

CADIA HOLDINGS PTY LIMITED

CADIA CONCENTRATE AND RETURN WATER PIPELINE MODIFICATION

ENVIRONMENTAL ASSESSMENT

CADIA HOLDINGS PTY LIMITED

JUNE 2011  
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## **1 INTRODUCTION**

The Cadia Valley Operations are located approximately 25 kilometres (km) south-west of Orange, in the Central Tablelands of New South Wales (NSW) (Figure 1). Cadia Holdings Pty Limited (CHPL) is the owner and operator of the Cadia Valley Operations. CHPL is a wholly owned subsidiary of Newcrest Mining Limited (Newcrest).

Project Approval (PA) for the Cadia East Project was granted by the NSW Minister for Planning under Part 3A of the *Environmental Planning and Assessment Act, 1979* (EP&A Act) on 6 January 2010 (PA 06\_0295). The PA integrates all of the components of the Cadia Valley Operations (as described in Schedule 1 of the PA) including the Cadia East underground mine, the Cadia Hill open cut mine, the Ridgeway underground mine, the Blayney and CVO Dewatering Facilities, and ancillary infrastructure. These integrated operations are herein referred to as the Cadia Valley Operations.

### **1.1 OVERVIEW OF THE EXISTING CADIA VALLEY OPERATIONS**

The Cadia Hill open pit and Ridgeway underground mine are located within the Cadia Valley (Figure 1) within Mining Lease (ML) 1405, ML 1472, ML 1481 and ML 1449. The Blayney Dewatering Facility is located approximately 25 km to the east of the Cadia Valley in the town of Blayney (Figure 1).

Mining at the Cadia Valley Operations commenced at Cadia Hill in 1998 and Ridgeway commenced production in 2002.

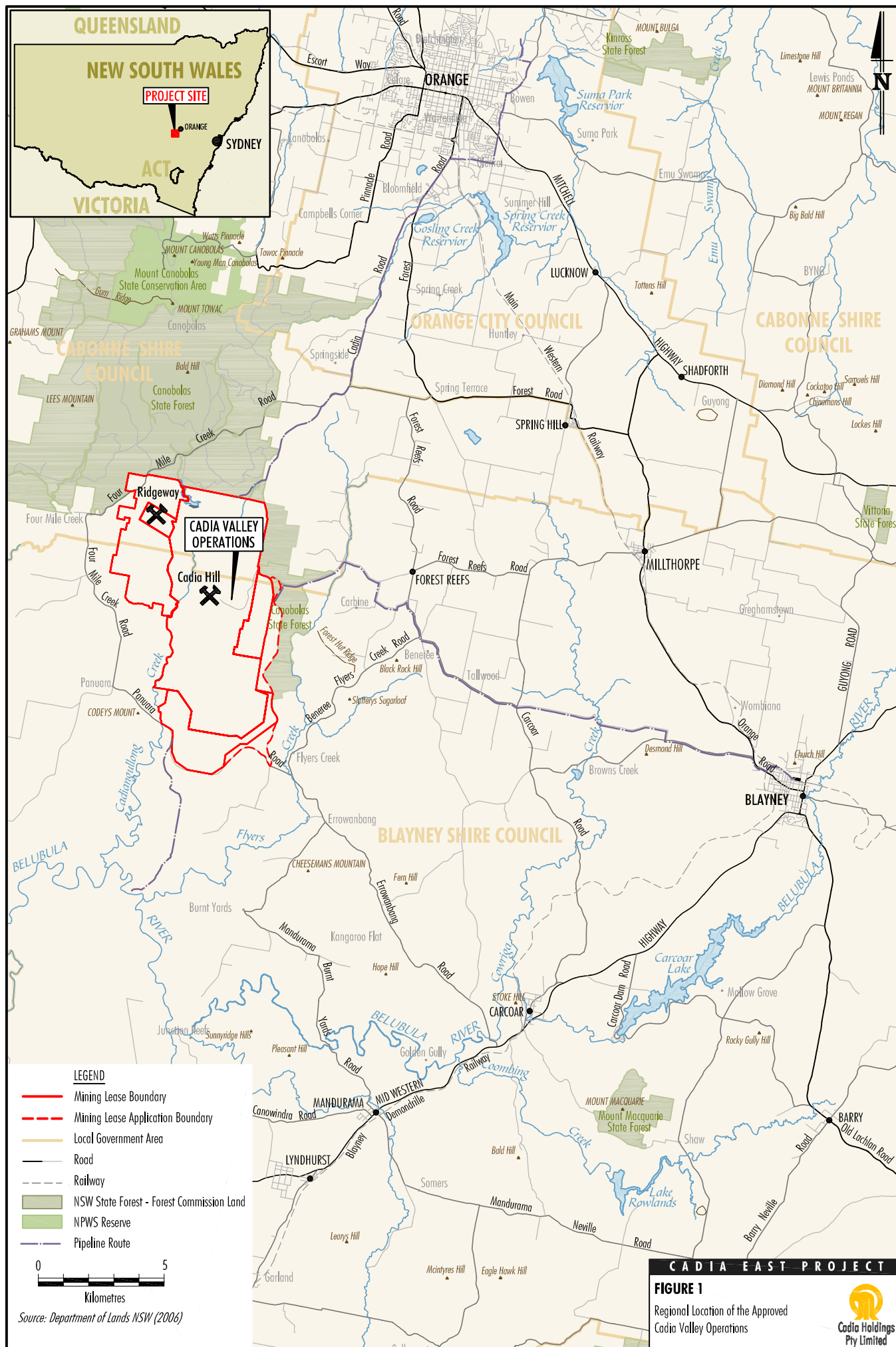
Approximately 24 Mtpa of ore is mined at the Cadia Valley Operations. Mineral concentrate containing gold and copper is pumped approximately 30 km from the Cadia Valley Operations to the nearby town of Blayney, where it is dewatered and then loaded onto trains for transport to Port Kembla on the eastern seaboard. Figure 2 shows the approved alignment of the concentrate pipeline from the Cadia Valley to Blayney.

