

19 June 2017

**NSW Planning Assessment Commission Determination Report  
Western Coal Services - Residuals Emplacement Modification (SSD 5579 MOD 1)**

## **1. INTRODUCTION**

On 28 April 2017, the Planning Assessment Commission received from the Department of Planning and Environment a State significant development application from Centennial Coal Pty Limited (the applicant) to modify the Western Coal Services project consent to allow the site to receive and emplace a residual waste material produced by the proposed Springvale water treatment facility.

The Department has referred the modification to the Commission for determination in accordance with the Minister for Planning's delegation dated 14 September 2011. The Department referred the modification to the Commission due to its interrelationship with the Springvale water treatment facility project and Springvale mine extension project modification 2, of which both projects received more than 25 submissions. The Commission notes that Western Coal Services – Residuals Emplacement (the project) received one submission from the public.

The Commission to determine the modification consisted of Mr Ross Carter (Chair), Ms Lynelle Briggs AO and Mr David Johnson.

### **1.1 Summary of Development Application**

The applicant proposes to vary the project consent to allow for the transfer of 0.35 megalitres (ML) per day (annual average) or 0.43 ML per day (daily maximum) of residual waste from the Springvale Water Treatment Project. The material to be emplaced is a residual waste by-product from the proposed water treatment process at Mount Piper Power Station, resulting from the presence of suspended solid materials within mine water piped from Springvale mine.

The modification application also involves minor changes to the Western Coal Services project rehabilitation strategy due to the physical installation of the raw water and residual transfer pipelines.

### **1.2 Need for the proposal**

The applicant has stated that the project is necessary to support the proposed water treatment facility in SSD 7592, which is to be constructed by June 2019. The water treatment facility will be required to dispose of the residual waste from the water treatment process in its reject emplacement area.

### **1.3 Background**

Mining operations commenced within the site in 1995 under a development consent granted in 1992. In September 2015, a new development consent for the Springvale Mine Extension project was approved by the Commission. The consent permits:

- mining operations until 31 December 2028;
- extraction of up to 4.5 million tonnes per annum (Mtpa) of run-of-mine coal;
- transportation of coal:
  - by overland conveyor to the Western Coal Services Site for further processing;
  - by overland conveyor to the Mt Piper Power Station; or
  - by road to local domestic customers; and

- operation of support infrastructure, including ventilation shafts, coal stockpile, mine services bores and offices.

The Department's report included a summary of key events important to this project:

Date	Event
1992	Springvale Mine – development consent (DA 11/92) granted
1995	Springvale Mine – underground coal mining operations commenced
2006	Wallerawang Power Station – Pollution Reduction Program required mine water from Springvale Mine and Angus Place Colliery to be transferred to the power station for treatment and beneficial re-use
November 2014	Wallerawang Power Station – closed
December 2014	Springvale Mine – environmental protection license issued that allows mine water discharges into Sawyers Swamp Creek (intended as a temporary measure)
June – September 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

In April 2014, development consent for the Western Coal Services project was granted by the Planning Assessment Commission to:

- receive up to 9.5Mtpa of ROM coal;
- process up to 7Mtpa at the coal handling and preparation plant;
- extend an existing reject emplacement area to sustain another 25 years of operations; and
- upgrade the water management systems at the site.

The Western Coal Services site has a long history of mining operations for over 70 years through underground and open cut mining, with coal processing and reject disposal activities occurring over the last 40 years.

In April 2017, the most recent modification to the Springvale Mine Extension project consent was approved by the Commission making the following amendments to the existing development:

- increase the mine's run-of-mine coal production from 4.5Mtpa to 5.5Mtpa;
- increase the capacity of the run-of-mine coal stockpile from 85,000 tonnes to 200,000 tonnes;
- extend the stockpile footprint 0.3ha to the north-east; and
- increase the workforce from 310 full time equivalent personnel, including contractors, to 450 full time equivalent personnel.

The September 2015 Springvale Mine Extension project consent required that, for mine water discharged to the Cocks River and Sydney water catchment, the applicant meet limits for salinity of 700 (50<sup>th</sup> percentile), 900 (90<sup>th</sup> percentile) and 1,000 (100<sup>th</sup> percentile) uS/cm EC by 30 June 2017.

