

This chapter sets out the statutory framework to be considered for the integration of CNA operations within HVO South.

4.1**ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979**

Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) details the approval of major infrastructure and other significant 'projects'. It applies to:

"... the carrying out of development that is declared under this section to be a project to which this Part applies:

(a) by a State environmental planning policy, or

(b) by order of the Minister published in the Gazette" (Section 75(b)).

State Environmental Planning Policy Major Projects (SEPP MP) 2005 defines certain developments that are major projects under Part 3A of the *EP&A Act* and to be determined by the Minister for Planning. The proposal is referred to as a Major Project in SEPP MP and therefore Part 3A applies.

Under Section 75(R) of the *EP&A Act*, environmental planning instruments (EPIs) (other than State environmental planning policies) do not apply to a 'Major Project'. A discussion of the State Environmental Planning Policies (SEPPs) applicable to the proposed development follows.

The Environmental Assessment Report, which assesses the likely impact of a project on the environment, will be prepared in accordance with Section 75(F) of the *EP&A Act*.

An approved project is a project that is approved by the Minister under Part 3A of the *EP&A Act*, but does not include a project for which only approval for a concept plan has been given. As the proposal is not an approved project the below sections apply to work undertaken during the preparation of the Part 3A application. Where required the appropriate approval will be obtained.

Pursuant to Section 75V authorisation of a Mining Lease under the *Mining Act 1992* or an Environment Protection Licence under Chapter 3 of the *Protection of the Environment Operations Act 1997* (for any of the purposes referred to in section 43 of that Act) cannot be refused if it is necessary for carrying out an approved project and is to be substantially consistent with the approval under Part 3A of the *EP&A Act*.

4.2

STATUTORY FRAMEWORK

Table 4.1 summaries legislation relevant to this project.

Table 4.1 Statutory Framework

Legislation	Standard / Requirement	Comment
Commonwealth		
<i>Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i>	The <i>EPBC Act</i> requires approval of the Commonwealth Minister for the Environment for actions that may have a significant impact on matters of national environmental significance.	The site is not a world heritage property, a natural heritage place, Ramsar wetlands of international importance, a Commonwealth marine environment and the proposal does not include nuclear actions. A search of threatened species and ecological communities and migratory species listed in the <i>EPBC Act</i> will be completed as part of the environmental assessment.
New South Wales		
<i>EP&A Act 1979</i>	Refer to Section 4.1	Refer to Section 4.1
<i>Mining Act 1992</i>	Under the <i>Mining Act 1992</i> environmental protection and rehabilitation are regulated by conditions in all Mining Leases, including requirements for a Mining Operations Plan (MOP) prior to the commencement of operations.	Environmental protection and rehabilitation will be addressed in the environmental assessment report. MOPs will be put in place for all mining operations.
	Section 86 of the <i>Mining Act 1992</i> outlines the process by which a number of adjacent Mining Leases can be consolidated.	The consolidation of existing Mining Leases at HVO South will be undertaken in accordance with Section 86.
<i>Coal Mine Health and Safety Act 2002</i>	The <i>Coal Mine Health and Safety Act 2002</i> regulates activities undertaken on Coal Mines to ensure that the health, safety and welfare of persons involved in their operation are protected.	Activities undertaken within HVO South will continue in accordance with this Act. The replacement of current consents with a Project Approval and extension of mining areas is not expected to require additional consideration under this legislation.
<i>Coal Mines Regulation Act 1982</i>	The <i>Coal Mines Regulation Act 1982</i> regulates activities undertaken on coal mines including mine management and operations.	Activities undertaken at the HVO South will continue in accordance with the provisions of this Act.
<i>Protection of Environment Operation Act 1997 (POEO Act)</i>	Section 48 of the <i>POEO Act</i> requires scheduled activities listed in Schedule 1 to hold a premises-based environment	A review of the existing licences will be completed to accommodate the proposal.