Cadia Hill is currently scheduled to cease operation in 2013. With the Ridgeway Deeps extension, Ridgeway is currently scheduled to cease operations in 2017.

Cadia East involves the development of an underground mine to extract approximately 450 million tonnes (Mt) of ore over a period of 21 years. The ore contains gold, copper and some molybdenum. Development of Cadia East occurs in conjunction with ongoing operation of the existing Cadia Hill and Ridgeway mines. Cadia East extends the life of the Cadia Valley Operations to approximately 2030. Figure 3 shows the approved General Arrangement at the end of the mine life.

Cadia East development activities currently consist of the construction of two declines, namely the Cadia East decline and conveyor incline.

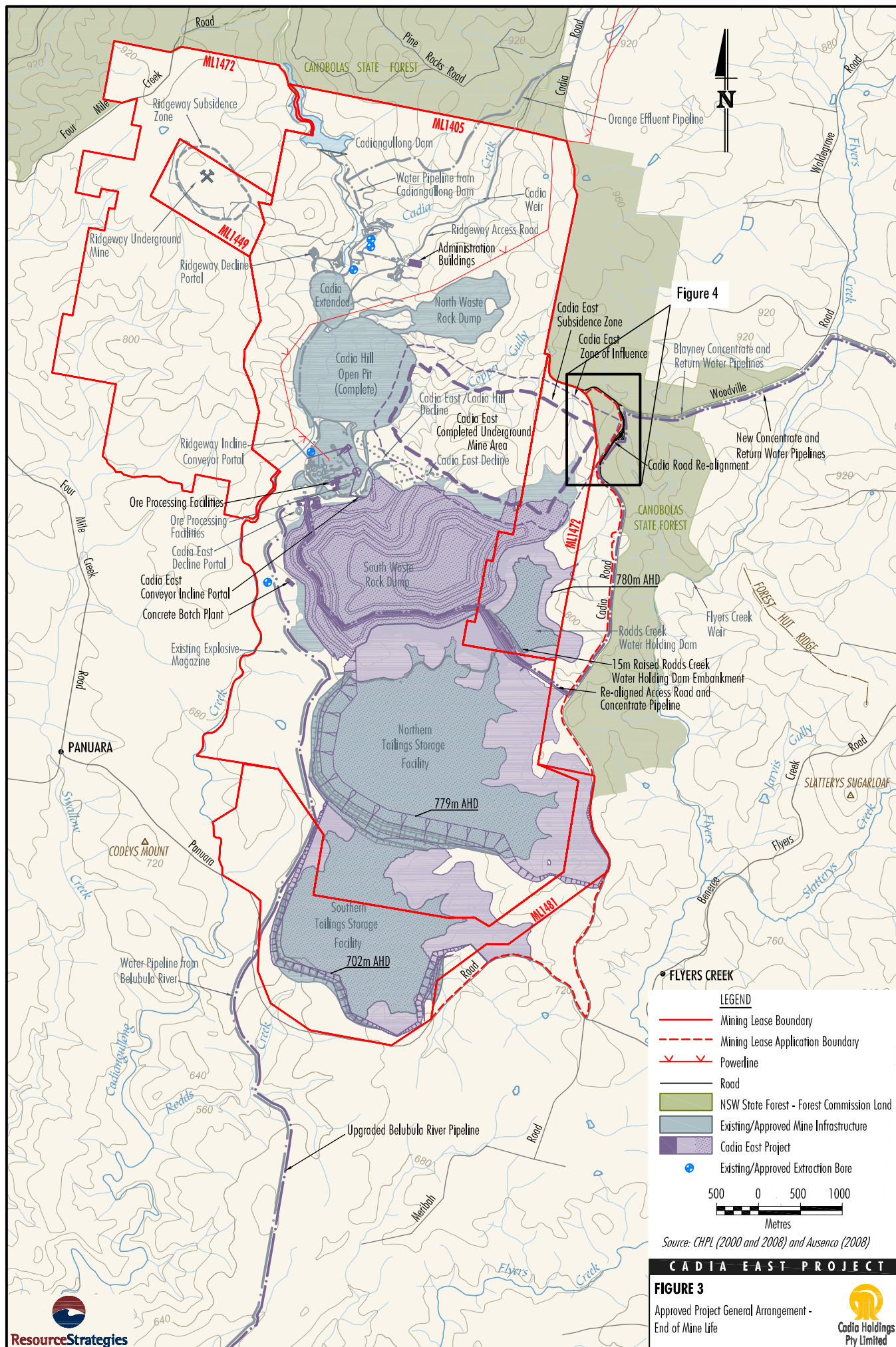
Cadia East is described in full in the Cadia East Project Environmental Assessment (the Cadia East EA) (CHPL, 2009a).











## **1.2 OVERVIEW CADIA CONCENTRATE AND RETURN WATER PIPELINE MODIFICATION**

The proposed Cadia Concentrate and Return Water Pipeline Modification (the proposed Modification) involves the realignment of a 1.4 km section of the new concentrate and return water pipelines, which are to be installed from the Cadia Valley to Blayney.

