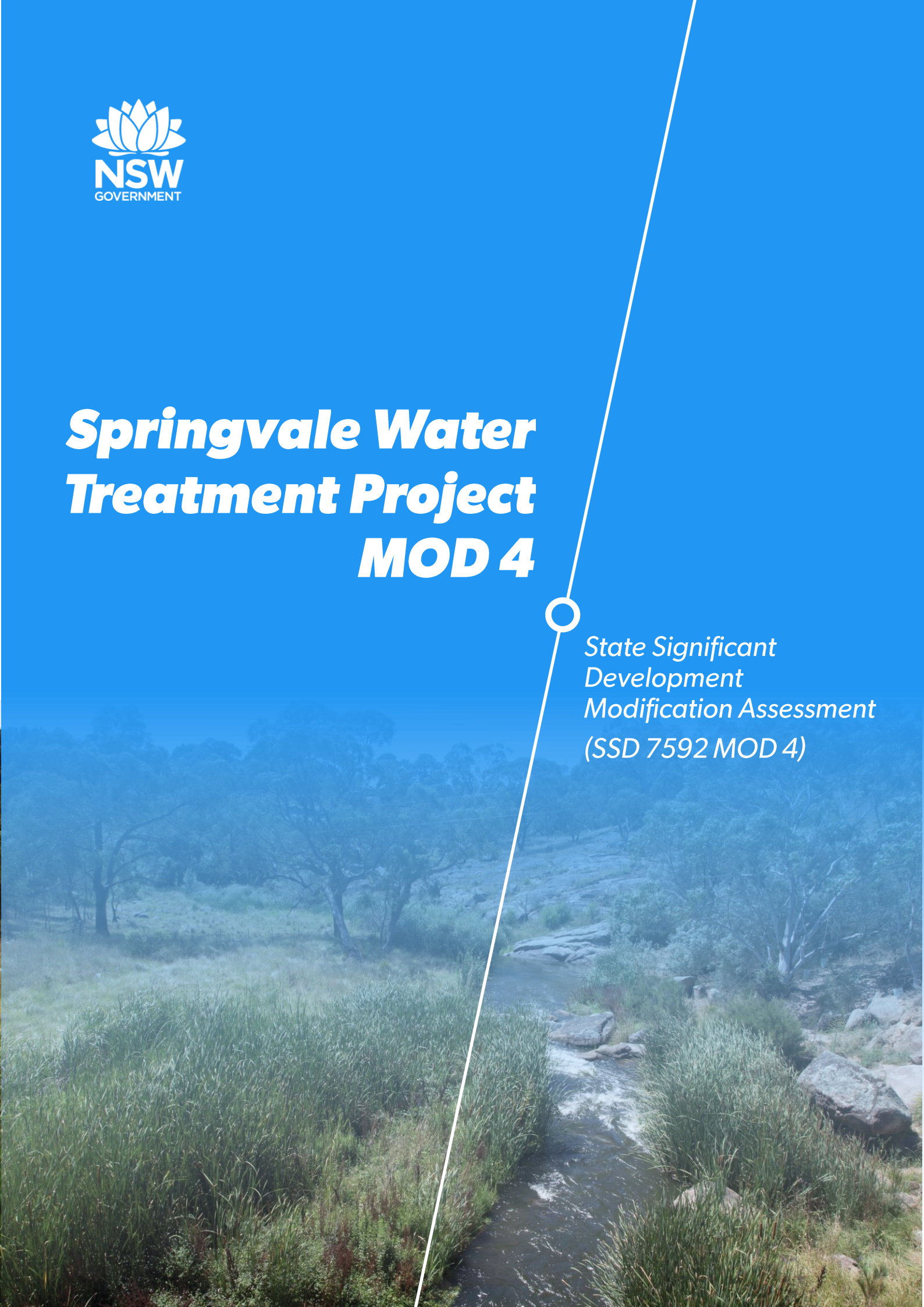
NSW GOVERNMENT

Springvale Water Treatment Project MOD 4

State Significant Development Modification Assessment

(SSD 7592 MOD 4)



November 2019

Cover photo

Coxs River near Wallerawang, Department of Planning and Environment 2017

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1. Introduction

1.1 Background

Centennial Coal (Centennial) is developing the Springvale Water Treatment Project in a joint venture with EnergyAustralia NSW Pty Limited. The project is located between the Springvale Coal Mine and the Mount Piper Power Station, in the Lithgow local government area.

