



**Planning &  
Environment**

**STATE SIGNIFICANT  
DEVELOPMENT ASSESSMENT  
*Springvale Water Treatment Project  
(SSD 7592)***



Assessment Report  
Section 89E of the  
*Environmental Planning and Assessment Act 1979*  
April 2017

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## EXECUTIVE SUMMARY

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Springvale Coal Pty Limited, in collaboration with Energy Australia, proposes to develop a mine water transfer and treatment project, which would transfer mine water from the Springvale Coal Mine and Angus Place Coal Mine to the Mount Piper Power Station, for use in its cooling towers. The project is known as the Springvale Water Treatment Project.

The project involves two key components: a 15 kilometre water transfer pipeline, to transfer up to 42 megalitres a day of mine water from the Springvale Coal Mine to the power station; and a desalination plant to treat the water for use in the cooling towers. The project would remove the current need to discharge a large amount of mine water to the drinking water catchment, and provide a beneficial re-use of this water in the operation of the power station.

The project is classified as State significant development (SSD) under section 89C of the *Environmental Planning & Assessment Act 1979* (EP&A Act), and requires the Minister's consent. However, under the Minister's delegation of 14 September 2011, the Planning Assessment Commission must determine the development application for the project as it attracted more than 25 public objections.

There are also two modifications associated with this project: one to defer salinity reduction targets in the Springvale Mine consent until the Springvale Water Treatment Project is completed; and another to allow the Western Coal Services Site to receive a small amount of residual waste from the treatment of mine water. This project and the two modifications are fundamentally inter-related and have therefore been submitted to the Commission for determination as one package at the same time.

The Department publicly exhibited the development application and accompanying environmental impact statement (EIS) from 27 September 2016 to 8 November 2016. During the exhibition period, the Department received 453 submissions on the project, including 7 from government agencies, 5 from special interest groups, and 441 submissions from the general public.

All the agencies support the project, subject to the imposition of suitable conditions of consent.

All but one of the 441 public submissions raised concerns about the project. The key issue raised in most of these objections related to potential impacts on the water catchment from the discharge of treated mine water into a new discharge point into Wangcol Creek. However, this issue is no longer relevant as the Applicant has amended its development application to remove that aspect of the project.

The five special interest groups expressed support to the removal of highly saline mine water discharges from the catchment, and all asked if the project could be expanded to capture mine water from additional mines in the Lithgow region. While the Department agrees that this should be considered as an option in the future, the Department accepts that it does not form part of the current project and understands the practical and economic difficulties that prevent an expansion at this stage.

In its assessment, the Department considers that three key issues required careful consideration. First, the Department finds that the considerable benefits from the removal and re-use of mine water far outweigh some minor potential residual catchment impacts, including the disposal of by-product materials (see **section 5.1**).

Secondly, the Department also considers that a relatively small amount of native vegetation clearing required would be appropriately mitigated through detailed project design and the provision of suitable biodiversity offsets, in accordance with the *NSW Biodiversity Offsets Policy* (see **section 5.2**).

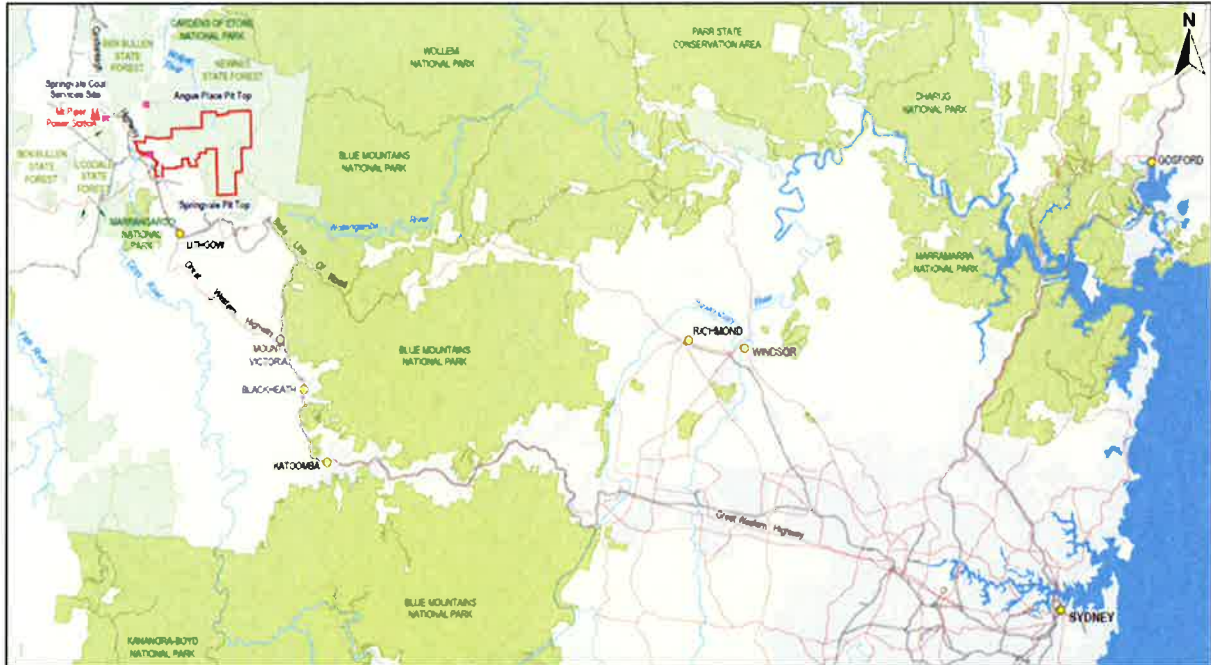
Finally, the Department recognises the importance of this project for the continued operation of the Springvale Mine, which is the only supplier of coal to the power station. In the broader context of energy security, it is important that the power station has a reliable source of coal to enable it to operate continuously as it provides approximately 15% of NSW's electricity (see **section 5.3**).

The Department therefore considers that on balance, the benefits outweigh the environmental impacts, that the project is in the public interest and should be approved, subject to the strict conditions recommended by the Department.

# 1. PROPOSED PROJECT

## 1.1 Background

Springvale Mine and Angus Place Colliery are underground coal mines located in the western coalfield of NSW, approximately 15 kilometres (km) west of Lithgow. The Mount Piper Power Station is located approximately 8 km west of Springvale Mine (see **Figure 1**).



**Figure 1: Project Locality**

Springvale Mine is owned by Centennial Springvale and Springvale SK Kores, and is operated by Springvale Coal. Springvale Mine has been operational since 1995 and has approval to extract up to 5.5 million tonnes per annum (Mtpa) of run of mine coal. It currently has a full-time workforce of 363 employees, with a potential future increase to 410 employees.

In 2015, the Planning Assessment Commission (the PAC) granted development consent (SSD 5594) for the Springvale Mine Extension Project. The project allowed the continuation of mining operations at Springvale Mine until 31 December 2028.

Springvale Coal also manages the Angus Place Colliery, which is located to the north of Springvale Mine. It was operational from 2002 with an approval to extract 4 Mtpa of coal, and was placed under care and maintenance in 2015.

Mount Piper Power Station is a coal-fired power station that is owned and operated by EnergyAustralia and generates up to 1,400 megawatts (MW) of electricity. It currently supplies approximately 15% of NSW's energy demand.

## 1.2 Mine Water Management

The removal of groundwater is an essential aspect of underground mining, whether it is 'dewatering' in advance of mining operations or the ongoing removal of inflows that occur during mining. Springvale Mine and Angus Place Colliery currently discharge mine water into the Cocks River catchment at a licenced discharge point (LDP009) located in Sawyers Swamp Creek. This discharge is allowed under an Environment Protection Licence (EPL) issued by the Environment Protection Authority (EPA).

The discharge of mine water into Sawyers Swamp Creek has occurred since the closure of Wallerawang Power Station in early 2014 (located to the west of Springvale Mine). Prior to that, the mine water was transferred for treatment and industrial re-use in Wallerawang's cooling towers.

The EPL that currently permits the mine water discharges into Cocks River was originally intended as an interim solution following the closure of the Wallerawang Power Station. This was a key issue that the PAC considered in its assessment of the Springvale Mine Extension Project in 2015.

Consequently, the PAC used the granting of consent for the Springvale Mine Extension Project as an opportunity to impose stricter water quality performance measures on mine water discharges. The PAC set targets to improve the water quality of the discharges and specifically required Springvale Coal to consider the potential transfer of mine water to Mount Piper Power Station.

### 1.3 Springvale Water Treatment Project

To meet the performance measures in the Springvale Mine Extension Project, Springvale Coal has collaborated with EnergyAustralia to develop the Springvale Water Treatment Project. This project would involve the transfer of mine water to Mount Piper Power Station for treatment and reuse.

The project includes a proposed pipeline that would transfer mine water from both Springvale Mine and Angus Place Colliery to a proposed water treatment plant south of the existing cooling towers at Mount Piper Power Station (see **Figure 2**). The transfer pipeline alignment would follow existing infrastructure on the Newnes Plateau, including ash pipelines, haul roads and an overland conveyor.

The proposed water treatment plant would utilise a reverse osmosis process. Treated mine water would then be pumped from the water treatment plant to the Mount Piper Power Station for use in the cooling towers (see **Figure 3**).

Springvale Coal initially proposed to discharge excess treated water into Wangcol Creek via a new licenced discharge point. However, the Applicant amended the project after both the community and government agencies raised concerns about the potential impacts of discharges on the catchment. The amended project now involves the transfer of treated mine water to Thompsons Creek Reservoir.

The project is described in full in the EIS (see **Appendix A**) and the amended development application documentation (see **Appendix C**). The major components of the project are summarised in **Table 1**.

