Centennial Coal

CENTENNIAL COAL

SPRINGVALE WATER TREATMENT PROJECT

ANNUAL REVIEW

March 2018

Centennial Coal
Environment Matters

Table 1. Annual Review Title Block

Name of Operation	Springvale Water Treatment Project
Name of Operator	MP Water Pty Ltd as trustee for the MP Water Trust
Development Consent/ Project Approval #	SSD 7592
Name of holder of development consent / project approval	Springvale Coal Pty Limited
Mining Lease #	NA
Name of Holder of Mining Lease	NA
Water License #	NA
Name of Holder of Water License	NA
MOP/RMP Start Date	NA
MOP/RMP End Date	NA
Annual Review Start Date	19 June 2017
Annual Review End Date	31 December 2017

I, M. Cairney certify that this audit report is a true and accurate record of the compliance status of the Springvale Water Treatment Project for the period 19 June 2017 to 31 December 2017and that I am authorized to make this statement on behalf of Springvale Coal Pty Limited.

Note:

a) *The Annual Review is an '**environmental audit**' for the purposes of s122B(2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion) in an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000.*

b) *The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (intention to defraud by false or misleading statement – maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents –maximum penalty 2 years imprisonment or $22,000,or both).*

Name of Authorised Reporting Officer	M. Cairney
Title of Authorised Reporting Officer	MD & CEO
Signature of Authorised Reporting Officer	M Cairney
Date	27.3.18

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Tables

Figures

1. STATEMENT OF COMPLIANCE

Table 2 provides a statement of compliance with the relevant approvals during the reporting period.

Table 2. Statement of Compliance

Were all conditions of the relevant approval(s) complied with?	
Development Consent SSD 7592	Yes
Development Consent SSD 5579 MOD 1	Yes

Table 3 provides a list of conditions that were not complied with during the reporting period.

Table 3. Non-Compliances

Relevant Approval	Condition #	Condition summary	Compliance Status	Comment	Reference # addressed in Annual Review
Nil					

Note: Compliance Status Key for Table 3

Risk Level	Colour Code	Description
High	Non-complaint	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-complaint	Non-compliance with: • Potential for serious environmental consequences, but is unlikely to occur; or • Potential for moderate environmental consequences, but is likely to occur
Low	Non-complaint	Non-compliance with: • Potential for moderate environmental consequences, but is unlikely to occur; or Potential for low environmental consequences, but is likely to occur
Administrative	Non-complaint	Only to be applied where the non-compliance does not result in any risk of environmental harm (eg submitting a report to government later than required under approval conditions)

2. INTRODUCTION

The Annual Review Report (Report) is the 1st report prepared to detail the environmental performance of Springvale Water Treatment Project (Project) during its construction phase. This Report covers the period 19 June 2017 to 31 December 2017 (reporting period).

Veolia Australia & New Zealand (Veolia) have been engaged as the construction and operations contractor to carry out the Project for MP Water, who are contracted to Springvale SK Kores Pty Limited, Centennial Springvale Pty Limited (together, the Springvale Joint Venturers) and EnergyAustralia NSW Pty Ltd (EnergyAustralia) for that purpose.

This Report has been prepared in accordance with Schedule 4, Condition 5 of the Development Consent SSD 7592 by Veolia, as the Construction Contractor contracted to deliver the Project.

2.1. History of the Project Approvals

The Springvale Water Treatment Project was approved as State Significant Development (SSD) 7592 by the Planning Assessment Commission (PAC) on 19 June 2017, under delegation from the Minister for Planning. A Development Consent was granted under Section 89E of the Environmental Planning and Assessment Act, 1979 (EP&A Act) based upon the development described in the Springvale Water Treatment Project Environmental Impact Statement (EIS), the Response to Submissions and the Amendment to Development Application.

In developing its design solution, Veolia incorporated a number of minor design modifications to improve the operational efficiency and risk profile for the Project. The Project remains substantially the same development as the Project described in the EIS and in the Amendment to Development Application.

The DP&E assessed the application to modify development consent SSD 7592 and considered that the modifications proposed by Veolia would result in a number of key operational and environmental benefits. The DP&E determined the proposed modification application (SSD 7592 MOD1) for the Project on 12 January 2018.

The DP&E considers that the proposed changes would be appropriately managed within the existing approval and post-approval management framework for the Project, with appropriate updates to the management plans as required.

2.2. Project Overview

The Project aims to improve water quality in the upper Cox's River catchment through the transfer of water from existing underground mine dewatering facilities for reuse at the Mount Piper Power Station (SMPPS) cooling towers as a first priority, rather than discharge into the upper catchment of the Cox's River.

This is achieved by constructing and operating a pipeline and ancillary facilities to transfer water from the existing dewatering facilities on the Newnes Plateau for treatment and reuse at MPPS as shown on Figure 1 below.

In detail, the Project involves construction of the following elements:

Water transfer system (WTS) – WTS is a 15 kilometre water transfer pipeline, to transfer up to 42 mega litres a day of mine water from existing underground mine dewatering facilities (operated by Springvale Coal Pty Ltd) to MPPS (operated by EnergyAustralia Pty Ltd) and a 5km residuals pipeline from the WTF site to the Springvale Coal Services Area.

Water treatment facility (WTF) – WTF is a desalination plant designed to treat the mine water for use in the MPPS cooling towers and to discharge excess treated water to Thompson's Creek Reservoir if required; discharge of treated water will only occur when MPPS is not operating at full capacity.

2.3. Project Location

Springvale Mine is an underground coal mine located in the western coalfield of NSW, approximately 15 kilometres west of Lithgow. The MPPS located about 8 kilometres west of the Springvale Mine pit top at Lot 363 Boulder Road, Blackmans Flat, NSW (see Figure 2 below).

2.4. The Project Application Area

The Project Application area comprises a number of infrastructure elements primarily including a 10 meter wide linear pipeline corridor extending between the existing minewater pump station (WBS002) on the Newnes Plateau and the Water Treatment Facility location within the MPPS site (Refer to Figure 2).

The Project application area is partially situated within the Newnes State Forest, extending from the east on Newnes Plateau to west into lower lying vegetated and disturbed lands.

The western half of the Project application area is situated on largely disturbed lands due to existing farming lands, roads, easements and mining lands. Castlereagh Highway is situated to the north of these western portion of the Project application area.

The Water Treatment Facility site located at Mount Piper Power Station has been extensively cleared and modified for construction of the power station and associated infrastructure.

2.5. Responsibilities

Environmental monitoring was undertaken by Veolia during this reporting period.

Table 4 provides the names and contact details of the key personnel who are responsible for the environmental management on site.

Table 4. Environmental Management Contact Details

Name	Position	Email	Phone
Tom Roche	Veolia Construction Manger	tom.roche@veolia.com	+61 438 880 470
Elena Ivanova	Environmental Nominee	elena.ivanova@veolia.com	+61 415 556 620

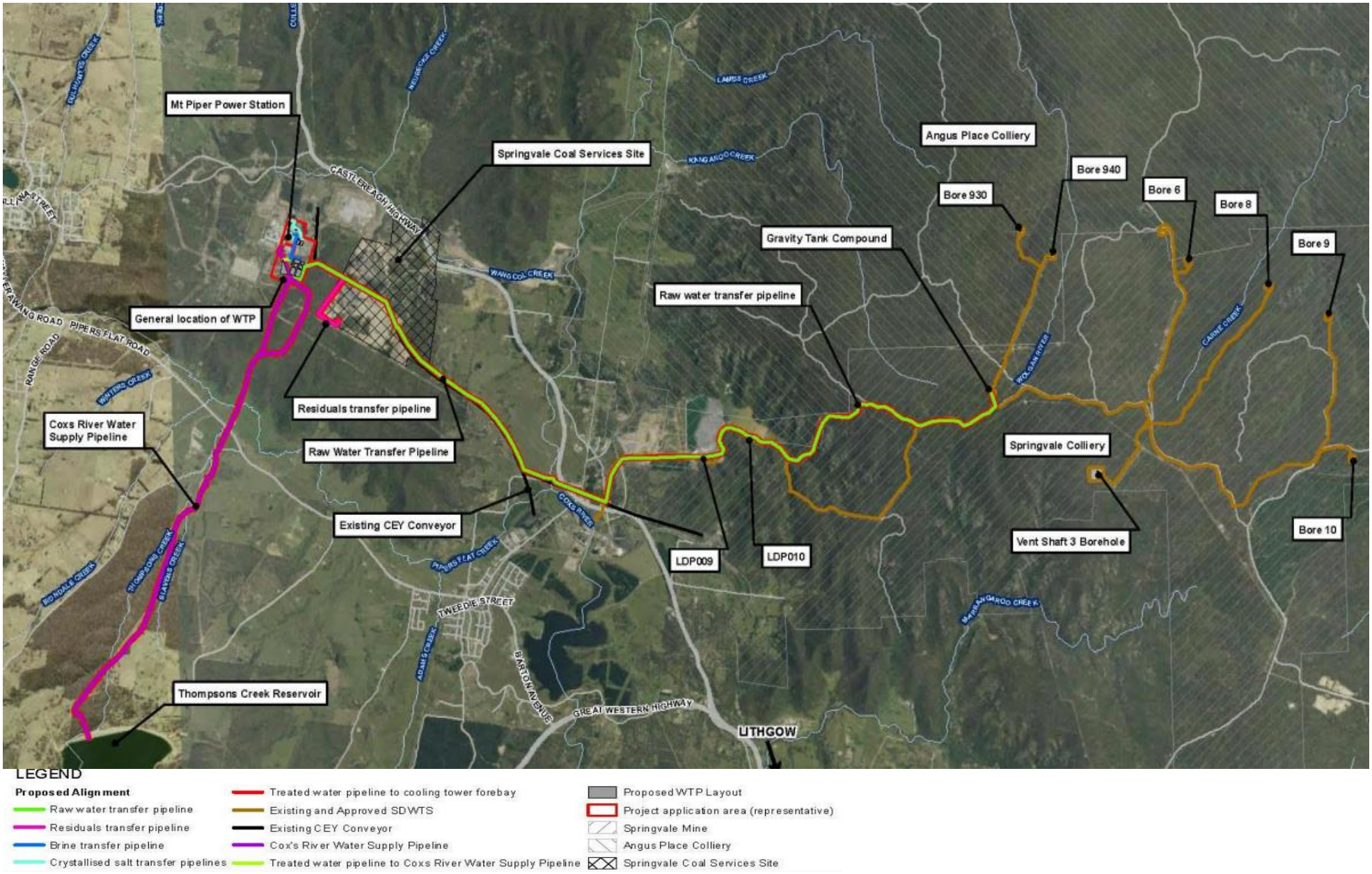

Figure 1. Project Overview

Figure 2. Project Location

3. APPROVALS

Table 5 provides a summary of the License and Permits that are required, in addition to Development Consent for the Project construction.

Table 5. Approvals held by Site

Legislation/ Guideline	Approval/ License	Assessment Authority	Status	Responsibilities
Road Act 1993 (section 138)	Roads Consent Act Approval	RMS	**In progress.**	Veolia/ Abergeldie
Road Act 1993 (section 138)	Consent (Road Occupancy Licence)	RMS	**In progress.** RMS to be contacted prior to commencement of Castlereagh Hwy crossing.	Veolia/ Abergeldie
Road Act 1993 (section 138)	Approval	Lithgow City Council	**Not required.** Drawings will be issued to Council for review prior to commencement of Castlereagh Hwy crossing.	Veolia/ Abergeldie
Road Act 1993 (section 138)	Consent (Road Occupancy Permit)	Lithgow City Council	**Not required.** No permit is required as there are no needs to change traffic or road closure as construction works are located on private land and outside the road corridor.	Veolia/ Abergeldie
Crowns Land Act 1989	Approval	Lithgow City Council	Approval to be issued prior to any groundwater extraction when required.	Veolia/ Abergeldie
Environmental Planning and Assessment Act 1979 (part 4A)	Construction and Occupation certificates	Accredited certifier or consent authority	**In progress.** A private certifier, "My Building Certifier" has been engaged to assess the construction certificate application with relevant standards and codes.	Veolia/ Abergeldie
Forestry Act 2012 (section 60)	Occupational Permit	NSW Forestry Corporation	**Completed** PERMIT# MIN100006 was issued in September 2017.	Springvale Coal

3.1. Annual Review Requirements

The Annual Review has been developed to satisfy the reporting requirements of the approvals listed in Table 6.

