete pads belonging to substations/switchyards would also be removed.
Service borehole (at the Ventilation Shaft 3 Facility)	Seal with an appropriately designed and engineered plug reinforcement that complies with relevant construction standards and RR guidelines.
Monitoring infrastructure (piezometers, weirs and transducers, seismometers, survey markers)	Piezometers will be decommissioned in accordance with relevant RR requirements; surface water monitoring devices (e.g. transducers) will be decommissioned and removed; subsidence survey markers will be decommissioned and removed; boreholes will be sealed in accordance with RR requirements.
Springvale Delta Water Transfer Scheme	Trenched pipelines and power cables will be isolated and made safe in accordance with the relevant guidelines. Trenched powerlines and water pipelines will be left in-situ in accordance with the EIS.
Booster Pump Station 1 and 2	Disconnect services; demolish and remove infrastructure; and remove concrete pads.
Dams at Ventilation Shaft 3 Facility (excluding the Emergency Holding Pond)	Drain and remove sediments from the floor of the dams to be decommissioned and dispose of material appropriately; fill dam voids.
Dams including the Fire Dam, Primary (or Stockpile) Pond, Secondary Pond, Duck Pond and Emergency Holding Pond	Where required by sampling, drain and remove contaminated sediments from the floor of the dam to enable it to be converted into a clean water structure.
Tanks	Tanks would be demolished and removed. Concrete pads or other footings that support these tanks would also be removed.
Trenched power cables	Trenched power cables will be isolated, left in-situ and made safe in accordance with the EIS.
Trenched water pipelines	Trenched pipelines will be isolated, left in-situ and made safe in accordance with the EIS.

As required by relevant development consent conditions for the Springvale Mine, all demolition work on site is carried out in accordance with *Australian Standard AS 2601-2001: The Demolition of Structures*, or its latest version.

In addition, the rehabilitation works would be completed in consultation with NPWS (or the prevailing landowner at the time of rehabilitation) to ensure landowner sign-off can be achieved.

4 MINE CLOSURE PLANNING

4.1 Strategic Framework for Mine Closure

The strategic rehabilitation and mine closure objectives are discussed in **Section 1.4**, **Section 6** and **Section 7**. The Rehabilitation Strategy also addresses the six key objectives of the Strategic Framework for Mine Closure (Strategic Framework) (ANZMEC and MCA, 2000). The objectives of the Strategic Framework are described in **Table 4.1**, with a description of how each is addressed within this Rehabilitation Strategy.

Centennial will develop an internal Mine Closure Standard. The internal Mine Closure Plan will be prepared in accordance with the Mine Closure Standard. The RMP and this Rehabilitation Strategy will be reviewed and updated as required by the NSW Rehabilitation Reforms and by SSD-5594.

Table 4.1 Strategic Framework for Mine Closure Objectives

Strategic Framework Objective	Strategic Framework Principle	Relevance for Springvale
1. Stakeholder Involvement: to enable all stakeholders to have their interests considered during the mine closure process.	1.1 Stakeholder Identification	Relevant stakeholders are outlined in Sections 5.3 and 5.4 . These include statutory authorities, community groups and staff. Company management, including shareholders will also be consulted with regards to closure. Stakeholders will continue to be reviewed throughout operations at Springvale.
	1.2 Effective Consultation	Formal community consultation occurs via the Community Consultative Committee (CCC) (refer Section 5.2), activities as outlined in the Springvale Stakeholder Engagement Plan (SEP)/project specific SEPs, collaborative development of management plans with statutory authorities and the Centennial website. A targeted mine closure SEP will be prepared within five years of the planned cessation of mining, as outlined in Section 5.1.2 .
	1.3 Targeted Communication Strategy	Established consultation frameworks are tailored to suit the target audience, whether it be staff, statutory authorities or community groups. Within five years of the anticipated cessation of operations, a project specific mine closure SEP will be developed as outlined in Section 5.1.2 . The mine closure SEP will include but not be limited to the specific engagement approach, timing, resources and key responsibilities.
	1.4 Adequate Resources	Adequate resources are provided to facilitate effective consultation, which falls under the responsibility of the Environment and Community Manager and is approved by the Mine Manager.
	1.5 Working with Communities	Recent community engagement has been focused on discussions regarding post mining land use, and potential for future employment and economic benefit. Additional detail is provided in Section 5.0 .
2. Planning: to ensure the process of closure occurs in an orderly, cost-effective and timely manner.	2.1 Integration	Life of mine (LOM) planning is a critical component of business planning. During the operational phases, this is used to effectively plan for mining activities. When the LOM enters five years prior to the cessation of planned operations, the focus of the planning will shift to consider mine closure planning. Centennial consider mine closure throughout all stages of operations, to set realistic expectations, avoid unforeseen costs and capitalise on available strategies. The progressive revisions to the RMP and rehabilitation risk assessment, as required under the NSW Rehabilitation Reforms, ensure the continual improvement of knowledge prior to the cessation of operations.
	2.2 Risk-based Approach	The RMP includes a comprehensive risk assessment to reduce uncertainty for closure and rehabilitation, which will be reviewed in accordance with NSW Rehabilitation Reform requirements, including to reflect changes to operations over time (e.g. closure and rehabilitation). RMP revisions and risk assessment reviews will promote additional investigations where required to mitigate identified risks.

Strategic Framework Objective	Strategic Framework Principle	Relevance for Springvale
	2.3 Closure Plans	Based on the current development consent mining operations will cease in 2028, however Centennial are actively investigating opportunities to extend the mine life, along with a modification to extend the consent duration to allow approved extraction (refer Section 4.2). The RMP and this Rehabilitation Strategy will be reviewed and updated as required by the NSW Rehabilitation Reforms and by SSD-5594, throughout the life of operations at Springvale. Within five years prior to the planned cessation of operations, Centennial will develop an internal Mine Closure Plan for Springvale. This will be used to inform closure activities at the site. Following completion of the Mine Closure Plan and supporting specialist assessments, a Closure RMP will be developed and this Rehabilitation Strategy will be revised.
	2.4 Closure Feasibility	The RMP describes the technical feasibility of mine closure. The Rehabilitation Cost Estimate (RCE) is updated regularly in accordance with the NSW Rehabilitation Reforms to reflect the current status of rehabilitation and disturbance (refer Section 4.3), resulting in a suitable rehabilitation bond being in place for unexpected closure. Prior to the anticipated cessation of operations, a Social Impact Assessment will be developed in accordance with the <i>Social Impact Assessment Guideline</i> (DPHI, 2023).
	2.5 Regular and Critical Review	As required, relevant documents will be reviewed and if necessary, revised as described in Section 9 . The RMP and rehabilitation risk assessment will continue to be reviewed in accordance with the NSW Rehabilitation Reforms.
3. Financial Provision: to ensure the cost of closure is adequately represented in company accounts and that the community is not left with a liability.	3.1 Cost Estimate	As described in Section 4.3 , a RCE is prepared using the tool provided by RR. This includes provision for progressive rehabilitation, final closure activities, environmental monitoring and maintenance activities.
	3.2 Regular Review	The RCE is regularly updated as required by the RR, to accurately reflect the extents of disturbance and rehabilitation, knowledge obtained by detailed design/specialist assessments and the approved Final Landform and Rehabilitation Plan (FLRP). The RR RCE Tool is reviewed every 3 years to ensure rates are appropriately benchmarked.
	3.3 Financial Provision	
	3.4 Accepted Accounting Standards	The RCE determines the value of security deposit to be held by the RR, this is in the form of a bank guarantee, cash, bond or another suitable form as deemed appropriate by the Secretary. This process helps to ensure adequate securities are maintained.
	3.5 Adequate Securities	
4. Implementation: to ensure there is clear accountability, and adequate resources, for the implementation of the closure plan.	4.1 Accountability for Closure	Within 5 years of the anticipated cessation of operations, a Mine Closure Plan will be prepared, along with supporting specialist assessments. This document, and the subsequent Closure RMP will include descriptions of roles, responsibilities and key accountabilities for closure implementation.
	4.2 Adequate Resources	As described above, provision of adequate resources is based on a security deposit, which is informed by the RCE. The RCE accuracy will continue to be refined during closure planning.
	4.3 On-going Management	Anticipated post-closure management and monitoring is described in the RMP, and includes rehabilitation maintenance (e.g. weed control), appropriate monitoring and adaptive management until relinquishment. This is also captured within the RCE via contingencies and site-specific costs as required.
	4.4 Closure Business Plan	Life of mine planning is used by Centennial to address planned business costs, revenues, profit/loss and cash flow. Closer to the anticipated cessation of operations, the business plan/life of mine plan will shift focus, and include a schedule of actions, responsibilities, resources and timeframes for closure.

Strategic Framework Objective	Strategic Framework Principle	Relevance for Springvale
	4.5 Closure Implementation	Based on the current development consent mining operations will cease in 2028, however Centennial are actively investigating opportunities to extend the mine life, along with a modification to extend the approved consent duration to allow approved extraction (refer Section 4.2). Mining infrastructure at the site remains in use until the cessation of operations and life of mine planning extends beyond the approved consent (subject to pending modification and future approvals). In the event of temporary or premature mine closure, measures are described in Section 4.3 .
5. Standards: to establish a set of indicators which will demonstrate the successful completion of the closure process.	5.1 Legislation	This Rehabilitation Strategy and the RMP consider relevant legislation and industry standards. The documents will continue to be revised in accordance with NSW Rehabilitation Reforms and SSD-5594 requirements, throughout the life of operations at Springvale.
	5.2 Standards	
	5.3 Completion Criteria	The rehabilitation objectives statement and final landform and rehabilitation plan were approved by the RR on 8 November 2023. The associated rehabilitation completion criteria statement is currently in draft. Approval of rehabilitation completion criteria will be sought in accordance with NSW Rehabilitation Reform requirements (refer Section 5.1.2).
	5.4 Environmental Indicators	Environmental, or performance indicators are incorporated into completion criteria, as described above.
	5.5 Targeted Research	Where there is high uncertainty regarding closure feasibility, targeted research programs may be implemented, and will be described in the RMP, Annual Review, Annual Rehabilitation Report and Forward Program.
6. Relinquishment: to reach a point where the company has met agreed completion criteria to the satisfaction of the Responsible Authority.	6.1 Responsible Authority	The relinquishment process is dependent upon achieving the approved final land use and satisfying approved rehabilitation objectives and rehabilitation completion criteria. Relinquishment of a lease or an identified part of the lease is approved by the RR.
	6.2 Relinquishment	
	6.3 Record Retention	Rehabilitation records will be maintained in accordance with NSW Rehabilitation Reform requirements.

4.2 Integration with Mine Closure Planning Process

In accordance with the *Springvale Mine Extension Project Decommissioning and Rehabilitation Strategy* (SLR 2014) and the *Strategic Framework for Mine Closure* (ANZMEC, 2000), Springvale will commence the detailed mine closure planning process at least five years prior to the anticipated mine closure date (e.g. the planned cessation of mining). Based upon current development consent, mining operations at Springvale will cease in 2028. However, it is noted that Springvale are actively investigating opportunities to extend the mine life, which would provide for ongoing socio-economic benefits. The extraction of Longwalls 501, 502 and 503 will extend beyond 31 December 2028. Accordingly, Centennial will be seeking a modification to extend the consent/mine life. Development of an Extraction Plan for these panels has commenced. As indicated in **Table 4.2**, mine closure planning will include:

- Stakeholder consultation regarding mine closure will commence five years prior to planned closure of the mine to assist in minimising long-term impacts associated with mine closure, including socio-economic impacts;
- An agreed detailed mine closure plan will be developed at least two years prior to the anticipated mine closure date (refer **Table 4.2**);
- An infrastructure demolition plan will be developed within two years prior of mine closure; and

- The Closure RMP will be made available on the Centennial website, and a revised Rehabilitation Strategy will be submitted to the appropriate regulatory agencies for approval within two years prior to cessation of mining.

It is recognised that the dynamic nature of closure planning requires regular and critical review to reflect changing circumstances (ANZMEC and MCA, 2000). Accordingly, this Rehabilitation Strategy will be progressively reviewed along with the Springvale Mine RMP throughout the LOM, particularly as the operation moves to within five years of planned closure, after which a detailed mine closure plan will be prepared for internal closure implementation.