A full description of the proposed Modification is provided in Section 2.

Approval is sought from the Minister for Planning under Section 75W of the EP&A Act for the Modification.

## **1.3 CONSULTATION FOR THE MODIFICATION**

CHPL provided a brief overview of the proposed Modification to the Department of Planning and Infrastructure (DoPI) on 20 May 2011.

CHPL consulted with the Cabonne Shire Council regarding the proposed Modification in May 2011. The Cabonne Shire Council subsequently discussed the matter at its Ordinary Council Meeting on 16 May 2011 and agreed to authorise clearing works associated with the construction of the pipelines subject to several conditions (including the works being conducted in accordance with DoPI approval). A copy of the relevant letter from the Cabonne Shire Council is appended to this document (Attachment A).

CHPL also consulted with the Blayney Shire Council regarding the Modification, and a letter from the Council providing in principle support was issued on 16 May 2011 (Attachment B).

CHPL advised local residents of the reduction in the subsidence zone and that Cadia Road would no longer need to be diverted during a Cadia Districts Residents meeting in June 2010, and subsequently via its Community newsletter in July 2010.

## **1.4 DOCUMENT STRUCTURE**

This EA is structured as follows:

Section 1	Provides an introduction to the proposed Modification and the purpose of this EA, describes the structure of this EA and provides a summary of the consultation undertaken.
Section 2	Describes the approved Cadia East Project and the proposed Modification.
Section 3	Outlines the relevant statutory provisions and provides a justification for the proposed Modification.
Section 4	Details the environmental assessment for the proposed Modification.
Section 5	Provides a conclusion to this EA.
Section 6	Lists documents and reports referenced in this document.

## **2 PROJECT DESCRIPTION**

### **2.1 OVERVIEW OF THE APPROVED CONCENTRATE AND RETURN WATER PIPELINE OPERATIONS**

Construction of the Cadia East Mine is currently occurring in conjunction with the operation of the existing Cadia Hill and Ridgeway Mines.

The new concentrate pipeline is required to accommodate the forecast concentrate production rates for the Cadia East Mine. As described in the Cadia East Project EA, the new pipeline will have a 124 millimetre internal diameter and will be installed with a design capacity of up to approximately 60 tonnes per hour at a slurry density of 60% solids by weight. The new pipeline will be installed parallel to the existing concentrate pipeline to the Blayney Dewatering Facility, with a take-off to the CVO Dewatering Facility (Figure 2). The new pipeline will be designed to handle the full duty from the Cadia East Mine, with the existing pipeline available as a partial standby. The new concentrate pipeline will also require the installation of supporting infrastructure (e.g. pumps). A new return water pipeline will also be constructed alongside the new concentrate pipeline.

The majority of the new pipelines will be installed along the existing concentrate pipeline route, with a small additional section from the existing Blayney Dewatering Facility to the CVO Dewatering Facility. This section will be located within the railway line easement, which runs between the two sites (Figure 2).

As described in the Cadia East Project EA, leak detection and shutdown systems will be installed to identify and respond to variations in flow rates (used to detect leaks in the pipeline or other malfunctions). At larger creek crossings (e.g. Cowriga Creek), the pipelines will be encased in steel structures, equivalent to those on the existing pipeline, with the capacity to contain leakage if the pipelines were to fracture before automatic cut-off valves were activated.

### **2.2 DESCRIPTION OF THE PROPOSED MODIFICATION**

Due to refinements of the Cadia East mine design, the predicted surface expression of the Subsidence Zone and the Zone of Influence no longer extend as far to the east. As a result, CHPL believes that Cadia Road will no longer need to be relocated into the Woodville Creek catchment area, as was predicted at the time of the Cadia East Project Environmental Assessment (EA).

The new concentrate and return water pipelines were to be constructed parallel to the relocated Cadia Road. Since this relocation is now not required, CHPL is seeking approval to construct the pipelines along the road verge parallel to the existing Cadia and Woodville roads. The section of road in question is 1.4 km in length. The existing concentrate and return water pipelines are currently installed along the road verge of Woodville Road.

The alignment of the approved route, as well as the modified route is shown on Figure 4. Figure 4 also shows the locations where plates 1 to 4 were taken from the road verge in May 2011. The approximate location of the proposed pipeline is indicated on each of the photographs.

The proposed Modification would be constructed and operated in the same manner described in the Cadia East Project EA.