Legislation	Standard / Requirement	Comment
	protection licence.	
<i>Water Management Act 2000 (WM Act)</i>	The <i>WM Act</i> incorporates the provisions of various acts relating to the management of surface and groundwater in NSW. There is an operational water sharing plan for the 'Hunter Regulated River Water Source' which commenced on 1 July 2004.	Section 75U of the <i>EP&A Act</i> excludes projects approved under Part 3A from water use approval under <i>section 89, a water management work approval under section 90 or an activity approval under section 91</i> .
<i>The Water Act 1912</i>	Under this Act, a licence is required if water is extracted from a creek or if any waterways are proposed to be realigned.	Existing licences will be reviewed.
<i>Rivers and Foreshores Improvement Act (RFI Act)</i>	Under section 22B of the <i>RFI Act</i> a permit is required to excavate on, in or under protected land, or remove material from protected land, or do anything which obstructs, or detrimentally affects, the flow of protected waters, or which is likely to do so.	Section 75U of the <i>EP&A Act</i> excludes projects approved under Part 3A from requiring a permit.
<i>Threatened Species Conservation Act 1995 (TSC Act)</i>	Projects determined by a statutory authority of the NSW State Government, are required to be assessed in accordance with the <i>EP&A Act</i> , as amended by the <i>TSC Act</i> .	The presence of threatened fauna species and endangered ecological communities will be investigated as part of the environmental assessment.
<i>Fisheries Management Act 1994 (FMA Act)</i>	The <i>FMA Act</i> includes provisions to declare and list threatened species of fish and marine vegetation, endangered populations and ecological communities, and key threatening processes.	Section 75U of the <i>EP&A Act</i> excludes projects approved under Part 3A from requiring a permit under section 201, 205 or 219 of the <i>FMA Act</i> .
<i>National Parks and Wildlife Act 1974 (NPW Act)</i>	Section 87 of the <i>NPW Act</i> requires a permit to disturb or excavate land for the purpose of discovering an aboriginal object. Section 90 of the <i>NPW Act</i> requires a permit to destroy aboriginal objects.	Section 75U of the <i>EP&A Act</i> excludes projects approved under Part 3A from requiring a permit. A permit will be obtained as part of the Part 3A process if considered necessary during the aboriginal heritage investigations.
<i>Native Vegetation Act 2003 (NV Act)</i>	Clause 12 of the <i>NVC</i> requires consent from the Minister for the clearing of 'native vegetation'.	Section 75U of the <i>EP&A Act</i> excludes projects approved under Part 3A from requiring "an authorisation referred to in section 12 of the <i>NV Act</i> (or under any Act to be repealed by that Act) to clear native vegetation".

Legislation	Standard / Requirement	Comment
State Environmental Planning Policy No. 11 – Traffic Generating Developments (SEPP 11)	Under Section 7 of SEPP 11 a consent authority is required to forward a copy of any development application for mining to the RTA.	As the proposal requires an approval under Part 3A, the Department of Planning is required to forward the application to the RTA for comment.
State Environmental Planning Policy No 44 – Koala Habitat Protection (SEPP 44)	The SEPP 44 affects land in Singleton local government area and encourages the proper conservation and management of areas of natural vegetation that provide habitat for koalas to ensure a permanent free – living population over their present range and reverse the current trend of koala population decline.	The potential for koala habitat within the area will be investigated as part of the Environmental Assessment Report.
State Environmental Planning Policy No 45 – Permissibility of Mining (SEPP 45)	SEPP 45 allows mining on land, with consent, where an environmental planning instrument requires the consent authority to make a value judgement as to whether such development is permissible.	Mining is permissible.
State Environmental Planning Policy (Major Projects) 2005 (SEPP MP)	Mining is included in Schedule 1 to the SEPP MP and therefore a Major Project to which Part 3A of the <i>EP&A Act</i> applies.	The proposal requires consent from the Minister for Planning under Part 3A of the <i>EP&A Act</i> .
Singleton Local Environment Plan 1996	The study area is zoned Rural 1(a). Within this zone mining is permissible. <i>“...to allow mining where environmental impacts do not exceed acceptable limits and the land is satisfactorily rehabilitated after mining,...”</i> the existing gun club and Glider airstrip and facilities are permissible.	The Environmental Assessment Report will demonstrate that the proposal will not exceed acceptable limits.
Other plans that apply to the site but do not limit development in a Part 3A application pursuant to Section 75R of EP&A Act		
Hunter Regional Environment Plan (HREP) 1989	The HREP applies to land in a number of local government areas including Singleton. Relevant requirements in the HREP include land use and settlement, transport and natural resources.	The Environmental Assessment Report will assess the soil and land capability and agricultural suitability, and impacts on transport, ground and surface water quality and flow characteristics, air quality, acoustical environment, and relevant Total Catchment Strategies.
Singleton Shire Council Erosion and Sediment Control DCP	The objective is to prevent land from being degraded by soil erosion or unsatisfactory land	This will be investigated as part of the surface water assessment completed as part