An indicative closure timeline is shown in **Table 4.2**, including the key rehabilitation and closure activities that will be required. The key phases of closure considered in this timeline include:

- Planning;
- Closure execution (the decommissioning and rehabilitation phases);
- Maintenance and monitoring; and
- Relinquishment.

Table 4.2 Indicative Mine Closure Timeline

Years from Closure	Closure Planning					Decommissioning and Rehabilitation				Monitoring and Maintenance				Relinquishment	
	-5	-4	-3	-2	-1	1	2	3	4	5	6	7	8	9	10
Closure Planning															
Stakeholder consultation regarding closure															
Agreed Detailed Mine Closure Plan															
Develop Closure RMP															
Develop an infrastructure demolition plan															
Closure Execution															
Demolition of infrastructure															
Landform establishment															
Growth medium development															
Ecosystem establishment															
Ecosystem development															
Post Closure Activities															
Maintenance of rehabilitated areas															
Monitoring and inspections															
Post Relinquishment Activities															
Management of residual risk															

4.3 Temporary or Premature Mine Closure

The Rehabilitation Cost Estimate (RCE) prepared for Springvale has been calculated to undertake the necessary works to achieve the desired final land use if the operation were to cease (e.g. a close now scenario). In accordance with the *Guideline: Rehabilitation Cost Estimate* (RR 2022), the RCE has been prepared based upon a “snapshot of current disturbance”. The RCE provides for:

- Decommissioning and demolition of all surface infrastructure;
- Rehabilitation of all areas disturbed by mining as depicted, except for areas to be retained for post-mining uses; and
- Mobilisation costs, project management and contingencies.

This mechanism also provides a level of assurance of satisfactory rehabilitation outcomes in the event of temporary or premature closure of the mine. Additionally, as an underground mine the majority of the mine area will not be disturbed and disturbance areas are progressively rehabilitated.

In the event of temporary or premature closure, this Rehabilitation Strategy and the RMP would be revised and implemented.

5 STAKEHOLDER CONSULTATION

Consultation with landowners, residents, non-government organisations and regulatory bodies associated with the site has been consistent and open through personal contact, newspaper publications (Lithgow Mercury, Coal Face etc.) and information days for projects. The community consultation process has been formalised through the Community Consultative Committee (CCC) and other communication tools including the Centennial website. The website provides interested parties with information on site and the environmental performance of the mine. Rehabilitation commitments made to stakeholders are detailed in the Springvale Mine Extension Project Decommissioning and Rehabilitation Strategy and the outcomes of rehabilitation are reported in the Annual Review, which is available on the Centennial website.

5.1 Stakeholder Engagement Plans

All Centennial mines maintain and implement an internal Stakeholder Engagement Plan (SEP) for each site, providing a framework to guide stakeholder engagement, satisfy legislative requirements and meet stakeholder expectations. Certain projects (e.g. consent modifications, new approvals, mine closure) and certain activities (e.g. exploration, Extraction Plan development) will require a separate and more comprehensive SEP.

The project specific SEP will be developed as needed and provides a level of detail about the activity as well as the specific components of engagement, including relevant stakeholders, timing, frequency, resources, engagement activities etc. The structure of the project specific SEP will be developed as required and structured to reflect the scope of the project and reflect the area of social influence.

5.1.1 Springvale Stakeholder Engagement Plan

The current Springvale SEP includes a comprehensive list of stakeholders for the mine (refer **Sections 5.3** and **5.4**). Engagement activities described in the SEP include:

- Continued engagement with the Community Consultative Committee (CCC) (refer **Section 5.2**);
- Contribution to the Western Regional Aboriginal Cultural Heritage Aboriginal Advisory Group twice per year, facilitating the involvement of Registered Aboriginal Parties (RAP's) in post mining surveys and other areas of interest as required or requested;
- Regular review and update where required for all Land Access Agreements, for inclusion in the site spatial database;
- Regular review and update where required for all Negotiated Agreements, for inclusion in the site spatial database; and
- Provision of environmental monitoring outcomes to the adjacent landholders.

Recent community engagement has been focused on discussions regarding post mining land use, and potential for future employment and economic benefit.

5.1.2 Project Specific Stakeholder Engagement Plans

Springvale is developing a project specific SEP to facilitate stakeholder consultation for the operations rehabilitation objectives and completion criteria, in accordance with the requirements of the NSW Rehabilitation Reforms. This document will detail Springvale's relevant stakeholders as outlined in the *Guideline: Rehabilitation Objectives and Rehabilitation Completion Criteria* (RR, 2023), the strategies used to communicate with them and provide the foundation for working with those stakeholders prior to and during the mine closure process. Relevant stakeholders include anyone who may be affected by the mining operations, including rehabilitation, carried out on the lease land such as:

- The relevant development consent authority or local council;
- The relevant landholder;
- CCC;

- Affected landholders;
- Government agencies relevant to the final land use;
- Affected infrastructure authorities (electricity, telecommunications, water, pipeline, road, rail authorities);
- Local Aboriginal communities; and
- Any other person determined by the Minister to be a relevant stakeholder in relation to a mining lease.

In accordance with the NSW Rehabilitation Reforms, the rehabilitation completion criteria statement must be submitted to the RR for approval three years before rehabilitation of the whole (or an identified part) of the mining area is proposed to be completed.

A specific mine closure SEP will be developed within 5 years of the planned cessation of mining. The mine closure SEP will include relevant stakeholders, proposed engagement activities, details of engagement timing and frequency. An overview of the mine closure SEP will be included in future revisions of this Rehabilitation Strategy and incorporated into the Mine Closure Plan. The Springvale SEP and project specific SEPs are regularly revised to reflect operational/project requirements and the outcomes of ongoing engagement.

5.2 Community Consultation Committee

In accordance with the requirements of Schedule 6, Condition 9 of SSD-5594, a regional CCC has been established to provide a forum whereby the community can communicate with Centennial sites including Springvale and be kept up to date with the progress of the mine. For Springvale, this has included consultation with regards to obligations under the NSW Rehabilitation Reforms.

The CCC has representatives from the Lithgow City Council and local community. The CCC is operated in accordance with the *CCC Guidelines for State Significant Projects* (Department of Planning, 2016) with meetings held on a regular basis.

5.3 Statutory Authority Consultation

Centennial has consulted with and will continue to consult with the following regulatory bodies in relation to the Springvale operations and rehabilitation:

- Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW);
- Biodiversity and Conservation Division (BCD);
- Department of Planning, Housing and Infrastructure (DPHI);
- Environment Protection Agency (EPA);
- Resource Regulator (RR);
- Natural Resources Access Regulator (NRAR);
- National Parks and Wildlife Services (NPWS);
- Forestry Corporation of NSW (managed former Newnes State Forest);
- Department of Primary Industries – Agriculture;
- Fisheries NSW;
- Crown Lands;
- Transport for NSW;
- NSW Health;
- Water NSW;
- Hawkesbury-Nepean Catchment Management Authority; and

- Lithgow City Council.

To satisfy the requirements of Schedule 3, Condition 31A of SSD-5594, this Rehabilitation Strategy was submitted for consultation with the RR, BCD, DPHI Water, Water NSW, NPWS, Lithgow City Council and the CCC on 24 May 2023, noting a separate submission would be made once stakeholder feedback has been addressed. Feedback received from stakeholders has been appropriately considered prior to submitting a copy of the final Rehabilitation Strategy to DPHI for approval.

Evidence of stakeholder engagement and feedback regarding this Rehabilitation Strategy has been included as **Appendix B**.

5.4 Other Key Stakeholders

Centennial Springvale has consulted with and will continue to consult with several community groups and landholders in relation to the Springvale operations and rehabilitation, including:

- CCC;
- Aboriginal stakeholder groups;
- Local community and affected landowners;
- Community groups;
- Staff, contractors and unions;
- Non-Government Organisations (NGOs) including the Blue Mountains Conservation Society and the Colong Foundation for Wilderness; and
- Relevant infrastructure owners including Energy Australia.

6 PROPOSED FUTURE USE OF REHABILITATED AREAS

Springvale is required under the Development Consent and mining tenements to return any land disturbed by mining operations to its pre-mining capacity. The proposed post-mining land use at Springvale includes rehabilitating all major infrastructure/disturbance areas with woodland species commensurate with adjacent remnant vegetation. The vegetation communities and species that have been or will be established are described within the RMP and include species that will successfully establish on the available growth medium, bind the soil and result in a variety of structure and food/habitat resources. The woodland seed mix will include a mix of understorey, mid-storey and over-storey species, with an aim to establish vegetation communities that are commensurate with surrounding existing vegetation. Whilst every attempt will be made to use species that existed prior to disturbance, additional species may be required to ensure suitable initial groundcover for site stabilisation and minimal soil erosion.

This may include the use of short-lived annual exotic non-invasive grass species (such as shirohie millet in the Spring and Summer, and oats/barley/wheat in the Autumn and Winter), however the use of these species will be minimised or avoided where possible.

The approved rehabilitation objectives state that for native revegetation:

- Vegetation structure of the rehabilitation is similar to that of native vegetation communities (including Map Unit (MU) 7 / 8 / 11 / 14 / 26 / 26a / 28 / 29 / 30 / 35 / 37 / 43 / 58 / 61 / 62 found in the local area;
- Vegetation composition of the rehabilitation contains species that are commensurate with native vegetation communities (including MU 7 / 8 / 11 / 14 / 26 / 26a / 28 / 29 / 30 / 35 / 37 / 43 / 58 / 61 / 62 found in the local area; and
- Levels of ecosystem function have been established that demonstrate the rehabilitation is self-sustainable.

Vegetation communities relevant to Springvale are illustrated on **Figure 2.3**, descriptions for the MUs are provided in **Table 6.1**. It is noted that MU 61 and MU 62 represent areas of adjacent vegetation that are predominately non-native vegetation communities. Rehabilitation will prioritise other native vegetation communities.

Table 6.1 Vegetation Descriptions for Relevant Map Units

MU Number	Vegetation Description
7	Newnes Plateau Narrow – leaved Peppermint – Mountain Gum – Brown Stringybark Layered Forest
8	Newnes Sheltered Peppermint - Brown Barrel Shrubby Forest
11	Tableland Gully Snow Gum - Ribbon Gum Montane Grassy Forest
14	Tableland Mountain Gum - Snow Gum - Daviesia Montane Open Forest
26	Newnes Plateau Narrow-leaved Peppermint - Silver-top Ash Layered Open Forest
26a	Newnes Plateau Gum Hollows variant: Brittle Gum - Mountain Gum, Scribbly Gum - Snow Gum Shrubby Open Forest
28	Sandstone Plateau and Ridge Scribbly Gum - Silvertop Ash Shrubby Woodland
29	Sandstone Slopes Sydney Peppermint Shrubby Forest
30	Exposed Blue Mountains Sydney Peppermint – Silvertop Ash Shrubby Woodland
35	Tableland Gully Mountain Gum - Broad-leaved Peppermint Grassy Forest

