Appendix W

Environmental review of proposed infrastructure at Angus Place Colliery and Western Coal Services

REGIS RESOURCES LTD

McPhillamys Gold Project

Environmental review of proposed infrastructure at Angus Place Colliery and Western Coal Services

August 2020

PREPARED FOR LFB RESOURCES NL

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McPhillamys Gold Project

Environmental review of proposed infrastructure at Angus Place Colliery and Western Coal Services

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25 August 2020

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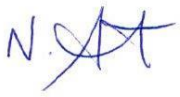

Nicole Armit
Associate Director
25 August 2020

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1 Introduction

1.1 Background to the McPhillamys Gold Project

LFB Resources NL, a 100% owned subsidiary of Regis Resources Ltd (Regis), is seeking development consent for the construction and operation of the McPhillamys Gold Project, a greenfield open cut gold mine and associated water supply pipeline in the Central West of New South Wales (NSW). The project application area for the McPhillamys Gold Project is illustrated at a regional scale in Figure 1.1.

The project comprises two key components:

- the mine site where the ore will be extracted and processed (herein referred to as the mine development). The mine development is around 8 kilometres (km) north-east of Blayney, within the Blayney and Cabonne local government areas, and
- an associated water pipeline which will enable the supply of water from near Lithgow to the mine site (herein referred to the pipeline development).

Up to 8.5 million tonnes per annum (Mtpa) of ore will be extracted from the McPhillamys gold deposit over a total project life of 15 years. Water will be supplied to the mine development via an approximately 90 km long pipeline, transferring surplus water from Centennial Coal Company Limited's (Centennial's) Angus Place Colliery (Angus Place) and Springvale Coal Services Site (SCSS), and EnergyAustralia NSW Pty Ltd's (EnergyAustralia's) Mount Piper Power Station (MPPS) near Lithgow, to the mine development.

The pipeline development will supply the majority of water required for the mine development, transferring approximately 13 megalitres per day (ML/day) (up to a maximum of 15.6 ML/day) from Centennial's Angus Place and SCSS; and MPPS to the mine development.

The pipeline development will include approximately four pumping station facilities, a pressure reducing system and communication system. The pipeline will have a nominal flow of 13 ML/day on average (and up to a maximum of 15.6 ML/day) to transfer water to the mine development for mining and processing operations.

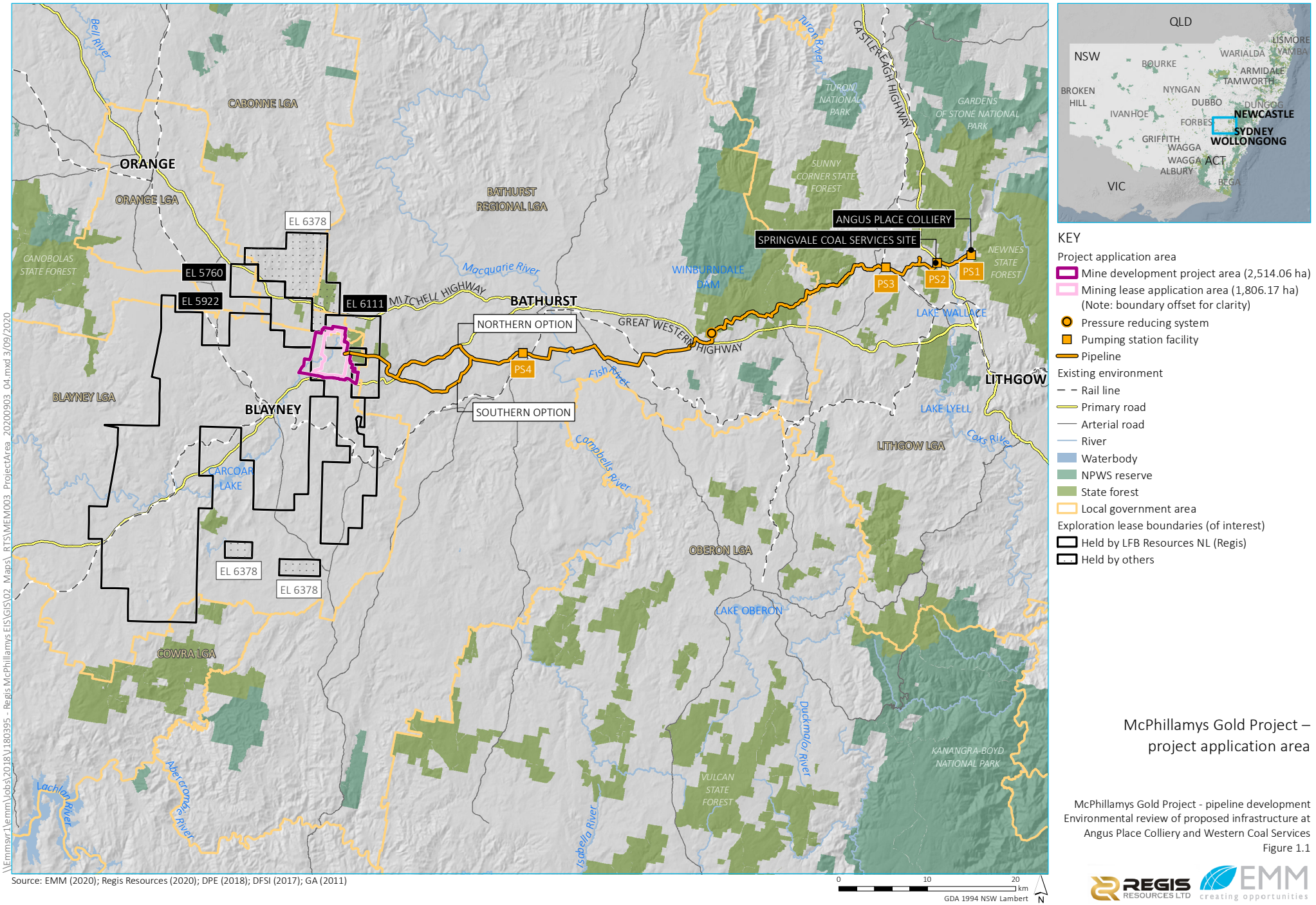
The water to be pumped to the mine development via the pipeline will originate from the following three sources in order of priority (refer to Figure 1.2):