Table 6. Development Consent (SSD 7592) Requirements

Relevant Conditions of Consent (Schedule 4)	Definition	Where addressed in Annual Review
Annual Review		
5	By the end of March each year, the Applicant must submit a review of the environmental performance of the development for the previous calendar year to the satisfaction of the Secretary. This review must:	
5 (a)	describe the development (including any rehabilitation) that was carried out in the past year, and the development that is proposed to be carried out over the next year;	Section 4.2 Section 10.1
5 (b)	include a comprehensive review of the monitoring results and complaints records of the development over the past year, which includes a comparison of these results against the: • relevant statutory requirements, limits or performance measures/criteria; • monitoring results of previous years; and • relevant predictions in the EIS.	Section 6
5 (c)	identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;	Section 9
5 (d)	identify any trends in the monitoring data over the life of the development;	Section 6
5 (e)	identify any discrepancies between the predicted and actual impacts of the development, and	Section 6.2.1
5 (f)	analyse the potential cause of any significant discrepancies; and	Section 6.2.1
5 (g)	describe what measures will be implemented over the next year to improve the environmental performance of the development	Section 10.2

4. OPERATIONS SUMMARY

4.1. Construction Stage of the Project

Abergeldie Complex Infrastructure Pty Ltd (Contractor) has been engaged by Veolia as a sub-contractor to undertake construction of the Project. Abergeldie is responsible for implementing the management system for environmental performance during construction activities at the site; this shall be overseen by Veolia in its capacity as Principal Contractor.

Approval to commence the Project construction was granted by the DP&E on 27 October 2017, following preparation, assessment and approval of the Construction Environmental Management Plan (CEMP) and supplementary Environmental Management Plans (EMPs). Construction of the Project commenced on 31 October 2017.

The CEMP and supplementary EMPs detail the management and control measures which are being implemented by Veolia and subcontractors. These documents focus on key environmental issues associated with the construction of the Project, including

biodiversity, aboriginal cultural heritage, waste, traffic, air quality, noise, and emergency response. These documents were prepared to satisfy the requirements of the Development Consent conditions and provide detailed controls and monitoring criteria to manage the environmental performance of the Project during the construction stage.

4.2. Works Completed during Reporting Period

During the reporting period the progress made is as follows:

- The Environmental Management Strategy (EMS) has been established for construction stage of the Project and described in the Construction Environmental Management Plan (CEMP).
- Approval has been obtained from the DP&E of the CEMP and management plans required under the Development Consent for the construction stage of the Project.
- All flora, fauna and heritage survey validations and protection measures have been completed.
- Installation of site sheds, power supply and other amenities for the Project has been completed.
- The detailed design of the Project is ongoing and is close to completion.
- Erosion and sediment controls for the Water Treatment Facility site are installed and maintained in good condition.

5. ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

The Annual Review Report is the 1st report prepared to detail the environmental performance of Springvale Water Treatment Project and no correction actions were proposed.

Table 7. Actions from Previous Annual Review

Action Required	Requested By	Action Taken	Where addressed in Annual Review
Nil actions from previous reporting period			

6. ENVIRONMENTAL PERFORMANCE

The following sections detail the monitoring undertaken throughout the reporting period in accordance with the Environmental Monitoring Schedules as proposed within the CEMP.

Environmental Monitoring Schedules provide details on all monitoring requirements of the Development Consent and other appropriate regulations to measure and assess the continuing suitability, adequacy and effectiveness of on-site environmental management measures.

Table 8 summarises the environmental monitoring conducted at the site during its construction stage of the Project as per the Environmental Monitoring Schedule.

Table 8. Construction Monitoring Requirements

Condition Ref	Type of Monitoring	Frequency	Annual Review Section
Section 3.5.6.4 of the CEMP	Visual Dust Monitoring	Daily or as required	Section 6.1
Table 11, section 4.1 of the Biodiversity Management Plan	Ecological (Biodiversity) Survey Monitoring of the feral animals Site Inspections Weed Monitoring	Post Construction Fortnightly Fortnightly Weekly after rehabilitation works commence	Section 6.2
Section 6 of the Aboriginal Cultural Heritage Management Plan	Avoid impacts on known Aboriginal heritage sites.	As required	Section 6.3
Section 5 of the Construction Noise Management Plan	Noise Monitoring	As required	Section 6.4
Section 3.5.6.4 of the CEMP	Contaminated land	As required	Section 6.5
Section 3.5.6.1 of the CEMP	Groundwater Monitoring	As required	Section 6.6.1
Section 5.3.1 of the Water Management Plan	Surface Water Monitoring	As required	Section 6.6.2

6.1. Air Quality

Potential dust sources from Project construction include unsealed traffic roads, exposed areas, earth works, soil stockpiles and loads with no cover leaving the site and importing materials to site. Dust controls used on site include the:

- Use water carts and conduct regular road sweeping;
- Progressively rehabilitate/seal disturbed area;
- Limit vehicles to specified routs to construction sites and ensuring speed limits are adhered to.

Visual dust monitoring was conducted on site on daily basis to ensure compliance with requirements described in Section 3.5.6.4 of the CEMP. The CEMP was approved by the DP&E and was in effect during the reporting period.

There were no dust complaints received from either industrial or residential neighbours during the reporting period.

6.2. Biodiversity

A Biodiversity Management Plan (BMP) has been prepared in order to fulfil the regulatory requirements for the Project and to provide Project employees and contractors with a clear understanding of the requirements of this plan. The plan was approved by the DP&E and was in effect during the reporting period.

The purpose of the BMP is to contribute to the maintenance and protection of existing biodiversity values and minimise the potential long-term effects of clearing required for construction works on the surrounding vegetation communities and habitats.

Pre-construction surveys were undertaken in September 2017, as part of the BMP development, to confirm vegetation communities and actual clearing estimates based upon the design of the Project. It is estimated that only about 9.8 ha of vegetation to be cleared compared to 27.4 ha in the EIS.

Five Biodiversity Management Areas (BMAs) were identified for the project based upon vegetation types and cover, land use, land management and construction activities (refer to Figure 3). BMA 1 is the WTF site whereas the other BMA's are along the raw water and residuals pipeline routes. Further information is provided for each BMA in the BMP.

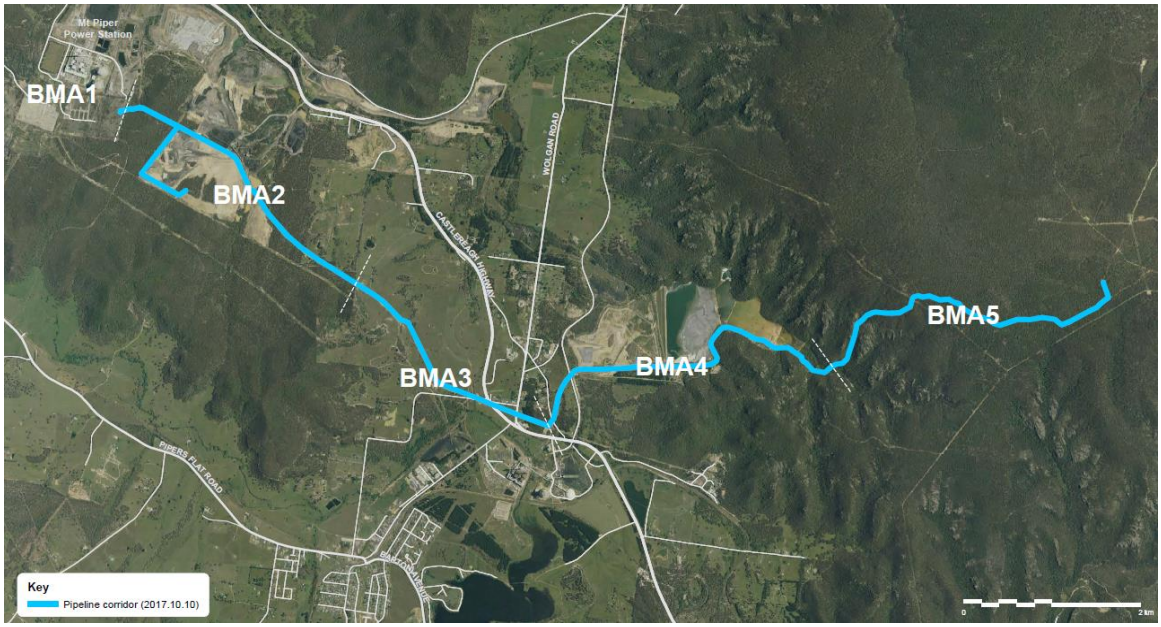

Figure 3. Overview of the BMAs

6.2.1. Ecological (Biodiversity) Survey

In accordance with the BMP requirements the pre-clearing and post-clearing surveys were undertaken by a Senior Ecologist from Jacobs to verify the clearing extent within BMA 1of the WTF site.

BMA 1 – WTF site

During this reporting period, the pre-clearing survey was undertaken on 30 October 2017 and post-clearing survey was on 15 December 2017 following completion of vegetation clearing in BMA 1 (refer to Appendix A). The inspections verified that approximately 3.01 hectares of vegetation from the Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion Plant Community Type has been cleared from the footprint of the WTF site.

All clearing has occurred within the Project Application area as identified in the EIS. No hollow-bearing trees have been removed from the WTF site as none were present in the area that was cleared. As such, impacts to hollow-bearing trees have been minimised.

No high quality breeding habitats have been affected by the clearing. As such, impacts to threatened bird and bat populations have been minimised.

The WTF site is not situated on an area of remnant or high quality native vegetation. Exclusion zones were established to ensure that the adjacent vegetation was not directly impacted. These exclusions zones and associated on site management has minimised the clearing of native vegetation and key habitat within the approved development footprint.

6.2.2. Monitoring of the Feral Animals

During this reporting period, no feral animals were observed and reported.

6.2.3. Site Inspections

During this reporting period, two environmental site inspections were conducted to assess the compliance with the Biodiversity Management Plan.

There were no non – compliances reported during the reporting period.

6.2.4. Rehabilitation

The extent of rehabilitation will be relatively minor as the area disturbed for construction is small and in some areas rehabilitation will not be required (e.g. pipeline on the surface, directional drilled sections, pipeline in road reserve).

The immediate intent of rehabilitation actions throughout construction is to re-establish site surfaces as soon as possible after disturbance to assist with erosion mitigation, and prevent the establishment of weed species.

Successful rehabilitation would meet the following performance criteria:

- Self-sustaining vegetative cover;
- No signs of subsidence or erosion;
- Representative of species richness and diversity of pre-disturbed condition;
- Plants showing healthy growth and signs of recruitment; and
- Free of noxious weeds.

No rehabilitation works were undertaken during this reporting period as none of the construction zones have been completed.

6.3. Heritage (Aboriginal and Non-Aboriginal)

The ACHMP has been prepared to address the requirements of the Secretary's Environmental Assessment Requirements (SEARs) issued by the DP&E on 06 May 2016. It also addresses the mitigation and management measures listed in the State Significant Development Assessment (SSD 7592) Springvale Water Treatment Project EIS and the Development Conditions of Consent issued by DP&E on 19 June 2017.