#### 1.4 Related applications

The Springvale Water Treatment Project, Springvale Mine Extension project Modification 2 and Western Coal Services project Modification 1 were submitted to the Commission as one package by the Department as they are fundamentally interrelated.

The Department has advised and the Commission is satisfied that this modification application can and should be dealt with separately on its own merits within the context of the two other related applications.

#### Springvale Water Treatment project

The major components of the Springvale Water Treatment project application includes:

- a pipeline to transfer mine water from Springvale Mine to Mt Piper Power Station;
- a water treatment facility utilising reverse osmosis;
- use of treated water in the cooling towers of Mt Piper Power Station;
- residual waste from the pre-treatment process to be transferred via pipeline to the Western Coal Services site;
- disposal of concentrated brine slurry to continue at the Mt Piper Power Station ash emplacement area; and
- the transfer of surplus treated mine water into Wangcol Creek via a new licensed discharge point and to Thompsons Creek Dam for storage and ultimate beneficial reuse at Mt Piper Power Station.

#### Springvale Mine Extension project Modification 2

The major components of the Springvale Mine Extension project Modification 2: Deferral of salinity reductions are:

- removal of the interim salinity reduction target for mine water discharge and the deferral of the elimination of mine water toxicity by two years to align with construction of the Springvale water treatment facility.

## **2. DEPARTMENT'S ASSESSMENT REPORT**

The Department's assessment report identified that the proposed modification to increase residual materials emplaced on the Western Coal Services site can be appropriately managed within the existing management regime of the project subject to additional conditions to address water quality discharge issues and updates to the various environmental and operational management plans which under the existing development consent.

The Department considers that the water treatment facility and two modifications are the most appropriate means to improve overall water quality in the Cocks River Catchment. The Department is also satisfied that the project is in the public interest and recommends its approval.

## **3. COMMISSION'S MEETINGS AND SITE VISIT**

As part of its assessment of the proposal, the Commission met with the Department, the applicant, Lithgow City Council (Council), the Environment Protection Authority (EPA) and visited the site. Notes from these meetings and the site inspection are provided in **Appendix 1**. The Commission also conducted a public meeting. Notes from the public meeting are provided in **Appendices 2 and 3**.

### **3.1 Briefing from the Department**

On 9 May 2017, the Department briefed the Commission on the project and the Department's assessment report. Specifically, the Department outlined the history of the project, impacts of the proposed pipeline, implications of the water treatment facility waste by-product and the impacts of emplacing the water treatment facility waste on the Western Coal Services site.

### **3.2 Briefings from Other Agencies**

On 9 May 2017, the Commission met with the EPA to discuss the project. The EPA's main concern with the project was with licensed discharge point 006 (LDP 006). The EPA acknowledged that LDP

006 had historically been no more than a trickle and that discharge flows have recently (2009-10) increased to 4-5ML/day. The EPA questioned why geotextile bags were not proposed to further treat residual waste from the waste treatment facility.

### **3.3 Briefing from the Applicant and Site Visit**

On 16 May 2017, the Commission met with the applicant and visited the site. The applicant provided the Commission with an overview of the three project applications, the interconnection between Springvale mine and Mt Piper Power Station, the process of water movement and treatment, and the environmental impacts of the project. During the site visit, the Commission visited LDP 006, the reject emplacement area, the proposed location of the water treatment facility and LDP 009.

### **3.4 Meeting with Lithgow City Council**

On 16 May 2017, the Commission met with Lithgow City Council (Council) to discuss the project. Council advised the Commission that it was unanimously in support of the projects and the employment opportunities they would provide.

### **3.5 Public Meeting**

The Commission held a public meeting at the Lithgow Council civic ballroom on 17 May 2017 to hear the public's views on the proposal. A list of the 41 speakers that registered to speak to the Commission is provided in **Appendix 2**. A summary of the issues raised by the speakers and provided in written submissions is provided in **Appendix 3**. In summary, the main issues of concern include Lithgow regional economic and employment situation, water impacts, environmental impacts and matters regarding the project's determination.