### 1.4 Related Applications

In 2016, Springvale Coal lodged four separate applications with the Department that are related to mining operations at Springvale Mine, including the:

- Springvale Water Treatment Project;
- Springvale Mine Extension Project Modification 1: Production Increase (Springvale Mod 1);
- Springvale Mine Extension Project Modification 2: Deferral of Salinity Reductions (Springvale Mod 2); and
- Western Coal Services Project Modification 1: Residuals Emplacement (Western Coal Services Mod 1).

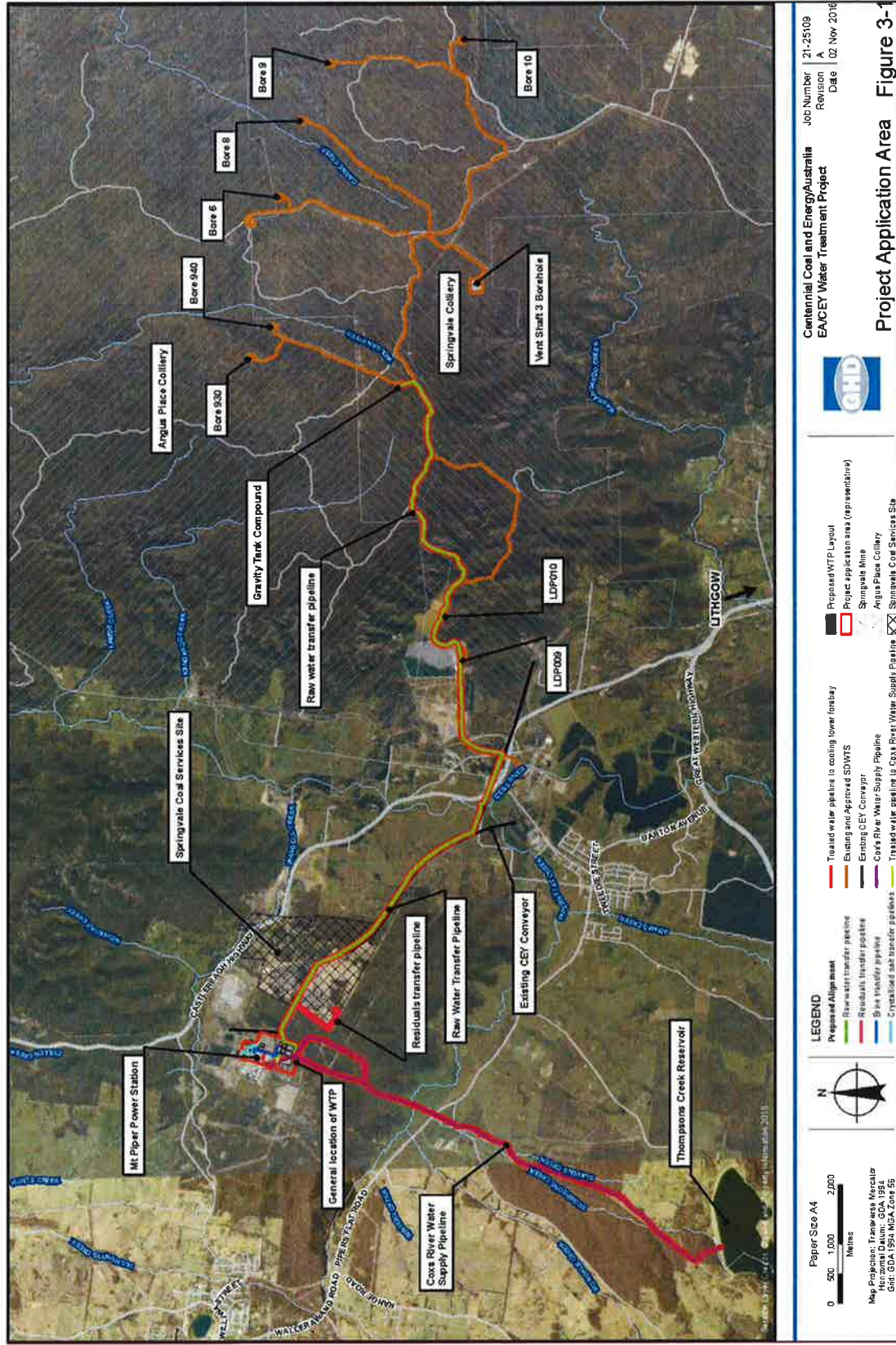
Springvale Mod 1 involves a proposal to increase coal production at the mine and an increase in stockpile size. Given Springvale Mod 1 was not directly related to the Springvale Water Treatment Project and was submitted in advance, it was dealt with separately on its own merits. It was approved by the PAC on 19 April 2017.

Springvale Mod 2 seeks to remove the shorter-term salinity reductions and defer toxicity reductions until the Springvale Water Treatment Project is completed. This modification is now required due to the delays in the assessment of the Springvale Water Treatment Project, the large scale and nature of the \$100 million project, and the time required to construct if it is approved.

Western Coal Services Mod 1 seeks to allow the Western Coal Services Site to receive a small amount of residual waste from the treatment of mine water at the Springvale Water Treatment Project.

The Springvale Water Treatment Project, Springvale Mod 2 and Western Coal Services Mod 1 are fundamentally inter-related and have therefore been submitted to the Commission for determination as one package at the same time. Each of these three applications have a separate assessment report, however these reports are appropriately cross referenced throughout.