This Aboriginal Cultural Heritage Management Plan (ACHMP) describes how the Project will protect and manage heritage areas during construction and operation of the Project. The ACHMP outlines the requirements for the avoidance, management and mitigation of impacts to Aboriginal cultural heritage and include management recommendations for any Aboriginal heritage that may be potentially impacted by the Project.

The ACHMP sits alongside Centennial's Western Holdings: Aboriginal Cultural Heritage Management Plan (2014) (CCACHMP) in providing a framework for protecting Aboriginal

heritage sites on land operated by Centennial Coal. While the CCACHMP provides management measures and guidelines for the full range of heritage sites managed by Centennial Coal, the ACHMP is focused on the seven existing Aboriginal sites located within 30 meters of the Project area and details how they will be protected and managed during construction and operation of the Project.

The plan was approved by the DP&E and was in effect during the reporting period.

During the reporting period, no noticeable damage of Aboriginal sites were observed and no artifacts or skeletal remains have been found during construction activities.

6.4. Noise

Noise monitoring was conducted to ensure that construction activities undertaken at the Project site were managed in a way which minimized noise emissions.

The Environmental Monitoring Program and associated management measures were followed as outlined in the Construction Noise Management Plan, which included regular site inspections by Veolia. The plan was approved by the DP&E and was in effect during the reporting period.

Spot checks of noise intensive plant and equipment were also undertaken by the Veolia's construction contractor during this reporting period.

Construction activities of the Project were also restricted within the approved construction hours described in Table 9 as per Schedule 3, Condition 14 of the Development Consent.

Table 9. Approved Hours of Construction & Operation

Activity	Day	Hours
Construction	Monday- Friday	7:00am-6:00pm
	Saturday	8:00am-1:00pm
	Sunday & Public Holidays	At no time

No noise complaints were received from either industrial or residential neighbors during the construction of the Project.

6.5. Contaminated Land

Jacobs was commissioned by Veolia to undertake a Baseline Contaminated Site Investigation (BCSI) for portions of land to be occupied by the WTF and the WTS associated with the Project in August 2017.

The objective of the BCSI was to assist Veolia in obtaining sufficient information to assess baseline soil and groundwater contamination conditions of the site (comprising the WTF and the WTS) to support both the lease agreement and ongoing environmental monitoring requirements during operation of the WTF and WTS.

Based on the results of the fieldwork program, site observations and results of the laboratory analysis, contamination was not identified in soils beneath the WTF or the WTS that would impact upon construction and/or operation of the project in consideration of a commercial / industrial land use.

Based on the results of the BCSI, the risk of existing significant contamination being present at the WTF site areas that will be disturbed by construction and operations of the facility is considered to be low.

6.6. Water Management

6.6.1. Groundwater management

Groundwater beneath the WTF sites contains elevated concentrations (i.e. concentrations above the site acceptance criteria) of some heavy metals and hydrocarbon compounds as identified by the Baseline Contaminated Site Investigation. This is likely to be from groundwater coming in contact with overburden material containing remnants of coal; however, this cannot be conclusively determined. At the time of the BSCI, groundwater was only encountered in two groundwater wells (7 wells installed) to the limit of the investigation (approximately 10m bgl). These wells were located in the northern most portion of the WTF within the operational areas of the Mount Piper Power Station and therefore dewatering in unlikely to be required.

The Baseline Contaminated Site Investigation Report recommended to manage groundwater to prevent discharge and impacts to the fresh water ecosystems of the Coxs River and associated tributaries (Wangcol Creek and Sawyers Swamp Creek) if groundwater levels increase and dewatering of groundwater is required to facilitate construction. Threshold concentrations are presented in the the Baseline Contaminated Site Investigation Report, prepared by Jacobs.

No groundwater dewatering activities were undertaken during this reporting period as groundwater levels have not increased.

6.6.2. Surface Water Monitoring

Sensitive receptors located in proximity to the Project application area include Wangcol Creek and Coxs River. Erosion and sediment controls were developed for the both the WTF site and for installation of the WTS in accordance with Managing Urban Stormwater: Soils and construction 4th edition, “The Blue Book”.

Erosion and sediment controls have been implemented at the WTF site to avoid pollution of the Mount Piper power Station stormwater system.

The following controls were implemented at the WTF site as per the Progressive Erosion and Sediment Control Drawings;

- Stabilised entry/exit point;
- Temporary Sediment Basin;
- Sediment filter fences;
- Straw Bale Filter; and
- Diversion channels.

Visual monitoring and/or inspections of silt erosion controls were conducted during events of heavy rainfall to assess the quality of stormwater for potential contamination.

No unauthorised discharge from the site was observed in this reporting period.

7. COMMUNITY

7.1. Community Consultation and Engagement

Ongoing consultation with community is in the progress and being undertaken in accordance with the Stakeholder Management Plan appended to the CEMP. Formal letters describing upcoming construction activities were provided to the potentially affected stakeholders in early March 2018. A regular update of the Project progress will be provided on till the end of the construction works to minimize disruption or inconvenience.

A community information line currently exists for Project to receive calls from the local community that operates 24 hours a day, 7 days a week. Contact details have been provided to the community on all communication materials (e.g. Formal letters).

All information received from the community is being recorded in a Project Communication Register which is available via Veolia's Smartsheet system. Smartsheet is a cloud-based work management tool designed to be simple and easy to use by the Project team. Veolia issues a weekly update of the Project Communication Register to the Customer.

7.2. Community Complaints

Any complaint, query and/or issue received regarding noise, dust or other general community disturbances during the construction of the Project was managed as per the Stakeholders Management Plan.

All complaints are to be investigated, with the details recorded and auctioned through RIVO, which forms part of Veolia's National Integrated Management System for logging incidents and managing governance.

No complaints were received during the Project construction of this reporting period.

8. INDEPENDENT AUDIT

There is no requirement for the Project to undertake an external Independent Environmental Audit during the reporting period.

9. INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD

There were no non-compliances and incidents reported during this reporting period.

10. ACTIVITES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

10.1. Works Proposed for Upcoming Year

The following work is scheduled to be completed in the forward 12 month period:

Engineering and Procurement

- Completion of all detail design; and
- Placement of all orders for equipment and materials.

Water Transfer System (WTS)

- Selective clearing of the final pipeline route and install new pipeline;
- Directional boring of pipeline under Castlereagh Highway and Coxs River (no clearing required);
- Installation of fibre optic communication cable for pipeline monitoring; and
- Pre-commissioning of the WTS.

Water Treatment Facility (WTF)

- Major bulk earth works at WTF;
- Connecting pipelines to the MPPS water systems;
- Detailed earthworks, including piles and foundations;
- Receipt of all process equipment and installation of same;
- Installation of switchboards and power supplies;
- Installation of buildings, offices and associated infrastructure; and
- Pre-commissioning of the WTF.

10.2. Environmental Measures for Upcoming Year

As part of constructing the WTS, the following control measures will be adopted but not limited to:

- Pre-clearance surveys will be undertaken by an ecologist to identify any hollow trees. hollow logs or threatened plant species prior to the commencement of pipeline construction.
- Sediment fencing and flow breaks in areas of excessive grade (greater than 5%);
- Diversion of clean water around disturbance activities using temporary lined channels or appropriate located pipes; windrows of won material can also be utilised to protect the trenching site;
- Clearance of approximately 10 m of easement in locations where no easement already exists;
- Clearance will be undertaken as required during construction leaving mulch as groundcover while construction works are being undertaken;
- Excavated spoil material will be placed on the down slope side of the trench; and
- Rehabilitation of the trench is to occur within 10 days of the backfilling (IECA 2000).

APPENDICES

Appendix A – Pre-clearing and post-clearing surveys – BMA 1

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12 March 2018

Attention: Andrew Mcloughlin
Abergeldie Complex Infrastructure
PO Box 3019 Regents Park NSW 2143

Project Name: Springvale MPPS Water Treatment Project
Project Number: IA125601

Subject: Post-clearing survey of the Springvale WTS from the WTP site to SCS land

Dear Andrew,

This letter outlines the results of the post-clearance inspection of the Springvale WTS project application area undertaken on the 15th February 2018. The post-clearing inspection covered the project application area from the edge of the WTP site in the west to the creek at the boundary with Springvale Coal Services (SCS) land in the east. The post-clearance inspection was undertaken by Lukas Clews, Senior Ecologist at Jacobs.

1. Development consent conditions

Schedule 3 Environmental Conditions of the Development Consent state that the Applicant must:

a) ensure that no more than 27.84 hectares of native vegetation is cleared for the development unless the Secretary agrees otherwise; and

b) minimise:

- the impacts of the development on hollow-bearing trees;
- the impacts of the development on threatened bird and bat populations; and
- the clearing of native vegetation and key habitat within the approved development footprint.

Table 2 of the Development Consent conditions specifies the maximum area of each vegetation type that can be cleared. The approved impact to vegetation types present in the project application area is:

- Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion Plant Community Type (PCT) = 21.22 hectares
- Broad-leaved Peppermint - Brittle Gum - Red Stringybark dry open forest on the South Eastern Highlands Bioregion PCT = 0.47 ha.

Table 3 of the Development consent conditions specifies the species credit requirements for the three species that are approved to be impacted which can be expressed as the maximum number of individuals that can be impacted. Three *Eucalyptus cannonii* trees are approved to be impacted.

12 March 2018

Subject: Post-clearing survey of the Springvale WTS from the WTP site to SCS land

2. Vegetation clearing extent

The post-clearing survey verified the clearing extent within the WTP site. Based on a 10-metre-wide corridor, approximately 0.57 ha of native vegetation was removed from site consisting of:

- Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion Plant Community Type (PCT) = 0.15 ha
- Broad-leaved Peppermint - Brittle Gum - Red Stringybark dry open forest on the South Eastern Highlands Bioregion PCT = 0.42 ha.

All of the clearing that has occurred is within the Project Application area as identified in the EIS and is within the limits stipulated in Table 3 of the Development Consent.

No hollow-bearing trees have been removed as none were present in the area that was cleared. As such, impacts to hollow-bearing trees have been minimised.

The clearing area largely contained regrowth vegetation but there was removal of some high quality vegetation immediately east of the WTS site. The habitat suitability of the vegetation that was cleared for the WTP site would be considered moderate to good quality foraging habitat for threatened birds and bats. No high quality breeding habitat would have been affected by the clearing. As such, impacts to threatened bird and bat populations have been minimised.

3. Impacts to threatened species

Prior to clearing, all *Eucalyptus cannonii* trees within and directly adjacent to the project application area were located and identified on maps and in the field. Exclusion zones were established around the trees to be retained and the clearing footprint was narrowed and minimised where possible and in some instances located closer to the fence to avoid and minimise impacts to this species. Two *Eucalyptus cannonii* trees were removed in the western end of the project application area. This clearing is within the approved limits for this species as identified in the Development Consent.

Photos of the clearing area are provided below including photos of exclusion zones that have been established around the *Eucalyptus cannonii* trees.