The project involves developing a water transfer pipeline from the mine to the power station, a reverse-osmosis water treatment plant and ancillary infrastructure at the power station, and a transfer residual material pipeline from the treatment plant to the neighbouring Western Coal Services site which is owned and operated by Centennial Coal (see **Figure 1**).

The project is being developed to use the mine water transferred from the Springvale and Angus Place Coal Mines as cooling water at the power station's cooling towers. It allows Centennial to achieve its strict water quality performance measures under the Springvale Coal Mine development consent, which required all mine water discharges to the Coxs River to cease after 30 June 2019.

The project has the capacity to transfer and treat up to 42 ML of mine water per day from Centennial's Springvale and Angus Place coal mines. Treated water in excess of requirements at the power station is allowed to be transferred to nearby Thompsons Creek Reservoir using the existing Coxs River Water Supply Pipeline.

The project was approved in June 2017 by the former Planning Assessment Commission, under delegation from the then Minister for Planning. Construction works commenced in September 2017. The development consent has been modified three times, with two modifications dealing with pipeline alignment works and the most recent modification in May 2019 involving an interim water storage strategy, which allowed 2,700 million litres (ML) of filtered water to be stored in Thompsons Creek Reservoir while the reverse osmosis treatment facility is fully commissioned.

The contractor for the project has made every effort to complete the project as quickly as possible. Major components of the project have been installed and the reverse osmosis treatment facility is being progressively commissioned and would be fully operational by the end of January 2020. Some of the reverse osmosis modules are already online and the project is currently able to treat around 50% (or around 12 ML/day) of the water that is transferred from the Springvale Coal Mine.

However, the brine management system component of the project continues to be delayed, and until this component is fully operational there remains the need to transfer and partially treat water for storage at Thompsons Creek Reservoir.

2. Proposed Modification

On 2 September 2019, Springvale Coal submitted a modification application and supporting modification report (see **Appendix A**) to the Department for the project (SSD 7592 Mod 4). The proposal seeks to expand the interim water storage strategy that was approved in May 2019, by transferring a further 3,060 ML of partially treated mine water to Thompsons Creek Reservoir at a rate of up to 36 megalitres (ML) per day, until the end of January 2020.

The primary reason for the proposed modification is that the brine management system of the reverse osmosis facility is yet to be fully commissioned. This is expected to be operational by the end of January 2020.

Also, a temporary reverse osmosis facility that was installed at Angus Place mine to manage water while the Springvale Water Treatment Project was developed will cease operating at the end of 2019, and the 10 ML/day of water that is currently being treated and discharged from Angus Place would then be transferred to the Springvale Water Treatment Project for treatment and re-use.

Therefore, the proposal is for the transfer up to 24 ML/day of partially treated mine water until the end of 2019, and up to 36 ML/day during January 2020.

Considering the amount of water that is required to be stored, there are no feasible or safe alternatives to storing the water in the reservoir. There is not enough underground storage at Springvale and Angus Place or capacity in the other storages at the power station. The consequences of the proposed modification not going ahead would be:

- flooding of active mine workings at Springvale and Angus Place, and potential impacts to the integrity of underground infrastructure; and
- Springvale Coal Mine requiring to reduce its production and ability to supply coal to the power station, with potential impacts to energy generation in NSW.

As per the previous approved modification, mine water would be partially treated to filter out solids before it is transferred to the reservoir.

The water would continue to be transferred to the reservoir using the existing Coxs River Water Supply Pipeline (see **Figure 1**). No additional infrastructure would be required to facilitate the proposed transfer of water to the reservoir. There are no other changes proposed for the project.

3. Statutory Context

3.1 Scope of Modification

The modification application and Modification Report were lodged under Section 4.55(1A) of the EP&A Act. The Department has reviewed the scope of the modification and considers that it:

- would not increase the environmental impacts of the project as approved (see Section 5);
- is substantially the same development as originally approved (see Section 3.2); and
- would not involve any further disturbance outside of the already approved disturbance areas for the project.

Therefore, the Department is satisfied the proposed modification is within the scope of section 4.55(1A) of the EP&A Act and does not constitute a new development application. Accordingly, the Department considers that the application should be assessed and determined under section 4.55(1A) of the EP&A Act.
The Department has also:

- considered advice provided concerning the proposed modification (see Section 4.2); and
- considered the relevant matters in Section 4.15(1) of the EP&A Act, including:
    - the provisions of any relevant environmental planning instrument (see Section 3.4);
    - the likely impacts of the proposed modification, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality (see Section 5.2);
    - the public interest, including any relevant objects of the EP&A Act (see Section 3.4); and
    - the reasons given by the approval authority for the grant of the original approval (see Section 3.5).