- Water at SCSS that is currently discharged by Centennial via licensed discharge point (LDP) 001 (formerly LDP006) into Wangcol Creek in accordance with the requirements of environment protection licence (EPL) 21229.
- Water from the existing Blowdown Pond 1 (Blowdown Pond) at MPPS originating from the new Springvale Water Treatment Project (SWTP) (SSD-7592) and MPPS cooling towers.
- Surplus groundwater at Angus Place which is currently transferred to the SWTP via the Angus Place Haul Road Pipeline.

Water will be pumped from each of these three sources to storage tanks (with a capacity of approximately 750 kilolitres) at each of the Regis pumping station facilities at Angus Place, SCSS and on Pipers Flat Road.

The interface at the start of the pipeline with Centennial's Angus Place and SCSS and EnergyAustralia's MPPS is illustrated in the schematic in Figure 1.3. This figure illustrates the battery limit (the defined boundary of responsibility) of where Regis will hold responsibility for the pipeline infrastructure and where it will be the responsibility of Centennial or EnergyAustralia.

As shown in Figure 1.3, Regis will be responsible for obtaining the necessary approval for the required infrastructure on EnergyAustralia land including the transfer pipeline from the Blowdown Pond to Pumping Station Facility No.3. The construction and operation of this infrastructure has therefore been considered as part of the McPhillamys Gold Project (pipeline development component) and impacts associated with it have been assessed. EnergyAustralia will be responsible for the construction and operation of this infrastructure.



KEY

Project application area

- Mine development project area (2,514.06 ha)
- Mining lease application area (1,806.17 ha) (Note: boundary offset for clarity)
- Pressure reducing system
- Pumping station facility
- Pipeline

Existing environment

- Rail line
- Primary road
- Arterial road
- River
- Waterbody
- NPWS reserve
- State forest
- Local government area

Exploration lease boundaries (of interest)

- Held by LFB Resources NL (Regis)
- Held by others

McPhillamys Gold Project – project application area

McPhillamys Gold Project - pipeline development
Environmental review of proposed infrastructure at Angus Place Colliery and Western Coal Services
Figure 1.1

Source: EMM (2020); Regis Resources (2020); DPE (2018); DFSI (2017); GA (2011)

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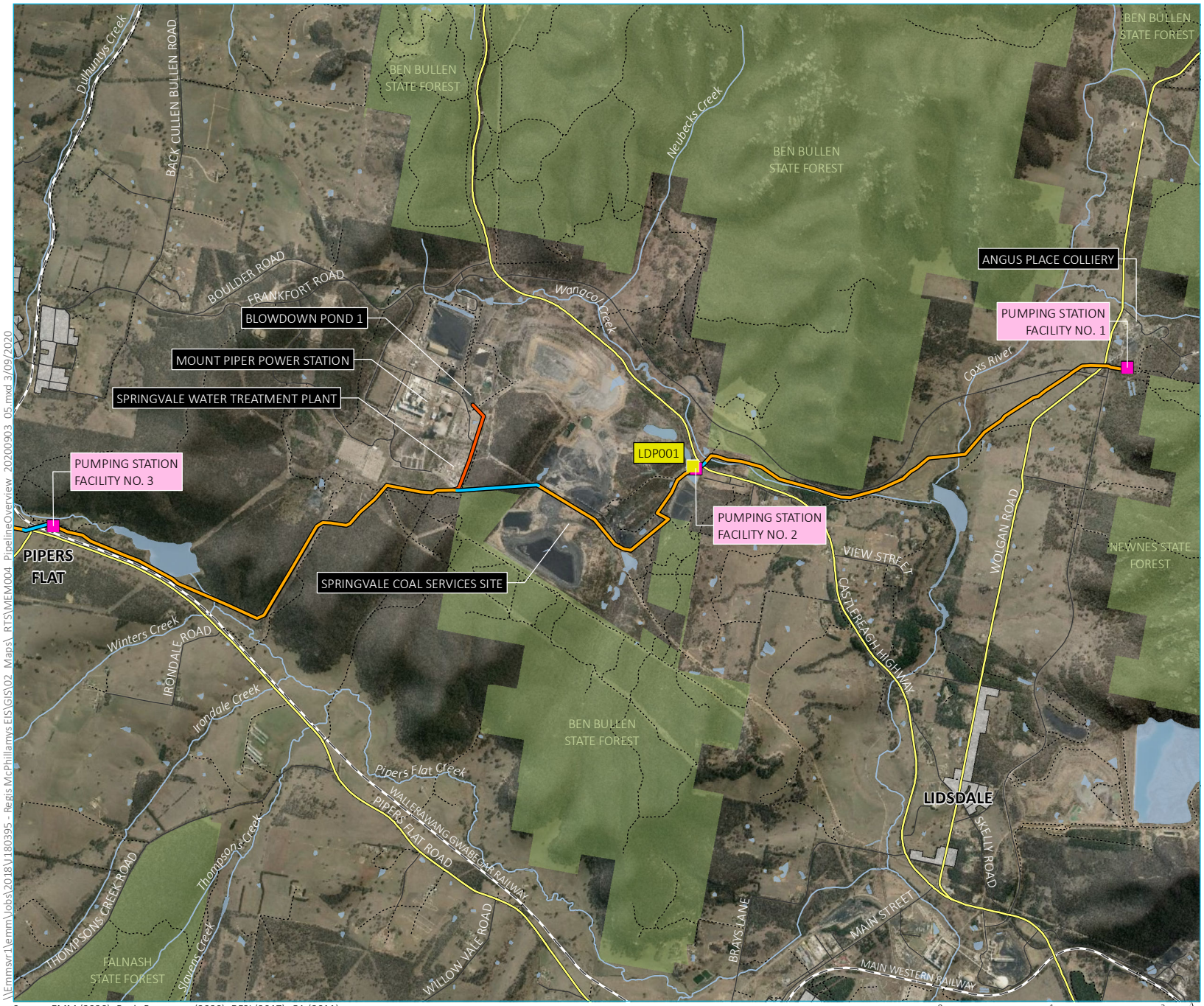