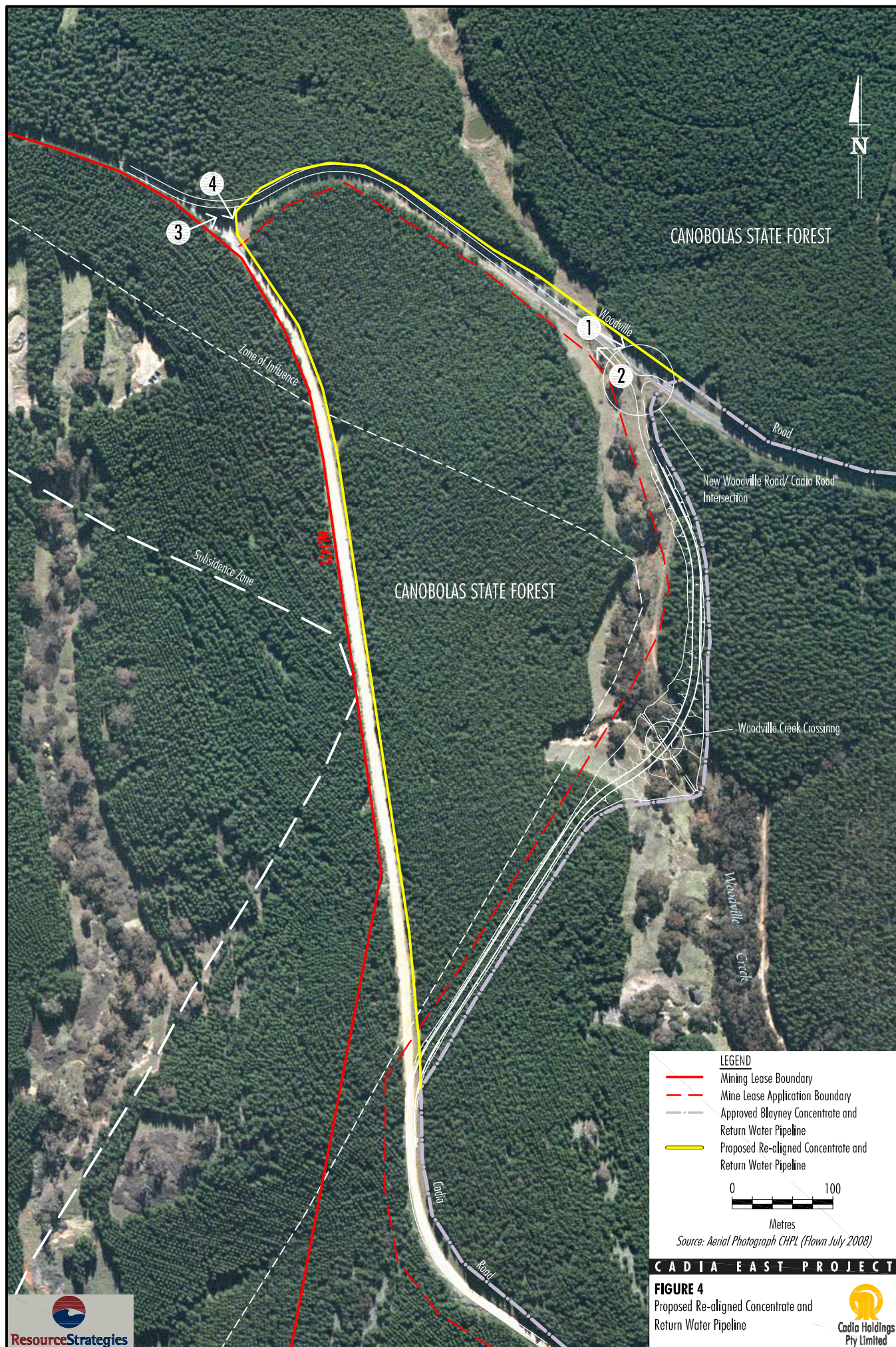






PLATE 1 Woodville Road (Installation on the left side of road)

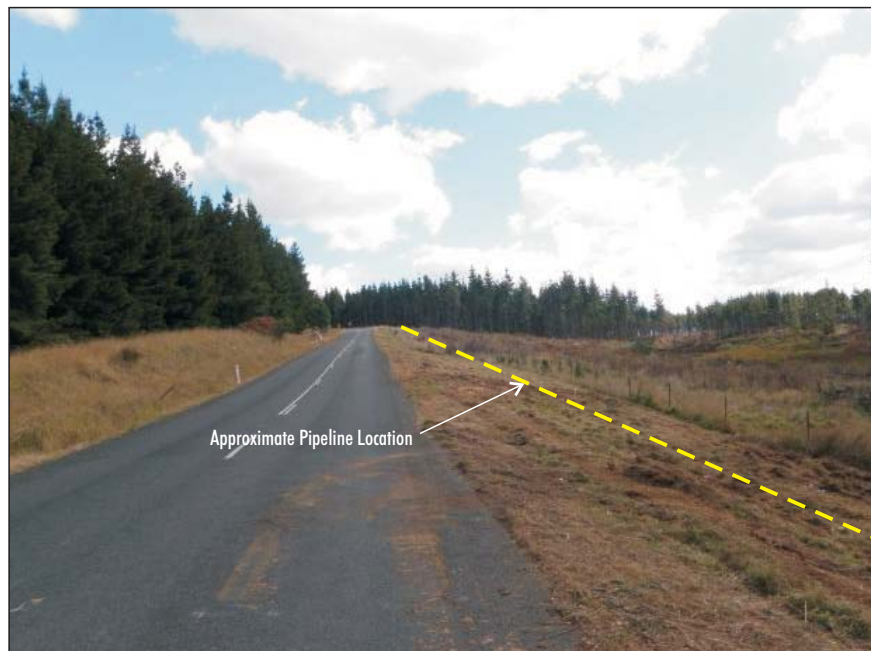


PLATE 2 Woodville Road (Installation on the right side of road)

**CADIA EAST PROJECT**

Plates 1 and 2





PLATE 3 Woodville Road Cadia Road Intersection (Installation on the left side of road)



PLATE 4 Woodville Road (Installation on the left side of road)

CADIA EAST PROJECT

Plates 3 and 4



### 3 STATUTORY CONTEXT AND MODIFICATION JUSTIFICATION

#### 3.1 STATUTORY CONTEXT

##### 3.1.1 Environmental Planning and Assessment Act 1979

The Cadia East Project was approved under Part 3A of the EP&A Act by the Minister for Planning (the Minister) on 6 January 2010 (Application Number 06\_0295).