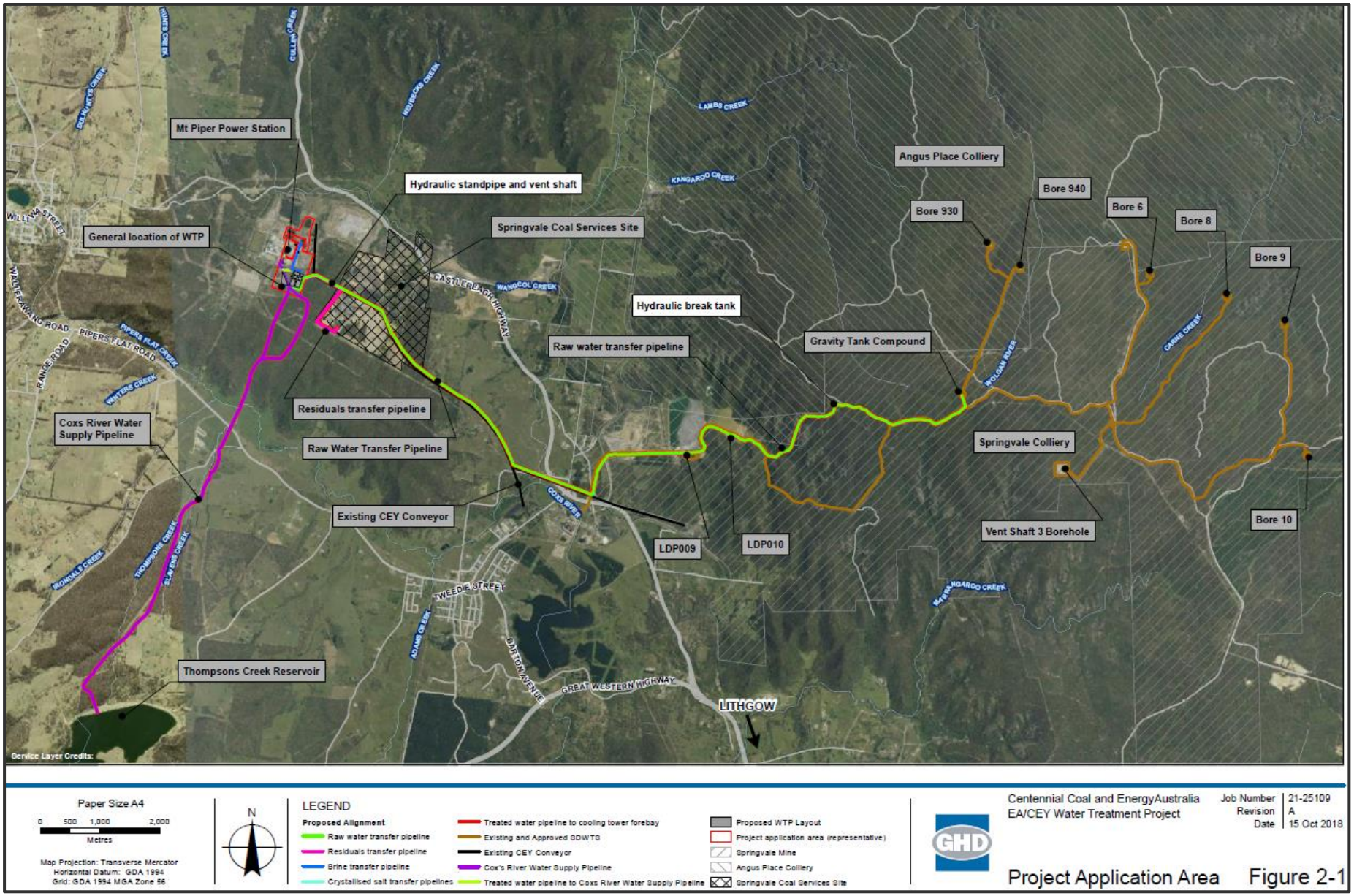

Figure 1 | Site Location and Project Components

3.2 Substantially the Same Development

The Department is satisfied that the project as modified would be substantially the same development as approved, and that the proposal should be characterised a modification to the existing development consent, as:

- there would be no change to the operations and components of the project;
- there would no change to the water transfer and treatment capacity of the project; and
- the impacts of the development as modified would be similar to the impacts of the approved project (see Section 5.2).