**Figure 2: Project Overview (as amended)**



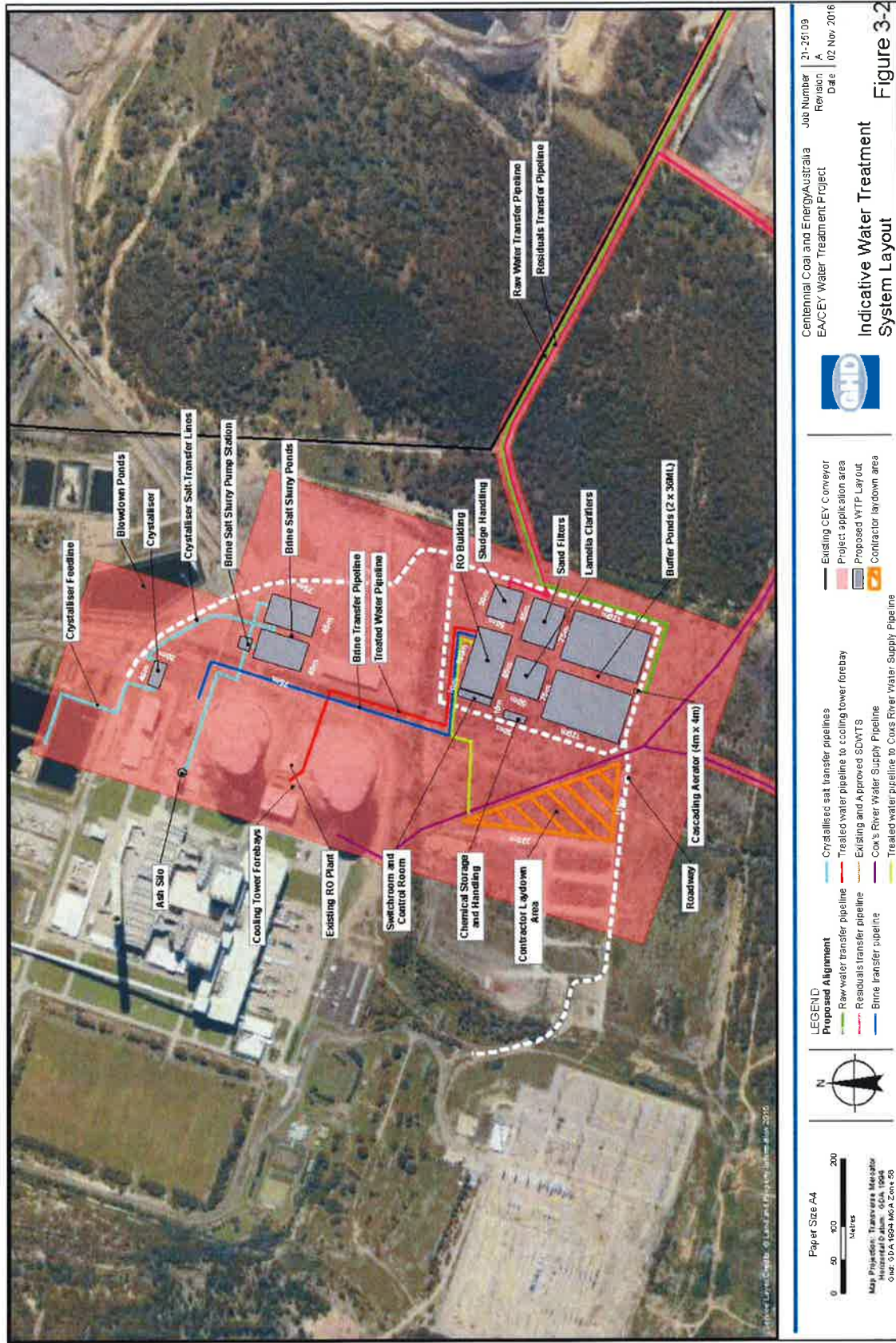


Figure 3: Water Treatment Plant Layout

**Table 1: Major Components of the Project**

Aspect	Project as originally submitted	Project as amended
Summary	<ul style="list-style-type: none"> <li>• Pipeline to transfer mine water from Springvale Mine site to Mount Piper Power Station;</li> <li>• Water treatment plant utilising reverse osmosis;</li> <li>• Use of treated water in cooling towers;</li> <li>• Residual waste from pre-treatment process transferred via pipeline to Western Coal Services Site; and</li> <li>• Transfer of surplus treated mine water into Wangcol Creek via a new licenced discharge point.</li> </ul>	<ul style="list-style-type: none"> <li>• Removal of new licensed discharge point into Wangcol Creek; and</li> <li>• Transfer of surplus treated mine water to Thompsons Creek Reservoir instead.</li> </ul>
Pipelines	<ul style="list-style-type: none"> <li>• 'Raw Water Transfer Pipeline':               <ul style="list-style-type: none"> <li>- 15 km pipeline from Springvale Mine to Mount Piper Power Station;</li> <li>- capacity of 36 megalitres (ML)/day;</li> </ul> </li> <li>• 'Treated Water Transfer Pipeline':               <ul style="list-style-type: none"> <li>- 3 km pipeline to transfer excess treated water from water treatment plant for discharge at a new licensed discharge point in Wangcol Creek; and</li> </ul> </li> <li>• 'Residuals Transfer Pipeline':               <ul style="list-style-type: none"> <li>- 1.8 km residuals pipeline to transfer from water treatment plant to Western Coal Services Site.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• 'Raw Water Transfer Pipeline' – increased capacity of 42 ML/day;</li> <li>• 'Treated Water Transfer Pipeline' removed – use existing pipeline to transfer excess treated water to Thompsons Ck Reservoir; and</li> <li>• No change to 'Residuals Transfer Pipeline'.</li> </ul>
Water Treatment Plant	<ul style="list-style-type: none"> <li>• New water treatment plant at Mount Piper Power Station integrated with existing system (see <b>Figure 4</b>):               <ul style="list-style-type: none"> <li>- capacity to treat 36 ML/day;</li> <li>- water treatment and management infrastructure including reverse osmosis plant, crystalliser, aerator, sand filter, lamella clarifiers and water pump station;</li> <li>- waste management systems including ash silo, sludge handling room, brine slurry pumping station, brine slurry ponds and buffer ponds;</li> <li>- administration infrastructure, including laboratory, office, control room, kitchen, dining and first aid room; and</li> <li>- security fencing and security system.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Increase capacity of treatment plant to treat 42 ML/day; and</li> <li>• Upgrade capacity of treated water pump station to allow pumping to Thompsons Creek Reservoir.</li> </ul>
Ancillary Features	<ul style="list-style-type: none"> <li>• Air valves, vent stacks, scour valves, communications systems and intermediate in-line control valves.</li> </ul>	<ul style="list-style-type: none"> <li>• Unchanged.</li> </ul>
Construction Facilities	<ul style="list-style-type: none"> <li>• Temporary construction compounds and laydown areas located along the proposed pipeline and within treatment plant footprint.</li> </ul>	<ul style="list-style-type: none"> <li>• Unchanged.</li> </ul>
Construction Road Transport	<ul style="list-style-type: none"> <li>• Major transport routes to the project site would be via Castlereagh Highway and private haul roads.</li> </ul>	<ul style="list-style-type: none"> <li>• Unchanged.</li> </ul>
Road Works	<ul style="list-style-type: none"> <li>• Pipeline crossing over the Castlereagh Highway road corridor west of Blackmans Flat.</li> </ul>	<ul style="list-style-type: none"> <li>• Unchanged.</li> </ul>
Total Project Area	<ul style="list-style-type: none"> <li>• 105.8 ha project footprint.</li> </ul>	<ul style="list-style-type: none"> <li>• Unchanged.</li> </ul>
Capital Investment Value	<ul style="list-style-type: none"> <li>• \$100 million.</li> </ul>	<ul style="list-style-type: none"> <li>• Unchanged.</li> </ul>
Employment	<ul style="list-style-type: none"> <li>• 50 full time equivalent construction jobs; and</li> <li>• 5 full time equivalent operational jobs.</li> </ul>	<ul style="list-style-type: none"> <li>• Unchanged.</li> </ul>
Hours of Operation	<ul style="list-style-type: none"> <li>• Construction would be undertaken during standard working hours:               <ul style="list-style-type: none"> <li>- Monday to Friday 7 am to 6 pm;</li> <li>- Saturday 8 am to 1 pm; and</li> </ul> </li> <li>• Operation would be 24 hours, 7 days a week.</li> </ul>	<ul style="list-style-type: none"> <li>• Unchanged.</li> </ul>



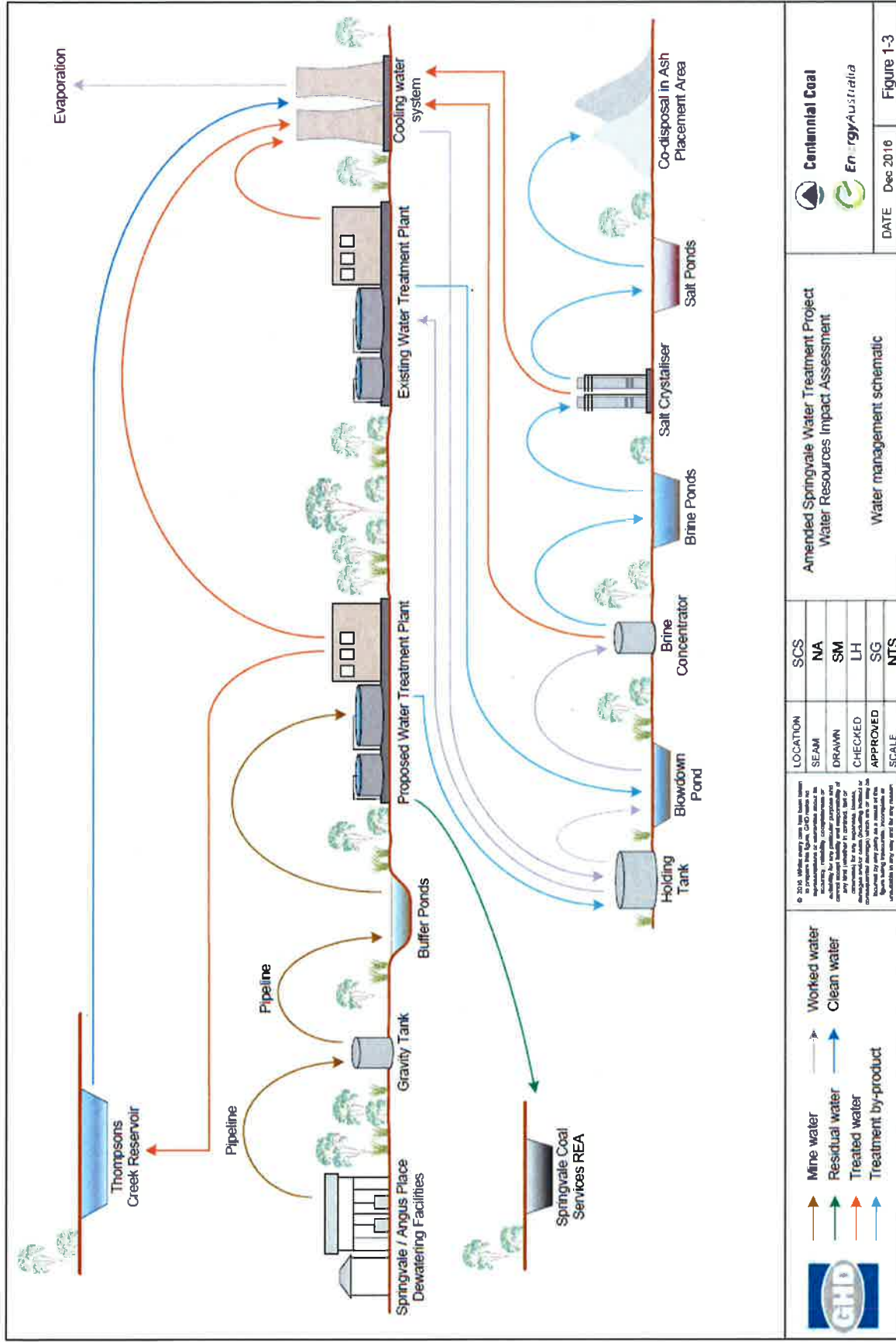


Figure 4: Schematic of Water Treatment Process

## 2. STRATEGIC CONTEXT

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### 2.1 Regional Setting

Land use in the Lithgow region is characterised by a combination of coal mining, small-scale cattle grazing properties, hobby farms, rural residential developments and small townships.

There are also large areas of State Forest where commercial forestry and recreational uses are common, including camping, dirt-biking and hunting.

The coal mining industry is the major employer in the region, with more than 10% of the workforce working in mining-related jobs. The power generation industry is also an important employer with approximately 290 people working at the Mount Piper Power Station.

### 2.2 Environmental Setting

The Springvale Mine and Mount Piper Power Station are located in close proximity to a number of National Parks, including the Blue Mountains National Park, the Gardens of Stone National Park and the Wollemi National Park. These parks are an important natural asset for NSW, as they act as biodiversity conservation areas and sustainable tourism destinations.

The underground mine workings are also located within the upper reaches of the Cocks River catchment, which ultimately feeds into Lake Burragorang, the primary reservoir for drinking water supply to Sydney. However, there is a considerable distance between the upper and lower reaches of the drinking water catchment, with Lake Burragorang located approximately 80 km from Springvale Mine.

While the lower reaches of the Cocks River catchment generally have high water quality with low salinity, the upper reaches of the catchment are somewhat degraded and contain moderate salinity. This is largely due to historical pressures from the predominant land uses in the region, including mining, agriculture and commercial forestry.

### 2.3 Energy Security

The Lithgow region is a strategically important coal mining centre that is important for cost effective generation of electricity for Sydney and NSW. However, in recent years four established coal mines in the region have ceased to operate, including Baal Bone Mine, Cullen Valley Mine, Invincible Mine and Angus Place Colliery.