As outlined in Section 1.3, CHPL has consulted with the DoPI with regard to seeking the necessary approvals for the Modification and based on this consultation, this EA has been prepared under Section 75W of the EP&A Act.

Section 75W of the EP&A Act states:

##### **75W Modification of Minister's approval**

(1) *In this section:*

**Minister's approval** means an approval to carry out a project under this Part, and includes an approval of a concept plan.

**modification of approval** means changing the terms of a Minister's approval, including:

- (a) *revoking or varying a condition of the approval or imposing an additional condition of the approval, and*
  - (b) *changing the terms of any determination made by the Minister under Division 3 in connection with the approval.*
- (2) *The proponent may request the Minister to modify the Minister's approval for a project. The Minister's approval for a modification is not required if the project as modified will be consistent with the existing approval under this Part.*
- (3) *The request for the Minister's approval is to be lodged with the Director-General. The Director-General may notify the proponent of environmental assessment requirements with respect to the proposed modification that the proponent must comply with before the matter will be considered by the Minister.*
- (4) *The Minister may modify the approval (with or without conditions) or disapprove of the modification.*

....

##### 3.1.2 General Statutory Requirements

A full description of the statutory context of the Cadia Valley Operations is provided in Attachment 3 of the Cadia East EA.

The Cadia Valley Operations, and the Cadia Hill decline, are located within the Blayney Shire and Cabonne Shire Local Government Areas (LGAs) (i.e. the LGA boundary intersects the proposed Cadia Hill decline). Presented below is an overview of the statutory requirements relevant to the Modification, consistent with Attachment 3 of the Cadia East EA.



**Blayney Shire**

Clause 9(3) of the Blayney LEP provides:

*Except as otherwise provided by this plan, the Council must not grant consent to the carrying out of development on land to which this plan applies unless the Council is of the opinion that the carrying out of the development is consistent with the objectives of the zone within which the development is proposed to be carried out.*

While not obliged to do so, the Minister may, pursuant to section 75J(3), take into account the zone objectives of any land on which the Modification is proposed to be developed, unless it can be established that some or all of the relevant zone objectives are inconsistent with clauses in the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries)* (Mining SEPP) and therefore overridden.

The lands relevant to the proposed Modification are located within an existing road reserve (i.e. Cadia Road). As road reserves are not specifically identified in the zoning map of the Blayney LEP, the Blayney reserves in the Blayney LGA do not fall within the relevant LEP zones. Notwithstanding, the zoning of land adjoining the road reserve along the concentrate pipeline route (i.e. 1[a] [General Rural]) has been considered.

Clause 6 of the Blayney LEP provides that the *Environmental Planning and Assessment Model Provisions, 1980* (the EP&A Model Provisions) are adopted for the purposes of the LEP (subject to limited exceptions). Clause 14 of the Model Provisions provides:

**14 Development on public road**

- (1) *A person shall not carry out development on a public road shown uncoloured on the map or part of such road lawfully closed without the consent of the consent authority.*
- (2) *The consent authority shall only grant its consent under subclause (1) for a purpose which may be carried out either with or without the consent of the consent authority on land adjoining that road.*

As described in Section 3.1.1, the NSW Minister for Planning is the relevant consent authority for the Project.

Section 4 of this EA includes consideration of the potential impacts of the proposed Modification on the road reserve and the adjoining land.

**Cabonne Shire**

Clause 9(3) of the Cabonne LEP provides that:

*Except as otherwise provided by this plan, the Council shall not grant consent to the carrying out of development on land to which this plan applies unless the Council is of the opinion that the carrying out of the development is consistent with the objectives of the zone within which the development is proposed to be carried out.*

Whilst not obliged to do so, the Minister may, pursuant to section 75J(3), take into account the zone objectives of any land on which the Modification is proposed to be developed.

The lands relevant to the proposed Modification are located within existing road reserves (i.e. Cadia Road and Woodville Road). As road reserves are not specifically identified in the zoning map of the Cabonne LEP, the Cadia and Woodville road reserves in the Cabonne LGA do not fall within the relevant LEP zones. Notwithstanding, the zoning of land adjoining the road reserve along the concentrate pipeline route (i.e. 1[a] [General Rural]) has been considered.

Clause 6 of the Cabonne LEP provides that the *Environmental Planning and Assessment Model Provisions, 1980* (the EP&A Model Provisions) are adopted for the purposes of the LEP (subject to limited exceptions). Clause 14 of the Model Provisions provides:

**14 Development on public road**

- (1) *A person shall not carry out development on a public road shown uncoloured on the map or part of such road lawfully closed without the consent of the consent authority.*
- (2) *The consent authority shall only grant its consent under subclause (1) for a purpose which may be carried out either with or without the consent of the consent authority on land adjoining that road.*

As described in Section 3.1.1, the NSW Minister for Planning is the relevant consent authority for the Project.

Section 4 of this EA includes consideration of the potential impacts of the proposed Modification on the road reserve and the adjoining land.

**State Environmental Planning Policy (Major Projects) 2005**

As outlined above, the Cadia East Project was approved under Part 3A of the EP&A Act by the NSW Minister for Planning in January 2010.

**State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007**

The Mining SEPP, which commenced on 16 February 2007, regularises the various environmental planning instruments that previously controlled mining activities.