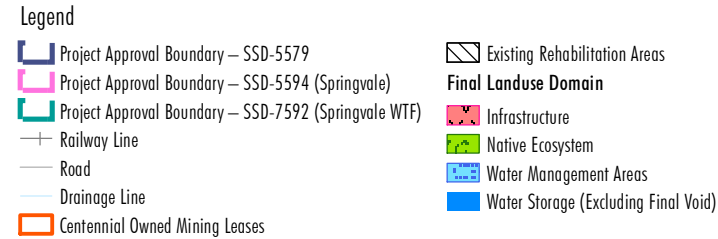
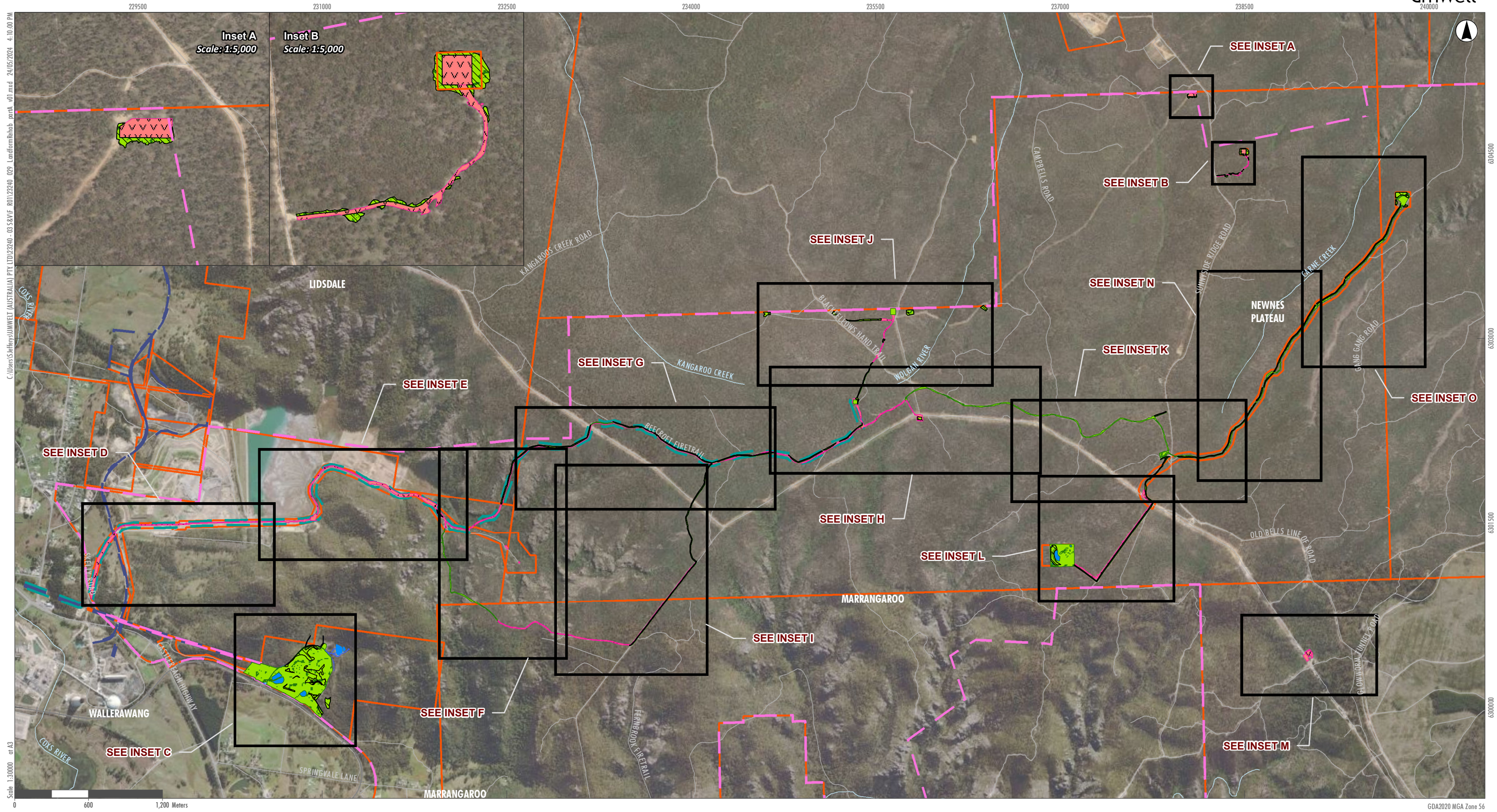
MU Number	Vegetation Description
37	Coxs Permian Red Stringybark - Brittle Gum Woodland
43	Pagoda Rock Sparse Shrubland
58	Acacia Thickets
61	Unclassified (<1 ha patch of remnant vegetation adjacent / within cleared lands)
62	Cleared and Severely Disturbed Lands

Additionally, a network of dams and associated water management structures will be retained in the final landform for future use.

With the different proposed post-mining land uses, the landscape goals differ. Post-mining land use options were assessed during the preparation of the Springvale Mine Extension Project EIS, which was submitted to support an application for Development Consent to the DPHI. Development Consent SSD-5594 was approved on 21 September 2015. The post-mining land uses outlined in this RMP are consistent with the EIS and the Springvale Mine Extension Project Decommissioning and Rehabilitation Strategy (SLR 2014).

In accordance with the Springvale Mine Extension Project Decommissioning and Rehabilitation Strategy and as outlined within this RMP, Centennial Coal propose to retain all tracks to infrastructure facilities on Newnes Plateau in the final landform for use as fire trails or access tracks by recreational users of the Gardens of Stone State Conservation Area. However, unless retention for future use, including management responsibility, has been accepted by NPWS then access roads associated with mine disturbance will be rehabilitated following the cessation of mining activities. The rehabilitation (if required) of the access road will be further discussed and confirmed with the EA during the final rehabilitation stage of the Project.

Construction works associated with the SWTP and within the Springvale colliery holding, were planned to minimise environmental impacts by following the alignment of existing disturbance (e.g. existing water pipelines, access tracks and ash pipelines). In accordance with SSD-7592, where trenching was undertaken adjacent to tracks, the topsoil and seed bank were conserved during works prior to progressive rehabilitation consistent with pre-construction species (e.g. woodland or pasture). Where trenching was undertaken within an existing access road, no revegetation was completed to retain the existing land use. Current and proposed rehabilitation areas, as aligned with final land use domains, are shown on **Figures 6.1A to Figure 6.1E**.



GDA2020 MGA Zone 56

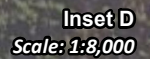
FIGURE 6.1A

Final Landform and Rehabilitation



 Project Approval Boundary – SSD-5579
 Project Approval Boundary – SSD-5594 (Springvale)
 Project Approval Boundary – SSD-7592 (Springvale WTF)
 Railway Line
 Road
 Drainage Line
 Centennial Owned Mining Leases

 Existing Rehabilitation Areas
Final Landuse Domain
 Infrastructure
 Native Ecosystem
 Water Management Areas
 Water Storage (Excluding Final Void)



Final Landform and Rehabilitation

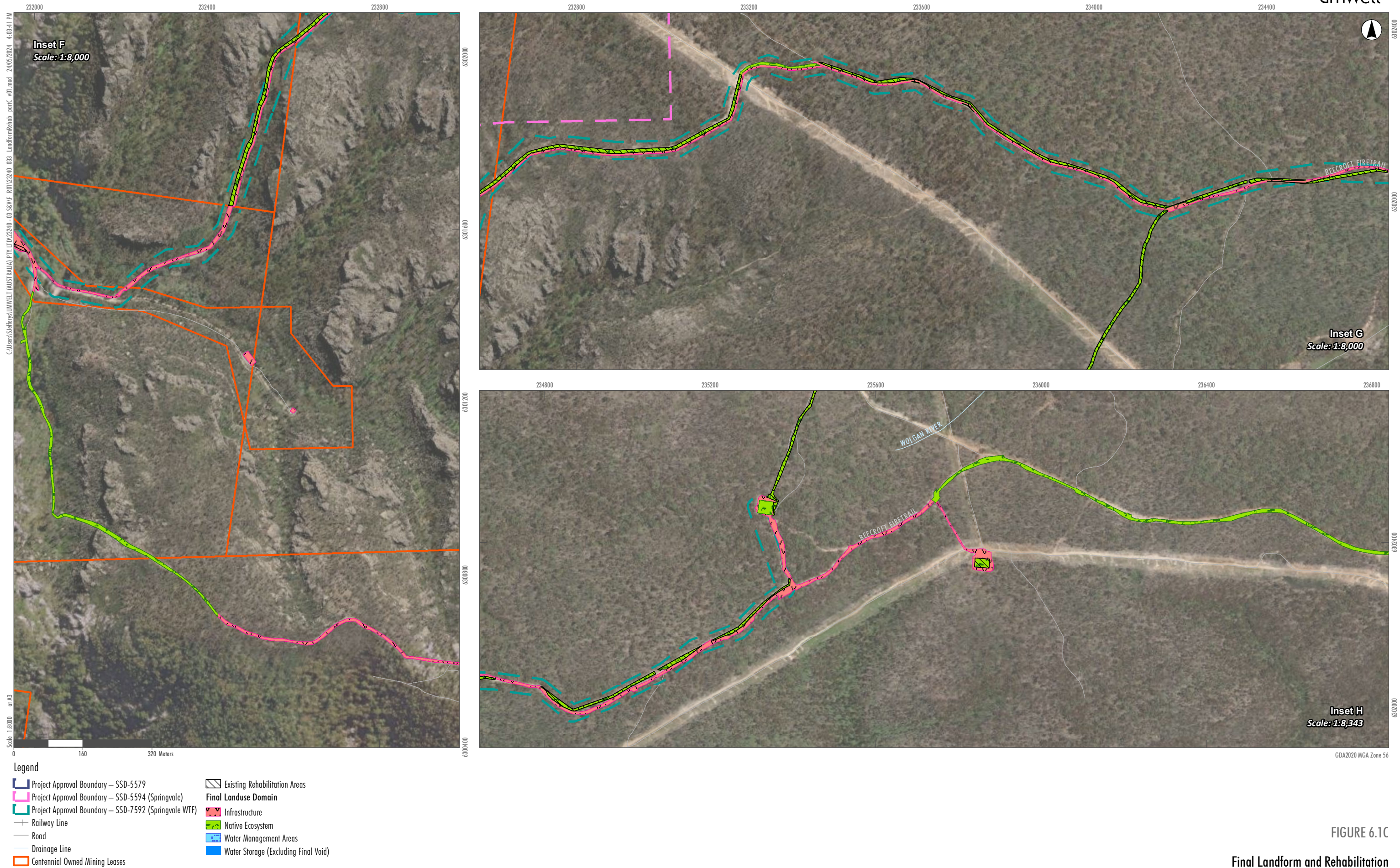
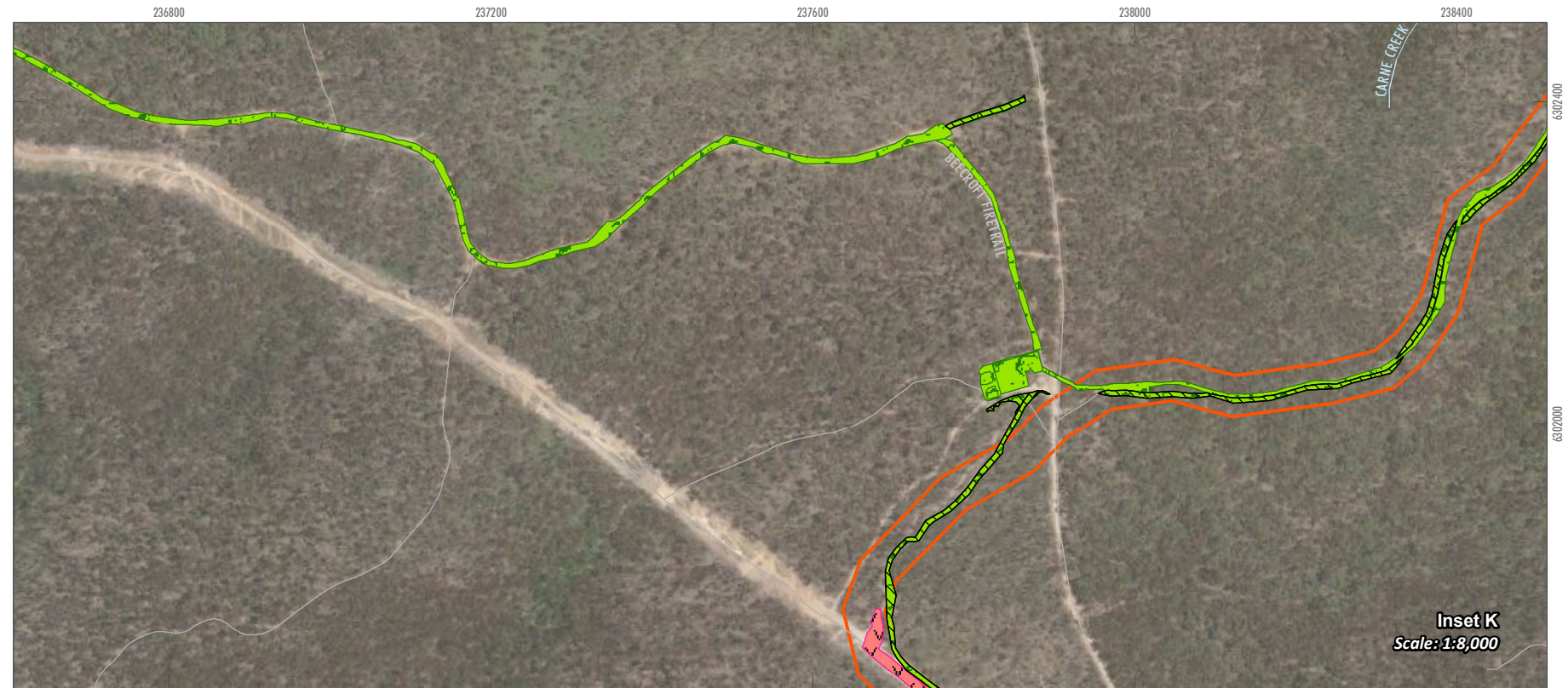
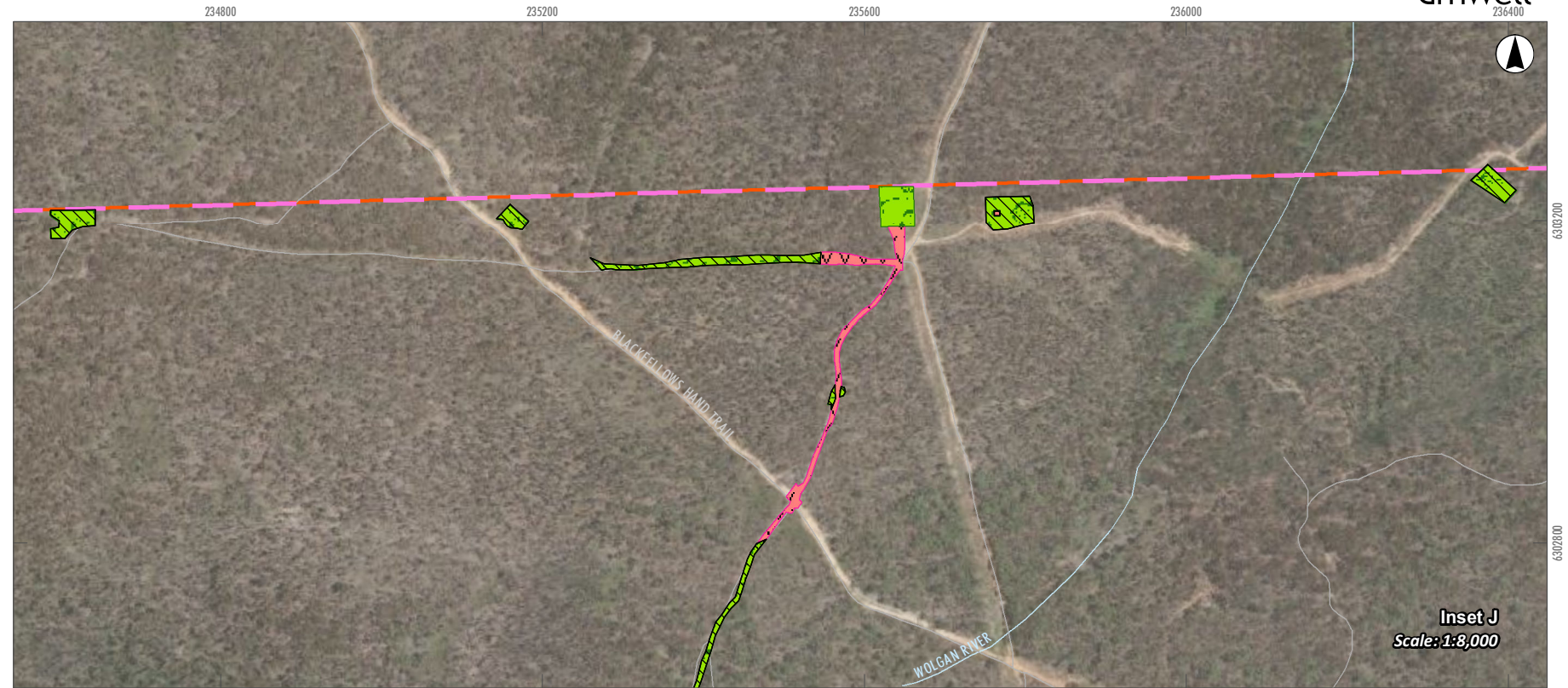