As a result, Springvale Mine is the only local supply of coal to the Mount Piper Power Station, which provides approximately 15% of NSW's electricity. In the broader context of NSW energy supply, it is important that the power station has a reliable source of coal to enable it to operate continuously, particularly during periods of increased demand.

The Department notes that in recent times, NSW has experienced an increase in the development of renewable energy sources. This aligns with the NSW Government *Renewable Energy Action Plan*, which encourages the development of renewable energy in NSW, and will help NSW meet the national *Renewable Energy Target (RET)* of 20% renewable energy by 2020.

However, these renewable energy sources do not currently have the capacity to meet the State's energy demand. This means that coal remains an important energy source to protect against power outages and ensure energy security in the short to medium term.

### 2.4 Timeline of Events

Since mining operations commenced at Springvale Mine in 1992, there has been a growing awareness about the potential adverse impacts associated with underground mining in the western coalfield, particularly within the drinking water catchment. There have been a number of important events that have ultimately led to the development application for the Springvale Water Treatment Project, and its associated modifications. These key events are summarised in **Table 2**.

**Table 2: Timeline of Events**

<b>Date</b>	<b>Event</b>
1992	• Springvale Mine - development consent (DA 11/92) granted
1995	• Springvale Mine - underground coal mining operations commence
2006	• Wallerawang Power Station – Pollution Reduction Program required mine water from Springvale Mine and Angus Place Colliery to be transferred to power station for treatment and beneficial re-use
November 2014	• Wallerawang Power Station – closed
December 2014	• Springvale Mine – EPL issued that allows mine water discharges into Sawyers Swamp Creek (intended as a temporary measure)
June – Sept 2015	• Springvale Mine Extension Project – PAC review and determination led to requirements to reduce salinity in mine water discharges at Sawyers Swamp Creek
April – May 2016	• Springvale Water Treatment Project – SEARs requested and issued
September 2016	• Springvale Water Treatment Project – development application lodged
November 2016	• Western Coal Services MOD 1 lodged
December 2016	• Springvale Mine Extension Project MOD 2 lodged

### 3. STATUTORY CONTEXT

#### 3.1 State Significant Development

The project is declared to be State Significant Development (SSD) under Section 89C of the EP&A Act as it is a development “for the purpose of desalination plants that has a capital investment value of more than \$10 million”.

The Minister for Planning is the consent authority for the proposed development. However, the development application falls within the Minister’s delegation to the PAC dated 14 September 2011, because more than 25 public submissions in the nature of objections were made.

Consequently, the PAC must determine the application.

#### 3.2 Amended Development Application

Under clause 55 of the EP&A Regulation, a State significant development application may be amended at any time before its determination with the agreement of the consent authority.

Springvale Coal discussed its proposed development with the Department and key Government agencies prior to formal lodgement. The Department subsequently agreed to the submission of the amendment application.

The Department reviewed the amended development application and considered that it contained sufficient information to clearly indicate the nature of the proposed amendments.

The Department considered that the proposed amended development application does not substantially differ from the original application as it only involved a change in the transfer location of excess treated mine water and the increase in the capacity of the treatment system. More importantly, the environmental impacts of the development are likely to be significantly reduced by the proposed changes.

The Department sought comment on the amended project from government agencies that raised concerns on the original project application. The amended project application was also publicly available on the Department’s website.



### 3.3 Permissibility

The proposed development is located within the Lithgow City local government area. Under the *Lithgow Local Environmental Plan 2014* (Lithgow LEP 2014), the proposed development area includes land zoned as:

- RU1 - Primary Production;
- RU2 - Rural Landscape;
- RU3 - Forestry; and
- SP2 – Infrastructure.

Water supply systems are permissible with consent in the RU1 and RU2 zones. Non-forestry land uses in State Forests are permitted in accordance with the *Forestry Act 2012* and are subsequently permissible without consent in the RU3 zone. Development that is ancillary to the operation of the Mount Piper Power Station is permissible with consent in the SP2 zone.

Consequently, the project is permissible with development consent and the PAC may determine the application.

### 3.4 Environmental Planning Instruments

A number of state policy instruments apply to the project, including the:

- *State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011*;
- *State Environmental Planning Policy No. 33 (Hazardous and Offensive Development)*; and
- *State Environmental Planning Policy No. 44 (Koala Habitat Protection)*.

Based on its assessment (see **section 5**), the Department considers that these instruments do not substantially govern the project, and that the development could be undertaken in a manner that is generally consistent with the aims, objectives and provisions of these instruments.

### 3.5 Integrated and Other Approvals

Under Section 89J of the EP&A Act, a number of other approvals are integrated into the SSD approval process, and consequently are not required to be separately obtained for the proposal. These include:

- various approvals relating to heritage required under the *National Parks and Wildlife Act 1974*;
- an authorisation under the *Native Vegetation Act 2003* for the clearing of native vegetation; and
- certain water approvals under the *Water Management Act 2000*.

Under Section 89K of the EP&A Act, other approvals are required, but these approvals must be substantially consistent with any development consent for the project. These include:

- an environment protection licence (EPL) under the *Protection of the Environment Operations Act 1997*; and
- consent under Section 138 of the *Roads Act 1993* for works that affect public roads.

The relevant agencies have been consulted through the assessment process on these other approvals, and conditions have been recommended to address the relevant matters.

The Applicant would also require other approvals for the project which are not integrated into the SSD assessment process, including:

- approval under the *Crown Lands Act 1989* for any works on Crown land;
- a permit under Section 60 of the *Forestry Act 2012* to authorise the use of the Newnes State Forest for non-forestry purposes;
- licences to relocate threatened species under the *National Parks and Wildlife Act 1974*; and
- certain water licences under the *Water Act 1912* and the *Water Management Act 2000*.

### 3.6 Section 79C Considerations

Section 79C(1) of the EP&A Act outlines the matters that a consent authority must take into consideration when determining development applications.

These matters can be summarised as:

- the provisions of environmental planning instruments (including draft instruments), development control plans, planning agreements, and the EP&A Regulations;
- the environmental, social and economic impacts of the development;
- the suitability of the site;
- any submissions; and
- the public interest, including the objects of the Act which include encouraging Ecologically Sustainable Development.

The Department has considered all of these matters in its assessment of the project (see section 5).

## 4. CONSULTATION

### 4.1 Consultation Process

The Department made the development application and accompanying environmental impact statement (EIS) publicly available from 27 September 2016 to 8 November 2016:

- on its website and at its Information Centre in Sydney;
- at Lithgow City Council; and
- at the Nature Conservation Council.

The exhibition was also advertised in the Lithgow Mercury from 27 September 2016 to 13 October 2016.

The Department received 453 submissions on the project (see **Appendix B**). This included:

- 7 submissions from government agencies;
- 5 submissions from special interest groups; and
- 441 submissions from the general public.

The Department undertook a comprehensive consultation process on this project, including an initial Planning Focus Meeting, two interagency site visits, and meetings with key stakeholders (including community groups) throughout the assessment process.

**Table 3** provides a summary of the key additional steps that the Department undertook to ensure that all key stakeholders had sufficient opportunities for engagement throughout the assessment process.

**Table 3: Key Additional Consultation Steps**

<b>Date</b>	<b>Item</b>
April 2016	<ul style="list-style-type: none"> <li>• Planning Focus Meeting with the Applicant and all relevant government agencies</li> </ul>
May 2016	<ul style="list-style-type: none"> <li>• Interagency site visit with the Applicant and key government agencies</li> </ul>
July-October 2016	<ul style="list-style-type: none"> <li>• Meetings with representatives from special interest groups, including Colong Foundation for Wilderness, Blue Mountains Conservation Society and Lithgow Environment Group</li> <li>• Consultation with the EPA, resulting in the request to use Thompsons Creek Reservoir to store excess treated mine water</li> </ul>
November 2016	<ul style="list-style-type: none"> <li>• Interagency site visit to Thompsons Creek Reservoir and Sawyers Swamp Creek Ash Dam with key government agencies</li> </ul>

In December 2016 and January 2017, the Applicant provided a detailed Response to Submissions and an amended development application, both of which the Department placed on its website immediately. In January 2017, the Department forwarded both of these documents to the government agencies and requested further comments.

The amended development application is attached at **Appendix C**, the Response to Submissions is attached at **Appendix D** and the agency comments received in response to these documents are attached in **Appendix E**.

The Department also sought additional information from the Applicant regarding biodiversity offsets and alternative options for the treatment and disposal of residual waste material. This information was provided to the Department on 28 March 2017 and is attached in **Appendix F**.

## 4.2 Agency Submissions

The **Environment Protection Authority (EPA)** recommended that the project include an arrangement to address current water discharges from Centennial's Western Coal Services Site, which would support the EPA's intention to place a Pollution Reduction Program on the existing Environment Protection Licence for the site. The Department agrees with this approach and has recommended conditions of consent requiring the implementation of catchment improvement measures (see **section 5.1**).

EPA noted the benefits of the project as a whole as it would allow Springvale Mine to meet its approved long-term salinity target obligations. In its supplementary submission on the amended development application, EPA was particularly supportive of the proposal to use of Thompsons Creek Reservoir, noting that this measure would remove the requirement to discharge excess treated water from the project.

**WaterNSW** initially did not support the proposal to discharge excess treated water to the catchment via a new discharge point in Wangcol Creek. However, following its review of the amended development application, WaterNSW changed its position and is supportive of the project based on the proposed use of Thompsons Creek Reservoir.

WaterNSW requested additional information on the impacts of a potential increase in discharge from the Western Coal Services site due to the emplacement of the residual waste material from the project. This information was provided in the Response to Submissions and is discussed in **section 5.1** of this report.