## **4. ADDITIONAL INFORMATION**

The Commission requested the following additional information from the Applicant:

- additional details of proposed works identified under the pollution reduction plan, including details of any works that would impact on surface water movements;
- details of proposed works intended to be included within the Catchment Improvement Plan;
- a high level schedule of works identifying how the water treatment works project will be completed within two years;
- reasons why undertaking interim works are not an option in the two years prior to the water treatment facility's completion;
- details on the proposed pipeline route selected and why it is considered more appropriate than the initial route;
- specific numbers on the discharge volumes from LDP 009; and
- details of the proposed Pollution Reduction Works to be undertaken on the Western Coal Services Site.

The Commission requested the following additional information from the Department:

- Whether a condition containing milestones aligning with progressive construction of the water treatment facility is available;
- Confirmation that the Office of Environment and Heritage was satisfied with the pipeline alignment;
- Details of the current and proposed Pollution Reduction Program for the site;
- If the Department had received any agency submissions identifying issues with groundwater leakages to the Western Coal Services Site from the ash emplacement.

## **5. COMMISSION'S CONSIDERATION**

In this determination, the Commission has considered carefully:

- all information provided by the applicant including additional information requested;

- the Department's Assessment Report;
- advice and recommendations from government agencies;
- relevant matters for consideration specified in section 79C of the *Environmental Planning and Assessment Act 1979* (EP&A Act), including:
  - relevant environmental planning instruments;
  - the *Environmental Planning and Assessment Regulation 2000*;
  - the likely impacts of the development on both the natural and built environments;
  - social and economic impacts in the locality;
  - the suitability of the site for the development;
  - written and verbal submissions from the public; and
  - the public interest, including the objectives of the EP&A Act;
- assessment and findings of the Springvale Mine Extension Project MOD 2 (SSD 5594) and Springvale Water Treatment Project (SSD 7592) projects.

The project does not seek to significantly alter the nature of the development as the reject emplacement area is already approved to receive coarse and fine reject materials under the existing conditions of consent. The proposed residual waste would not require a change to the capacity of the reject emplacement area or increase the footprint of the site. So, the key matters considered by the Commission's include:

- State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011;
- The interrelation between the Springvale Water Treatment Project, Springvale Mine Extension Project Modification 2 and Western Coal Services Project Modification 1; and
- NorBE in the wider catchment context resulting from the three projects.

## **5.1 State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011**

### **5.1.1 Neutral or beneficial effect**

The Commission acknowledges that clause 10 of the State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011 ('Sydney Drinking Water Catchment SEPP') does not strictly apply to the assessment of a modification application such as this proposal. However, the Sydney Drinking Water Catchment SEPP is recognised as a relevant consideration by the Commission as the site is located within the Sydney drinking water catchment, and is subsequently afforded significant weight in the determination of this project. The Sydney Drinking Water Catchment SEPP requires any development identified within the Sydney Drinking Water Catchment area to have a neutral or beneficial impact on the catchment in accordance with the Neutral or Beneficial Effect (NorBE) tool.

As the project is a modification, the Commission, when assessing the neutral or beneficial effect of the project, has compared the future state of the catchment against the future state of the catchment if the modification did not proceed.

The Commission recognises that transferring up to 0.43ML/day of residual waste has the potential to impact on water quality within the catchment in various ways depending on the location and mitigation actions. The Commission also recognises that the Western Coal Services site is comprised of several ponds, retention basins and waste emplacements that drain towards the discharge point named LDP 006. After the water is discharged through LDP 006 it travels downstream via Wangcol Creek through to Lake Wallace, Lake Lyell and Lake Burragorang. Therefore, the Commission has assessed the impact on the catchment at LDP 006, as it represents the location at which water quality may have an acute impact, at a catchment level where the impact is likely to be less significant, and in the context of the three interrelated applications as this provides a whole of catchment outcome.

### **5.1.2 Western Coal Services site**

The applicant's water and salt balance modelling indicates that the current average annual discharge from LDP 006 is 848ML of water per annum. This discharge contributes approximately 1517 tonnes of salt to Wangcol Creek under the existing conditions of consent. The historic underground mine workings at the site provide pathways for water to move within the voids and fractured zones, and into the key water management structures which contribute to discharges at LDP 006. The Commission therefore finds that the discharge of 848ML containing 1517 tonnes of salt per annum is the baseline or current state of impact on the catchment. The Commission finds that the rate of discharge identified above is expected to continue from LDP 006 for the duration of the existing Western Coal Services consent.