Yours sincerely

Lukas Clews
Senior Ecologist
(02) 9928 2291
lukas.clews@jacobs.com

12 March 2018

Subject: Post-clearing survey of the Springvale WTS from the WTP site to SCS land

Site photos as of 15 February 2018

Photo 1 : The cleared 10 m corridor inside the project application area through the Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion PCT east of the WTP site

Photo 2 : The project application area east of the WTP site after clearing showing *Eucalyptus cannonii* trees protected with exclusion zones made from high visibility fencing

Photo 3 : The project application area at the top of the hill adjacent to the conveyor looking west showing the cleared area and some retained vegetation near the fence

Photo 4 : The project application area mid slope near the SCS land looking east showing the minimised clearing area with retained vegetation including juvenile *Eucalyptus cannonii* trees directly adjacent

Photo 5 : Juvenile *Eucalyptus cannonii* trees that were retained in the project application area during clearing by minimising the width of the clearing footprint and careful location of the clearing footprint close to the fence to avoid these trees

Photo 6 : The cleared are along the fence line showing retained juvenile *Eucalyptus cannonii* trees on the southern edge

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19 December 2017

Attention: Elena Ivanova
Project Manager
Veolia Australia and New Zealand
Level 4, 65 Pirrama Road, Pyrmont NSW 2009

Project Name: Springvale WTP

Subject: Post-clearance inspection of the Springvale WTP clearing boundary

Dear Elena,

This letter outlines the results of the post-clearance survey of the vegetation clearing boundary at the Springvale WTP site, undertaken on 15 December 2017. The post-clearance survey of the clearing boundaries was undertaken by Adrian Seidler, a registered surveyor at Jacobs. Lukas Clews, Senior Ecologist at Jacobs, had inspected the clearing area on 30 November 2017.

1. Survey methodology

The site was traversed on foot to record the extent of the clearing boundary. Survey control for the site was established via Real-Time Kinematic (RTK) Global Navigation Satellite Systems (GNSS) observations using the Continually Operating Reference Stations (CORS) virtual base station network to establish Map Grid of Australia (MGA) coordinates that were checked with survey bench marks on site. The clearing boundary was surveyed via RTK GNSS measurements using a Leica GS15 base and rover and the established MGA survey control. The expected accuracy achieved from this methodology is +-30mm.

2. Consent conditions

Schedule 3 Environmental Conditions of the Development Consent state that the Applicant must:

a) ensure that no more than 27.84 hectares of native vegetation is cleared for the development unless the Secretary agrees otherwise; and

b) minimise:

- the impacts of the development on hollow-bearing trees;
- the impacts of the development on threatened bird and bat populations; and
- the clearing of native vegetation and key habitat within the approved development footprint.

Table 2 of the Development Consent conditions specifies the maximum area of each vegetation type that can be cleared. The approved impact to the Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion Plant Community Type (PCT) is 21.22 hectares.

3. Vegetation clearing extent

The post-clearing survey verified the clearing extent within the WTP site. Approximately 3.01 hectares of vegetation from the Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion PCT has been cleared from the footprint of the WTP site. This leaves 24.83 hectares of impact to this vegetation type allowable for the remainder of the project under the approved clearing amount. All clearing has occurred within the Project Application area as identified in the EIS.

No hollow-bearing trees have been removed from the WTP site as none were present in the area that was cleared. As such, impacts to hollow-bearing trees have been minimised.

The habitat suitability of the vegetation that was cleared for the WTP site would be considered moderate foraging habitat only for threatened birds and bats. No high quality breeding habitat would have been affected by the clearing. As such, impacts to threatened bird and bat populations have been minimised.

The WTP site has been located in the south east corner of the Project Application Area which contained the sparsest regrowth. The WTP site is not situated on an area of remnant or high quality native vegetation such as the area immediately to the east. Exclusion zones were established to ensure that the adjacent vegetation was not directly impacted. This siting and on site management has minimised the clearing of native vegetation and key habitat within the approved development footprint.

Photos of the clearing area are provided below.

Yours sincerely

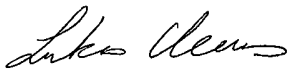

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Figure 1.1 : Post-clearing survey of vegetation clearing boundaries undertaken on Friday 15 December 2017 showing area of clearing (green polygons) located within the project application area (Blue polygons)

Site photos as of 30 November and 15 December 2017

Photo 1: The area of the proposed access road immediately to the left of the access gate

Photo 2: An example of an area with sparse mid-storey

Photo 3: Sediment fencing and exclusion zones have been erected to prevent damage to adjacent vegetation

Photo 4: Another example of the exclusion zones and sediment fencing

Veolia ref: SMPPS-O-02-M13-00-03

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30 October 2017

Attention: Elena Ivanova
Project Manager
Veolia Australia and New Zealand
Level 4, 65 Pirrama Road, Pyrmont NSW 2009

Project Name: Springvale WTP

Subject: Pre-clearance ecology inspection of the Springvale WTP site

Dear Elena,

This letter outlines the results of the pre-clearance inspection of the Springvale WTP site undertaken on 30 October 2017. The pre-clearance inspection was undertaken by Lukas Clews, Senior Ecologist at Jacobs. The site was traversed on foot in an attempt to identify any habitat features.

The footprint of the WTP site (red polygon in Figure 1.1) has been marked with survey pegs. During the inspection, an additional area to the north of the WTP footprint where a pond will be constructed and an area to the west of the WTP footprint near the entrance gate where site offices and laydown area will be constructed were discussed with Abergeldie.

The WTP site contains regrowth of the Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion Plant Community Type as identified in the EIS. The vegetation consists of scattered eucalypts including *Eucalyptus rubida, Eucalyptus mannifera, Eucalyptus rossiii, Eucalyptus viminalis* and *Eucalyptus bridgesiana* and a dense to sparse shrub layer of *Acacia dorothea, Acacia decurrens, Acacia terminalis, Acacia dealbata* and *Cassinia arcuata*. The groundcover is generally sparse to absent but contains species including *Acaena novae-zelandiae* and *Poa labillardierei.* Weeds including *Rosa rubiginosa, Pinus* sp. *Rubus fruticosus* sp. aggregate and *Hypericum perforatum* are present scattered throughout the vegetation. Characteristic photos of the vegetation within the WTP site are attached.

No hollow-bearing trees or large woody debris is present within the proposed clearing footprint. The WTP site does not contain any specific fauna habitat features that need management during clearing. The identified weeds will require management during clearing and excavation.

Yours sincerely

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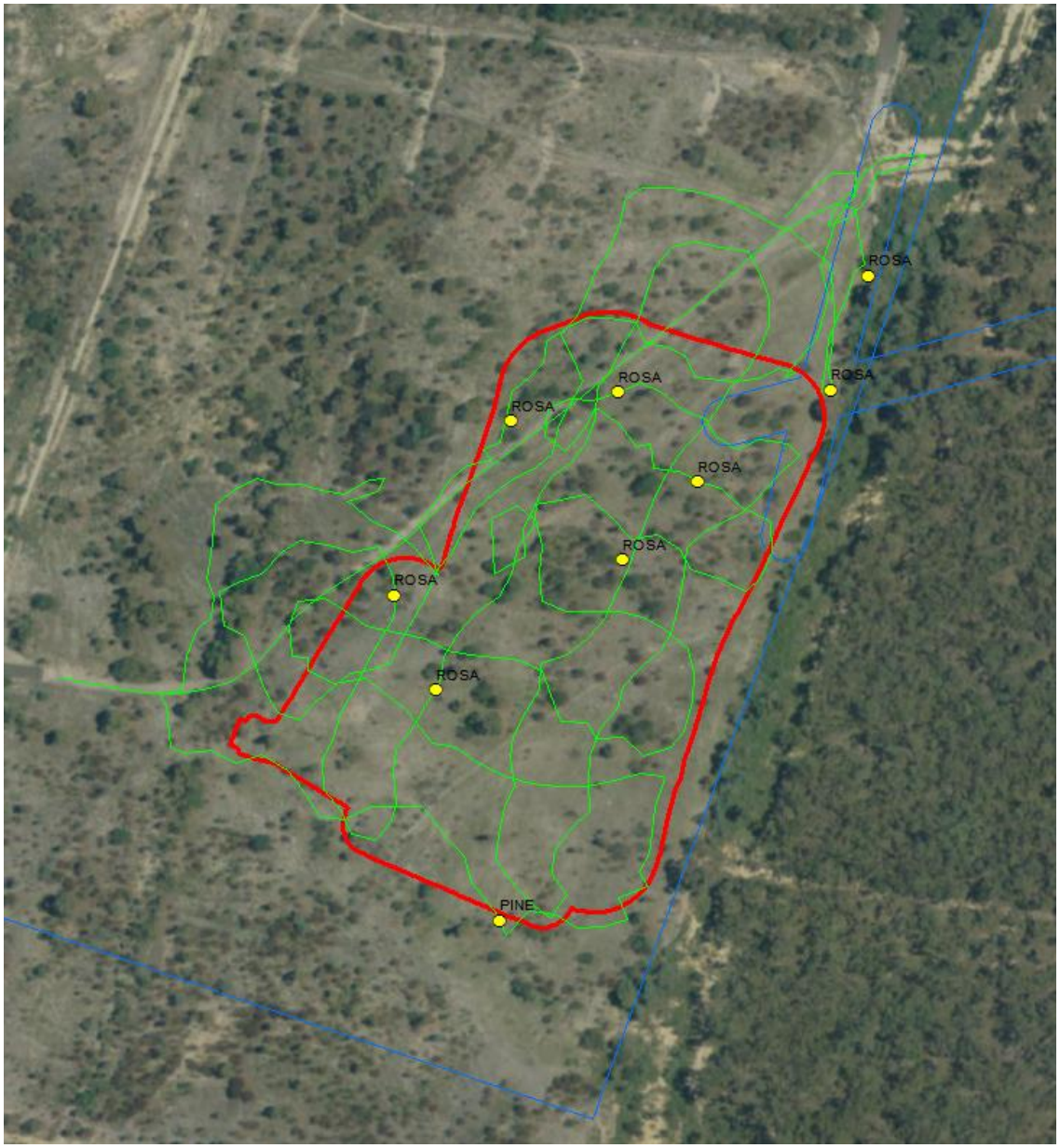

Figure 1.1 : Survey undertaken on 30 October 2017 showing area covered (green line) and location of high threat weed species *Rosa rubiginosa* and *Pinus* sp. (yellow dots). Other weeds including *Hypericum perforatum* and juvenile *Rubus fruticosus* sp. aggregate are scattered throughout the area. The red polygon shows the WTP footprint.

Site photos as of 30 October 2017

Photo 1: The footprint of the WTP site is marked with survey pegs

Photo 2: An example of the more vegetated area of the WTP site that contains eucalypts with acacia mid-storey

Photo 3: An example of the more open areas of the WTP site with scattered eucalypts and *Cassinia arcuata*

Photo 4: Typical open area within the WTP site with shrub layer in the back ground

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31 January 2018

Attention: Andrew Mcloughlin
Abergeldie Complex Infrastructure
PO Box 3019 Regents Park NSW 2143

Project Name: Springvale MPPS Water Treatment Project
Project Number: IA125601

Subject: Pre-clearing survey of the Springvale WTS from the WTP site to SCS land

Dear Andrew,

This letter outlines the results of the pre-clearance inspection of the Springvale WTS project application area undertaken on the 25th January 2018. The pre-clearing inspection covered the project application area from the edge of the WTP site in the west to the creek at the boundary with Springvale Coal Services (SCS) land in the east. The pre-clearance inspection was undertaken by Lukas Clews, Senior Ecologist at Jacobs. The area was traversed on foot to record any habitat features and the location of any threatened plant species. Approximately 1.6 km of walking transects were undertaken.

The pre-clearing survey was undertaken in January which is the optimal time for detection of species including *Caesia parviflora* var. *minor* and *Eucalyptus cannonii*. *Caesia parviflora* var. *minor* is only readily detectable from September to the end of February when this species flowers. *Eucalyptus cannonii* was flowering at the time of survey and had produced buds which made identification of this species easier in the field.

Existing conditions

This portion of the WTS site from the WTP site to the SCS conveyor contains the *Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion Plant Community Type* (PCT) as identified in the EIS. The vegetation is in good condition and is dominated by *Eucalyptus rossiii* with *Eucalyptus mannifera, Eucalyptus dives, Eucalyptus sparsifolia, Eucalyptus macrorhyncha,* and the threatened species *Eucalyptus cannonii* (see Photo 1 and 2). Hybrids between *Eucalyptus macrorhyncha* and *Eucalyptus cannonii* are also present. The mid-storey is sparse and open with *Lissanthe strigosa* the most common shrub. The groundcover is predominantly composed of *Poa* sp.