WaterNSW suggested that the project could be expanded to allow other local mines to deliver water for treatment and beneficial re-use. The Department has held high-level discussions with the Applicant and EPA about this as a future option, however it recognises that there are significant practical and economic difficulties preventing such an expansion at this stage.

In particular, the power station currently only needs a finite amount of water and would not be able to handle a larger volume from other mines at this stage. Furthermore, there are considerable distances between the other mines that would require long sections of pipeline, with associated vegetation disturbance and potential amenity impacts on residences.

The **Office of Environment and Heritage (OEH)** initially raised minor concerns about potential impacts to endangered ecological communities (EECs), and threatened flora and fauna species. It recommended that the impacts to these EECs and threatened species are avoided and minimised during the final design of the proposed pipeline.

OEH also commented on the scope of the Centennial's currently proposed Biodiversity Offset Strategy, and requested additional details on how the offset liability would be met. The Department has recommended conditions of consent requiring the Applicant to retire the requisite ecosystem and species credits in accordance with *NSW Biodiversity Offsets Policy* and to the satisfaction of OEH (see discussion in **section 5.2**).

The **Department of Primary Industries (DPI)** requested further details of proposed watercourse crossings and recommended that the crossing works are undertaken in accordance with *DPI Water Guidelines for Controlled Activities*. The Department agrees and has incorporated this into the recommended conditions of consent.

The **Division of Resources and Geosciences** (formerly the Division of Resources and Energy within the Department of Industry) recommended that the development consent include rehabilitation requirements and noted that the existing rehabilitation strategies for Springvale Coal Mine and Western Coal Services Project could be updated to satisfy the rehabilitation of the project.

**Forestry Corporation of NSW (FCNSW)** recommended that the Applicant maintain the State Forest roads used in the construction stage of the project. It also requested that is provided with the Applicant's Bushfire Management Plan, and stated that pipeline works would need to comply with its fire restrictions. The Applicant has agreed to provide this plan to FCNSW for review prior to construction.

The **Roads and Maritime Services (RMS)** advised that the Applicant would require its concurrence for the proposed pipeline crossing of the Castlereagh Highway.



**Lithgow City Council** initially requested that the Applicant enter into a Voluntary Planning Agreement (VPA) with Council, however has since advised the Department that a VPA is not necessary.

### 4.3 Special Interest Group and Community Submissions

The Department received submissions from the Colong Foundation for Wilderness, Blue Mountains Conservation Society, Lithgow Environment Group, Ryde Hunters Hill Flora and Fauna Preservation Society, and 4Nature. These five submissions generally provide a good summary of the key issues raised across the 440 submissions in the nature of objections from the broader community.

The key issue raised in most of the special interest group and community submissions related to the impacts on the catchment of the discharge of treated mine water into a new discharge point into Wangcol Creek at the Mount Piper Power Station. However, this issue is no longer relevant as the Applicant amended its development application to remove that aspect of the project.

All five of the special interest groups listed above support the beneficial reuse of mine water, and all asked if the project could be expanded to capture mine water from additional mines in the Lithgow region. While the Department agrees that this should be considered as an option in the future, the Department accepts that it does not form part of the current project and understands the practical and economic difficulties that would prevent an expansion at this stage.

Many of the submissions also raised concerns about the potential biodiversity impacts associated with the proposed vegetation clearing for the new pipeline. The Blue Mountains Conservation Society, Colong Foundation for Wilderness and Lithgow Environmental Group raised concerns about one EEC near Sawyers Swamp Creek. The Department has carefully considered these issues, which are discussed in detail in **section 5.2** of this report.

There was also some concern raised about a group of rock formations called the Clerestory Spurs. The Applicant has advised that the proposed pipeline would be buried in the section closest to the spurs and would therefore have no direct impact upon the rock formations. The Department and OEH have no residual concerns about this issue.

The one supporting submission from the community focussed on the economic benefits of mining in the Lithgow region.

## 5. ASSESSMENT

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In assessing the merits of the proposal, the Department has considered the:

- development application and accompanying EIS;
- government agency and community submissions;
- the amended development application and accompanying documentation;
- the Response to Submissions and additional information from the Applicant dated 28 March 2017;
- existing conditions of consent for Springvale Mine, Mount Piper Power Station, Western Coal Services and the ash emplacement areas;
- relevant environmental planning instruments, policies and guidelines; and
- relevant requirements of the EP&A Act.

The Department considers that there are three key issues for consideration on this project:

- water – weighing up the environmental benefits from the removal and re-use of mine water against some potential residual impacts including the disposal of by-product materials (see **section 5.1**);
- biodiversity – a relatively small amount of native vegetation clearing and the provision of suitable offsets (see **section 5.2**); and
- socio-economic – the importance of this project for the continued operation of the Springvale Mine and the related implications for energy security in NSW (see **section 5.3**).

A range of other issues have been assessed, including noise, vibration, air quality, heritage, traffic and visual impacts, which are summarised in table format in **section 5.4**.

## 5.1 Water Impacts

In order to understand the potential water impacts of the Springvale Water Treatment Project, it is important to first provide some background information about the operations at both the Springvale Mine and the Mount Piper Power Station.

### 5.1.1 Background

#### Springvale Mine

The removal of groundwater is an essential aspect of underground mining, whether it is 'dewatering' in advance of mining operations or the ongoing removal of inflows that occur during mining.

Since the closure of the Wallerawang Power Station in 2014, it has been necessary for Springvale Coal to discharge its mine water from the Springvale Mine and Angus Colliery into the Cocks River via LDP009 under an EPL issued by the EPA. The EPL allows up to 30 ML/day of mine water discharges with a salinity level of up to 1,200  $\mu\text{S}/\text{cm}$  and was intended to be an 'interim measure'.

As the Angus Place Mine is currently under care-and-maintenance and will not be mined until after Springvale Mine ceases to operate, the EPL limits are not likely to ever be exceeded. However, in its approval of Springvale Mine Extension Project, the PAC agreed with the EPA that the EPL limits should only be considered 'interim'.

The mine water is currently only subject to a minimal amount of treatment involving a series of holding ponds that contain chemical flocculants before being released into Sawyers Swamp Creek. The discharge of this mine water can significantly elevate the salinity of the receiving environment.

The development consent for the Springvale Mine Extension Project requires the following reductions in the salinity of mine water discharges:

- 700  $\mu\text{S}/\text{cm}$  (50<sup>th</sup> percentile), 900  $\mu\text{S}/\text{cm}$  (90<sup>th</sup> percentile) and 1,000  $\mu\text{S}/\text{cm}$  (100<sup>th</sup> percentile) by 30 June 2017; and
- 500  $\mu\text{S}/\text{cm}$  (90<sup>th</sup> percentile) by 30 June 2019.

#### Mount Piper Power Station

The Mount Piper Power Station requires large volumes of water in its power generation operations, which is primarily used in the cooling towers. The power station currently has a water licence that allows it to draw up to 23,000 ML/year of fresh water from the Cocks River, which would equate to approximately 63 ML/day if the power station exhausted its licence entitlements.

This water is currently drawn via a complex system called the Cocks River Water Supply System, and the majority of it is drawn from the Thompsons Creek Reservoir. This reservoir has a relatively small catchment area and must therefore draw large amounts of water from Lake Lyell, which is further downstream in Sydney's drinking water catchment.

The operations at the power station also generate a brine by-product from 'blowdown' water in the cooling towers. The brine by-product material is put through a complex management system involving brine concentrators and storage ponds at the power station. It is then mixed with fly ash and emplaced at the ash emplacement areas located to the west of the power station.

The ash emplacement areas are regulated by three separate approvals, including development consents 230/89 (date 12 March 1980) and 80/100060 (dated 1 April 1982), and Major Project approval (dated 16 February 2002).

### 5.1.2 Environmental Benefits

The project would result in two key benefits on the water catchment:

- the removal of a large volume of mine water discharges into the Cocks River catchment; and
- the cessation of water extraction from the catchment for use in the cooling towers at the Mount Piper Station.

Firstly, the transfer of up to 42 ML/day of mine water to the power station would remove the need to discharge the majority of the largely untreated mine water into the Cocks River catchment. These discharges have led to a high level of salinity and changes in both the light climate and mixing properties of the water column, which in turn may have reduced the ability for plants to photosynthesise.

The removal of the mine water discharges at Sawyers Swamp Creek would result in reduced pollution and lead to the restoration of water quality in the catchment. It is also expected that the diversity and richness of plant species would increase with improved catchment conditions.

Secondly, the transfer of mine water for treatment and re-use at the Mount Piper Power Station would largely remove the need for the power station to draw water from the catchment via Lake Lyell. The power station requires up to 40 ML/day of water when it is operating at full capacity. Given that the power station generally only operates at approximately 50% of its capacity, the Springvale Water Treatment Project would easily satisfy its water demand most of the time.

This significant reduction in the extraction of water from the catchment would improve the catchment as a whole by maintaining environmental flows and increasing the availability of water to other users in the catchment, particularly during dry periods. It would particularly benefit Lake Lyell, which is an important water source in Sydney's drinking water catchment.

### **5.1.3 Potential Environmental Impacts**

There would be two by-product materials produced by the Springvale Water Treatment Project:

- an additional brine stream from the highly saline mine water; and
- a residual waste from the presence of suspended solids in the mine water.

#### **Brine Stream**

The Springvale Water Treatment project would result in an increase in the overall volume of brine that is initially produced at the power station due to the high level of salinity in the mine water. However, this would be offset by the construction of a crystalliser at the water treatment plant.