FIGURE 6.1C

Final Landform and Rehabilitation



GDA2020 MGA Zone 56

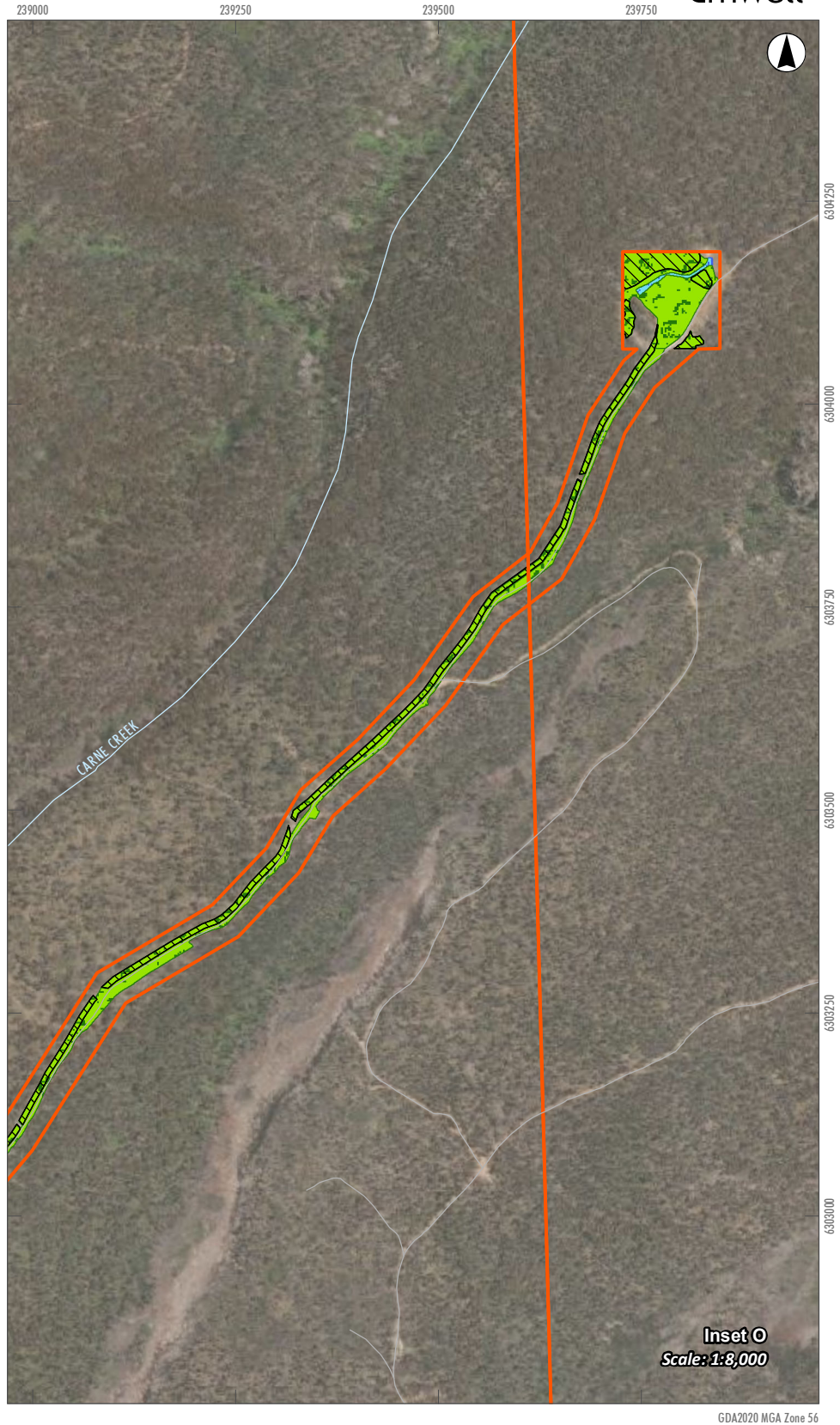
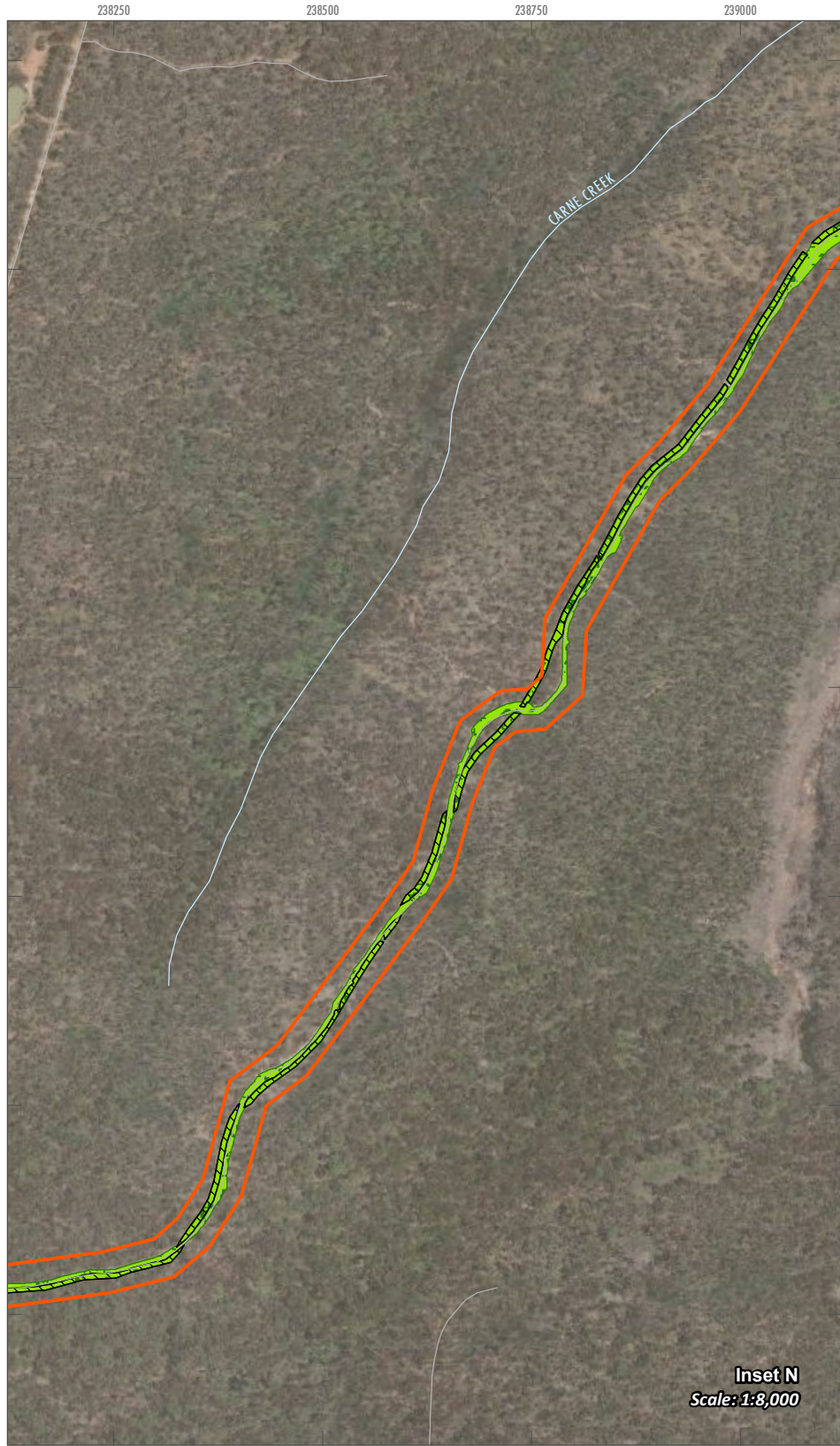
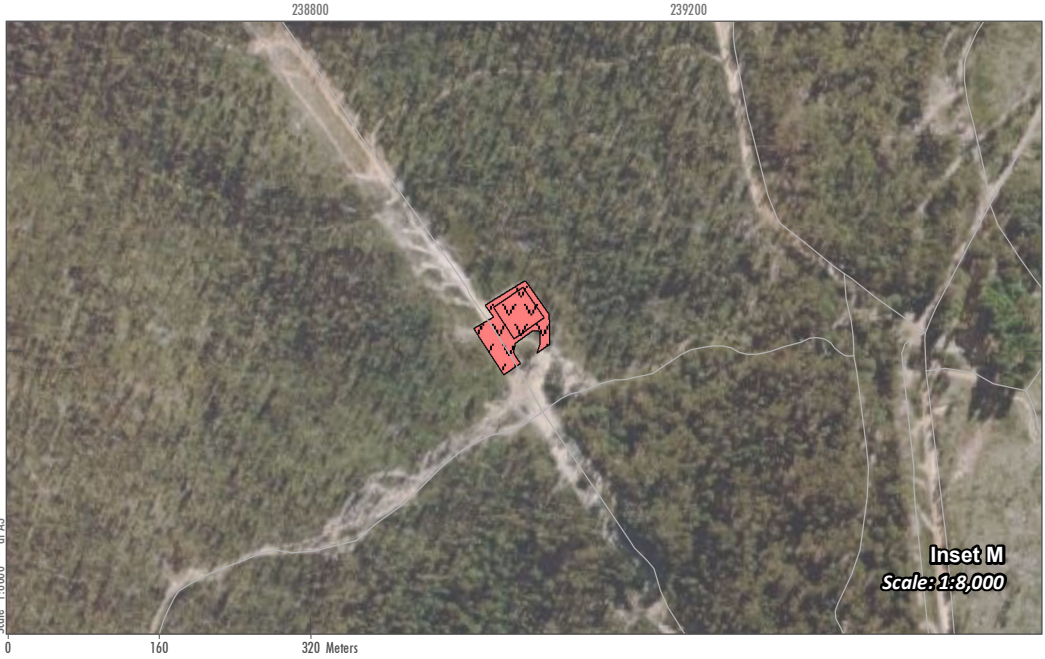
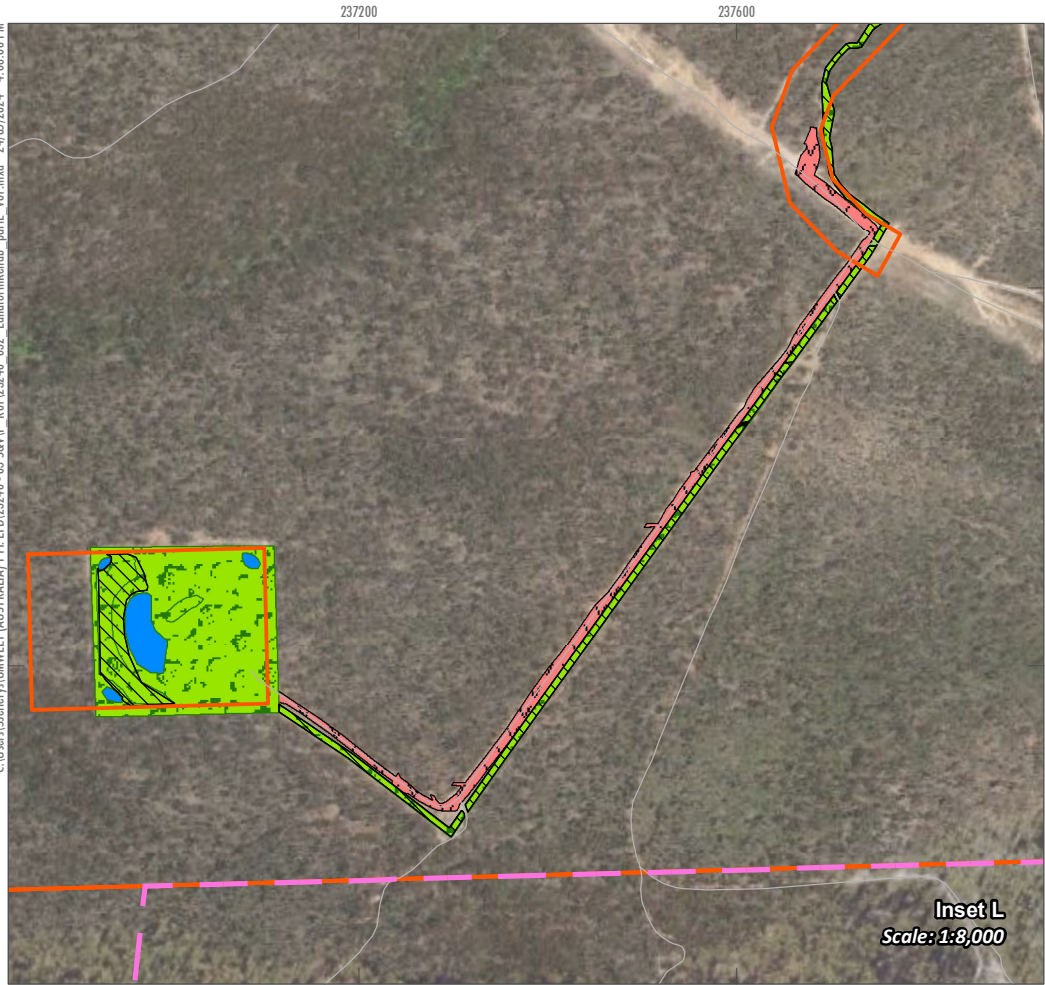
Legend