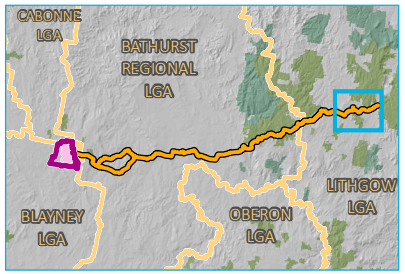

KEY

- Licensed discharge point

McPhillamys Gold project application area

- Mine development project area (refer to inset)
- Mining lease application area (refer to inset)
- Pumping station facility
- Pipeline
- Pipeline - underbore section
- Pipeline - Blowdown Pond

Existing environment

- Rail line
- Major road
- Minor road
- Vehicular track
- Named watercourse
- Built up area
- Waterbody
- NPWS reserve (refer to inset)
- State forest
- Local government area(refer to inset)

Source: EMM (2020); Regis Resources (2020); DFSI (2017); GA (2011)

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Pipeline development overview

McPhillamys Gold Project - pipeline development
Environmental review of proposed infrastructure at Angus Place Colliery and Western Coal Services
Figure 1.2

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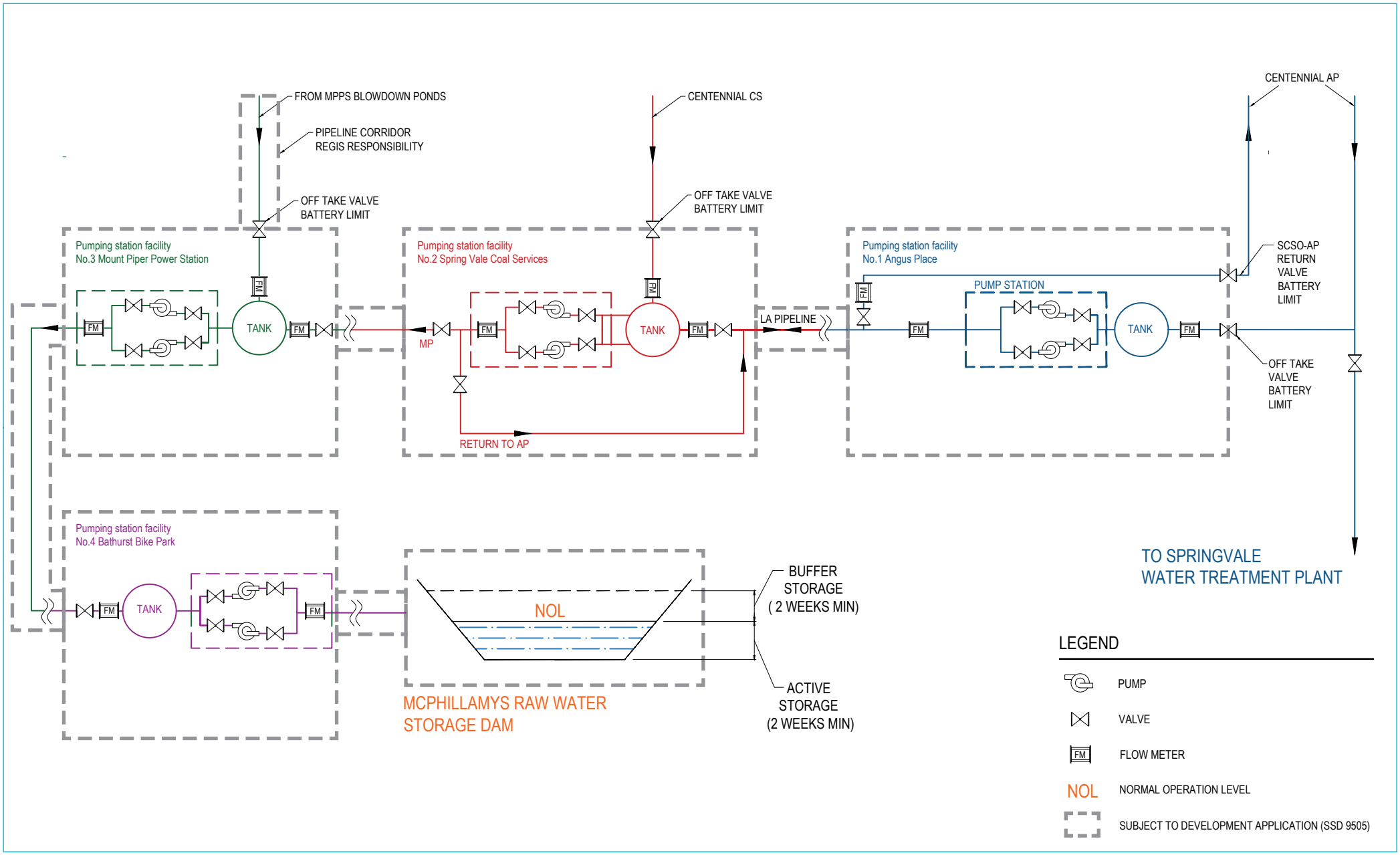

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Pipeline development operation schematic

McPhillamys Gold Project
Environmental review of proposed
infrastructure at Angus Place and Western Coal Services

Figure 1.3

1.2 Modification or consent requirements

Centennial will be required to obtain development consent to enable the transfer of water from Angus Place and SCSS to the McPhillamys Gold Project pipeline development, and ultimately onto the mine development.