At the Commission meeting with the EPA, the EPA indicated that groundwater salinity concentrations were elevated at several groundwater detection bores and that groundwater interactions across the Mt Piper Power Station and Western Coal Services site were being investigated. The EPA noted that it was working with EnergyAustralia and Centennial in this regard. The Commission requested additional information from the Department regarding the coal ash dam neighbouring site and its relationship to the project from the Department. The Department, after liaison with the EPA, confirmed that the applicant is complying with license requirements and EnergyAustralia will be submitting a more detailed groundwater study for the site. Furthermore, the EPA identified that there were several mitigation measures available to address potential groundwater impacts from the neighbouring coal ash site.

The operation of the Mt Piper Power Station coal ash dam is regulated under earlier and separate consents and the Commission considers that the coal ash dam located on the adjacent site is not part of this project.

### **5.1.3 Residuals Emplacement Modification 1**

The modification is proposing to transfer of up to 0.43ML/day (157ML per annum) of residual waste within the Western Coal Services site. The residual waste from the water treatment facility is proposed to be discharged within an existing reject emplacement area that drains through the Western Coal Services site. Excess water from this site that is not re-used is ultimately discharged through LDP 006. The disposal of the residual waste will result in an increased volume and concentration of the discharge from LDP 006 once the water treatment facility is operational in the absence of mitigation actions.

The applicant is currently working with the EPA to identify a number of measures under a Pollution Reduction Program to reduce the volume of water and concentrations of salt being discharged through LDP 006. The measures include:

- The establishment of a groundwater monitoring network across the Western Coal Services site that will provide an understanding of surface water and groundwater interactions across the site;
- Design and installation of run-off diversion works to divert all clean water run-off generated to Wangcol Creek to prevent clean water from entering any disturbed areas, dirty water storages, or other storages that might contribute to salinity levels at LDP006;
- Investigation of long term treatment and discharge and/or beneficial reuse of groundwater presently contributing to the discharge from the site through LDP 006; and
- Implementation of long term treatment and/or beneficial reuse options.

The water diversion works will comprise the primary component of the Pollution Reduction Program and the reduction in discharge from LDP 006. The applicant provided the Commission with additional details outlining specific details of the diversion works:

- Stage 1 – Water separation at Lamberts Gully:
  - Establishment of a pumping system for the transfer of tailings water from the A-Pit residual emplacement area to Cooks Dam was completed in 2016;
  - Installation of the head of catchment separation to divert the upstream clean water away from the Retention Pond;
  - Commencement of modification to critical culverts, drains, spillways, separation bunds and the regrade of the Haul Road with a cross-grade to the dirty water diversion through Lamberts Gully according to design; and
  - Targeted manual flow and quality monitoring.
- Stage 2 – Water separation at Lamberts Gully:
  - Completion of modification to critical culverts, drains, spillways, and separation bunds;
  - Construction of a staged bypass of the Conveyor Dam and Retention Pond; and
  - Installation of automated flow and quality monitoring.
- Interception works from Huon Gully to the Lamberts Gully clean water works:
  - Works to divert the upstream catchment of Huon Gully around the residual emplacement area to enable clean water flows down Huon Gully were completed in 2016;
  - A review of options for the interception and transfer clean water runoff to clean catchment prior to entering surface voids at Huon Gully; and
  - Automated flow and targeted manual water quality monitoring.

The applicant's EIS modelled the impacts of the Pollution Reduction Program and how it would alter discharge volumes and salt concentrations from LDP 006. The applicant found that the Pollution Reduction Program would reduce the current LDP 006 discharge to 441ML containing 1107 tonnes of salt per annum. Once the applicant's Pollution Reduction Program measures were completed and the water treatment facility begins discharging within the Western Coal Services site, the applicant predicts a reduction to 570ML containing 1444 tonnes of salt discharged per annum. The values of the base case versus the two scenarios have been recorded in the table below (source: Centennial Coal EIS):

	Megalitres (annual)	Salt (t)
The current and expected future LDP 006 discharge without modification	848	1,517
Once the Pollution Reduction Program operational	441	1,107
LDP 006 discharge once 0.43/ML day commenced and Pollution Reduction Program completed	570	1,444
Total reduction	<b><u>278ML</u></b>	<b><u>73t</u></b>