- Project Approval Boundary – SSD-5579
- Project Approval Boundary – SSD-5594 (Springvale)
- Project Approval Boundary – SSD-7592 (Springvale WTF)
- Railway Line
- Road
- Drainage Line
- Centennial Owned Mining Leases
- Existing Rehabilitation Areas
- Final Landuse Domain**
- Infrastructure
- Native Ecosystem
- Water Management Areas
- Water Storage (Excluding Final Void)

FIGURE 6.1D

Final Landform and Rehabilitation

C:\Users\Steffen\umwelt (AUSTRALIA) PTY LTD\23240 - 03 SSVF\ROI\23240_032 LandformRehab.parE v01.mxd 24/05/2024 4:08:08 PM



- Legend**
- Project Approval Boundary – SSD-5579
 - Project Approval Boundary – SSD-5594 (Springvale)
 - Project Approval Boundary – SSD-7592 (Springvale WTF)
 - Railway Line
 - Road
 - Drainage Line
 - Centennial Owned Mining Leases
 - Existing Rehabilitation Areas
 - Final Landuse Domain**
 - Infrastructure
 - Native Ecosystem
 - Water Management Areas
 - Water Storage (Excluding Final Void)

GDA2020 MGA Zone 56

FIGURE 6.1E

Final Landform and Rehabilitation

7 REHABILITATION

7.1 Rehabilitation Phases

Achievement of the agreed post-mining land use will be reached through a series of rehabilitation phases which are described as:

- **Phase 1: Active Mining** – This phase is associated with active mining operations across the domains.
- **Phase 2: Decommissioning** – This phase of rehabilitation includes activities associated with the removal of mining infrastructure, unless agreed to be retained, and the removal, remediation or management of contaminated and hazardous materials.
- **Phase 3: 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, and prepare a substrate with the desired physical and chemical characteristics (e.g. rock raking or ameliorating sodic materials).

- **Phase 4: 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 approved or, if not yet approved, the proposed:
 - Rehabilitation objectives;
 - Rehabilitation completion criteria; and
 - Final landform and rehabilitation plan.

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.

- **Phase 5: Ecosystem and Land Use Establishment** – This phase of rehabilitation consists of the processes to establish the 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.

- **Phase 6: Ecosystem and Land Use Development** – This phase of rehabilitation consists of the activities to manage maturing rehabilitation areas on a trajectory to achieving the approved or, if not yet approved, the proposed:
 - Rehabilitation objectives;
 - Rehabilitation completion criteria; and
 - Final landform and rehabilitation plan.

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 7: Rehabilitation Completion (sign-off)** – The final phase of rehabilitation when a rehabilitation area has achieved the final land use for the mining area:
 - As stated in the approved rehabilitation objectives and the approved rehabilitation completion criteria; and
 - As spatially depicted in the approved final landform and rehabilitation plan.

Rehabilitation areas may be classified as complete when the RR has determined in writing that rehabilitation has achieved the final land use following submission of the relevant application by the lease holder.

In accordance with SSD-5594 requirements, rehabilitation of disturbed areas is undertaken progressively at Springvale. For more detail on the rehabilitation phases, methodologies, criteria and objectives refer to the Springvale Mine RMP.

7.2 Integration with the Western Region Biodiversity Management Plan

This Springvale Biodiversity Management Plan (BMP) is appended as a sub-plan to the Western Region BMP (v7), which was submitted to DPHI for approval on 18 July 2023. The broad objective of the BMPs are to provide an overview of site specific biodiversity management requirements and standardise the management of biodiversity across Centennial's western operations. These include appropriate monitoring of baseline biodiversity values prior to impacts occurring, operational impacts to receiving environments, and effective implementation of biodiversity management measures. These are used to inform adaptive management practices and to assist in improving biodiversity management activity outcomes on Centennial managed lands as required.

Biodiversity offsets, habitat corridors, rehabilitation of disturbed areas (where not being retained for future use) and maintenance of undisturbed areas are measures in line with the Western Region Biodiversity Management Plan and Springvale RMP that will support achievement of positive biodiversity outcomes for flora and fauna, including threatened species.

Once operational areas are relinquished and no longer required for continuation of the operation, rehabilitation measures can be implemented to achieve and restore the biodiversity outcomes of these disturbed areas as part of achieving final landform and post-mining land uses outlined in Section 6 of the Springvale RMP.

Rehabilitation monitoring will be undertaken in accordance with the Springvale RMP. The monitoring results are used to identify the need for corrective actions for rehabilitation performance. The monitoring program incorporates the most appropriate indicators and methods that:

- Provide a measure of completion criteria to be assessed in accordance with the defined rehabilitation objectives;
- Adequately track changes to rehabilitation phases;
- Are reproducible;
- Utilise scientific recognised techniques; and
- Are cost-effective.

Monitoring is conducted by a suitably skilled and qualified person(s) at locations representative of the range of conditions on the rehabilitating areas and appropriate analogue sites. Monitoring results will inform refinements of rehabilitation methodology as required. Rehabilitation monitoring will be continued until it can be demonstrated that rehabilitation has satisfied all rehabilitation and closure criteria.

Ecological monitoring will be undertaken in accordance with the Western Region Biodiversity Management Plan. Monitoring reports will include recommendations that describe the outcomes of monitoring and recommendations for restoring biodiversity values.

Where biodiversity monitoring or rehabilitation monitoring identify issues requiring management activities, the respective Trigger Action Response Plan (TARP) is implemented. Collectively the implementation of the Western Region Biodiversity Management Plan and the RMP, ensure the integrated management of remnant vegetation and rehabilitation across the site.

For further detail on rehabilitation in relation to biodiversity management, refer to the Western Region Biodiversity Management Plan. Additional information regarding rehabilitation can be found in the RMP.

8 Investigation and Programmes

8.1 Minimising Adverse Socio-economic Effects

A Social Impact Assessment (SIA), in line with the *Social Impact Assessment Guideline for State Significant Projects 2021* (DPHI), will be undertaken five years prior to planned closure of the mine. This will include stakeholder consultation and will assist in minimising long-term impacts associated with the rehabilitation and closure of Springvale Mine, including socio-economic impacts. However, this may be delayed if an opportunity to extend the LOM is deemed feasible.

Given that the approved life of mine under SSD-5594 is until 31 December 2028 and Centennial are actively seeking opportunities to extend the LOM, the requirement for an SIA has not been triggered and thus cannot be reported on until this time. Once the SIA has been triggered, the outcomes will be reported/reflected in the:

- Rehabilitation Strategy;
- RMP; and
- Annual Review.

8.2 Opportunities to Refine and Improve the Final Landform

Springvale is associated with two main surface disturbance areas requiring rehabilitation, being the Pit Top and infrastructure facilities located on the Newnes Plateau. As outlined in **Section 6** and in accordance with regulatory requirements in **Section 2.5**, it is intended to rehabilitate infrastructure areas to woodland to commensurate with the adjacent remnant vegetation. Water management structures will be retained as outlined in the Springvale Mine Extension EIS. The retention of access tracks is in accordance with the Springvale Mine Extension EIS, however, unless retention for future use, including management responsibility, has been accepted by NPWS these access roads will be rehabilitated following the cessation of mining activities. Given the limited footprint of proposed rehabilitation, Springvale has extremely limited potential to improve the final landform.