Development consent will need to include the pipeline related infrastructure for which Centennial will hold responsibility, as described in Section 1.1. The development consents will therefore need to cover the elements summarised in Table 1.1 .

Table 1.1 Key elements requiring a modification to Centennial's development consents

Element	Relevant operation
Construction and operation of a water transfer pipeline and associated infrastructure between Angus Place and Pumping Station Facility No.1.	Angus Place
Construction and operation of a water transfer system and associated infrastructure between SCSS and Pumping Station Facility No.2.	SCSS
The transfer of up to 15.6 ML/day of water from Angus Place or SCSS to Pumping Station Facility No.1 and No.2, respectively.	Angus Place and SCSS
The receipt of up to 15.6 ML/day of SCSS water at Angus Place via the pipeline development (ie at times when water is not able to be delivered to the mine development).	Angus Place

1.3 Purpose of this document

The purpose of this report is to assist the consent authority for the McPhillamys Gold Project to consider the likely impacts of the required infrastructure for the project at Angus Place and the SCSS. Accordingly, this document provides commentary on the anticipated biophysical, social and economic impacts of the required infrastructure.

Centennial will be submitting applications to the NSW Department of Planning, Industry and Environment (DPIE) to undertake the proposed developments at Angus Place and SCSS under Part 4 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). While this document provides some information on the likely impacts of these applications, the required environmental assessments that will accompany the applications will examine the impacts in further detail, in accordance with the EP&A Act and regulations.

2 Angus Place Colliery

2.1 Background

Centennial Angus Place Pty Limited (Centennial Angus Place) operates Angus Place, an existing underground coal mine producing thermal coal for use predominantly at MPPS.

Angus Place's project approval (MP_06_0021) was granted in September 2006 under the now repealed Part 3A of the EP&A Act. The Part 3A Approval has been transitioned to a State significant development (SSD) consent under Part 4 of the EP&A Act. The mine is currently in care and maintenance. MP_06_0021 will expire in August 2024 and a new SSD consent is currently being sought so that Angus Place can be operational beyond this date. Centennial Angus Place submitted an SSD application (SSD-5602) and supporting environmental impact statement (EIS) to the DPIE in April 2014 for the Angus Place Mine Extension Project (APMEP). The APMEP seeks to extend the life of Angus Place and continue the ability to extract up to 4 Mtpa of run-of-mine (ROM) coal using longwall mining techniques.

2.2 Existing water management system

2.2.1 Overview

The primary objectives of water management at Angus Place are the separation of clean and dirty water, and the effective collection, treatment, and discharge of water. Three separate water management systems operate at Angus Place, including:

- underground water management;
- surface water infrastructure and management at the Angus Place pit top; and
- surface water infrastructure and management on the Newnes Plateau.

Of the above, two are of relevance to the transfer of water from Angus Place to the McPhillamys Gold Project; Angus Place's underground water management system and the surface water infrastructure and management system at the pit top area.

2.2.2 Underground water management

Mine inflows encountered during mining operations underground are:

- transferred to the 1 ML fire tank at Angus Place's pit top for reuse or transfer to the SWTP via the Angus Place Haul Road Pipeline; and
- transferred to the SDWTS via existing and proposed additional dewatering bore facilities and associated infrastructure for transfer to the SWTP.

2.2.3 Surface water infrastructure and management at the Angus Place pit top

Surface water management at Angus Place pit top comprises separation of clean and dirty water.

The clean water management system consists of a series of diversion bunds and drains around the pit top that intercept clean surface runoff prior to it entering disturbed areas. This water is directed off-site into Kangaroo Creek, which flows into the Coxs River.

The dirty water management system for Angus Place pit top comprises a series of on-site storages, including:

- a 1 ML fire tank that receives water from the underground mining area;
- pollution ponds, including:
  - the primary pond, which receives contaminated runoff from the coal handling plant, the stockpile area and its own disturbed catchment;
  - the secondary pollution pond, which receives overflow from the primary pollution pond and drainage from its own disturbed catchment; and
  - the filter pond, which receives overflow from the secondary pollution pond and drainage from its own disturbed catchment;
- two settling ponds which receive treated runoff from pit top catchments and discharge to the Coxs River via LDP002;
- maturation ponds, which receive wastewater from the offices and bathhouse and discharge to the sewage treatment works before being recycled on-site through land application irrigators via LDP005;
- a grit trap, which receives overflows from washdown with grit removed by a contractor with the overflow reporting to an oil water separator;
- rainwater tanks that receive water from the workshop roofs; and
- an oil water separator, which receives overflows from the grit trap and rainwater tanks.

Since 1 January 2020, any excess groundwater not used for on-site operational requirements has been transferred to the SWTP via the Angus Place Haul Road Pipeline. LDP002 will continue to operate as a rainfall based discharge point. Water is discharged off-site in accordance with Angus Place's EPL 467.

2.3 Proposed development description

The supply of water from Angus Place will enable a beneficial use of otherwise surplus water and will provide a reliable water source to the McPhillamys Gold Project (SSD-9505).

To supply water to the McPhillamys Gold Project, Centennial Angus Place will need to seek development consent to:

- construct and operate a water transfer pipeline and associated infrastructure to connect Angus Place's pit top and Pumping Station Facility No. 1 (Figure 2.1);
- transfer up to 15.6 ML/day of water via this pipeline to Pumping Station Facility No. 1; and
- receive and temporarily store surplus water from the McPhillamys Gold Project pipeline development in Angus Place's underground water management system (ie until it can be redirected into the pipeline development for transfer to McPhillamys Gold Project).

The physical works associated with the development will therefore likely be limited to the construction of a pipeline from the Angus Place pit top to McPhillamys Gold Project Pumping Station Facility No. 1, and associated infrastructure required to operate this pipeline, including valves and a flow meter. The required pipeline works will take place on land owned by Centennial Angus Place.