The portion of the WTS site to the south of the conveyor east over the hill to the creek and SCS land contains regrowth of the Broad-leaved Peppermint - Brittle Gum - Red Stringybark dry open forest on the South Eastern Highlands Bioregion PCT. The vegetation is in moderate/good_poor condition (as defined under the old Framework for Biodiversity Assessment and the new Biodiversity Assessment Method) and is dominated by regrowth shrubs with occasional eucalypt regeneration and some mature trees at the top of the crest (see Photo 3 and 4). Shrubs including *Acacia* spp.*, Cassinia arcuata, Podolobium ilicifolium, Boronia microphylla, Brachyloma daphnoides, Lissanthe strigosa, Dillwynia phylicoides,*

Hibbertia obtusifolia, and *Xanthorrhoea* sp. are dominant in the regrowth. Eucalypts including *Eucalyptus dives, Eucalyptus rossii, Eucalyptus macrorhyncha, Eucalyptus sparsifolia* and the threatened species *Eucalyptus cannonii* are present. There are some mature eucalypts at the top of the hill (*Eucalyptus sparsifolia*) but the majority of eucalypts are present as seedlings and coppice regrowth from lignotubers that have sprouted since the previous clearing for the easement.

Weeds including *Rubus fruticosus* sp. aggregate (Blackberry) and *Cortaderia selloana* (Pampas Grass) are present in discreet areas (see Figure 1).

No hollow-bearing trees are present within the proposed clearing footprint. The southern edge of the previously cleared easement within the project application area contains a number of logs and felled trees from previous clearing. This large woody debris is likely to provide habitat for a range of reptile species and for threatened species of bird including the Scarlet Robin which is known to occur in this habitat.

Search for threatened plant species

The threatened species *Eucalyptus cannonii* is present in the project application area as identified in the EIS and work undertaken for preparation of the Biodiversity Management Plan. Hybrids between *Eucalyptus macrorhyncha* and *Eucalyptus cannonii* are also present which are also considered the threatened species. The location of identified *Eucalyptus cannonii* trees is shown in Figure 1.

Approximately 26 *Eucalyptus cannonii* trees were noted as occurring adjacent to the project application area during the surveys undertaken for the EIS by RPS. The EIS also notes that there was potential for juveniles to occur in the project application area. The impact assessment undertaken for the EIS had estimated that only three *Eucalyptus cannonii* trees would be impacted. The subsequent surveys of the project application area undertaken by Jacobs for preparation of the Biodiversity Management Plan in September 2017, and this pre-clearing survey, have identified 51 *Eucalyptus cannonii* plants in and adjacent to the access track opposite the project application area (see Figure 1).

There are 10 mature *Eucalyptus cannonii* trees in and directly adjacent to the project application area in the vegetation immediately to the east of the WTP site (see Figure 1). These trees will not be impacted as the project has been designed to avoid these trees. From the top of the hill east to the creek on SCS land there are 41 *Eucalyptus cannonii* trees present (see Figure 1). Twenty-nine of these trees are outside of the project application area (but are directly adjacent to it) and should not be impacted by the project. The project application area is on the northern side of the row of woody debris created when trees were previously cleared and pushed up out of the easement. Mature *Eucalyptus cannonii* trees are present on the southern side of the access track (see Photo 5) and these trees have been identified with flagging to prevent accidental damage by vehicles that may use the track. *Eucalyptus cannonii* trees on the northern side of the access track are regenerating from past clearing and are present as multi stemmed coppice regrowth from trees pushed into the row of debris (see Photo 6). There are eight multi stemmed regrowth *Eucalyptus cannonii* trees within the project application area that may be impacted by the project.

The young multi stemmed regrowth *Eucalyptus cannonii* trees were able to be identified during the January 2018 pre-clearing survey as some trees had developed buds allowing for a positive identification to be made. Adjacent regrowth trees of the same age class that lacked buds but had the same leaf morphology and bark were identified as *Eucalyptus cannonii* as a precautionary measure.

No *Caesia parviflora* var. *minor* plants were found in the project application area during this pre-clearing survey. Management of this species is not an issue for the project at this stage.

Conclusions and recommendations

Vegetation removal

The impacts from the project must be within the limits specified in the development consent for the project. Schedule 2, conditions 6 and 7 of the development consent for the Springvale water treatment project specify upper limits for clearing of native vegetation (totalling 27.84 hectares) and for impacts on threatened species.

The proposed removal of native vegetation for this segment equates to approximately 0.57 ha of native vegetation (based on a 10 m wide footprint) composed of:

- Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion PCT = 0.15 ha
- Regrowth of the Broad-leaved Peppermint - Brittle Gum - Red Stringybark dry open forest on the South Eastern Highlands Bioregion PCT = 0.42 ha

Combined with the clearing to date for the WTP site (3.01 ha), this will equate to removal of approximately 3.58 ha of native vegetation.

Table 2 of the Development Consent conditions specifies the maximum area of each vegetation type that can be cleared. The approved impact to the Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion PCT is 21.22 hectares. The anticipated accumulated clearing of this PCT after this section is complete will be 3.16 ha.

The approved impact to the Broad-leaved Peppermint - Brittle Gum - Red Stringybark dry open forest on the South Eastern Highlands Bioregion PCT is 0.47 ha. The predicted impact to this PCT from this section is 0.42 ha which is near the upper limit approved for this PCT. The EIS had underestimated the extent of this PCT within the project application area as much of the regrowth to the south of the conveyor was not recognised in the EIS.

Threatened species impacts

The maximum number of *Eucalyptus cannonii* trees that can be removed is three individuals as this is what was assessed in the EIS and approved. The EIS had not identified this tree as present in the project application area but had indicated that there may be potential for juvenile *Eucalyptus cannonii* trees to occur. The pre-clearing surveys have identified stands of *Eucalyptus cannonii* trees within the project application area and these have been flagged for avoidance and retention where possible. Trees outside of the project application area along the access track have also been flagged so that any accidental impacts do not occur to these trees. However, there are eight multi stemmed juvenile *Eucalyptus cannonii* trees within the project application area that may be impacted by the project. As the approval is for the removal of a maximum of three *Eucalyptus cannonii* trees and exceeding this limit will constitute a breach of the conditions of development consent, we recommend that the clearing footprint is narrowed in the area of these individuals to avoid the need to clear the eight trees. Clearing lower numbers of threatened flora species plants than approved is one of the performance objectives of the Springvale MPPS Water Treatment Project Biodiversity Management Plan. One tree is in the middle of the footprint and cannot be avoided. However, the remaining seven trees are towards the south of the project application area adjacent to the log pile. There is an area of

approximately 11 m wide between the trees that could be retained and the SCS fence in this area that can be used for construction which would avoid the removal of these seven trees (see Figure 1).

Management of weeds and habitat

The identified weeds will require management during clearing and excavation according to the procedures outline din the Springvale MPPS Water Treatment Project Biodiversity Management Plan.

The large woody debris, and any trees removed, should be carefully removed and placed on site to retain the habitat in accordance with the cleared vegetation placement protocol as outlined in the Springvale MPPS Water Treatment Project Biodiversity Management Plan.

Yours sincerely

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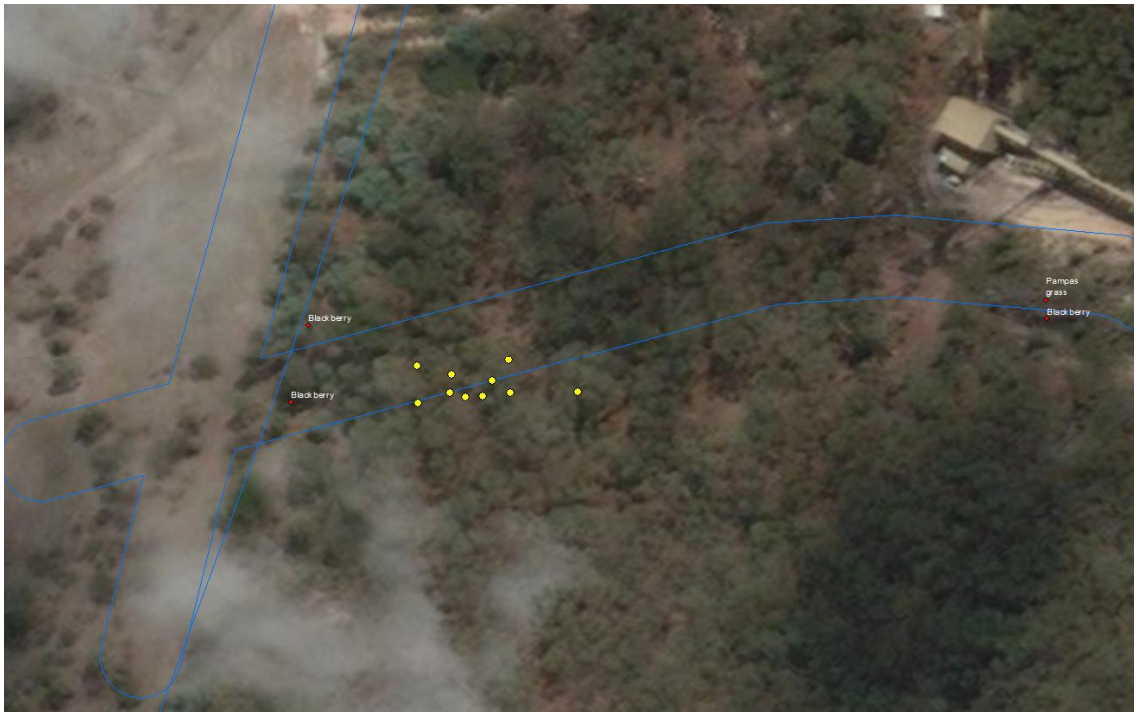

Figure 1 : Location of *Eucalyptus cannonii* (yellow dots) and weeds (red dots) in the western section near the WTP site (blue polygon is the project application area)

Figure 2 : Location of *Eucalyptus cannonii* (yellow dots) and weeds (red dots) in the eastern section near the SCS conveyor (blue polygon is the project application area)

31 January 2018

Subject: Pre-clearing survey of the Springvale WTS from the WTP site to SCS land

Site photos as of 25 January 2018

Photo 1 : The Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion PCT in the project application area east of the WTP site

Photo 2 : The project application area east of the WTP site showing *Eucalyptus cannonii* (potential hybrids) identified with tape for retention

Photo 3 : The project application area at the top of the hill adjacent to the conveyor looking west showing regrowth vegetation

Photo 4 : The project application area at the bottom of the slope near the SCS land looking east showing regrowth vegetation

Photo 5 : The access track adjacent to the project application area showing mature *Eucalyptus cannonii* trees identified with tape to prevent accidental damage

Photo 6 : The access track adjacent to the project application area showing regrowth *Eucalyptus cannonii* trees with multiple stems coppicing from lignotubers after previous clearing

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8 March 2018

Attention: Andrew Mcloughlin
Abergeldie Complex Infrastructure
PO Box 3019 Regents Park NSW 2143

Project Name: Springvale MPPS Water Treatment Project
Project Number: IA125601

Subject: Pre-clearing survey of the Springvale WTS from SCS land, residuals pipeline to the ash dam laydown area

Dear Andrew,

This letter outlines the results of the pre-clearance inspection of the Springvale WTS project application area undertaken on the 15th February 2018. The pre-clearing inspection covered the project application area from the western edge of the Springvale Coal Services (SCS) site, along the residuals pipeline, and east to the laydown area adjacent to the ash dam.

The pre-clearance inspection was undertaken by Lukas Clews, Senior Ecologist at Jacobs. The area was traversed on foot and vehicle to record any habitat features and the location of any threatened plant species.