3.3 Consent Authority

The Minister for Planning and Public Spaces (Minister) is the consent authority for the application under Section 4.5(a) of the EP&A Act. However, under the Minister's delegation dated 11 October 2017, the Director - Resource Assessments, may determine the application, as:

- Lithgow City Council did not object;
- Centennial Coal's subsidiary, Ivanhoe Coal Pty Ltd, did not report any political donations; and
- no public submissions in objection were received.

3.4 Environmental Planning Instruments and Objects of the EP&A Act

In undertaking its assessment, the Department has considered the objects of the EP&A Act and the provisions of relevant environmental planning instruments, including:

- Lithgow Local Environmental Plan 2014;
- State Environmental Planning Policy (State and Regional Development) 2011 (SRD SEPP);
- State Environmental Planning Policy 55 (SEPP No. 55) – Remediation of Land;
- State Environmental Planning Policy 44 (SEPP No. 44) – Koala Habitat Protection; and
- State Environmental Planning Policy 33 (SEPP No. 33) – Hazardous and Offensive Development.

3.5 Reasons for Granting the Original Consent

In determining the original Springvale Water Treatment Project, the Planning Assessment Commission concluded that the benefits of the project outweighed the residual environmental impacts and imposed a range of strict conditions to appropriately manage impacts. The Department has considered the proposed modification against the reasons the Commission gave for determining the project and is satisfied that the proposed modification does not affect the decision that was previously made. The proposed modification would allow similar benefits to be realised at local, regional and State levels.

3.6 Biodiversity

The Department has considered the provisions of section 7.17 of the *Biodiversity Conservation Act 2016* and is satisfied that a biodiversity development assessment report is not required to be submitted with this application as the modification will not increase the impacts on biodiversity values on the site.

4. Engagement

4.1 Department's Engagement

The modification application was advertised in the *Lithgow Mercury* on 13 September 2019. Relevant State government agencies were invited to provide advice on the proposal.

The Department also exhibited the modification application and supporting documents from 13 September 2019 until 29 September 2019:

- on the Department's website;
- at Lithgow City Council; and
- at the Nature Conservation Council.

The Department received advice from five government agencies and comments from one special interest group. No submissions were received from members of the public. The advice and comments were provided to Centennial, which provided its Submissions Report on 8 October 2019 addressing each of the issues raised.

The agency advice and Centennial's responses are summarised below and provided in **Appendix B** and **Appendix C** respectively.

4.2 Summary of Agency Advice and Responses

WaterNSW did not object to the proposal, again noting the overall improvements in water quality in the Coxs River catchment that would occur as a result of the project. It also noted that the minimal increase in salinity in the river as a result of the proposed modification would be temporary and would decrease when the reverse osmosis treatment plant is fully commissioned. WaterNSW asked that water quality monitoring results that exceed predictions or spills from the reservoir are immediately reported.

In its Submissions Report Centennial stated that it would provide monitoring results to WaterNSW.

The Environment Protection Authority (EPA) commented about the risk of overflows or need for controlled discharges from the reservoir, as the power station is operating at a lower capacity and is currently drawing less water from the reservoir to use in the cooling towers. It asked for further information on the transfer volume in relation to the cessation of use of the temporary reverse osmosis facility at Angus Place. It recommended a contingency strategy to account for potential changes to water volumes in the reservoir and management options in case discharges are required.

In its Submissions Report, Centennial outlined there would be sufficient capacity in the reservoir to handle the additional volume proposed to be stored and the risk of spills or discharge would be very low. Notwithstanding, it has committed to developing spill protocols in consultation with EPA and other relevant agencies.

The Dams Safety Committee, the Department's Water Division and Lithgow City Council did not object to the proposal.

The Colong Foundation for Wilderness commented on the potential for water quality impacts from discharges from Centennial's Western Coal Services site which emplaces the residual material from the filtering process. It also commented that the proposed modification is linked to the potential transfer of water from Clarence Colliery to the project.

In its Submissions Report, Centennial responded by stating that the issue of discharges from the Western Coal Services project to the catchment is a wider issue, which is being investigated by Centennial and Energy Australia in consultation with the EPA and there is no intention to transfer water to the project from Clarence Colliery.