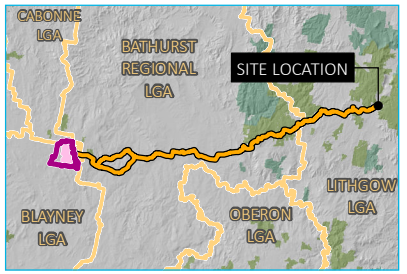
To minimise disturbance, it is anticipated that the water transfer pipeline and associated infrastructure will be constructed within predominantly existing disturbed areas at Angus Place's pit top and will utilise existing infrastructure (where possible) (refer to Figure 2.1). The water transfer pipeline and associated infrastructure will be designed, constructed, operated, and managed by Centennial Angus Place.

The detailed design of the pipeline is yet to be undertaken, including confirming whether the pipeline will be above ground or underground. Notwithstanding, it is anticipated that construction works will involve the following activities:

- establishing site environmental controls;
- creating temporary access tracks where required;
- clearing vegetation (if required) and removing and stockpiling topsoil;
- trench excavation, if the pipeline is to be installed underground;
- installing pipework;
- casting and pouring of concrete thrust blocks, if required;
- installing valves (as required);
- backfilling the trench (if installed underground); and
- site restoration.

The proposed development will be designed to avoid and minimise adverse biophysical, social and economic impacts where possible and is anticipated to result in minimal environmental impacts beyond those previously assessed under SSD-5602.

Extensive existing management controls and mitigation strategies are in place for Angus Place to effectively monitor, mitigate and/or manage environmental impacts. It is expected that all aspects relating to environmental management would continue in accordance with various approved environmental management plans.



KEY

- Sensitive receptor (privately owned)

McPhillamys Gold project application area

- Pipeline
- Pipeline corridor
- Mine development project area (refer to inset)
- Mining lease application area (refer to inset)

Existing environment

- Main road
- Local road
- Vehicular track
- Watercourse/drainage line
- Waterbody
- Cadastral boundary
- State forest
- NPWS reserve (refer to inset)
- Local government area (refer to inset)

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Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006)

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Angus Place and Pumping Station Facility No. 1

McPhillamys Gold Project - pipeline development
Environmental review of proposed infrastructure at Angus Place Colliery and Western Coal Services
Figure 2.1

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2.4 Potential environmental impacts

The potential biophysical, social, and economic impacts of the proposed development have been considered. A detailed assessment of the impacts of the proposed development will need to be prepared and submitted by Centennial Angus Place as part of a development application to DPIE; however, the below sub-sections consider the potential environmental impacts of the proposed development. Anticipated mitigation measures are also identified.

2.4.1 Water resources

The transfer of water to the McPhillamys Gold Project will enable an additional beneficial reuse of Angus Place's surplus water.

As noted in Section 2.2, any excess groundwater not used for on-site operational requirements at Angus Place is currently transferred to the SWTP via the Angus Place Haul Road Pipeline and the SDWTS. If water cannot be transferred to Pumping Station Facility No. 1 and subsequently on to the McPhillamys Gold Project, it is expected that this water would continue to be transferred to the SWTP for treatment and beneficial reuse at MPPS.

It is anticipated that the development application would need to include a water resources impact assessment that describes existing water management at Angus Place and any changes required as part of the proposed development and would need to include adequate consideration of potential impacts to water resources, users, and receptors. Should water need to be stored underground prior to transfer to the McPhillamys Gold Project, the potential impacts of this would need to be further considered as part of the development application.

Centennial Angus Place previously sought a variation to EPL 467 in 2018 for the inclusion of a pollution reduction program (PRP) to allow the establishment and operation of a temporary water treatment plant at Angus Place's pit top. The environmental impact assessment that was prepared as part of the variation application included consideration of the potential environmental impacts associated with the emplacement of residuals generated from the water treatment plant within the existing underground workings at Angus Place.

As part of this assessment, JBS&G (2018) prepared a groundwater assessment which investigated potential surface water and groundwater interactions between the underground workings at Angus Place (specifically the 800 District) and nearby surface water sources (namely Kangaroo Creek, Lambs Creek and the Wolgan River). The assessment concluded that no seepage of mine water from the 800 District to both Kangaroo Creek and Lambs Creek was likely to occur (JBS&G 2018). As a result of the average groundwater velocity (9.7 m/year), potential for seepage of stored mine water in District 800 into the Wolgan River was also considered unlikely over the proposed duration of storage (ie 5 years).

The results of this assessment suggest that should water need to be temporarily stored underground at Angus Place prior to transfer to the McPhillamys Gold Project, it could be done so with minimal risk of adverse impacts to the receiving environment.

Given the above, the supply of surplus water to and from Pumping Station Facility No. 1 is not expected to result in significant adverse impacts on local groundwater users, downstream waterways or downstream water users.

Erosion and sediment controls would be installed and maintained prior to the start of construction activities to ensure that downstream areas are protected from erosion and sedimentation, in accordance with the Landcom (2004) publication *Managing Urban Stormwater: Soils and Construction – Volume 1* and DECC (2008) *Volume 2E – Mines and Quarries* (the Blue Book).

Updates may also be required to Angus Place's water and salt balance and Water Management Plan as a result of the proposed development. Ongoing monitoring of underground water quality and potential connectivity with other groundwater sources may also be required.

2.4.2 Land and soils

The EIS prepared for the McPhillamys Gold Project (EMM 2019) considered the existing soil resources within the pipeline corridor. The soil landscapes and soil characteristics in and near Pumping Station Facility No. 1 at Angus Place is summarised in Table 2.1 (as reported in Appendix W of the EIS).

Table 2.1 Soil profile – Angus Place

Soil landscape	Australian soil classification	Land and soil capability	Inherent land fertility
Cullen Bullen	Kurosols	4	Moderately low

The Cullen Bullen landscape is described as having moderate gully erosion potential. Kurosol soils generally have very low agricultural potential with high acidity and low chemical fertility. As described above in Section 2.4.1, soil erosion minimisation practices would be adopted during earthworks, in accordance with the Blue Book.