The pre-clearing survey was undertaken in February which is the optimal time for detection of species including *Caesia parviflora* var. *minor* (Small Pale Grass-lily), *Eucalyptus cannonii* (Capertee Stringybark) and *Eucalyptus aggregata* (Black Gum). *Caesia parviflora* var. *minor* is only readily detectable from September to the end of February when this species flowers. *Eucalyptus cannonii* was flowering at the time of survey and had produced buds which made identification of this species easier in the field. *Eucalyptus aggregata* was also flowering which made identification of this species easier.

Existing conditions

This portion of the project application area contains a number of different plant community types in varying condition including:

- Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion.
- Broad-leaved Peppermint - Brittle Gum - Red Stringybark dry open forest on the South Eastern Highlands Bioregion.
- Ribbon Gum - Snow Gum grassy forest on damp flats, eastern South Eastern Highlands Bioregion.
- Black Gum grassy woodland of damp flats and drainage lines of the eastern Southern Tablelands, South Eastern Highlands Bioregion.

- Tableland swamp meadow on impeded drainage sites of the western Sydney Basin Bioregion and South Eastern Highlands Bioregion.

The area of *Ribbon Gum - Snow Gum grassy forest on damp flats, eastern South Eastern Highlands Bioregion* present adjacent to OL3 in the drainage line is in poor condition and is suffering from extensive weed invasion. This area contains some scattered young trees but is generally dominated by herbaceous weeds (see Photo 1). The conditions in this area are as identified in the EIS.

The vegetation along the residuals transfer pipeline is the *Broad-leaved Peppermint - Brittle Gum - Red Stringybark dry open forest on the South Eastern Highlands Bioregion* as identified in the EIS (see Photo 2 and Photo 3). The vegetation also shows some evidence of an ecotone with the *Ribbon Gum - Snow Gum grassy forest on damp flats, eastern South Eastern Highlands Bioregion* plant community type towards the drainage line. This area contains some larger trees and is in moderate to good condition but there is evidence of past disturbance indicated by a variable dense to very sparse shrub layer, log piles from past clearing, and an access road. The project application area exits the vegetation and overlies an access road around a dam (see Photo 4). There is no native vegetation that would be affected in this area as the pipeline will be constructed in the road.

The vegetation along OL3 is most likely regrowth from the *Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion* plant community type given the presence of small *Eucalyptus rossii, Eucalyptus rubida* and *Eucalyptus mannifera* trees. The regrowth is dominated by *Cassinia arcuata* and a number of other native shrub species including *Acacia* spp. and *Pultenaea* spp. (see Photo 5). This area was mapped as 'Cleared and Severely Disturbed Lands' in the EIS which is correct as this area has been cleared in the past. However, this area now contains regrowth native vegetation that will be impacted (see Photo 5).

The vegetation along OL2 is a mixture of regrowth and remnant vegetation from the following communities (see Photo 6 to Photo 8):

- Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion.
- Broad-leaved Peppermint - Brittle Gum - Red Stringybark dry open forest on the South Eastern Highlands Bioregion.
- Ribbon Gum - Snow Gum grassy forest on damp flats, eastern South Eastern Highlands Bioregion.

The edge of the access track along OL2 is regrowth vegetation largely dominated by *Cassinia arcuata*. The project application area also cuts through areas of remnant vegetation in the areas immediately to the west and east of the farm. The impact to native vegetation along OL2 is likely to be greater than what was reported in the EIS as the original mapping did not pick up the majority of regrowth native vegetation at the edge of the access track. There are three *Eucalyptus cannonii* trees on the edge of the project application area that were not identified in the EIS (see Figure 1). There are three hollow-bearing trees in or immediately adjacent to the application area along OL2 (see Figure 1).

The project application area then cuts across cleared grazing land towards Brays Lane and the Castlereagh Highway (see Photo 9 and Photo 10). A horizontal directional drill (HDD) launch pit will be placed in the farmland near the conveyor north of Brays Lane. In this area vegetation types including the *Black Gum grassy woodland of damp flats and drainage lines of the eastern Southern Tablelands, South Eastern Highlands Bioregion* and *Tableland swamp meadow on impeded drainage sites of the western Sydney Basin Bioregion and South Eastern Highlands Bioregion* will be under-bored and no impact will occur to these communities. *Eucalyptus*

aggregata is present in this area, including along Brays Lane (see Figure 2), but these trees will not be impacted due to the HDD methodology to be employed.

The pipeline will emerge to the east of Wolgan Road and a HDD launch pit will be located in cleared land to the north of the United service station. The project application area then follows the conveyor cutting east towards Skelly Road where there is adjacent pine forest and *Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion* vegetation (see Photo 11).

The project application area to the north of the conveyor and south of Skelly Road, where the pipeline was realigned in Modification 1 to remove a sharp bend to accommodate the use of HDD, contains a number of threatened *Eucalyptus aggregata* trees (flagged with orange tape) and the *Black Gum grassy woodland of damp flats and drainage lines of the eastern Southern Tablelands, South Eastern Highlands Bioregion* plant community type (see Figure 3 and Photo 12). Modification 1 to the EIS indicates that there would be no disturbance to vegetation in this area due to the HDD methodology. Works have since been changed back to the original method of open trenching outside of this vegetation so there will be no impact.

The vegetation in the project application area from north of Skelly Road around the ash dam to the proposed laydown area is largely regrowth *Cassinia arcuata* with *Acacia* spp., *Eucalyptus mannifera, Eucalyptus rubida* and pine trees (see Photo 13 to Photo 15). The pipeline will largely follow the alignment of the disused pipeline and access road in these areas but there will be some impact to regrowth vegetation at the edges. The impact in this area is likely to be greater than indicated in the EIS as much of the regrowth vegetation along the access road was not identified or assessed in the EIS.

The proposed laydown area is located on a patch of *Ribbon Gum - Snow Gum grassy forest on damp flats, eastern South Eastern Highlands Bioregion* located between access tracks (see Photo 16 and Figure 4). The project application area assessed in the EIS does not cover the entirety of this patch (see Figure 4) so some modification of the approval may be needed to accommodate the required vegetation clearing in this area.

Weeds including *Rubus fruticosus* sp. aggregate (Blackberry) and *Cortaderia selloana* (Pampas Grass) are present scattered throughout the project application area. There are a number of logs and felled trees from previous clearing. This large woody debris is likely to provide habitat for a range of reptile species and for threatened species of bird including the Scarlet Robin which is known to occur in this habitat.

Search for threatened plant species

Two threatened plant species are present in the portion of the project application area where the pre-clearing surveys were undertaken:

- *Eucalyptus cannonii* – three plants present in a single location at the edge of the project application area along OL2 (see Figure 1)
- *Eucalyptus aggregata* – plants present in and adjacent to the project application area in two locations:
    - One tree in the project application area near the conveyor north of Brays Lane with at least six other trees (but probably more) adjacent to the project application area along Brays Lane (see Figure 2).
    - Six trees in the project application area between the conveyor and Skelly Road with at least four (but probably many more) trees adjacent to the project application area in this location (see Figure 3).

Approximately 26 *Eucalyptus cannonii* trees were noted as occurring adjacent to the project application area during the surveys undertaken for the EIS by RPS. However, the three *Eucalyptus cannonii* trees at the edge of the project application area along OL2 were not identified in the EIS. These trees are relatively young and may not have had any reproductive features during the survey undertaken for the EIS making positive differentiation from the related and similar *Eucalyptus macrorhyncha* impossible. These trees were able to be identified during the February 2018 pre-clearing survey as the trees had developed buds allowing for a positive identification if *Eucalyptus cannonii* to be made. These trees have been marked in the field with high visibility flagging tape for easy identification. The identification of these three trees brings the number of identified *Eucalyptus cannonii* plants in and directly adjacent to the project application area to 54 plants.

The EIS identified two *Eucalyptus aggregata* trees to the south of the project application area to the north of Brays Lane. There are at least seven *Eucalyptus aggregata* trees in this location including one tree that is located in the middle of the project application area. These trees will not be impacted due to the use of HDD in this area. The EIS and Modification 1 did not identify any *Eucalyptus aggregata* trees in or near the project application area between the conveyor and Skelly Road. The area had been proposed for HDD so impacts to vegetation in this area were not assessed. The area was surveyed in the February 2018 pre-clearing survey and 10 *Eucalyptus aggregata* trees were recorded in this area with six trees inside the project application area. The work in this area has been changed back to the original open trenching method outside of this vegetation patch so no impacts to *Eucalyptus aggregata* will occur.

No *Caesia parviflora* var. *minor* or *Persoonia hindii* plants were found in the project application area during this pre-clearing survey. Management of these species is not an issue for this stage of the project.

Conclusions and recommendations

Predicted vegetation removal

The impacts from the project must be within the limits specified in the development consent for the project. Schedule 2, conditions 6 and 7 of the development consent for the Springvale water treatment project specify upper limits for clearing of native vegetation (totalling 27.84 hectares) and for limits to impacts on threatened species.

Vegetation removal for the project to date totals 3.58 ha of native vegetation. The proposed removal of native vegetation for this segment equates to approximately 3.24 ha of native vegetation (based on a 10 m wide footprint) composed of:

- Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion = 2.41 ha
- Broad-leaved Peppermint - Brittle Gum - Red Stringybark dry open forest on the South Eastern Highlands Bioregion = 0.46 ha
- Ribbon Gum - Snow Gum grassy forest on damp flats, eastern South Eastern Highlands Bioregion = 0.32 ha
- Black Gum grassy woodland of damp flats and drainage lines of the eastern Southern Tablelands, South Eastern Highlands Bioregion = 0.05 ha

There is no predicted impact to the *Tableland swamp meadow on impeded drainage sites of the western Sydney Basin Bioregion and South Eastern Highlands Bioregion* as it will be under-bored.

After clearing of this section is complete, vegetation removal will total approximately 6.82 ha out of the approved total of 27.84 ha.

Table 2 of the Development Consent conditions specify the maximum area of each vegetation type that can be cleared. The approved impacts to each plant community type are outlined below in Table 1.

Table 1 : Approved clearing limits for each plant community type according to the development consent

Vegetation type	Approved impact (ha)	Predicted impact from the project to date (ha)
Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion (HN570)	21.22	5.57
Broad-leaved Peppermint - Brittle Gum - Red Stringybark dry open forest on the South Eastern Highlands Bioregion (HN514)	0.47	0.88
Ribbon Gum - Snow Gum grassy forest on damp flats, eastern South Eastern Highlands Bioregion (HN572)	2.12	0.32
Black Gum grassy woodland of damp flats and drainage lines of the eastern Southern Tablelands, South Eastern Highlands Bioregion	No impact approved by development consent	0.05

The approved impact to the *Broad-leaved Peppermint - Brittle Gum - Red Stringybark dry open forest on the South Eastern Highlands Bioregion* is 0.47 ha. The EIS had underestimated the extent of this plant community type in the project application area. The EIS had mapped much of the regrowth along the conveyor as 'Cleared and Severely Disturbed Lands'. However, these areas actually contain regrowth native vegetation from the *Broad-leaved Peppermint - Brittle Gum - Red Stringybark dry open forest on the South Eastern Highlands Bioregion* plant community type. As such, the impact to this community to date is likely to be greater than the 0.47 ha approved in Table 2 of the development consent. The predicted impact to this community is estimated at 0.88 ha which is more than approved in the development consent. It is likely that the impacts can be minimised on site and that the actual impact will be smaller than predicted. The final impact will be determined post-clearing when the clearing area is surveyed by a surveyor.