Opportunities to refine and improve the landform will be undertaken through the continued development of this Rehabilitation Strategy and the RMP. The rehabilitation completion criteria outlined in the Springvale Mine RMP will be utilised to demonstrate achievement of rehabilitation objectives. It is noted that the completion criteria may be subject to refinement as rehabilitation progresses, including as a result of ongoing consultation with the relevant stakeholders, studies yet to be completed and continuous improvement process informed by rehabilitation monitoring results. The achievement (or otherwise) of the completion criteria will be monitored and reported as required.

Outcomes of investigations conducted into the continual improvement of rehabilitation outcomes and final landforms as stated above, will be included in the:

- Annual Rehabilitation Report and Forward Program;
- RMP; and
- Annual Review.

9 REVIEW

In accordance with the requirements of Schedule 6, Condition 6 of SSD-5594, Springvale will review and if necessary, revise this Rehabilitation Strategy within three months of the following:

- a. Submission of an incident report;
- b. Submission of an Annual Review;
- c. Submission of an Independent Environmental Audit; or
- d. The approval of a modification to SSD-5594.

Following amendments, a copy of the revised Rehabilitation Strategy will be provided to RR, BCD, DPHI Water, Water NSW, NPWS, Lithgow City Council and the CCC as part of the consultation process, prior to submission to DPHI for approval.

10 References

- ANZMEC and MCA (2000). *Strategic Framework for Mine Closure*.
- Centennial Coal Limited (2014). *Angus Place and Springvale Mine Extension Projects – State Significant Developments SSD 5602 and SSD 5594 Response to Response to Submissions*.
- Centennial Coal Limited (2015). *Springvale Mine Extension Project - Response to PAC Review Report*.
- Centennial Coal Limited (2018). *Western Region Historic Heritage Management Plan*.
- Golders (2014). *Environmental Impact Statement: Angus Place Mine Extension Project – State Significant Development 5602*.
- Lithgow City Council (2010). *Lithgow Draft Land Use Strategy 2010 – 2030*.
- NSW Department of Planning and Environment (2021). *Social Impact Assessment Guideline for State Significant Projects*.
- NSW Department of Planning. (2016). *Community Consultative Committee (CCC) Guidelines for State Significant Projects*.
- NSW Resources Regulator (2024). *Form And Way Rehabilitation Management Plan for Large Mines*.
- NSW Resources Regulator (2022). *Guideline: Rehabilitation Cost Estimate*.
- NSW Resources Regulator (2023). *Guideline: Rehabilitation Objectives and Rehabilitation Completion Criteria*.
- RPS (2014). *Springvale Mine Extension Project Cultural Heritage Impact Assessment*.
- SLR (2014). *Springvale Mine Extension Project Decommissioning and Rehabilitation Strategy*.
- Springvale Coal Pty Limited (2014). *Springvale Mine Extension Project Response to Submissions*.

Appendix A – DPHI Endorsement of Suitably Qualified Persons

Russell Hart
Group Manager Projects & Rehabilitation
Centennial Coal Pty Limited

Via: NSW Major Project Portal (SSD-5594-PA-85)

16/05/2023

Subject: Appointment of suitably qualified and experienced person – Rehabilitation Strategy

Dear Russell,

I refer to your request dated 21 April 2023 for the Planning Secretary's endorsement of suitably qualified and experienced person(s) to prepare a Rehabilitation Strategy in accordance with the following development consents:

- Northern Coal Services Project: Schedule 3, Condition 28A of SSD-5145;
- Awaba Colliery: Schedule 3, Condition 29A of MP 10_0038;
- Springvale Mine Extension Project: Schedule 4, Condition 31A of SSD-5594;
- Myuna Colliery Mining Project: Schedule 3, Condition 34A of MP 10_0080; and
- Angus Place Coal Project: Schedule 3, Condition 36C of MP 06_0021.

The Department has reviewed the nominations you have provided and is satisfied that Adam Williams (Principal Environmental Consultant, Umwelt Environmental and Social Consultants), is a suitably qualified and experienced person to prepare the Rehabilitation Strategies required under the above development consents.

Accordingly, I can advise that the Planning Secretary endorses the appointment of Adam Williams to prepare the Rehabilitation Strategy under:

- Schedule 3, Condition 28A of SSD-5145;
- Schedule 3, Condition 29A of MP 10_0038;
- Schedule 4, Condition 31A of SSD-5594;
- Schedule 3, Condition 34A of MP 10_0080; and
- Schedule 3, Condition 36C of MP 06_0021.

If you wish to discuss the matter further, please contact Gabrielle Allan on 02 9585 6078.

Yours sincerely



Jessie Evans
Director, Resource Assessments
Resource Assessments

As nominee of the Planning Secretary

Appendix B – Stakeholder Engagement Records

Our ref: SSD-5594-PA-86

Natalie Gardiner
Environment and Community Superintendent
Springvale Coal Pty Ltd
PO BOX 1000
Toronto NSW 2283
30/04/2024

Subject: Springvale Coal - Rehabilitation Strategy

Dear Mrs Gardiner

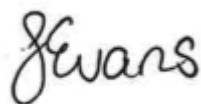
Reference is made to your post approval matter, SSD-5594-PA-86, Rehabilitation Strategy – Springvale Mine, submitted as required by Schedule 4 Condition 31A of SSD-5594 (Springvale Mine Extension Project) as modified (the consent) to the NSW Department of Planning, Housing and Infrastructure (NSW Planning).

NSW Planning has reviewed Rehabilitation Strategy and considers more information is required to satisfy the conditions of consent.

Under the provisions of Schedule 6, Condition 7 of the consent, I, as nominee of the Planning Secretary, request that an amended Rehabilitation Strategy be submitted addressing review comments in Attachment A by 31 May 2024 (or as otherwise agreed by the Planning Secretary).

Should you wish to discuss the matter further, please contact Emily Pemberton on 02 8275 1783 or by email at emily.pemberton@dpie.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink that reads "Evans".

Jessie Evans
Director, Resource Assessments
Resource Assessments

As nominee of the Planning Secretary

Your ref: Rehabilitation Strategy – Springvale Mine Extension Project

Our ref: SSD-5594-PA-86

Post Approval Review

ATTACHMENT A

Review Document: Springvale Mine Extension Project Rehabilitation Strategy

Revision: December 2023 version 0.2

Development Consent Schedule and condition	Sufficient (Yes/No/Partial)	Document reference and comment	Action Required
Schedule 4 31A. The Applicant must prepare a Rehabilitation Strategy for the development, to the satisfaction of the Secretary. The Rehabilitation Strategy must:	Partial	See below	See below
(a) be prepared by a suitably qualified and experienced person(s) whose appointment has been endorsed by the Secretary;	Yes	Rehabilitation Strategy has been prepared by Adam Williams. Adam Williams was endorsed by the Department of Planning and Environment (DPE) as a suitably qualified person to prepare the Rehabilitation Strategy for Springvale Mine (ref SSD-5594-PA-85).	N/A

Department of Planning, Housing and Infrastructure

Development Consent Schedule and condition	Sufficient (Yes/No/Partial)	Document reference and comment	Action Required
(b) be prepared in consultation with Resources Regulator, BCD, DPE Water, WaterNSW, NSW National Parks and Wildlife Service, Council and the CCC;	Yes	Consultation is detailed in section 5 and evidence of consultation and revision to the Strategy is provided in Appendix B. The Strategy was provided to the requisite stakeholders for consultation.	N/A
(c) be submitted to the Secretary for approval within 6 months of the date of determination of SSD-5594-MOD-4, or as otherwise agreed by the Secretary;	Partial	SSD-5594-MOD 4 was determined on 25 November 2022. Consultation with agencies and the Department was initiated within 6 months of the determination, however the Strategy was submitted to the Secretary for approval on 20 December 2023.	To note in Annual Review
(d) build upon the Rehabilitation Objectives in Table 7 and describe the strategic rehabilitation outcomes for the site, including mine closure, final landform, post-mining land use/s and water management;	Yes	Sections 1.4 discusses rehabilitation objectives for the site, and section 7.1 discusses strategic rehabilitation phases to reach rehabilitation, including <i>“Phase 7: Rehabilitation Completion (sign-off) – The final phase of rehabilitation when a rehabilitation area has achieved the final land use for the mining area as stated in the approved rehabilitation objectives and the approved rehabilitation completion criteria <of the Springvale Mine RMP>; and as spatially depicted in the approved final landform and rehabilitation plan”</i>	N/A Noted

Department of Planning, Housing and Infrastructure

Development Consent Schedule and condition	Sufficient (Yes/No/Partial)	Document reference and comment	Action Required
		Sections 4, 6 and 8.2 discuss mine closure planning, final landform, post-mining land use/s and water management respectively. Section 6 notes that a network of dams and associated water management structures will be retained in the final landform for future use.	
(e) align with the strategic rehabilitation and mine closure objectives and address the principles of the Strategic Framework for Mine Closure (ANZMEC and MCA, 2000), or its latest version;	Partial	The Strategic Framework for Mine Closure Strategy (The Closure Strategy) principles include (1) stakeholder involvement, (2) planning, (3) financial provision, (4) implementation, (5) standards and (6) relinquishment. Section 4 of the Rehabilitation Strategy broadly addresses The Closure Strategy principles are in Table 4.1, for (2) <i>planning</i> and (6) <i>relinquishment</i>. <i>Stakeholder involvement</i> (1) or engagement is evident throughout the Strategy, specifically in Table 4.1 and section 5. Section 4.2 discusses temporary or premature mine closure, and that a Rehabilitation Cost Estimate (RCE) has been performed for	Update the rehabilitation strategy to clearly identify how the Rehabilitation Strategy addresses the principles of the Strategic Framework for Mine Closure (ANZMEC and MCA, 2000), or its latest version. Include and reference any relevant rehabilitation standards.

Department of Planning, Housing and Infrastructure

Development Consent Schedule and condition	Sufficient (Yes/No/Partial)	Document reference and comment	Action Required
		Springvale Mine, but does not clarify whether (3) <i>financial provision</i> is available/in place. If there are relevant (5) <i>standards</i> applicable to rehabilitation, these can be included in the Rehabilitation Strategy, or a commitment made that standards will be detailed in the subsequent Rehabilitation Plan. Per Schedule 2, Condition 5, the mine is permitted to operate until 31 December 2028. It's unclear how development is meeting its closure related rehabilitation timeframes indicated in Table 4.1 and the principle (4) <i>implementation</i>.	
(f) describe how rehabilitation will be integrated with the mine planning process, including a plan to address premature or temporary mine closure;	Yes	Section 4.1 and Table 4.1 details strategic rehabilitation and mine closure planning timeframes, and also notes opportunities to extend the life of mine (LOM) are being investigated. Section 4.2 discusses temporary or premature mine closure, including a Rehabilitation Cost Estimate (RCE) based a snapshot of disturbance.	N/A

Development Consent Schedule and condition	Sufficient (Yes/No/Partial)	Document reference and comment	Action Required
		Section 4.2 commits that in the event of temporary or premature closure, the Rehabilitation Strategy and the RMP would be revised.	
(g) include details of: — (i) target vegetation communities and species to be established within the proposed revegetation areas;	No	- Section 2, Figure 2.3 details the mapped and or existing vegetation communities and hydrology, but Section 2, as referenced in Table 1.2 of the Strategy, does not clearly identify which areas are to be revegetated, or with which target vegetation communities and species. - Section 2.2.3 discusses proposed land use following cessation of mining, with <i>Springvale pit top and all major infrastructure on the Newnes Plateau will be rehabilitated to woodland commensurate with the adjacent remnant vegetation</i>, and that access tracks may be retained in the final landform for use as fire trails or access by recreational users. It's unclear though which communities or species will be established, and/or what the	- Update the Strategy to clearly identify proposed revegetation areas. - Update the Strategy to clearly identify each proposed revegetation area and the target vegetation communities and species to be established for each proposed revegetation area.