Clause 5(3) of the Mining SEPP gives it primacy where there is an inconsistency between the provisions of the Mining SEPP and the provisions of any other environmental planning instrument (except the *State Environmental Planning Policy (Major Projects) 2005* [Major Projects SEPP], *State Environmental Planning Policy No. 14 [Coastal Wetlands]* and *State Environmental Planning Policy No. 26 [Littoral Rainforest]*).

- **Clause 2**

Clause 2 sets out the aims of the Mining SEPP as follows:

- (a) *to provide for the proper management and development of mineral, petroleum and extractive material resources for the purpose of promoting the social and economic welfare of the State, and*
- (b) *to facilitate the orderly and economic use and development of land containing mineral, petroleum and extractive material resources, and*
- (c) *to establish appropriate planning controls to encourage ecologically sustainable development through the environmental assessment, and sustainable management, of development of mineral, petroleum and extractive material resources.*

- **Clause 7**

Clause 7 (1) of the Mining SEPP states that development for any of the following purposes may be carried out only with development consent:

(b) *mining carried out:*

...

(ii) *on land that is, immediately before the commencement of this clause, the subject of a mining lease under the Mining Act 1992 or a mining licence under the Offshore Minerals Act 1999.*

- **Clause 8**

Clause 8 of the Mining SEPP provides:

8 *Determination of permissibility under local environmental plans*

- (1) *If a local environmental plan provides that development for the purposes of mining, petroleum production or extractive industry may be carried out on land with development consent if provisions of the plan are satisfied:*
  - (a) *development for that purpose may be carried out on that land with development consent without those provisions having to be satisfied, and*
  - (b) *those provisions have no effect in determining whether or not development for that purpose may be carried out on that land or on the determination of a development application for consent to carry out development for that purpose on that land.*
- (2) *Without limiting subclause (1), if a local environmental plan provides that development for the purposes of mining, petroleum production or extractive industry may be carried out on land with development consent if the consent authority is satisfied as to certain matters specified in the plan, development for that purpose may be carried out on that land with development consent without the consent authority having to be satisfied as to those specified matters.*

**State Environmental Planning Policy No. 33 (Hazardous and Offensive Development)**

Clause 13 of SEPP 33 requires the consent authority, in considering a Development Application for a potentially hazardous or a potentially offensive industry, to take into account:

- (c) *in the case of development for the purpose of a potentially hazardous industry—a preliminary hazard analysis prepared by or on behalf of the applicant, and*
- (d) *any feasible alternatives to the carrying out of the development and the reasons for choosing the development the subject of the application (including any feasible alternatives for the location of the development and the reasons for choosing the location the subject of the application)...*

A PHA was conducted for the Cadia East EA in accordance with SEPP 33 to evaluate the potential hazards associated with Cadia East. The proposed Modification does not significantly alter the consequences or likelihood of a hazardous event occurring at the Cadia Valley Operations, as the construction and operational activities on-site would be generally unchanged.

**State Environmental Planning Policy No. 44 (Koala Habitat Protection)**

SEPP 44 requires the consent authority for any Development Application in certain LGAs (including Blayney and Cabonne) to consider whether land subject to a Development Application is *potential Koala habitat* or *core Koala habitat*.

The assessment of potential and core Koala habitat is presented in Appendix A and Section 4.5 of the Cadia East EA. The assessment concluded that the lands in the Cadia East Project area do not fall within the definition of "potential Koala habitat" (and therefore cannot fall within the definition of "core Koala habitat") for the purposes of SEPP 44. There are no recent records of a Koala population occurring in the area. Based on these findings, the provisions of SEPP 44 are not applicable to the proposed Modification.

### **State Environmental Planning Policy No. 55 (Remediation of Land)**

SEPP 55 aims to provide a State-wide planning approach to the remediation of contaminated land. Under SEPP 55, planning authorities are required to consider the potential for contamination to adversely affect the suitability of the site for its proposed use.

A consent authority must consider the following under clause 7(1):

- (a) *whether the land is contaminated, and*
- (b) *if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and*
- (c) *if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land will be remediated before the land is used for that purpose.*

Further, under clause 7(2), before determining an application for consent to carry out development that would involve a change of use of land, the consent authority must consider a report specifying the findings of a preliminary investigation of the land concerned, carried out in accordance with the contaminated land planning guidelines.

Because the proposed Modification is located within the Cadia and Woodville Road reserves, no change of use is proposed and no preliminary land contamination investigation is required.

### **Environment Protection and Biodiversity Conservation Act, 1999**

The objective of the Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act) is to provide for the protection of those aspects of the environment that are of *national environmental significance*. Proposals that are likely to have a significant impact on a matter of environmental significance are defined as a *controlled action* under the EPBC Act. Proposals that are, or may be, a controlled action are required to be referred to the Commonwealth Minister for the Environment to determine whether or not the action is a controlled action.

The proposed Modification involves a minor change to the approved activities and is not considered likely to have a significant impact on any protected matters listed under the EPBC Act. It has therefore not been referred to the Commonwealth Minister for the Environment for consideration under the EPBC Act, as no "controlled action" is proposed.

### **Other Approvals**

CHPL would obtain relevant approvals from the Cabonne Shire Council and Blayney Shire Council.



### **3.2 MODIFICATION JUSTIFICATION**

The proposed Modification is considered to be justified on economic, social and environmental grounds because:

- It would be constructed parallel to existing roads, which would minimise clearing of vegetation to road verge grasses and occasional *Pinus radiata* and *Eucalypt*. Sp saplings.
- It is small in scale (i.e. 1.4 km in length) and involves the same type of construction activities and operations that were assessed in the Cadia East Project EA.
- It would remove the need to construct a section of the new concentrate pipeline through the Canobolas State Forest.