The Commission recognises that compared to the base case, the transfer of up to 0.43ML/day of residual waste once the Pollution Reduction Program measures are completed will result in a decrease in salt and in volume of water being discharged through LDP 006. The Commission therefore recommends that the measures of the Pollution Reduction Program be inserted within the conditions of consent and completed prior to the commencement of residuals discharge to the rejects emplacement area in June 2019. The Commission finds that the project, with the inclusion of the Pollution Reduction Program measures, will have a neutral or beneficial impact on the Sydney Drinking Water Catchment by reducing the total volume of pollutants/salt being discharged.

### **5.2 The interrelation between the Springvale Water Treatment project, Springvale Mine Extension project Modification 2 and Western Coal Services project Modification 1**

The Department submitted the three applications to the Commission conjointly due to their inter-connection. The Commission acknowledges that the projects need to be assessed on their individual merits, however notes that conjointly the three projects deliver considerable environmental benefit to the Sydney drinking water catchment. The projects would remove 30ML/day of waste water from Springvale mine being discharged into the Coxs River catchment, treat the mine water at the water treatment facility, and transfer up to 0.43ML/day of residual waste into the Western Coal Services Site. In combination, this will reduce salinity loads to the catchment and reduce the existing Mt Piper Power Station draw on raw catchment water. The latter is anticipated to provide additional benefit to the restoration of environmental flow regimes, particularly in periods of low flow. The Commission agrees with the Department's findings that the water quality within the catchment would be substantially improved if the three projects were to proceed.

### **5.3 NorBE on wider catchment resulting from the three projects**

The Commission finds that although the residuals waste emplacement will have only a marginal beneficial effect on the water catchment, the project is a crucial part of the wider Springvale project. The transfer of up to 0.43ML/day of residual waste at the Western Coal Services site will allow the water treatment facility to operate and remove up to 30ML of Springvale mine water from being discharged daily into the Sydney drinking water catchment. The Commission finds that the three projects will improve water quality within the Sydney drinking water catchment.

## **6. COMMISSION'S FINDINGS AND DETERMINATION**

The Commission has considered carefully the applicant's proposal, the Department's assessment report and the relevant matters for consideration under section 79C of the EP&A Act. The Commission has noted the advice and recommendations from Lithgow City Council, and government agencies including EPA and OEH. The Commission has heard from members of the community about their concerns for the proposal during the public meeting in Lithgow on the 17 May 2017.

The Commission considers the proposed modification of the Western Coal Services consent does not fundamentally change the development consent as it would provide the same waste emplacement characteristics already permitted. In the Commission's view, the proposed changes are within the scope of section 96(2) of the EP&A Act.

The Commission has responded to concerns expressed by speakers at the public meeting, while noting that a number of those issues do not relate to substantive aspects of this modification proposal or its potential impacts, but to the wider impact of the three projects and the existing approval for the Springvale Coal Mine.

Once the Pollution Reduction Program works have been undertaken prior to the commencement of waste emplacement, the total amount of pollutants entering the Sydney drinking water catchment will be reduced. The Commission finds that although the project approves additional residual waste being deposited within the emplacement area, there will be an improvement of overall neutral or beneficial impact on the Sydney drinking water catchment.

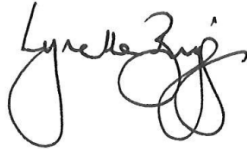
Furthermore, it is recognised that this project is a critical component of three projects that will overall, have a beneficial impact on the water catchment through the treatment of Springvale mine water at a water treatment facility to be built at Mt Piper Power Station. The three projects will also permit operations to continue at Springvale mine and the retention of mine employees within the local community.



The Commission accepts the Department's recommendation that this proposal be approved. Consequently, the Commission has determined to grant consent to the development modification request subject to the conditions set out in the instrument of approval.

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**Ross Carter (Chair)**  
**Member of the Commission**

A handwritten signature in black ink, appearing to read "Lynelle Briggs".

**Lynelle Briggs AO**  
**Chair of the Commission**

A handwritten signature in blue ink, appearing to read "David Johnson".

**David Johnson**  
**Member of the Commission**