5. Assessment

5.1 Water Transfer Volume

Water is currently being transferred from the Springvale Coal Mine to the power station at up to 24 ML/day. The modelling undertaken for the modification assessment assumed a worst-case discharge rate of 36 ML/day over about 85 days to reach a maximum transfer limit of 3,060 ML (see **Figure 2**). This is a conservative assumption as the current 24 ML/day transfer rate would be maintained until the end of 2019 and would only increase to 36 ML/day after the Angus Place reverse osmosis plant is switched off. The total volume that is proposed to be transferred equates to around 12% of the storage capacity of the reservoir.

5.2 Water Quality Impacts

Due to pre-existing water quality in Thompsons Creek Reservoir, the proposed transfers would have little effect on pH and salinity levels (an increase of around 60 µS/cm from 681 to 741 µS/cm). The increase in salinity would not affect the water quality in the downstream water catchment as its background water quality is influenced by current untreated mine water discharges.

As detailed in the Modification Report and as noted by WaterNSW, any potential salinity increase from the proposed modification would be minor and temporary in nature and would cease when the project is fully operational, and all water is fully treated.

There may also be the potential for minor salinity increase in the wider Coxs River catchment, primarily due to the approved emplacement of residual material from the filtration process at the Western Coal Services emplacement area and associated potential for increased discharges from the site to Wangcol Creek via discharge point LDP001.

This however is the subject of ongoing investigations regarding the water quality of discharges from LDP001, which Centennial and Energy Australia are undertaking in consultation with EPA and is not directly related to the proposed modification.

The assessment also showed that there would be negligible change in heavy metal concentrations in the reservoir, which would continue to meet ambient water quality guidelines specified in the *Australian and New Zealand Water Quality Guidelines 2018*.

Water and salt balance models for the approved interim water strategy at downstream locations of the Coxs River found little change in salinity at the locations. This would again be the case for the proposed modification, as currently around 50% of the water transferred to the project is being passed through the reverse osmosis treatment facility, and water quality in downstream catchments would be expected to improve as the remaining reverse osmosis modules are commissioned.

In terms of the neutral or beneficial effects test in the *State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011*, the assessment has again demonstrated that the interim strategy would have a negligible change when compared to the approved project. Notwithstanding, some of the overall benefits of the project on catchment water quality are already being realised as around 50% of the water being transferred to the project is currently being fully treated in the operating reverse osmosis modules.

5.3 Reservoir Infrastructure

Thompsons Creek Reservoir can hold up to 27,500 ML of water and no additional dam infrastructure would be required to support the proposal. The Dams Safety Committee has reviewed the proposal and does not object.

EPA commented about the potential for the reservoir overtopping as the current reduction in operating capacity at the power station would result in less water being drawn from the reservoir. Modelling was calibrated to provide a worst-case scenario, which assumes that the power station does not draw any water from the reservoir during the period required for the proposed modification, the 3,060 ML is added to the reservoir and maximum recorded rainfall conditions were to eventuate (see **Figure 2**).