Department of Planning, Housing and Infrastructure

Development Consent Schedule and condition	Sufficient (Yes/No/Partial)	Document reference and comment	Action Required
		<i>adjacent remnant vegetation is/are, because the Springvale Mine and rehabilitation areas are not shown on Figure 2.3.</i>	
— (ii) a post-mining land use strategy to investigate and facilitate post-mining beneficial land uses for the site and/or infrastructure; and	Yes	Section 6 details the overarching strategy for post mining land-use and section 5 details stakeholder consultation to investigate and facilitate post-mining beneficial land uses.	N/A
— (iii) stakeholder engagement plan to guide rehabilitation and mine closure planning processes and outcomes.	No	Section 5.1 states that Springvale Mine completes consultation in accordance with the Stakeholder Engagement Plan, but this is not readily available on the applicant's website nor attached to the Strategy.	Please provide evidence of the stakeholder engagement plan and how this guides rehabilitation and mine closure planning processes and outcomes
(h) investigate opportunities to refine and improve the final landform over time.	Yes	- Section 8.2 discusses timings for review of opportunities to refine or improve the final landform at the pit top and infrastructure facilities located on the Newnes Plateau. - The Strategy commits that opportunities and outcomes to refine or improve the final	- None - None. Noted.

Development Consent Schedule and condition	Sufficient (Yes/No/Partial)	Document reference and comment	Action Required
		landform will be included in the Annual Rehabilitation Report and Forward Program, the Rehabilitation Management Plan and Annual Review, but note that given the limited footprint of proposed rehabilitation, the mine has limited potential to improve the final landform	
Note: The Rehabilitation Strategy must address all land impacted by the mine, whether prior to or following the date of this consent. The Biodiversity Management Plan and Rehabilitation Strategy require substantial integration to achieve biodiversity objectives for the rehabilitated site.	Partial	Section 7 discusses integration with the <i>Western Region</i> Biodiversity Management Plan and the Springvale Rehabilitation Management Plan, but does not discuss the Springvale Mine <i>Biodiversity Management Plan</i> or its biodiversity objectives. Section 7.2 lists biodiversity measures, including offsets, habitat corridors and rehabilitation of disturbed areas, as “<i>in line with the Western Region Biodiversity Management Plan and Springvale RMP ...</i>” This Rehabilitation Strategy should also precede the Rehabilitation Plan, and the Rehabilitation Strategy should integrate the site-specific biodiversity objectives.	Please clarify how the biodiversity objectives are integrated between this Rehabilitation Strategy and the (site specific) Biodiversity Management Plan. Revise section 7.2 to reflect how the BMP, Rehabilitation Strategy and (subsequent) RMP relate and are integrated to achieve the biodiversity objectives for the rehabilitated site.

Department of Planning, Housing and Infrastructure

Development Consent Schedule and condition	Sufficient (Yes/No/Partial)	Document reference and comment	Action Required
		The Western Region Biodiversity Management Plan is an overarching <i>Biodiversity</i> Management plan, but the Springvale site must also have its own approved Biodiversity Management Plan (sch 4, condition 18), and Rehabilitation Management Plan (sch 4, condition 32). i.e. The Biodiversity Management Plan is separate and is specific to the Springvale Mine site/project, however it's unclear how or which biodiversity objectives are integrated between the (site specific) Biodiversity Management Plan and this Rehabilitation Strategy.	
Schedule 4 31B. The Applicant must implement the approved Rehabilitation Strategy.	Partial	Section 4 describes that Springvale will commence the detailed mine closure planning process at least five years prior to the anticipated mine closure date. Schedule 2, condition 5: <i>The Applicant may carry out mining operations on the site until 31 December 2028.</i> Mine closure planning should therefore have commenced in December 2023.	Provide evidence of implementing the rehabilitation Strategy, including mine closure planning.

Department of Planning, Housing and Infrastructure

General Department review comments:	Applicant's response
Section 1.4 notes “Rehabilitation objectives associated with the SWTP have been included in Table 1.4, which have also been considered within this Rehabilitation Strategy.” The SWTP (Springvale Water Treatment Project, while processing waters from SSD-5594 and other projects, holds a different development consent and its own operating conditions. Rehabilitation in the SSD-5594 Rehabilitation Strategy should only include the Springvale mine operation <i>unless</i> this Rehabilitation Strategy is intended to integrate with the Springvale Water Treatment Project or the EMS. If so, these linkages should be clearly explained in this Strategy, or reference to the Springvale Water Treatment project removed from this Rehabilitation Strategy. Please update this Strategy and/or the EMS as/if necessary.	

Comments were received from DPHI on the 30 April 2024 in preparation of this rehabilitation strategy. Centennial have addressed each comment with responses detailed below.

DPHI Comment	Action Required	Centennial Response
SSD-5594-MOD 4 was determined on 25 November 2022. Consultation with agencies and the Department was initiated within 6 months of the determination, however the Strategy was submitted to the Secretary for approval on 20 December 2023.	To note in Annual Review.	A letter was submitted on 25 May 2023 to DPHI regarding the submission of draft Rehabilitation Strategies on either 24 or 25 May 2023. This letter is included in Appendix B of the Rehabilitation Strategy and outlines that the documents were issued for consultation at this time. The Strategy was reissued to DPHI in December 2023, following edits to address stakeholder feedback. No feedback was received from DPHI, therefore this is considered compliant.
The Strategic Framework for Mine Closure Strategy (The Closure Strategy) principles include (1) stakeholder involvement, (2) planning, (3) financial provision, (4) implementation, (5) standards and (6) relinquishment. Section 4 of the Rehabilitation Strategy broadly addresses The Closure Strategy principles are in Table 4.1, for (2) planning and (6) relinquishment. Stakeholder involvement (1) or engagement is evident throughout the Strategy, specifically in Table 4.1 and section 5. Section 4.2 discusses temporary or premature mine closure, and that a Rehabilitation Cost Estimate (RCE) has been performed for Springvale Mine, but does not clarify whether (3) financial provision is available/in place. If there are relevant (5) standards applicable to rehabilitation, these can be included in the Rehabilitation Strategy, or a commitment made that standards will be detailed in the subsequent Rehabilitation Plan. Per Schedule 2, Condition 5, the mine is permitted to operate until 31 December 2028. It's unclear how development is meeting its closure related rehabilitation timeframes indicated in Table 4.1 and the principle (4) implementation.	Update the rehabilitation strategy to clearly identify how the Rehabilitation Strategy addresses the principles of the Strategic Framework for Mine Closure (ANZMEC and MCA, 2000), or its latest version. Include and reference any relevant rehabilitation standards.	Additional content has been included in Section 4 to outline each of the Strategic Framework objectives and principles, and how each has been/will be addressed. This includes reference to active investigation of opportunities to extend the mine life and applicable rehabilitation standards.

DPHI Comment	Action Required	Centennial Response
1. Section 2, Figure 2.3 details the mapped and or existing vegetation communities and hydrology, but Section 2, as referenced in Table 1.2 of the Strategy, does not clearly identify which areas are to be revegetated, or with which target vegetation communities and species. 2. Section 2.2.3 discusses proposed land use following cessation of mining, with Springvale pit top and all major infrastructure on the Newnes Plateau will be rehabilitated to woodland commensurate with the adjacent remnant vegetation, and that access tracks may be retained in the final landform for use as fire trails or access by recreational users. It's unclear though which communities or species will be established, and/or what the adjacent remnant vegetation is/are, because the Springvale Mine and rehabilitation areas are not shown on Figure 2.3.	1. Update the Strategy to clearly identify proposed revegetation areas. 2. Update the Strategy to clearly identify each proposed revegetation area and the target vegetation communities and species to be established for each proposed revegetation area.	1. Figure 6.1 has been presented as a series of figures, with increased focus on existing and proposed rehabilitation areas. 2. Within Section 6, reference to target vegetation communities and species has been included, consistent with the RMP and approved Rehabilitation Objectives (ROBJs).
Section 5.1 states that Springvale Mine completes consultation in accordance with the Stakeholder Engagement Plan, but this is not readily available on the applicant's website nor attached to the Strategy.	Please provide evidence of the stakeholder engagement plan and how this guides rehabilitation and mine closure planning processes and outcomes.	The wording in Section 5.1 and referenced by DPHI relates to NSW Rehabilitation Reform requirements, specifically the requirement to consult with "relevant stakeholders" as stipulated in the Guideline: Rehabilitation Objectives and Completion Criteria. Additional wording has been included for clarity in Section 5 of the Strategy.
Section 7 discusses integration with the Western Region Biodiversity Management Plan and the Springvale Rehabilitation Management Plan, but does not discuss the Springvale Mine Biodiversity Management Plan or its biodiversity objectives. Section 7.2 lists biodiversity measures, including offsets, habitat corridors and rehabilitation of disturbed areas, as "in line with the Western Region Biodiversity Management Plan and Springvale RMP ..." This Rehabilitation Strategy should also precede the Rehabilitation Plan, and the Rehabilitation Strategy should integrate the site-specific biodiversity objectives. The Western Region Biodiversity Management Plan is an overarching Biodiversity Management plan, but the Springvale site must also have its own approved Biodiversity	Please clarify how the biodiversity objectives are integrated between this Rehabilitation Strategy and the (site specific) Biodiversity Management Plan. Revise section 7.2 to reflect how the BMP, Rehabilitation Strategy and (subsequent) RMP relate and are integrated to achieve the biodiversity objectives for the rehabilitated site.	Section 7.2 has been updated to include direct reference to the Western Region BMP, and appended Springvale BMP, which were submitted to DPHI for approval on 18 July 2023. Additional detail has been included regarding integrated monitoring and management across the two plans.

DPHI Comment	Action Required	Centennial Response
Management Plan (sch 4, condition 18), and Rehabilitation Management Plan (sch 4, condition 32). i.e. The Biodiversity Management Plan is separate and is specific to the Springvale Mine site/project, however it's unclear how or which biodiversity objectives are integrated between the (site specific) Biodiversity Management Plan and this Rehabilitation Strategy.		
Section 4 describes that Springvale will commence the detailed mine closure planning process at least five years prior to the anticipated mine closure date. Schedule 2, condition 5: The Applicant may carry out mining operations on the site until 31 December 2028. Mine closure planning should therefore have commenced in December 2023.	Provide evidence of implementing the rehabilitation Strategy, including mine closure planning.	Section 4 has been updated to reflect the commencement of mine closure planning, including relevant stakeholder engagement (Section 5). It is noted that mine infrastructure is required up until the cessation of operations, and that opportunities to extend the mine life are actively being investigated and a proposed modification to extend the consent (allowing extraction of approved resources), which would provide for continued socio-economic benefits.
Section 1.4 notes "Rehabilitation objectives associated with the SWTP have been included in Table 1.4, which have also been considered within this Rehabilitation Strategy." The SWTP (Springvale Water Treatment Project, while processing waters from SSD-5594 and other projects, holds a different development consent and its own operating conditions.	Rehabilitation in the SSD-5594 Rehabilitation Strategy should only include the Springvale mine operation unless this Rehabilitation Strategy is intended to integrate with the Springvale Water Treatment Project or the EMS. If so, these linkages should be clearly explained in this Strategy, or reference to the Springvale Water Treatment project removed from this Rehabilitation Strategy. Please update this Strategy and/or the EMS as/if necessary.	The RMP captures all rehabilitation on the lease, it is considered that this content is important for alignment with the RMP (whilst noting the SWTP is under a separate consent).

Monday 11 September 2023

Natalie Gardiner
Centennial Coal
980 Castlereagh Highway
Lisdale NSW 2790
Natalie.Gardiner@centennialcoal.com.au

Via: Email

Dear Natalie,

I refer to the Springvale Colliery Mine Extension Project (SSD-5594) Rehabilitation strategy submitted to the Resources Regulator on 25th May 2023. Based on the review of the Rehabilitation Strategy the Resources Regulator advises that it has no specific comments regarding mine rehabilitation matters in relation to the proposal.

LIMITATIONS

It should be noted that the Resources Regulator does not provide any endorsement of the proposed rehabilitation methodologies presented in the plans provided. Under the conditions of a mining authorisation granted under the *Mining Act 1992*, the Resources Regulator requires the holder to adopt a risk-based approach to achieving the required rehabilitation outcomes.