The crystalliser would concentrate the residual brine material and reduce the overall volume of the brine that would need to be emplaced at the ash emplacement areas by up to 60%. The crystalliser would create a brine slurry with a salinity level of approximately 500,000 milligrams/litre (mg/L), which is significantly higher than the current brine slurry that has a salinity of approximately 180,000 mg/L.

The Department and WaterNSW initially raised concerns about the increase in concentration of the brine slurry and the potential impacts on groundwater at the ash emplacement areas. The Response to Submissions provided further detail about the process of emplacement and the measures already in place to prevent adverse impacts under the existing ash emplacement approvals.

These approvals require brine-conditioned ash to be emplaced at the highest areas of the ash dams, which minimises the risk of groundwater interaction and leaching of the brine into shallow aquifers. The brine-conditioned ash is also emplaced over a thick layer of water-conditioned ash, which is itself emplaced on a thick layer of soil.

The Department considers that this system of layered emplacement at the highest areas of the ash dams would effectively separate the brine-conditioned ash from the groundwater system. WaterNSW also raised no further concerns following the additional details provided in the Response to Submissions. Consequently, the Department is satisfied that concentrated brine can be managed through the existing approvals for the ash emplacement areas.

#### **Residual Waste Stream**

The other form of by-product material that would be produced by the treatment of mine water at the Springvale Water Treatment Project is a residual waste resulting from the presence of suspended solid materials in the mine water.

The proposed water treatment plant includes a clarifier that would remove the suspended solids from raw mine water prior to desalination. This would result in a separate residual waste stream that would be produced at a maximum rate of 0.43 ML/day.



It is proposed to transfer this residual waste stream via a 'Residual Waste Transfer Pipeline' to the adjacent Western Coal Services Site for emplacement. A variety of other mining reject material is currently emplaced at this site from Springvale Coal mining operations and there is also a licenced discharge point (LDP006) into Wangcol Creek.

The Western Coal Services Site is regulated under a separate development consent. The Applicant has lodged an associated modification application to allow the emplacement of this residual waste material on the site (Western Coal Services Site Mod 1). A full detailed assessment of the residual waste issue is included in the Department's assessment report for that modification.

In summary, the Department, EPA and WaterNSW raised concerns about whether the residual waste emplacement would increase the existing discharge rate at the Western Coal Services Site or further reduce the water quality of the receiving environment in Wangcol Creek. Consequently, the Department requested that the Applicant consider all potential options to avoid the need for the transfer to, and emplacement of, residual waste at the Western Coal Services Site.

The Department suggested a number of options for consideration, including:

- further treatment or storage at the Springvale Water Treatment Project site;
- removing the liquid component of the residual waste stream to form a 'dry' waste product; or
- lining the reject emplacement area at the Western Coal Services Site to prevent infiltration into the groundwater system.

Ultimately, the Department is satisfied that none of these options are reasonable or feasible due to the uncertainty around their likely success, the lack of space available on either site without significant disturbance, and the potential requirement to halt operations for an extended period.

However, the Department notes that the EPL regulating discharges at LDP006 does not currently have any restrictions on discharge volumes, salinity levels or heavy metal composition. For that reason, this EPL has been specifically identified by the EPA for future improvements, and the EPA has advised that a Pollution Reduction Program will be implemented to improve discharges at LDP006 over time.

Furthermore, the Department has adopted a recommendation from EPA and WaterNSW to include conditions of consent (on the Western Coal Services Project) requiring the Applicant to undertake water quality and catchment improvement measures, particularly in Wangcol Creek. The conditions include a requirement to spend at least \$250,000 on these measures as part of a Riparian Habitat and Catchment Improvement Plan.

In addition, the Department considers that further work should be undertaken on the potential cumulative impacts of residual waste, brine and ash across Springvale's various sites. Consequently, the Department has recommended a condition of consent for the Springvale Water Treatment Project requiring a Brine and Residual Waste Disposal Plan, including a detailed investigation and analysis of further options to decrease the quantity of brine and residual waste over time.

#### **5.1.4 Application of the Drinking Water Catchment SEPP**

Under clause 10 of the *State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011* (the Drinking Water Catchment SEPP), the consent authority must not "*grant consent to the carrying out of development*" in the drinking water catchment unless it would have a 'neutral or beneficial effect' on water quality (the 'NorBe test').

While the SEPP was established to ensure a safe supply of drinking water to Sydney, it expressly provides that this should not prevent ongoing development from occurring. In particular, one of the aims of the SEPP states that the policy is "*to provide for healthy catchments that will deliver high quality water while permitting development that is compatible with that goal*".

##### NorBE Test

The Springvale Water Treatment Project is located within the upper reaches of the Sydney's drinking water catchment, which means that the SEPP and the NorBE test must be applied.

The potential impacts on the drinking water catchment was one of the key considerations in the PAC's review and later approval of the Springvale Mine Extension Project. Following careful review, and based on advice from WaterNSW, the PAC was ultimately satisfied that the project passed the NorBe test.

However, the PAC also included conditions in the development consent that were aimed at improving the quality of mine water discharges from the mine into the catchment. The consent imposed a staged timeline of continual improvement that led to the current proposal for the Springvale Water Treatment Project.

In fact, the concept underpinning the Springvale Water Treatment Project (i.e. the transfer of water to the Mount Piper Power Station for treatment and re-use) is also expressly recommended in the conditions of the development consent for the Springvale Mine Extension Project.

#### Original proposal for discharge into Wangcol Creek

While the Government as a whole has broadly supported the Springvale Water Treatment Project from the beginning, there were concerns about the initial proposal to discharge the treated water directly into Wangcol Creek. The key issue with that aspect of the initial proposal was whether the addition of a substantially increased quantity of water into Wangcol Creek would pass the NorBE test.

The Government and community groups questioned whether there was a better way to deal with the treated mine water. Consequently, the project was amended to adopt an alternative approach utilising the existing Thompsons Creek Reservoir for storage of the treated water. This approach is strongly supported by both Government agencies and key community groups.

#### Residual waste emplacement

The transfer of treated mine water to, and storage in, Thompsons Creek Reservoir means that the water is largely kept in a 'closed system' and the project becomes effectively a 'nil discharge' development. If a development within the drinking water catchment has 'nil discharges', then it would generally pass the NorBE test.

However, there is one outstanding concern about the Springvale Water Treatment Project, as it may result in a minor increase in the salinity of discharges at LDP006 on the Western Coal Services Site due to the transfer of residual waste for emplacement. In particular, this issue remains a concern for WaterNSW.

The Department has carefully considered this issue and accepts that the full range of alternative options have been exhaustively considered and ruled out. The Department also considers that any minor increase in salinity levels at LDP006 is likely to be within historical levels over an annual basis.

Furthermore, the Department believes that this project offers an opportunity to kick-start a program of ongoing works to reduce the quantity, and improve the quality, of discharges at LDP006. As discussed above, the Department has recommended a condition of consent requiring a Riparian Habitat and Catchment Improvement Plan as an initial step in that direction.

#### Holistic consideration of applications

The Department considers that the three separate applications relating to the proposed treatment of mine water at Mount Piper Power Station – i.e. the Springvale Water Treatment Project, the Western Coal Services Mod 1 and the Springvale Mine Extension Project Mod 2 – are fundamentally inter-related and must be considered as a whole.

For that reason, the Department has undertaken a holistic assessment of the three applications and submitted a single package to the PAC for determination. The logical outcome of this approach is that the Springvale Water Treatment Project should not be approved unless the modifications are also approved, and vice versa.

If the NorBE test was to be applied to each of the three applications in isolation, then the question of whether the development application for the Springvale Water Treatment Project would have a 'neutral or beneficial effect' is straight-forward, given the clear overall benefits of the project to the catchment.

The same question about whether each of the associated modifications, in isolation, would have a 'neutral or beneficial effect' is more complicated, and is not necessarily logical in terms achieving the optimal outcome for the water catchment.

Notwithstanding, the Department has considered the application of the SEPP and the NorBE test in further detail in the assessment reports for Springvale Mod 2 and Western Coal Services Mod 1. The Department has received legal advice confirming that the NorBE test does not operate to constrain the determination of a modification application in the same way it does for the granting of development consent.

The Department, therefore, believes it is worthwhile from a decision-making perspective to apply a holistic approach to the application of the SEPP and the NorBE test across the three applications. The question would then be whether the development as a whole would have a 'neutral or beneficial effect' on water quality in the catchment.

The project would clearly have a significant benefit at the Springvale Mine site by removing the current discharge of up to 30 ML/day of largely untreated mine water into Sawyers Swamp Creek. This would not only be a benefit for Sawyers Swamp Creek, but also a significant benefit lower downstream in the broader catchment.

In particular, water quality is predicted to improve at Lake Wallace and Lake Burragorang, which are the key points that have previously been used by WaterNSW and the Department in assessing the NorBE test.

### Summary

The Department has carefully weighed up the significant benefits for the broader drinking water catchment against a potential minor decrease in water quality at Wangcol Creek.

The Department believes that a potential minor decrease in water quality in a stretch of one upstream creek should not prevent a project from going ahead that would provide substantial benefits to the drinking water catchment downstream.

Therefore, on balance, the Department is satisfied that the proposed treatment of mine water at Mount Piper Power Station would be substantially beneficial to Sydney's drinking water catchment, and is in accordance with the Drinking Water Catchment SEPP.

#### **5.1.5 Emergency Storage of Excess Treated Water**

There may be occasions where the power station would not be able to accept all the mine water from Springvale Coal. This may occur if the power station was required to shut down temporarily for maintenance or due to a safety concern. It is important to note that there has never been a complete shut-down of the power station so a partial shut-down is a more likely emergency scenario.

In these emergency situations, the standard operating procedure would be to store mine water in the underground workings and transfer it when the power station is again able to accept the water. The EIS predicts that there would be sufficient underground storage capacity to handle around 10 days of the maximum total of predicted mine water from the two mines.