2.4.3 Biodiversity

The additional infrastructure is anticipated to be within existing disturbed areas, and it is unlikely that significant additional vegetation clearing will be required. Vegetation within the potential area of impact has not been classified as part of previous biodiversity assessments; however, it is considered to be remnant vegetation adjacent to, or within, cleared land with a patch size of less than 1 ha. Should vegetation clearing or disturbance be required as part of the proposed development, potential biodiversity impacts would be assessed in accordance with the requirements of relevant NSW and Commonwealth legislation.

Vegetation and habitat at Angus Place will continue to be managed in accordance with the approved *Western Region Biodiversity Management Plan*.

2.4.4 Aboriginal cultural and historic heritage

Surface disturbance associated with the proposed development will likely be limited to the construction of the water transfer pipeline and associated infrastructure.

Aboriginal Cultural Heritage is managed at Angus Place in accordance with the *Western Region Aboriginal Heritage Management Plan* (Centennial 2016). No previously identified items or features of Aboriginal cultural heritage will be impacted as a result of the proposed development. No sites listed on the Aboriginal Heritage Information Management System (AHIMS) have been identified in the area where the pipeline is likely to be constructed between the pit top and Pumping Station Facility No. 1.

In relation to historic heritage, the *Western Region Historic Heritage Management Plan* (Centennial 2018) under which the site operates, states that there are no heritage items on Centennial-owned land and no heritage listed items exist within Angus Place Lease Boundary.

The management of Aboriginal and historic heritage at Angus Place will continue to be undertaken in accordance with the *Western Region Historic Heritage Management Plan* and the *Western Region Aboriginal Cultural Heritage Management Plan*. An unanticipated finds protocol will likely be required during construction to prevent unintended impacts to items or features of Aboriginal cultural or historic heritage if they are found.

2.4.5 Visual amenity

As previously described the additional surface infrastructure subject to the proposed development will likely be limited to the water transfer pipeline and associated infrastructure. Existing vegetation will likely screen the majority of views of this infrastructure for motorists travelling along Wolgan Road.

The nearest sensitive receiver (ie dwelling) to the proposed infrastructure is WR1, approximately 800 m south-west of existing infrastructure at Angus Place pit top, as shown on Figure 2.1. Existing vegetation is anticipated to screen all views of the proposed infrastructure from WR1.

2.4.6 Waste

The proposed development is not expected to generate any additional waste streams nor result in any material increase in the volumes of wastes generated at Angus Place.

Waste would continue to be managed in accordance with NSW Environment Protection Authority (EPA) guidelines, the approved *Waste Management Plan* and the conditions of the development consent.

2.4.7 Traffic and transport

No significant traffic and transport impacts are anticipated as a result of the proposed development.

Access to the proposed site of the water transfer pipeline and associated infrastructure will be directly from Wolgan Road. Due to the limited amount of infrastructure required, it is anticipated that during construction only limited vehicle movements will be required for construction workers and deliveries.

It is likely that a construction traffic management plan will be required to manage the temporary impacts along Wolgan road during the required trenching activities.

2.4.8 Air quality

No significant air quality impacts are anticipated as a result of the proposed development. The only anticipated air quality related impacts associated with the development are those associated with the brief construction period of the pipeline and associated infrastructure.

The nearest sensitive receiver (ie dwelling) to the proposed infrastructure is WR1, approximately 800 m south-west of existing infrastructure at Angus Place pit top. The proposed development will have a low level of disturbance for a short period of time. The only change to surface infrastructure as part of the proposed development is anticipated to be the construction of the water transfer pipeline and associated infrastructure. The proposed development will not result in the intensification of the existing operations at Angus Place.

Due to the limited amount of infrastructure required, it is anticipated that during construction only limited vehicle movements, plant and equipment will be required.

It is anticipated that dust mitigation will continue to be implemented in accordance with the mitigation measures outlined in the approved *Western Region Air Quality and Greenhouse Gas Management Plan*.

2.4.9 Noise

No significant noise impacts are anticipated as a result of the proposed development. The only anticipated noise related impacts associated with the development are those associated with the brief construction period of the pipeline and associated infrastructure.

As described above in Section 2.4.8, the nearest sensitive receiver (ie dwelling) to the proposed infrastructure is WR1. The proposed development will require a low level of disturbance for a short period of time. The only change to surface infrastructure as part of the proposed development will be the construction of the water transfer pipeline and associated infrastructure. The proposed development will not result in the intensification of the of existing operations at Angus Place.

Due to the limited amount of infrastructure required, it is anticipated that during construction only limited vehicle movements, plant and equipment will be required.

It is anticipated that noise mitigation and monitoring will continue to be implemented in accordance with the measures outlined in the approved *Western Region Noise Management Plan.*

2.4.10 Social and economic

The proposed development is required to facilitate the supply of water to the McPhillamys Gold Project. Therefore, it will contribute to the social and economic benefits provided by the pipeline through increased water security for the McPhillamys Gold Project and subsequent benefits to the local and regional economy through income for, and expenditure from, the mine's workforce.

In addition, and as described above, no significant amenity related impacts, such as air, noise or visual impacts, are anticipated on any sensitive receivers in the vicinity of the proposed works.