The applicability of the controls to achieve effective and sustainable rehabilitation is to be determined based on site-specific risk assessments conducted by the authorisation holder. An authorisation holder may also be directed by the Resources Regulator to implement further risk control measures required to achieve effective rehabilitation outcomes during the life of the mine.

BACKGROUND

The Mining Act Inspectorate within the Resources Regulator undertake risk-based compliance and enforcement activities in relation to obligations under the *Mining Act 1992*. This includes undertaking assessment and compliance activities in relation to mine rehabilitation activities and determination of security deposits. To ensure consistency, the Regulator requests the opportunity to review a copy of the draft development consent prior to any approval of the project.

CONTACT

Should you require any further information or clarification, please contact the Regulator on 1300 814 609 (Press Option 2 Press Option 5) or email nswresourcesregulator@service-now.com.

Yours sincerely,



Matthew Newton

Principal Inspector – Environment and Rehabilitation Operations
Resources Regulator

Our ref: DOC23/623747

Your ref:

Natalie Gardiner – Environment & Community Superintendent
Russell Hart – Group Manager Projects & Rehabilitation
natalie.gardiner@centennialcoal.com.au
russell.hart@centennialcoal.com.au

Dear Natalie and Russell

Centennial rehabilitation strategies – Angus Place and Springvale (May 2023)

Thank you for your e-mail dated 25 May 2023 to the National Parks and Wildlife Service (NPWS) and Biodiversity, Conservation and Science Directorate (BCS) of the Department of Planning and Environment inviting comments on the draft rehabilitation strategies for Angus Place and Springvale. We apologise for the delay in responding to you.

Table 1.2 in both rehabilitation strategies detail the requirements of the consents for the projects. This includes notes for both that state,

The Rehabilitation Strategy must address all land impacted by the development, whether prior to or following the date of this consent.

Table 1.3 in the Springvale rehabilitation strategy includes an objective for all watercourses subject to mine water discharges and/or subsidence impacts,

Hydraulically and geomorphologically stable, with aquatic ecology and riparian vegetation that is the same, or better than prior to the grant of this consent.

BCS and NPWS consider that the rehabilitation plans should include sections discussing the rehabilitation and restoration of natural features impacted by subsidence including (but not limited to) East Wolgan Swamp, Narrow Swamp, Junction Swamp and Kangaroo Creek.

This section should detail:

- The nature of the impacts
- Rehabilitation / restoration works to date
- Future rehabilitation / restoration works
- Monitoring and reporting

Additional comments on both rehabilitation plans are provided in **Attachment A**.

If you have any questions about this advice, please do not hesitate to contact me via liz.mazzer@environment.nsw.gov.au or (02) 6883 5325.

Yours sincerely



Liz Mazzer
A/Senior Team Leader Planning North West
Biodiversity, Conservation and Science Directorate

13 July 2023

Attachment A

NPWS and BCS comments on the Angus Place and Springvale draft rehabilitation plans

Plan / section	Comments
Angus Place and Springvale Section 2.2.2 – Current land use	Current land use does not include commercial forestry. This is an historic land use.
Angus Place and Springvale Section 2.2.3 – Proposed land use	Proposed land use mentions access trails being retained for use in Gardens of Stone State Conservation Area (GoS SCA). Any retention of access trails requires consultation with NPWS. Planning for proposed land use should anticipate that the land zoning under the Lithgow LEP will change to C1 – National Parks and Nature Reserves to align with the gazettal of the land as GoS SCA. Final landform planning should anticipate this change and set objectives accordingly.
Angus Place and Springvale table 3.1 – Infrastructure to be decommissioned	Trenched power cables and water pipelines are designated to be isolated and made safe. The rehabilitation plans should state whether these will be removed or remain in-situ. Substations and switchyard –concrete pads should also be removed. Tanks – any concrete pad or other footings that supports these tanks should be removed
Angus Place and Springvale Section 3.4 – Infrastructure	The rehabilitation work occurring on the Newnes Plateau should be completed in consultation with NPWS to ensure landowner sign-off can be achieved.
Angus Place and Springvale Section 6 – Proposed future use of rehabilitated areas	Any roads proposed to be left in-situ require consultation with NPWS.

Comments were received from BCD and NPWS on the 13 July 2023 in preparation of this rehabilitation strategy. Centennial have addressed each comment with responses detailed below.

BCD and NPWS Comment	Centennial Response
Table 1.2 in both rehabilitation strategies detail the requirements of the consents for the projects. This includes notes for both that state, The Rehabilitation Strategy must address all land impacted by the development, whether prior to or following the date of this consent. Table 1.3 in the Springvale rehabilitation strategy includes an objective for all watercourses subject to mine water discharges and/or subsidence impacts, Hydraulically and geomorphologically stable, with aquatic ecology and riparian vegetation that is the same, or better than prior to the grant of this consent. BCS and NPWS consider that the rehabilitation plans should include sections discussing the rehabilitation and restoration of natural features impacted by subsidence including (but not limited to) East Wolgan Swamp, Narrow Swamp, Junction Swamp and Kangaroo Creek. This section should detail: • The nature of the impacts • Rehabilitation / restoration works to date • Future rehabilitation / restoration works • Monitoring and reporting	Table 1.3 of the Springvale Rehabilitation Strategy and corresponding consent (SSD-5594), specifies “These rehabilitation objectives apply to all subsidence impacts and environmental consequences caused by mining taking place after the date of this consent; and to all surface infrastructure parts of the development, whether constructed prior to or following the date of this consent.” An Enforceable Undertaking was issued under the EPBC Act on 12 October 2011. This was in relation to Narrow Swamp, East Wolgan Swamp and Junction Swamp. Centennial have complied with the requirements of this Enforceable Undertaking, on that basis “the Minister will not pursue further action against Springvale Coal or Centennial Angus Place in relation to the activities, works and impacts.” In accordance with Schedule 3, Condition 13A of Angus Place consent MP 06_0021, a Trigger Action Response Plan for Kangaroo Creek and Long Swamp has been developed. This is captured within the approved Water Management Plan, including remediation measures that may be implemented. The intent of the Rehabilitation Strategy is to refine the post-mining land use of Springvale and Angus Place mining areas, in consultation with relevant stakeholders. No changes to the Rehabilitation Strategies are considered warranted.
Angus Place and Springvale Section 2.2.2 – Current land use: Current land use does not include commercial forestry. This is an historic land use.	Section 2.2.2 will be updated. Reference to forestry will be removed from text.
Angus Place and Springvale Section 2.2.3 – Proposed land use: Proposed land use mentions access trails being retained for use in Gardens of Stone State Conservation Area (GoS SCA). Any retention of access trails requires consultation with NPWS. Planning for proposed land use should anticipate that the land zoning under the Lithgow LEP will change to C1 – National Parks and Nature Reserves to align with the gazettal of the land as GoS SCA. Final landform planning should anticipate this change and set objectives accordingly.	Section 6 of the Springvale Rehabilitation Strategy states “In accordance with the Springvale Mine Extension Project Decommissioning and Rehabilitation Strategy and as outlined within this RMP, Centennial Coal propose to retain all tracks to infrastructure facilities on Newnes Plateau in the final landform for use as fire trails or access tracks by recreational users of the Gardens of Stone State Conservation Area. It is noted that many of the trails are not a result of mining activities. However, unless retention for future use, including management responsibility, has been accepted by NPWS access roads associated with mining disturbance will be rehabilitated following the cessation of mining activities.” Minor changes have been made in Section 2.2.3 and Section 6 of the Springvale Rehabilitation Strategy to reflect that many of the trails are not a result of mining activities and “However, unless retention for future use,

BCD and NPWS Comment	Centennial Response
	including management responsibility, has been accepted by NPWS access roads associated with mining disturbance will be rehabilitated following the cessation of mining activities." Section 6 of the Angus Place Rehabilitation Strategy states "In accordance with the Mod 1 Environmental Assessment (RPS 2010) Mod 2 Environmental Assessment (RPS 2012), infrastructure areas will generally be rehabilitated to woodland commensurate with adjacent vegetation. The access track from Sunnyside Road to the Ventilation Facility (APCVS2) will be rehabilitated following the cessation of operations and the trenched infrastructure installed adjacent to existing access tracks has been rehabilitated. It is proposed that some access roads and tracks on the Newnes Plateau may be retained in the final landform for monitoring, use as fire trails or access tracks by recreational users of Gardens of Stone State Conservation Area." It is noted that the above text highlights Sunnyside Road was existing and the disturbance associated with adjacent trenched infrastructure was rehabilitated. The small section of new track from Sunnyside Road to the Ventilation Facility (APCVS2) will be rehabilitated following cessation of operations. The Angus Place Rehabilitation Strategy will be revised to reflect the following wording for "However, unless retention for future use, including management responsibility, has been accepted by NPWS then access roads associated with mine disturbance will be rehabilitated following the cessation of mining activities." Section 2.2.3 of each Rehabilitation Strategy will be updated to reflect the anticipated changes to the Lithgow LEP, highlighting the land is expected to transition to C1 – National Parks and Nature Reserves to align with the GoS SCA.
Angus Place and Springvale table 3.1 – Infrastructure to be decommissioned: Trenched power cables and water pipelines are designated to be isolated and made safe. The rehabilitation plans should state whether these will be removed or remain in-situ. Substations and switchyard –concrete pads should also be removed. Tanks – any concrete pad or other footings that supports these tanks should be removed	Section 3.1 of each Rehabilitation Strategy will be updated to include: - Trenched powerlines and water pipelines will be left in-situ in accordance with the approvals. - Concrete pads belonging to substations, switchyards and tanks as well as footings would be removed during decommissioning.
Angus Place and Springvale Section 3.4 – Infrastructure: The rehabilitation work occurring on the Newnes Plateau should be completed in consultation with NPWS to ensure landowner sign-off can be achieved.	Text has been updated to reflect that rehabilitation will be undertaken in accordance with the RMP and in consultation with NPWS (or the prevailing landowner at the time of rehabilitation).

BCD and NPWS Comment	Centennial Response
Angus Place and Springvale Section 6 – Proposed future use of rehabilitated areas: Any roads proposed to be left in-situ require consultation with NPWS.	The following wording has been included: “However, unless retention for future use, including management responsibility, has been accepted by NPWS then access roads associated with mine disturbance will be rehabilitated following the cessation of mining activities.”

25th May 2023

Department of Planning and Environment
Post-Approval Documentation

To whom it may concern,

RE: Centennial Rehabilitation Management Strategies – Stakeholder Consultation and DPE Submission for Approval

Centennial are submitting the Rehabilitation Management Strategies to the Department of Planning and Environment (DPE) for approval in accordance with the following development consent Conditions:

- Northern Coal Services Project: Schedule 3, Condition 28A of SSD-5145;
- Awaba Colliery: Schedule 3, Condition 29A of MP 10_0038;
- Springvale Mine Extension Project: Schedule 4, Condition 31A of SSD-5594;
- Myuna Colliery Mining Project: Schedule 3, Condition 34A of MP 10_0080; and
- Angus Place Coal Project: Schedule 3, Condition 36C of MP 06_0021.

Note: To align with Centennial operational management, a single combined Rehabilitation Strategy for Northern Coal Services and Awaba Colliery was developed.

In accordance with the requirements of these development approvals, Centennial have issued these Strategies out for consultation to the relevant Stakeholders listed within the respective development approvals on either 24th or 25th May 2023.

Whilst we await feedback from these Stakeholders, Centennial are submitting the Strategies into the Planning Portal for each site, in compliance with the common requirement for Strategies to be issued to the Secretary for approval within 6 months of the Determination of the consent Modifications – noting that Determination was received on 25th November 2022 for all consents listed above.

On receipt of any feedback arising from the consultation, Centennial will review and if necessary, revise the Rehabilitation Strategies and resubmit to the DPE for approval.

We trust this course of action meets with your support and understanding. Please do not hesitate to contact the undersigned on 0415 323 096 should you require clarification or further information.

Yours sincerely



Russell Hart
Group Manager Projects & Rehabilitation
Centennial Coal Pty Limited

Enclosed: Rehabilitation Management Strategy

Centennial Coal Company Pty Limited
ABN 30 003 714 538

Level 20, 1 Market Street,
Sydney NSW 2000, Australia
T: +61 02 9266 2700
E: info@centennialcoal.com.au
www.centennialcoal.com.au