While the Springvale Water Treatment Project would still be available to treat the mine water, the water would not be used in the cooling towers at the power station and would therefore need to be transferred directly to Thompsons Creek Reservoir.

However, Thompsons Creek Reservoir is currently operating near its full capacity and would need to be lowered to allow additional water to be stored. The EIS shows that lowering the levels by between 0.1 m and 1.2 m would be required to cover any situation ranging from a complete shut-down of the power station up to 50% operating levels.

There are two options to lower Thompsons Creek Reservoir and allow storage of excess treated water during emergency situations.

The first and simplest option is to release water into local riparian zones, which occurs regularly under normal operation of the reservoir. The second option is to transfer water via the existing Pipers Flat Creek discharge valve and Wallerawang Pipeline to Lake Wallace, which has a far greater operating capacity than Thompsons Creek Reservoir.

The Department and WaterNSW consider these options to store and transfer water are feasible and achievable within existing infrastructure of the water supply system.

The Department has also recommended conditions of consent that would only allow these options during emergency situations, subject to approval from the Secretary.

## 5.2 Biodiversity

The water treatment plant site is highly disturbed by previous land uses at the power station and would not experience any significant biodiversity impacts. In general, the vegetation in this area is in poor condition and comprises shrubby regrowth of forest.

The key biodiversity impacts of the proposal relate to the clearing of vegetation on the route of the Raw Water Transfer Pipeline (between the Springvale Mine site and the Mount Piper Power Station site).

Two options for the pipeline route were initially considered and the 'northern alignment' was selected as it would require less vegetation clearing (see **Figure 5**). It is proposed to use existing cleared access tracks, easements and grazing land along a significant proportion of the pipeline corridor.

The majority of the proposed clearing is in a short section of pipeline (approximately 1 km) between an existing pipeline on the Newnes Plateau and the floor of the valley near the ash emplacement areas.

Several threatened communities and species, as well as numerous hollow bearing trees, have been recorded along this route and would be surveyed in detail prior to construction to minimise disturbance.

By selecting a pipeline route that is outside the areas of higher conservation value, the biodiversity impacts of the project would be largely avoided or minimised.

### 5.2.1 Vegetation Clearing

The project would involve clearing a maximum of 27.84 hectares (ha) of native vegetation from 8 vegetation communities.

While most of these vegetation communities (6 of the 8) are not listed under the *Threatened Species Conservation Act 1995* (TSC Act), a very minor amount of clearing (0.65 hectares) of two endangered ecological communities (EECs) would occur (see **Table 4**).

**Table 4: Vegetation clearing**

<b>Vegetation Community</b>	<b>Proposed Clearing (ha)</b>
Grassy woodlands (HN572) – EEC	0.63
Freshwater wetlands (HN602) – EEC	0.02
Dry Sclerophyll Forests (HN570)	22.71
Grassy woodlands (HN514)	0.47
Dry Sclerophyll Forests (HN558)	1.11
Dry Sclerophyll Forests (HN599)	0.73
Dry Sclerophyll Forests (HN600)	1.71
Freshwater wetlands (HN630)	0.46
<b>TOTAL</b>	<b>27.84</b>

The majority of vegetation that would be cleared (nearly 23 ha of the 27.84 ha) comprises poor condition vegetation and regrowth of the shrubby variation of Dry Sclerophyll Forests (HN570) at the water treatment plant site (see **Figure 5**).

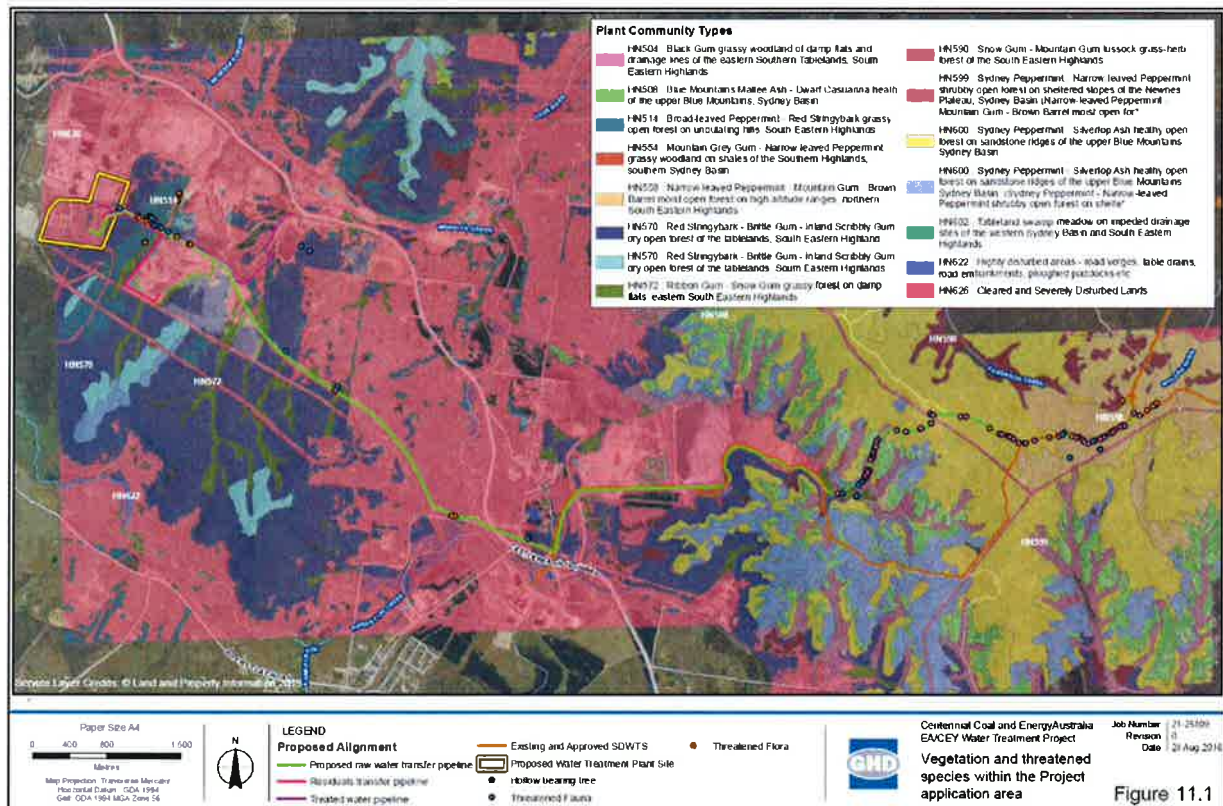


Figure 5: Vegetation and Threatened Species

The 0.63 ha area of Grassy woodland EEC (HN572) is located in an area dominated by previously cleared grazing land. No trees would be cleared in that section of the pipeline and the removal of this small amount of EEC would likely have little effect on the remaining area of the community.

The 0.02 ha area of Freshwater wetland EEC (HN602) is located in a gully that is already disturbed and degraded. It is likely that during the micro-siting of the pipeline, this very small area of EEC could be avoided altogether.

Overall, the Department considers the proposed amount of clearing within a 1 km stretch of pipeline to be minor, particularly considering the pipeline would be around 15 km long. Furthermore, the design of the pipeline and the associated corridor could further reduce the amount of clearing required.

## 5.2.2 Threatened Flora and Fauna

The biodiversity assessment in the EIS found 5 threatened flora species that are located in or near the pipeline corridor. However, the only two flora species that are likely to be affected by the construction of the pipeline are the *Caesia parviflora* var. *minor* (Small Pale Grass Lily) and the *Eucalyptus cannonii* (Capertree Stringbark).

As surveys for the EIS were undertaken outside the flowering period for the *Caesia parviflora*, Springvale Coal has committed to undertake pre-construction surveys to determine the size and extent of the local population. As recommended by OEH, the Department has included a condition of consent requiring the applicant to notify OEH within 5 working days if it is unable to avoid impacts this flora species.

A total of 89 fauna species were identified during surveys for the EIS, including 9 threatened species listed under the TSC or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) identified. These included 6 birds, two bats and a mammal (Greater Glider).

The proposed removal of native vegetation would include 67 hollow bearing trees, some of sufficient size to support roosting and nesting habitat. Springvale Coal has committed to timing its clearing activities to avoid removing the hollow-bearing trees during breeding season, and relocating any species that are found.



### 5.2.3 Offsets and Management

Any unavoidable impacts would be offset by retiring the ecosystem credit requirements of the project in accordance with *NSW Biodiversity Offsets Policy* and to the satisfaction of OEH.

Furthermore, the Department has recommended conditions requiring the Applicant to:

- update the baseline mapping of vegetation communities and key fauna habitat on site prior to construction;
- ensure that no more than 27.84 hectares of native vegetation is cleared for the project;
- minimise the impacts of the project on threatened flora and fauna species and its habitat, including hollow-bearing trees;
- minimise vegetation and habitat clearing in the disturbance footprint;
- protect the vegetation and habitat outside the disturbance footprint from any impacts; and
- rehabilitate and revegetate the disturbed parts of the site following construction and decommissioning

### 5.2.4 Aquatic Ecology

The Aquatic Ecology Assessment in the EIS concluded that the project would be unlikely to impact on any threatened aquatic fauna species that are listed under NSW or Commonwealth legislation.

No changes to groundwater quality are predicted to result from the project, and the groundwater environment is unlikely to provide habitat for groundwater dependent ecosystems.

Stygofauna communities are generally known to occur within the local groundwater environments associated with the Springvale Coal Mine and Angus Place Colliery. However, the project would not interact with any alluvial lands, and there is limited potential for stygofauna to be present within the project area.