## **4 ENVIRONMENTAL ASSESSMENT**

### **4.1 NOISE**

Noise management at the Cadia Valley Operations is conducted in accordance with the Noise Monitoring Program (CHPL, 2010).

Attended noise monitoring conducted during the 2007-2008 Annual Environmental Management Report (AEMR) period indicated that compliance was achieved in all instances (CHPL, 2008a). Attended noise monitoring conducted during the 2008-2009 AEMR period indicated that compliance was achieved at all receivers surrounding the Cadia Valley, with the exception of one night-time exceedance at a single location. This exceedance was partially attributed to traffic noise on a public road (i.e. Cadia Road) (CHPL, 2009b).

The proposed Modification would be constructed as described in the Cadia East Project EA. The proposed realigned section of the route is located within the Canobolas State Forest and as a result there are no additional potentially sensitive noise receivers.

### **4.2 AIR QUALITY AND GREENHOUSE GAS**

Dust generation from the proposed Modification would be minimal. Activities associated with the construction of the proposed new section of the concentrate and return water pipelines would be of relatively short duration and would be conducted within the existing Cadia Road and Woodville Road reserves. The proposed realigned section of the pipeline route is located within the Canobolas State Forest and as a result there are no additional potentially sensitive receivers.

The dust management measures described in the Cadia East Project EA would be implemented during construction.

No additional greenhouse gas emissions would be generated by the proposed Modification (i.e. the duration and types of greenhouse gas generating activities would be the same as assessed in the Cadia East Project EA).

### **4.3 SURFACE WATER AND GROUNDWATER RESOURCES**

The potential for the proposed Modification to materially impact local groundwater resources is negligible due to the shallow depth of the pipeline trench (i.e. less than 2 m) and the short duration of construction activities. Leak detection and shutdown systems will be installed to identify and respond to variations in flow rates (used to detect leaks in the pipeline or other malfunctions).

The proposed modified section of the new concentrate and return water pipelines is located towards the crest of the ridge that divides the Cadiangullong Creek and Flyers creek catchments. It will involve crossing of Woodville Creek in its headwaters approximately 400 m upstream of the currently approved location. This area has been previously disturbed through Monterey Pine plantation activities, the construction and maintenance of Woodville Road, and the installation of the existing Cadia Valley Operations concentrate pipeline and return water pipeline in the late 1990's.

The pipeline would be constructed using the sediment and erosion control measures described in the Cadia East Project EA. As a result, no significant impacts on surface water resources in Woodville Creek would occur as a result of the proposed Modification.

#### **4.4 VISUAL AMENITY**

The proposed modified section of the new concentrate and return water pipelines involves the same type of activity described and assessed in the Cadia East Project EA. The proposed realigned section of the route is located within the Canobolas State Forest and is screened from all potentially sensitive non-CHPL owned residences. As a result, no additional impacts on visual amenity are considered likely.

#### **4.5 FLORA AND FAUNA**

Some vegetation clearing would be required for the proposed Modification during the construction and installation. Vegetation clearing associated with these activities would be limited to disturbance to the road side grasses and removal of the occasional Monterey Pine (*Pinus radiata*) and *Eucalypt* Sp. saplings that have sprouted along the road verge.

It is considered that impacts on flora and fauna from the proposed Modification would be negligible given that the proposed route has been significantly modified and disturbed by the original construction of the Cadia and Woodville roads and their ongoing maintenance. The adjoining land in the Canobolas State Forest is also heavily modified, with all the native vegetation having been cleared and replaced with a Monterey Pine plantation.

#### **4.6 ABORIGINAL HERITAGE**

Aboriginal cultural heritage sites or areas of interest identified in the vicinity of the proposed Modification during the Cadia East Project EA surveys included:

- A quartz flake fragment (Woodville 1) – located along the route of the existing concentrate and return water pipelines easement.
- Two artefact scatters (Woodville 2 and 3), located east of the Cadia East subsidence zone of influence, adjacent to the proposed re-aligned section of Cadia Road. These sites consist of six and 11 artefacts, respectively and are considered to be of local archaeological significance because of the different types of raw materials present (Kayandel, 2009).

Potential impacts on the above sites were assessed as part of the Cadia East Project EA. Two of the previously identified artefacts (i.e. Woodville 2 and 3) would now longer be impacted as a result of the proposed Modification.

The mitigation and management measures for 'Woodville 1' would remain as described in the Cadia East Project EA, and summarised below.

- salvage of 'Woodville 1' prior to construction of the concentrate and return water pipelines in consultation with the OLALC;
- 'Woodville 1' would be stored on-site at the Cadia Valley Operations in a locked cabinet or suitably secure location ("keeping place") for the duration of construction works on the pipeline; and
- in general accordance with the wishes of the OLALC, the artefact would be placed within close proximity to its present location, after the completion of pipeline construction activities.

No additional impacts on Aboriginal Heritage (i.e. over and above those assessed in the Cadia East Project EA) are predicted to occur as a result of the proposed Modification.