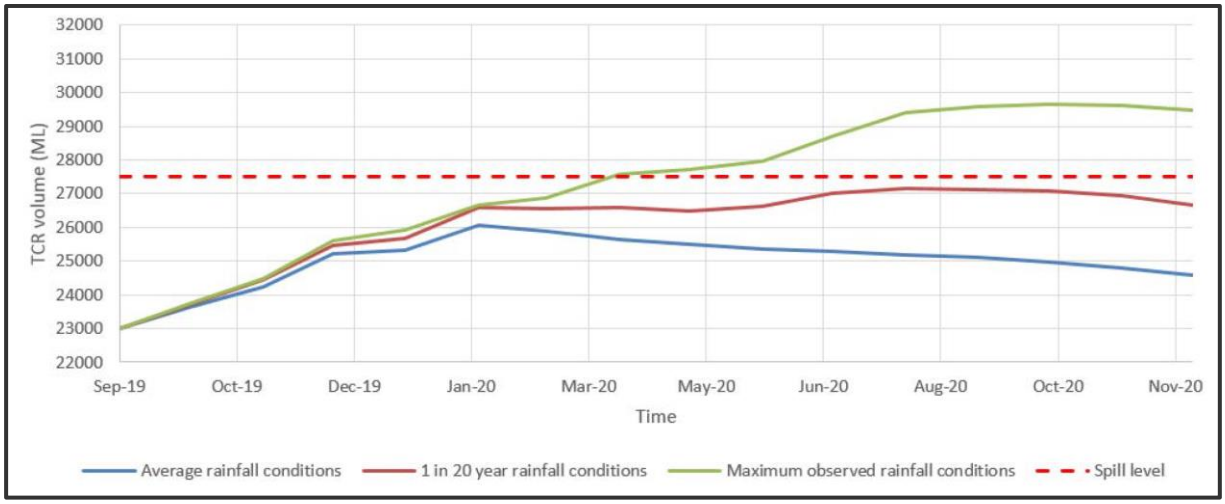

Figure 2: Water balance modelling – overtopping scenarios

The modelling shows that it would be very unlikely that the reservoir would overtop during the period required for the proposed modification (until the end of January 2020) and that the reservoir has sufficient capacity to handle the worst-case scenario. Further, this period would occur during warmer summer months when there is likely to be a higher demand for power generation and a subsequent increased use of cooling water from the reservoir. The Department considers that this additional demand for water, along with current drier than average conditions forecast to prevail to January 2020, would therefore substantially reduce the risk of any overtopping occurring during the proposed modification period.

However, while the conditions of consent for the project already require all excess treated water to be transferred to the reservoir unless in an emergency (ie events where overtopping of the reservoir is likely to occur), the proponent has committed to developing appropriate emergency spill protocols in consultation with EPA and WaterNSW.

5.4 Monitoring

A detailed Water Management Plan is required to be prepared and implemented under the project's development consent, to effectively manage water resources. This plan is required to be updated in accordance with the current conditions of consent. The updated plan would include:

- details of the interim water management strategy;
- details of the monitoring program for Thompsons Creek Reservoir; and
- details of the contingencies and operating protocols to manage water levels within Thompsons Creek Reservoir.

For the proposed modification, the Department has recommended that an additional 3,060 ML of partially treated water is included in the total limit of mine water that can be transferred to the Thompsons Creek Reservoir, until the end of January 2020.

6. Evaluation

The Department has assessed the merits of the proposed modification and considered its potential environmental, social and economic impacts and the relevant requirements of the EP&A Act.

The Department recognises the need to manage the water which is being transferred from the Springvale Coal Mine to the power station while the reverse osmosis facility is in its final stages of commissioning. The Department considers that the expansion of the approved interim water management strategy would be the safest and most feasible option to manage the water. The proposed modification would therefore provide a logical solution while the Springvale Water Treatment Project is completed.

The Department's assessment has found that the proposed modification would have a negligible impact on the water quality in Thompsons Creek Reservoir and would be unlikely to affect the downstream catchment water quality.

The transfer of water would be managed under the existing conditions of consent and the Department has recommended that a total limit of up to 5,760 ML of partially treated water can be transferred to Thompsons Creek Reservoir, until 31 January 2020. The proponent has also committed to developing protocols to manage the potential for spills from the reservoir.

If the proposed modification is not approved, mine water would need to be managed in underground and surface storages at the Springvale and Angus Place coal mines. Managing the water at the mines would affect current mining operations at Springvale Coal Mine, with impacts to coal supply to the Mount Piper Power Station, which supplies 15% of NSW energy needs.

Therefore, the Department considers that the proposed modification is in the public interest and should be approved.

The Department has drafted a recommended Notice of Modification (see **Appendix D**) and consolidated version of the development consent, as modified (see **Appendix E**). Springvale Coal has reviewed the draft Notice of Modification and has accepted the conditions.

7. Recommendation

It is recommended that the Director, Resource Assessments, as delegate of the Minister for Planning and Public Spaces:

- **considers** the findings and recommendations of this report;
- **accepts and adopts** all of the findings and recommendations in this report as the reasons for making the decision to grant approval to the modification application;
- **agrees to modify** the consent for the Springvale Water Treatment Project (SSD 7592); and
- **signs** the attached Notice of Modification (**Appendix D**).

Recommended by:

1.11.19

Philip Nevill
Environmental Assessment Officer
Resource Assessments

8. Determination

The recommendation is **Adopted** / **Not adopted by:**

5/11/19

Steve O'Donoghue
Director
Resource Assessments

Appendices

Appendix A – Modification Report

See the Department's website at:

https://www.planningportal.nsw.gov.au/major-projects/project/25031

Appendix B – Agency Advice

See the Department's website at:

https://www.planningportal.nsw.gov.au/major-projects/project/25031

Appendix C – Submissions Report

See the Department's website at:

https://www.planningportal.nsw.gov.au/major-projects/project/25031

Appendix D– Notice of Modification

See the Department's website at:

https://www.planningportal.nsw.gov.au/major-projects/project/25031

Appendix E – Consolidated Consent

See the Department's website at:

https://www.planningportal.nsw.gov.au/major-projects/project/25031