The water proposed to be sent to Thompsons Creek Reservoir would be treated to drinking water standards, and is therefore not predicted to be toxic to any fish species present in the reservoir.

Ceasing the discharge of saline mine water discharges from LDP009 would be likely to cause some localised changes to the macroinvertebrates and fish communities in the receiving environment. However, the removal of discharges would allow a more natural flow regime to return, with an overall beneficial impact on water quality and aquatic fauna inhabiting the creek and downstream in Cocks River.

In addition, the reduction in the volume of water extracted from the Cocks River for use in the power station operations would also allow a more natural flow regime to return, which would result in more natural stream flow regimes to re-establish, and increase the potential volume of flow released from Lake Lyell.

## 5.3 Socio-Economic

The Springvale Water Treatment Project is essential to ensure the ongoing operation of the Springvale Mine, which in turn is fundamentally important to the ongoing operation of the Mount Piper Power Station.

The Springvale Mine is the only local mine currently supplying coal to the Mount Piper Power Station, which provides approximately 15% of NSW's electricity. In the broader context of NSW energy supply, it is important that the power station has a reliable source of coal to enable it to operate continuously, particularly during periods of increased demand.

The development consent for the Springvale Mine Extension Project requires the mine to improve the quality of its mine water discharges significantly over time. The Department is aware that various options were considered to achieve the required targets of the development consent, and is satisfied that the only viable option is to transfer and treat the mine water at the power station.

The Springvale Mine and Mount Piper Power Station are now the main employers locally. The Springvale Mine is the largest employer with up to 410 full-time staff, while the power station and the Western Coal Services Site also provide full-time employment for up to 150 additional people.

The construction of the Springvale Water Treatment Project would take up to 18 months to complete and would provide up to 50 full-time employment opportunities in the Lithgow region.

#### 5.4 Other Issues

The Department has assessed other issues relating to the project in accordance with the requirements of the EP&A Act, and summarised the findings of this assessment in **Table 5** below.

**Table 5: Other Issues Considered**

Issue	Consideration and Assessment
Noise and Vibration	<ul style="list-style-type: none"> <li>• The EPA raised no concerns about noise or vibration impacts.</li> <li>• Large sections of the project area pass through mostly heavily vegetated or isolated country.</li> <li>• However, there are 140 residential receivers near the project area, located in the suburbs of Lidsdale, Blackmans Flat and Wallerawang.</li> <li>• Of these, 40 residences are predicted to experience temporary construction noise above the <i>Interim Construction Noise Guideline</i> (ICNG) "noise affected" level (i.e. the background noise level plus 10 decibels). However, none are predicted to be "highly noise impacted" (i.e. noise levels above 75 decibels).</li> <li>• The Department and EPA consider these impacts would be minor and temporary given the linear and moving nature of construction along the water transfer pipeline which will be built in 150 m increments.</li> <li>• Furthermore, noise generating construction activities would only be undertaken during recommended standard hours (7 am to 6 pm Monday to Friday, 8 am to 1 pm Saturday) and noise affected residences notified regarding the timing and duration of the construction works.</li> <li>• Noise from construction works at the water treatment plant are predicted to comply with ICNG noise affected criteria levels.</li> <li>• Due to the predicted low level of operational noise emissions from the water treatment plant and the separation distance to the nearest residence of more than 2 km, operational noise is predicted to comply with the <i>Industrial Noise Policy</i> (EPA, 2000).</li> <li>• The additional construction traffic would not exceed the road noise criteria.</li> </ul>
Air Quality and Greenhouse Gas Emissions	<ul style="list-style-type: none"> <li>• The EPA raised no concerns about air quality or greenhouse gas emission impacts.</li> <li>• The project would contribute around 19,000 t CO<sub>2</sub> equivalent per annum primarily due to electricity consumption required for the operation of the Springvale Water Treatment Project, which represents 0.01 percent of total annual emissions in NSW.</li> <li>• Minor and temporary dust emissions would potentially occur from earthworks during the construction phase.</li> <li>• The Department is satisfied these impacts can be adequately managed with standard erosion and sediment controls installed in accordance with the relevant guideline <i>Managing Urban Stormwater: Soils and Construction, Volume 1</i> (The Blue Book; Landcom, 2004).</li> </ul>
Aboriginal and European Heritage	<ul style="list-style-type: none"> <li>• The project site is considered highly disturbed and of low heritage significance.</li> <li>• Desktop and field surveys identified seven Aboriginal heritage sites including artefact scatters, isolated finds and a scar tree. These sites are all considered to be of low significance and are located outside of the disturbance footprint.</li> <li>• Surveys identified two European heritage items, The Cottage and a European Surveyors Tree. Neither item is located within the disturbance footprint.</li> <li>• The Department has recommended conditions requiring preparation and implementation of a Heritage Management Plan, developed in consultation with OEH and relevant Aboriginal stakeholders. The plan requires a description of measures to be implemented, which include minimising ground disturbance and managing impacts.</li> <li>• The Heritage Management Plan would address procedures for finding additional and unexpected Aboriginal items during the construction of the project.</li> <li>• OEH is satisfied with Springvale Coal's approach towards Aboriginal and European Heritage items found on site.</li> <li>• The Department is satisfied that the project is unlikely to result in a significant impact on the heritage values and that the Heritage Management Plan provides sufficient mitigation measures.</li> </ul>

Issue	Consideration and Assessment
Traffic and Transport	<ul style="list-style-type: none"> <li>Construction of the project would result in a small increase in traffic along Castlereagh Highway and Chifley Road (2% and 1% respectively).</li> <li>Larger increases in traffic are predicted on roads within the Newnes State Forest, with up to 20% predicted along Sunnyside Ridge Road. However, traffic volumes along these roads are low, and the roads have sufficient capacity to accommodate the traffic increases.</li> <li>FCNSW raised concerns about the cumulative impact on state forest roads from project related traffic and traffic from other mining activities. However, Springvale Coal confirmed it would construct, maintain and repair access tracks damaged as a result of its activities, in accordance with the forest permit issued by FCNSW.</li> <li>The Department is satisfied traffic generated by the project would have a negligible impact on road network capacity, safety or efficiency.</li> <li>The Department has recommended a condition of consent requiring Springvale Coal to develop a Construction Traffic Management Plan (CTMP) that will incorporate sufficient mitigation measures to avoid any traffic related impacts.</li> </ul>
Visual	<ul style="list-style-type: none"> <li>The pipeline and associated project infrastructure would be contained within the Mount Piper Power Station site or along the existing pipeline easement, both buffered by heavy vegetation.</li> <li>The project would not be visible from any residences or towns.</li> <li>The transfer pipeline would potentially be visible in the distance from a small number of elevated areas to the north of the project site, although these areas are within Ben Bullen State Forest or on agricultural land.</li> <li>The Department is satisfied the visual impacts associated with the project would be low.</li> </ul>

## 6. RECOMMENDED CONDITIONS

The Department's recommended conditions of consent for the project are attached in **Appendix G**. These conditions are required to:

- prevent, minimise, and/or offset adverse impacts of the project;
- ensure standards and performance measures for acceptable environmental performance;
- ensure regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

## 7. CONCLUSION

The Department has assessed the amended development application, EIS, submissions, RTS and additional information provided by the Applicant in accordance with the requirements of the EP&A Act.

The Department considers that the site is suitable for the project, as the water treatment plant would be developed adjacent to the Mount Piper Power Station on mostly cleared land.

The mine water transfer pipeline would also be located mostly along existing access easements, with minimal impacts. Further, the Department considers that the project represents a modest and compact layout.

The operation of the project would also not compromise other long-term uses of the land in the Lithgow region, including forestry and agriculture, and promotes and co-ordinates the orderly and economic use and development of land.

The project is able to be undertaken in a manner that would improve or at least maintain the biodiversity values of the locality over the medium to long term, and would not significantly impact threatened species and ecological communities of the locality. The Department is also satisfied that any residual biodiversity impacts can be managed and/or mitigated by imposing appropriate conditions and a biodiversity offset strategy.

The Department has carefully considered the potential impacts of the project on the site and surrounds in its assessment, and is satisfied that the impacts of the project on the environment and the local community could be adequately minimised, managed, or at least compensated for, to an acceptable standard and the project can be carried out in a manner that is consistent with the principles of ecologically sustainable development.

Based on its assessment, the Department is satisfied that the Applicant has designed the project in a manner that achieves a reasonable balance between ensuring the beneficial re-use of polluted mine water in the power station whilst minimising the potential impacts on surrounding land users and the environment.

To address the residual impacts of the project, the Department has recommended a range of detailed conditions to ensure these impacts are effectively minimised and/or offset. These conditions use a risk-based approach that focuses on performance-based outcomes. This reflects current government policy, and the fact that the project would require relatively limited ongoing environmental management once it is commissioned.

Notwithstanding some community concerns from special interest groups and community members about mine water management in the region in general, the project offers significant benefits for the local and wider communities, and would facilitate the continued significant contribution of the power station to the State's energy generation mix, consistent with the NSW Government's vision for a secure, reliable and affordable energy supply into the future.

In addition, the project would have flow-on benefits to the local community through job creation and capital investment.

Given these benefits can be achieved without causing any significant adverse impacts, the project is considered to be approvable, subject to strict conditions.

## 8. RECOMMENDATION


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It is recommended that the Planning Assessment Commission:

- **considers** the findings and recommendations of this report, noting that the Department considers the application is approvable, subject to conditions; and
- if the Commission determines to grant consent to the application, **signs** the attached development consent (see **Appendix G**).

 28/4/17

Clay Preshaw  
**A/Director**  
**Resource Assessments**

 28/4/17

David Kitto  
**Executive Director**  
**Resource Assessments & Business Systems**