#### **4.7 EUROPEAN HERITAGE**

The pipeline easement between the Cadia Valley and Blayney was surveyed by Edward Higginbotham and Associates Pty Ltd in May 2008. The historic research and site surveys along the route identified five heritage items along the existing easement. The closest of the five items Edward Higginbotham and Associates (2009) to the proposed Modification is located approximately 5 km to the east (i.e. 'Site of potential mining activity, adjacent to Long Swamp Road, on Portion 76, Parish of Beneree [Provisional Gold Leases – refused]).

No additional impacts on European heritage (i.e. over and above those assessed in the Cadia East Project EA) are predicted to occur as a result of the proposed Modification.

#### **4.8 ROAD TRANSPORT AND TRAFFIC**

Cadia Road is a gravel road from its junction with Woodville Road through to the south where it intersects Panuara Road. Woodville Road/Long Swamp Road connects Cadia Road to Forest Reefs. Woodville Road consists of a two lane sealed surface.

Traffic volume information presented in the Cadia East Project EA indicated that the recorded daily traffic volumes for Woodville Road East of Cadia Road were 254. These were predicted to increase to approximately 393 during the construction phase before dropping back down to approximately 226 towards the end of the Cadia East mine life. Estimated existing daily traffic volumes at Cadia Road south of Woodville Road described in the Cadia East Project EA were 65 and were predicted to increase to approximately 85 during the construction phase. The traffic numbers at this location are predicted to increase significantly (i.e. up to 1,111) in the later phases of the Cadia East mine life once the main access to the mine is relocated to the south. This increase was assessed and approved as part of the Cadia East Project EA.

The proposed Modification would result in pipeline construction activities occurring on an additional 1.4 km section of Cadia and Woodville roads (Figure 4). However, the pipeline construction activities in the new section will be the same as those assessed in the Cadia East Project EA (i.e. the new section does not introduce any additional or different types of traffic or road transport impacts).

No additional impacts on road transport and traffic (i.e. over and above those assessed in the Cadia East Project EA) are predicted to occur as a result of the proposed Modification.

#### **4.9 LAND USE AND SOCIO-ECONOMICS**

The proposed Modification is located in existing public road reserves (i.e. Cadia Road and Woodville Road) within the Blayney and Cabonne shires. Construction activities may result in some disruptions to local traffic while the trench is excavated and installed. However, these will be minor and temporary and will not affect the adjoining land uses (i.e. Monterey Pine plantation and agriculture).

The proposed Modification would not alter the socio-economic assessment contained in the Cadia East Project EA (i.e. the duration and type of activity remains the same, and the minor change in the alignment would not materially affect the social impacts or economics of the project).



#### **4.10 WASTE, CHEMICAL AND HAZARDOUS SUBSTANCE MANAGEMENT**

The proposed Modification would not alter the amount or types of waste and or hazardous substances associated with the construction and operation of the concentrate pipeline and return water pipeline.

It is expected that there would be minimal use of chemicals and hazardous substances during construction of the pipelines (i.e. limited to fuels and oils used by the mobile construction equipment). Notwithstanding, all chemicals and hazardous substances would be stored, handled and disposed of in accordance with the existing with the existing Cadia Valley Operations Health and Safety Standards (i.e. SAF 2015: *Storage of Dangerous Goods* and MAN-1011: *Workplace Hazardous Substances*), PA conditions, and relevant Australian Standards.

There would also be a minimal amount of domestic waste produced by the proposed Modification. All domestic waste would be stored, handled and disposed of in accordance with the Cadia Valley Waste Management Plan, existing Project Approval conditions and relevant standards.

In the event of a loss of containment of a chemical or hazardous substance leading to land contamination, the affected area would be remediated in accordance with *Managing Land Contamination: Planning Guidelines – SEPP55 – Remediation of Land* (Department of Urban Affairs and Planning and NSW EPA, 1998).

As described in the Cadia East Project EA, leak detection and shutdown systems will be installed in the pipeline to identify and respond to variations in flow rates (used to detect leaks in the pipeline or other malfunctions).

#### **4.11 CUMMULATIVE EFFECTS**

Impacts associated with the proposed Modification are considered to be minor, and represent a re-alignment of a previously assessed pipeline alignment rather than the introduction of an additional activity. Therefore, the proposed Modification would not result in significant cumulative environmental effects when combined with the Cadia Valley Operations.

## 5 CONCLUSION

The proposed Modification involves the realignment of a 1.4 km section of the new concentrate and return water pipelines, which are to be installed from the Cadia Valley to Blayney. The realignment is required due to a revision of the predicted area of subsidence associated with the Cadia East underground mining operation.

The proposed Modification would not result in any material additional environmental impacts as it would be located within the verge of existing local roads.

The Modification is considered to be justified on economic, social and environmental grounds because:

- The Modification would remove the need to construct a section of the new concentrate pipeline through the Canobolas State Forest.
- The Modification would be constructed parallel to an existing road and within its road corridor, which would minimise clearing of vegetation to road verge grasses and occasional *Pinus radiata* saplings.
- The Modification is small in scale (i.e. 1.4 km in length) and involves the same type of construction activities and operations that were comprehensively assessed in the Cadia East Project EA.

## **6 REFERENCES**

Cadia Holdings Pty Limited (2006) *2005 – 2006 Annual Environmental Management Report*.

Cadia Holdings Pty Limited (2007) *2006 – 2007 Annual Environmental Management Report*.

Cadia Holdings Pty Limited (2008a) *2007 – 2008 Annual Environmental Management Report*.

Cadia Holdings Pty Limited (2009a) *Cadia East Project Environmental Assessment*.

Cadia Holdings Pty Limited (2009b) *2008 – 2009 Annual Environmental Management Report*.