The proposed laydown area (see Figure 4) is only partly within the project application area. Impacts outside of the project application area have not been approved. Modification to the approval is likely required for clearing of this vegetation outside of the project application area

Threatened species impacts

The maximum number of *Eucalyptus cannonii* trees that can be removed is three individuals as this is what was assessed in the EIS and outlined in the development consent. Exceeding this limit will constitute a breach of the conditions of development consent. Two *Eucalyptus cannonii* trees have been removed to date due to construction activities in the west of the project application area near the MPPS site so works are still within the approval limits. One more *Eucalyptus cannonii* tree could be removed but the three identified trees are at the edge of the project application area along OL2 and should be able to be avoided during vegetation

removal. This avoidance would help to achieve the performance objectives of the Springvale MPPS Water Treatment Project Biodiversity Management Plan.

Management of weeds and habitat

The identified weeds will require management during clearing and excavation according to the procedures outlined in the Springvale MPPS Water Treatment Project Biodiversity Management Plan.

The large woody debris, and any trees removed, should be carefully removed and placed on site to retain their habitat value in accordance with the cleared vegetation placement protocol as outlined in the Springvale MPPS Water Treatment Project Biodiversity Management Plan.

An ecologist should be present on site to supervise hollow-bearing tree clearing as outlined in the EIS statement of commitments and the Springvale MPPS Water Treatment Project Biodiversity Management Plan.

Yours sincerely

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Figure 1 : Location of the three *Eucalyptus cannonii* trees (pink dot) and hollow-bearing trees (green squares) in the project application area along OL2

Figure 2 : Location of *Eucalyptus aggregata* trees (pink dots) in the project application area north of Brays Lane where HDD will be used

Figure 3 : Location of *Eucalyptus aggregata* trees (pink dots) in the project application area in the location where the pipeline was realigned to allow for HDD in order to eliminate the right angle bend

Figure 4 : Approximate location of the proposed laydown area (blue ellipse) in the context of the project application area (red corridor)

8 March 2018

Subject: Pre-clearing survey of the Springvale WTS from SCS land, residuals pipeline to the ash dam laydown area

Site photos as of 15 February 2018

Photo 1 : The disturbed area of Ribbon Gum - Snow Gum grassy forest on damp flats, eastern South Eastern Highlands Bioregion in the project application area in the creek line at the western end of the SCS site

Photo 2 : The project application area along the residuals pipeline showing the Broad-leaved Peppermint - Brittle Gum - Red Stringybark dry open forest on the South Eastern Highlands Bioregion

Photo 3 : The project application area along the residuals pipeline showing the access track through the Broad-leaved Peppermint - Brittle Gum - Red Stringybark dry open forest on the South Eastern Highlands Bioregion

Photo 4 : The project application area along the residuals pipeline showing the road on the outside of the pond where the pipeline will be situated

Photo 5 : The project application area at the SCS site adjacent to OL3 looking west showing regrowth native vegetation from the Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion plant community type

Photo 6 : The project application area at the SCS site along OL2 showing regrowth adjacent to the access track along the conveyor

Photo 7 : Three threatened *Eucalyptus cannonii* trees at the edge of the project application area along OL2 identified by orange flagging tape

Photo 8 : Dense regrowth of *Cassinia arcuata* behind the noise barrier along OL2

Photo 9 : The project application area where it cuts through farmland adjacent to OL2 in the east of the SCS site

Photo 10 : The eastern end of the SCS site where the project application area is situated in grazing land

Photo 11 : The conveyor to the east of Wolgan Road in the project application area showing pine forest at the edge of the cutting

Photo 12 : The project application area to the north of the conveyor and south of Skelly Road where the pipeline was realigned to accommodate the use of directional drilling contains a number of threatened *Eucalyptus aggregata* trees (flagged with orange tape) and the Black Gum grassy woodland of damp flats and drainage lines of the eastern Southern Tablelands, South Eastern Highlands Bioregion plant community type

Photo 13 : The disused pipeline and access road in the project application area to the north of Skelly Road

Photo 14 : The old pipeline and access track in the project application area adjacent to the ash dam

Photo 15 : The old access track in the project application area adjacent to the ash dam showing regrowth native vegetation and pine trees at the edges

Photo 16 : The proposed laydown area beside the access track near the ash dam contains the Ribbon Gum - Snow Gum grassy forest on damp flats, eastern South Eastern Highlands Bioregion plant community type

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5 December 2017

Attention: Elena Ivanova
Project Manager
Veolia Australia and New Zealand
Level 4, 65 Pirrama Road, Pyrmont NSW 2009

Project Name: Springvale WTP

Subject: Pre clearance ecology inspection of the Springvale WTP site access road

Dear Elena,

This letter outlines the results of the pre-clearance inspection of the area of the proposed access road for the Springvale WTP site, undertaken on 30 November 2017. The pre-clearance inspection was undertaken by Lukas Clews, Senior Ecologist at Jacobs. The site was traversed on foot (see Figure 1.1 for the area traversed during the pre-clearing survey). This is the area between the current fence and the area that has been cleared of vegetation for construction of the WTP site.

The area where the access road is proposed contains regrowth of the Red Stringybark - Brittle Gum - Inland Scribbly Gum dry open forest of the tablelands, South Eastern Highlands Bioregion Plant Community Type as identified in the EIS. The vegetation consists of scattered eucalypts (mostly planted as part of a former revegetation program) including *Eucalyptus rubida, Eucalyptus rossii, Eucalyptus viminalis* and *Eucalyptus bridgesiana* with a dense to sparse shrub layer of *Acacia dorothea, Acacia decurrens, Acacia dealbata* and *Cassinia arcuata*. The groundcover contains native species including *Acaena novae-zelandiae, Aristida vagans,* and *Poa labillardierei.* Characteristic photos of the vegetation are attached.

Weeds including *Rosa rubiginosa, Rubus fruticosus* sp. aggregate and *Hypericum perforatum* are present throughout the vegetation. *Hypericum perforatum* was particularly prominent throughout the ground layer and was one of the dominant species. The drainage ditch through the site contained mature clumps of *Rubus fruticosus* sp. aggregate. The identified weeds will require management during clearing and excavation including management of topsoil.

No hollow-bearing trees or large woody debris are present within the proposed clearing footprint. There are no specific fauna habitat features that need management during clearing.

Yours sincerely

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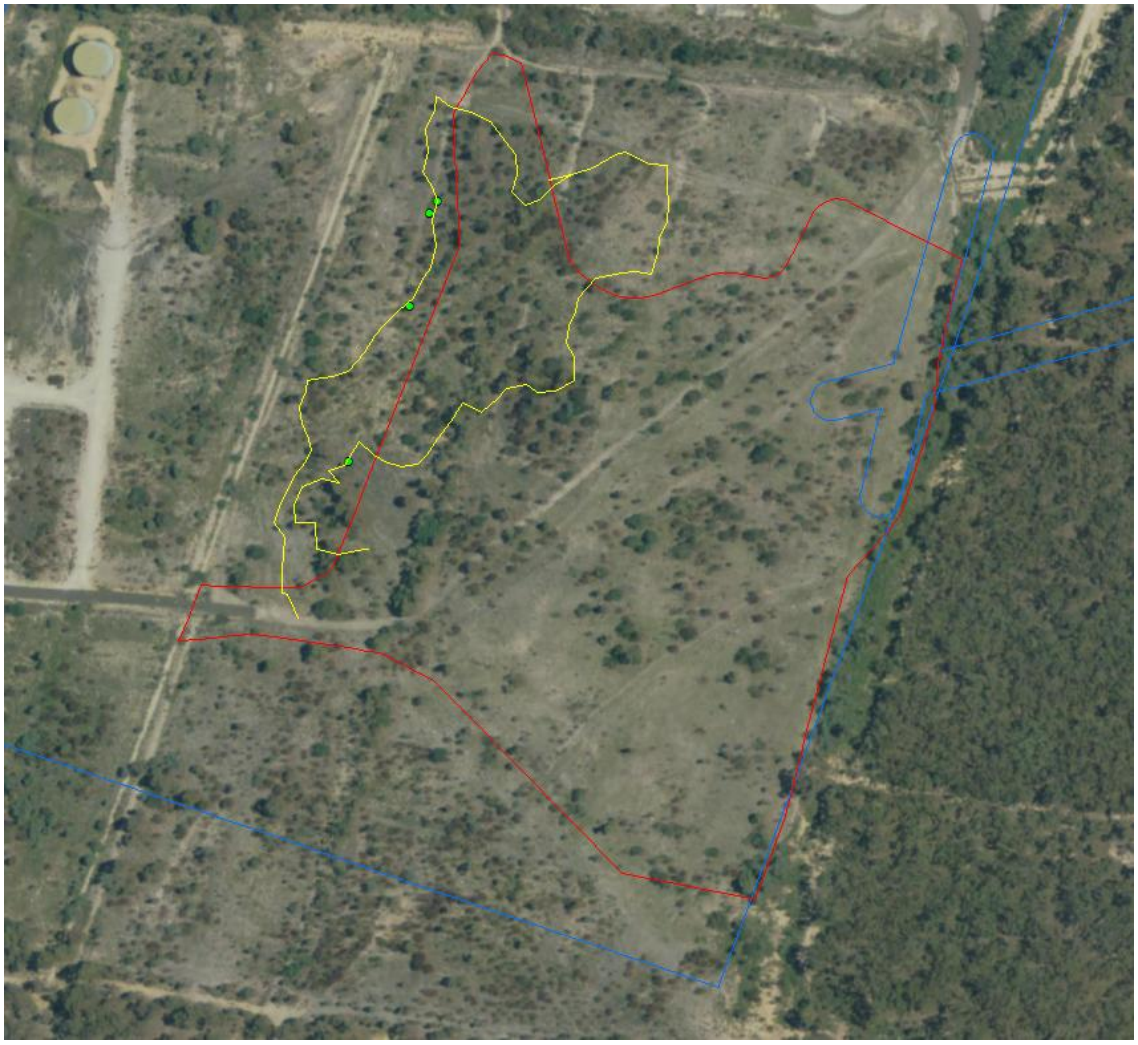

Figure 1.1 : pre-clearing survey undertaken on 30 November 2017 showing area covered (yellow line) and location of high threat weed species *Rubus fruticosus* sp. aggregate (green dots). The red polygon shows the current WTP site boundary. Blue polygon shows the project application area.

Site photos as of 30 November 2017

Photo 1: The area of the proposed access road immediately to the left of the access gate

Photo 2: An example of an area with sparse mid-storey

Photo 3: There are a number of existing roads through the area which may be able to be used as part of the new access road

Photo 4: *Rubus fruticosus* sp. aggregate present in the drainage line

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8 March 2018

Attention: Andrew Mcloughlin
Abergeldie Complex Infrastructure
PO Box 3019 Regents Park NSW 2143

Project Name: Springvale MPPS Water Treatment Project
Project Number: IA125601

Subject: Pre-clearing survey of the Springvale WTS on the Newnes Plateau and gully to ash dam

Dear Andrew,

This letter outlines the results of the pre-clearance inspection of the Springvale WTS project application area undertaken on the 27th of February 2018. The pre-clearing inspection covered the project application area from the proposed laydown area near the ash dam up the gully towards the escarpment and from the tie-in at the eastern edge near the gravity tank on the Newnes Plateau to the power line easement (see Figure 1).

The pre-clearance inspection was undertaken by Lukas Clews, Senior Ecologist at Jacobs. The area was traversed on foot to record and mark the location of any habitat features including hollow-bearing trees and the location of any threatened plant species.

The pre-clearing survey was undertaken in February which is the optimal time of year for detection of many threatened plant species, including *Caesia parviflora* var. *minor* (Small Pale Grass-lily) which has been recorded in three locations in or directly to the project application area on the Newnes Plateau. However, environmental conditions in 2017 in the lead up to summer were very dry and hot which made survey conditions for this species less than optimal.