3 Western Coal Services

3.1 Background

Springvale Coal Pty Limited (Springvale Coal) operates the Western Coal Services (WCS) project, a coal handling and processing operation approximately 15 km north of Lithgow in the Lithgow local government area. WCS was granted development consent SSD-5579 on 4 April 2014 by the NSW Planning Assessment Commission, as delegate for the then NSW Minister of Planning and Infrastructure. The main components of WCS are:

- SCSS – a coal processing and storage facility used for ROM coal handling and stockpiling, ROM coal beneficiation (washing), emplacement of coal reject material and emplacement of residual material from the SWTP;
- Kerosene Vale Stockpile Area – a coal stockpile area approved under SSD-5579, but managed day-to-day by Angus Place;
- an overland conveyor system extending from Springvale Mine's pit top to MPPS via SCSS to Lidsdale Siding;
- Mount Piper Haul Road – extending from Angus Place's pit top to MPPS;
- Wallerawang Haul Road – extending from Angus Place's pit top to Wallerawang Power Station;
- Link Haul Road – a private road to be constructed between the Mount Piper Haul Road and SCSS; and
- a residual waste stream pipeline –transfer of residual waste material from the SWTP at MPPS to an existing reject emplacement area at SCSS.

3.2 Existing water management system

The surface water management system at SCSS consists of a series of water management structures, allowing surface water runoff from the site and water seeping from the old underground mine workings to be captured and redistributed within the site for reuse or to improve the water quality.

Springvale Coal currently holds EPL 21229, with water licensed to be discharged from WCS through two LDPs:

- LDP001 at the base of Lamberts Gully at SCSS; and
- LDP002 on a drainage channel adjacent to overland conveyors on Duncan Street/Brays Lane.

All of the catchments within SCSS that drain towards LDP001 converge upstream and discharge off-site through a single discharge point into Wangcol Creek. Discharges to Wangcol Creek flow south-east to the Coxs River.

The primary objectives of the water management system at SCSS are to:

- provide a secure water supply for coal washing, washdown and dust suppression (including haul roads and coal stockpiles); and
- control the quantity and quality of water discharged into Wangcol Creek via LDP001.

Springvale Coal has consulted extensively with EPA on LDP001 discharges and approaches to improve water quality within Wangcol Creek.

3.3 Proposed development description

To facilitate the supply of water to the McPhillamys Gold Project, Springvale Coal will need to:

- construct and operate the SCSS Water Transfer System; and
- transfer up to 15.6 ML/day of water from SCSS Water Transfer System to Pumping Station Facility No. 2.

The SCSS Water Transfer System will consist of the infrastructure required to connect SCSS to Pumping Station Facility No. 2 and will likely include a transfer pit, pumps, valves, transformer, and motor control centre.

To minimise disturbance, this infrastructure will be constructed within close proximity of LDP001, within WCS's approved project application area and adjacent to the indicative envelope provided for Pumping Station Facility No. 2 (refer to Figure 3.1). As can be seen on Figure 3.1, the area around Pumping Station Facility No. 2 is highly disturbed.

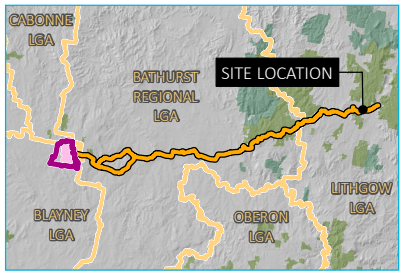
All water that currently leaves SCSS via LDP001 would be pumped to Pumping Station Facility No. 2 via the SCSS Water Transfer System.

The detailed design of the required infrastructure is yet to be undertaken. Notwithstanding, it is anticipated that construction works will involve the following activities:

- establishing site environmental controls;
- creating temporary access tracks where required;
- clearing vegetation (if required) and removing and stockpiling topsoil;
- installing pipework, valves, flow meter, transformer and motor control centre, as required;
- backfilling trenches (if any pipes are installed underground); and
- site restoration.

The SCSS Water Transfer System will be designed, constructed, operated, and managed by Springvale Coal.

The proposed development would be designed to avoid and minimise adverse biophysical, social and economic impacts where possible and is anticipated to result in minimal environmental impacts. The additional infrastructure is anticipated to be within existing disturbed areas, and it is unlikely that any vegetation clearing will be required.



KEY

- Sensitive receptor (privately owned)
- Sensitive receptor (Centennial owned)
- Licensed discharge point

McPhillamys Gold project application area

- Pipeline
- Pipeline corridor
- Mine development project area (refer to inset)
- Mining lease application area (refer to inset)

Existing environment

- Main road
- Local road
- Vehicular track
- Watercourse/drainage line
- Waterbody
- Cadastral boundary
- State forest
- NPWS reserve (refer to inset)
- Local government area (refer to inset)

\\Emmsvr1\emm\Jobs\2018\I180395 - Regis McPhillamys EIS\GIS\02_Maps_RTS\MEM001_SpringvalePS2_20200722_03.mxd 26/08/2020

Source: EMM (2020); Regis Resources (2020); ESRI (2020); DFSI (2017); ASGC (2006)

0 100 200 m

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Springvale Coal Services Operations and Pumping Station Facility No. 2

McPhillamys Gold Project - pipeline development
Environmental review of proposed infrastructure at Angus Place Colliery and Western Coal Services
Figure 3.1

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3.4 Potential environmental impacts

The potential biophysical, social, and economic impacts of the proposed development have been considered. A detailed assessment of the impacts of the proposed development will need to be prepared and submitted by Springvale Coal as part of a development application to DPIE; however, the below sub-sections consider the potential environmental impacts of the proposed development.

3.4.1 Water resources

The proposed development will eliminate WCS's raw water discharges into Wangcol Creek.

The supply of water to Pumping Station Facility No. 2 is not expected to result in significant adverse impacts on local groundwater users, downstream waterways or downstream water users. The proposed development would have a beneficial impact by removing raw mine water discharges into Wangcol Creek.

Given that the proposed development will result in changes to the water balance for WCS, a water and salt balance assessment would likely need to be prepared as part of the development application. The development application would also likely need to include consideration of potential impacts to water resources, users, and receptors. Updates may also be required to WCS's *Water Management Plan* should the project be approved.

3.4.2 Land and soils

As evident on Figure 3.1, the area in the vicinity of pumping station facility No. 2 is highly disturbed. Notwithstanding, and as described above in Section 2.4.1, soil erosion minimisation practices will be adopted during construction works for the required infrastructure, in accordance with the Blue Book.

3.4.3 Biodiversity

The additional infrastructure required for the SCSS Water Transfer System will be within existing disturbed areas and therefore no impacts to remnant vegetation are anticipated. Clearing of native vegetation should be limited to mine site rehabilitation, and patches of remnant vegetation surrounding the disturbance footprint should be retained. In the unlikely event that vegetation clearing or disturbance is required as part of the proposed development, potential biodiversity impacts would be further assessed in accordance with the requirements of relevant NSW and Commonwealth legislation.

Vegetation and habitat at SCSS will continue to be managed in accordance with the approved *Western Region Biodiversity Management Plan*.

3.4.4 Aboriginal cultural and historic heritage

Aboriginal cultural heritage is managed at WCS in accordance with the *Western Region Aboriginal Heritage Management Plan* (Centennial 2016). No previously identified items or features of Aboriginal cultural heritage will be impacted as a result of the proposed development. No sites listed on the Aboriginal Heritage Information Management System (AHIMS) have been identified in the vicinity of Pumping Station Facility No. 2.

In relation to historic heritage, the *Western Region Historic Heritage Management Plan* (Centennial 2018) under which the site operates, states that there are no heritage items on Centennial-owned land and no heritage listed items exist within WCS Lease Boundary.

The management of Aboriginal and historic heritage at WCS will continue to be undertaken in accordance with the *Western Region Historic Heritage Management Plan* and the *Western Region Aboriginal Cultural Heritage Management Plan*. An unanticipated finds protocol will likely be required during construction to prevent unintended impacts to items or features of Aboriginal cultural or historic heritage if they are found.

3.4.5 Visual amenity

Additional surface infrastructure as part of the SCSS Water Transfer System will likely be limited to a transfer pit, pumps, valves, transformer, and motor control centre. It is expected that existing vegetation would screen the majority of views of the SCSS Water Transfer System from motorists travelling along the Castlereagh Highway.

The nearest sensitive receiver (ie dwelling) to LDP001 is B12, approximately 620 m south-east of LDP001. Existing vegetation is anticipated to screen all views of the SCSS Water Transfer System from B12.

3.4.6 Waste

The proposed development is not expected to generate any additional waste streams nor result in any material increase in the volumes of waste generated at SCSS.

3.4.7 Traffic and transport

No significant traffic and transport impacts are anticipated as a result of the proposed development.

Access to the proposed site of the SCSS Water Transfer System will likely be directly from the Castlereagh Highway. Due to the limited amount of infrastructure required, it is expected that during construction limited vehicle movements would be required for construction workers and deliveries.

3.4.8 Air quality

No significant air quality impacts are anticipated as a result of the proposed development. The only anticipated air quality related impacts associated with the development would be those associated with the brief construction period of the SCSS Water Transfer System.

The nearest sensitive receiver (ie dwelling) to LDP001 is B12, approximately 620 m south-east of LDP001. The proposed development will have a low level of disturbance for a short period of time. The only change to surface infrastructure as part of the proposed development will likely be the construction of the SCSS Water Transfer System.

Due to the limited amount of infrastructure required, it is anticipated that during construction only limited vehicle movements, plant and equipment will be required.

It is anticipated that dust mitigation will continue to be implemented in accordance with the mitigation measures outlined in the approved *Western Region Air Quality and Greenhouse Gas Management Plan*.

3.4.9 Noise

No significant noise impacts are anticipated as a result of the proposed development. The only anticipated noise and vibration related impacts associated with the development are those associated with the brief construction period of the SCSS Water Transfer System.

As described above in Section 3.4.8, the nearest sensitive receiver (ie dwelling) to LDP001 is B12, approximately 620 m south-east of LDP001. The proposed development will have a low level of disturbance for a short period of time. The only change to surface infrastructure as part of the proposed development will likely be the construction of the SCSS Water Transfer System.

Due to the limited amount of infrastructure required, it is anticipated that during construction only limited vehicle movements, plant and equipment will be required.

It is anticipated that noise mitigation and monitoring will continue to be implemented in accordance with the measures outlined in the approved *Western Region Noise Management Plan*.

3.4.10 Social and economic

The proposed development is required to facilitate the supply of water to the McPhillamys Gold Project. Therefore, it will provide indirect social and economic benefits through increased water security for the McPhillamys Gold Project and subsequent benefits to the local and regional economy through income for, and expenditure from, the mine's workforce.

In addition, and as described above, no significant amenity related impacts, such as air, noise or visual impacts, are anticipated on any sensitive receivers in the vicinity of the proposed works.

4 Conclusion

Development consent will be required for Angus Place and WCS to facilitate the transfer of water to the McPhillamys Gold Project. A review of potential impacts associated with these development consent applications has been provided to enable some consideration of these impacts by the consent authority for the McPhillamys Gold Project.

Minimal additional infrastructure is required at Angus Place's pit top and SCSS to facilitate the transfer of water from Centennial's existing operations to the McPhillamys Gold Project. It is anticipated that this infrastructure will be within predominately existing disturbed areas and it is unlikely that any significant additional vegetation clearing will be required. Further, given the short duration and limited nature of the works and minimal nearby sensitive receivers, no significant impacts are anticipated on any sensitive receivers.

Notably, the transfer of water from Angus Place to the McPhillamys Gold Project will enable an additional beneficial reuse of surplus mine water, while the transfer of water from SCSS will have a beneficial impact by removing raw mine water discharges that currently occur into Wangcol Creek (via LDP001).

References

Centennial 2016, *Aboriginal Cultural Heritage Management Plan – Western* Region.

Centennial 2018, *Historic Heritage Management Plan – Western Region.*

JBS&G 2018, *Angus Place Water Treatment Project: Groundwater Assessment.* Report prepared by JBS&G for Centennial Angus Place.

RPS 2013, *Western Coal Services Project – Environmental Impact Statement*. Report prepared by RPS for Springvale Coal.

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