Existing conditions

These portions of the project application area contain a number of different plant community types in varying condition. The area from the ash dam laydown area to up the gully contains the following plant community types:

- Ribbon Gum - Snow Gum grassy forest on damp flats, eastern South Eastern Highlands Bioregion (see Photo 1).
- Sydney Peppermint - Narrow-leaved Peppermint shrubby open forest on sheltered slopes of the Newnes Plateau, Sydney Basin (see Photo 2).

The project application area on the Newnes Plateau contains the following plant community types:

- Sydney Peppermint - Silvertop Ash heathy open forest on sandstone ridges of the upper Blue Mountains, Sydney Basin (see Photo 3).

- Narrow-leaved Peppermint - Mountain Gum - Brown Barrel moist open forest on high altitude ranges, northern South Eastern Highlands (see Photo 4).

These areas of vegetation are in moderate to good condition as identified in the EIS and contain some large habitat trees which have been previously mapped for the Biodiversity Management Plan. The hollow-bearing trees that were previously identified and marked with flagging tape were re-identified during the pre-clearance survey and marked with a large letter 'H' with pink spray paint to more easily identify these trees during clearing.

Weeds including *Rubus fruticosus* sp. aggregate (Blackberry) are present and scattered throughout the project application area, notably in the gully up to the Newnes Plateau. The gully and plateau area contain a large number of large logs, felled trees and termite mounds which provide habitat for fauna. There are a number of wombat burrows in the project application area suggesting a good population of wombats is present. These habitat features are mapped in the Biodiversity Management Plan.

Search for threatened plant species

Two threatened plant species are known to be present in the portion of the project application area where the pre-clearing surveys were undertaken:

- *Persoonia hindii* – Seven plants were recorded on the Newnes Plateau near the fire trail during work undertaken for the EIS in 2014 and 2016.
- *Caesia parviflora* var. *minor* – Three plants were recorded on the Newnes Plateau near the fire trail during work undertaken for the EIS in 2016.

The EIS had reported the presence of the threatened plant species *Veronica blakelyi* in the project application area where it runs up the gully to the Newnes Plateau. During surveys undertaken for the preparation of the Biodiversity Management Plan the mapped *Veronica* species was located and sampled and verified by the Royal Botanic Gardens as the species *Veronica derwentiana* subsp. *subglauca* which is not listed as a threatened species.

The *Persoonia hindii* plants were relocated during the pre-clearance survey directly adjacent to the fire trail (see Figure 2). The GPS location for these plants is 56H 0234950 6302015. There is an old plant with multiple stems directly adjacent to the fire trail (see Photo 5) and several smaller plants growing in adjacent vegetation (see Photo 6). The location of these plants was marked in the field by spray painting the adjacent grass and leaf litter to aid in re-identification of these plants.

The threatened species *Caesia parviflora* var. *minor* has not been re-located during surveys undertaken in spring 2017 for the Biodiversity Management Plan or during these pre-clearing surveys in summer 2018. On 27th February 2018 the length of the project application area from the gravity tank to the power line easement and return was traversed on foot over several hours (the survey was not timed) covering an area of approximately 5 kilometres. No individuals of *Caesia parviflora* var. *minor* or any other species from the family Anthericaceae or any related families with similar appearance were located. It is likely that the dry hot conditions experienced prior to and including summer 2018 has led to conditions that are less than optimal for growth and flowering of this species. *Caesia parviflora* var. *minor* had been recorded at the following locations in the EIS (see Figure 2):

- 56 H 233799 6302148
- 56 H 234552 6302067
- 56 H 234697 6302064.

JACOBS

8 March 2018

Subject: Pre-clearing survey of the Springvale WTS on the Newnes Plateau and gully to ash dam

Conclusions and recommendations

Predicted vegetation removal

The impacts from the project must be within the limits specified in the development consent for the project. Schedule 2, conditions 6 and 7 of the development consent for the Springvale water treatment project specify upper limits for clearing of native vegetation (totalling 27.84 hectares) and for limits to impacts on threatened species. Vegetation removal for the previous sections is likely to total approximately 6.82 ha out of the approved 27.84 ha. When the predicted impact from this section at approximately 4.05 ha, the total clearing will be approximately 10.87 ha. This is well below the amount allowed for in the approval and will help to achieve the performance objectives of the Springvale MPPS Water Treatment Project Biodiversity Management Plan.

Table 2 of the Development Consent conditions specifies the maximum area of each vegetation type that can be cleared. The approved impact to each plant community type is outlined below in Table 1.

The approved impact to some vegetation types may be exceeded by a small amount based on an estimate of clearing a 10 metre corridor. However, it is likely that the corridor can be narrowed in strategic places to minimise impacts to vegetation types to keep the clearing within approved limits. The actual impact will only be known once the cleared area is surveyed by a surveyor post-clearing.

Table 1 : Approved clearing limits for each plant community type according to the development consent

Vegetation type	Approved impact (ha)	Predicted impact from the project based on a 10m wide corridor (ha)
Ribbon Gum - Snow Gum grassy forest on damp flats, eastern South Eastern Highlands Bioregion (HN572)	2.12	0.51
Sydney Peppermint - Narrow-leaved Peppermint shrubby open forest on sheltered slopes of the Newnes Plateau, Sydney Basin (HN599)	0.73	0.78
Sydney Peppermint - Silvertop Ash heathy open forest on sandstone ridges of the upper Blue Mountains, Sydney Basin (HN600).	1.71	1.32
Narrow-leaved Peppermint - Mountain Gum - Brown Barrel moist open forest on high altitude ranges, northern South Eastern Highlands (HN588)	1.11	1.44

Threatened species impacts

There is approval for impact to the three *Caesia parviflora* var. *minor* plants that were previously located. As this species has not been re-located since the EIS, avoidance measures cannot be implemented as the exact locations of the plants cannot be pinpointed. The most appropriate approach is to assume that the three *Caesia parviflora* var. *minor* plants will be impacted.

The approval documentation does not outline any impacts to *Persoonia hindii*. The EIS and Modification 1 have assumed that there would be no impacts to this species and that avoidance

measures will be implemented. The statement of commitments from the EIS Response to Submissions report indicates that every effort will be made to realign the pipeline, if possible, within the impact footprint in order to avoid *Persoonia hindii* stems and *Caesia parviflora* var. *minor* individuals. If after the pre-clearance survey avoidance of *Persoonia hindii* stems and *Caesia parviflora* var. *minor* cannot be achieved, all removed individuals will be appropriately offset as a last resort.

Efforts should be made to avoid the impacts to *Persoonia hindii* and *Caesia parviflora* var. *minor*. Where it is not possible to avoid these plants, approval for impact to *Persoonia hindii* will need to be obtained and the offset requirement for the project will need to be modified.

Management of weeds and habitat

The identified weeds will require management during clearing and excavation according to the procedures outlined in the Springvale MPPS Water Treatment Project Biodiversity Management Plan.

The large woody debris, and any trees removed, should be carefully removed and placed on site to retain the habitat in accordance with the cleared vegetation placement protocol as outlined in the Springvale MPPS Water Treatment Project Biodiversity Management Plan.

An ecologist should be present on site to supervise hollow-bearing tree clearing as outlined in the EIS statement of commitments and the Springvale MPPS Water Treatment Project Biodiversity Management Plan.

Yours sincerely

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Figure 1 : The two areas where the pre-clearance survey was undertaken marked in yellow polygons

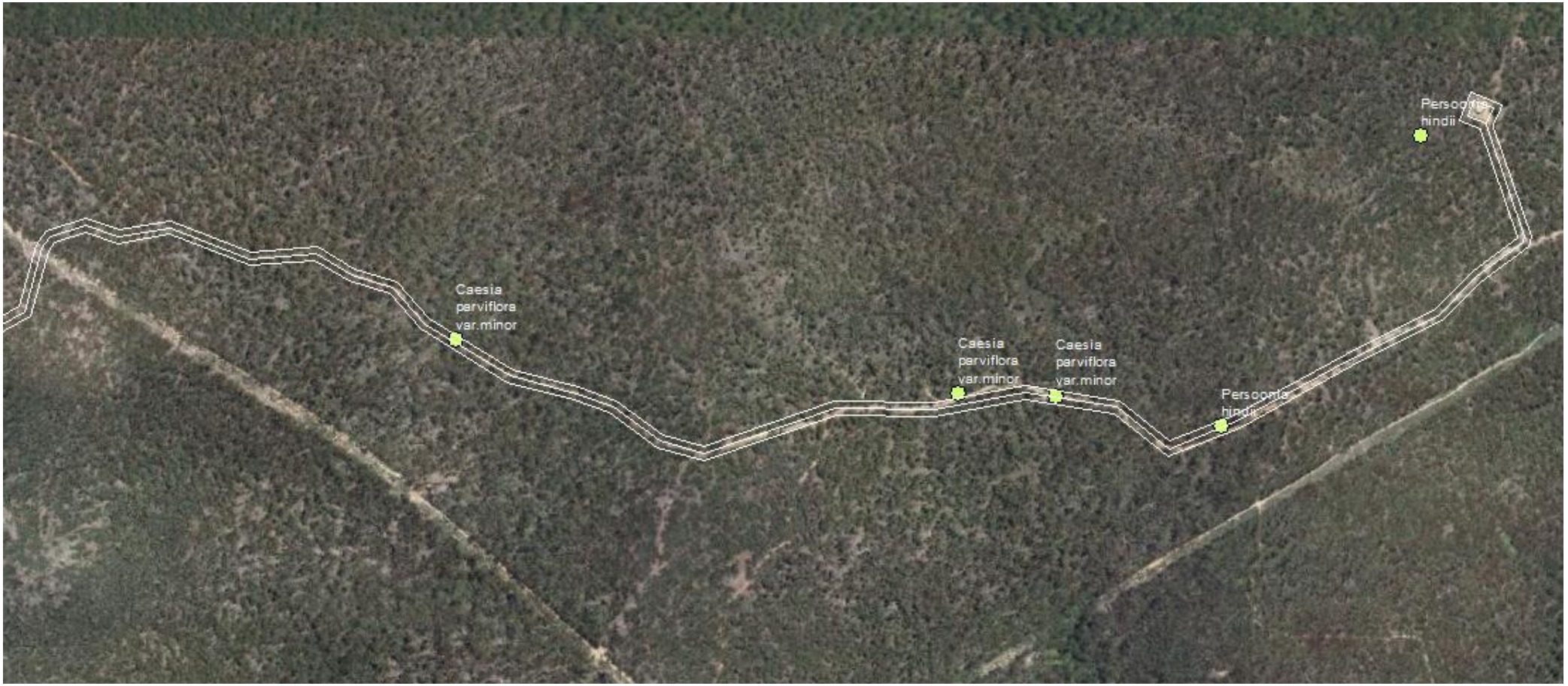

Figure 2 : Known locations of threatened plant species in the project application area on the Newnes Plateau

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Site photos as of 27 February 2018

Photo 1 : The Ribbon Gum - Snow Gum grassy forest on damp flats, eastern South Eastern Highlands Bioregion PCT at the bottom of the gully near the ash dam

Photo 2 : The Sydney Peppermint - Narrow-leaved Peppermint shrubby open forest on sheltered slopes of the Newnes Plateau, Sydney Basin PCT in the gully up to the Newnes Plateau

Photo 3 : The project application area along the eastern section of the fire trail on the Newnes Plateau showing the Narrow-leaved Peppermint - Mountain Gum - Brown Barrel moist open forest on high altitude ranges, northern South Eastern Highlands PCT

Photo 4 : The Sydney Peppermint - Silvertop Ash heathy open forest on sandstone ridges of the upper Blue Mountains, Sydney Basin PCT on the Newnes Plateau

Photo 5 : The larger *Persoonia hindii* plant located next to the fire trail in the project application area

Photo 6 : The smaller *Persoonia hindii* plants marked with spray paint for easy identification during clearing

Centennial Coal

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