Legislation	Standard / Requirement	Comment
	and water management practices, protect stream and waterways from being degraded by erosion and sediment and promote and protect biodiversity.	of the Environmental Assessment Report.

STAKEHOLDER CONSULTATION AND KEY ISSUES

The consultation and stakeholder engagement activities outlined in this Preliminary Assessment have been planned to provide key stakeholders with a background of the project and ability to provide input.

This chapter identifies the key stakeholders who have an interest in the project and their potential concerns.

5.1**CONSULTATION STRATEGY**

The aim of consultation is to ensure that the key stakeholders who may be directly or indirectly impacted by the project are:

- Provided with accurate and timely information in relation to the project;
- Provided with information to support their understanding of the planning framework in which the Project Application will be considered; and
- Have the opportunity to identify their concerns and understand how these will be considered in the context of the environmental assessment.

For CNA, the consultation process is additional to their ongoing interaction with nearby neighbours. It will further clarify community engagement roles, identify community concerns and manage potential issues early in the project.

5.2**STAKEHOLDER IDENTIFICATION AND ENGAGEMENT PROGRAMME**

Stakeholders identified through previous assessments include:

- Government agencies;
- Neighbours, local and regional community;
- Aboriginal groups;
- Mining and industrial community and unions (CFMEU);
- Local organisations, associations and Non-Government Organisations (NGO);
- Landowners including HVGC, CFMEU, United, Xstrata, Wambo, SSC and RLPB; and
- Media.

5.2.1

Government Agencies, Landowners And Organisations

The DoP has generally been aware of the potential project since 2005 with preliminary discussions on the opportunity for consolidation of consents. Since this time project briefings have been held with DoP, DEC (Newcastle, Sydney and Coffs Harbour), DPI-MR, DNR, RTA and SSC.

Negotiations with the relevant landowners have commenced with the intent to gain agreement in principle for the lodging of the Project Application with a written guarantee from CNA that development on the non CNA owned land will not occur until approval from the landowners is obtained.

Consultation with NGOs and neighbouring mining companies is underway with presentations of the proposal.

5.2.2

Community Stakeholders

The project has been flagged with the HVO Community Consultative Committee (CCC) since June 2005 and options discussed at the quarterly meetings.

It is noted that residents in the Hunter Valley area are likely to be familiar with mining operations and may previously have been involved in stakeholder consultation on mining activities. In developing the stakeholder engagement approach, some flexibility will be retained to enable engagement practices to best meet community needs and interest. Closest receptors and consultation zones are labelled in *Figure 5.1*. These only include non-mine owned residences.

The programme of consultation activities has been developed to ensure residents who are likely to be directly impacted by the activities are informed and provided the opportunity to comment on the proposal.

The three consultation zones include:

- neighbours in the current HVO zone of affectation;
- nearby residents (those within a 5km radius of the centre of HVO South); and
- the outer ellipse (refer to *Figure 5.1*) which includes nearby residents/ local communities of Maison Dieu and Warkworth and part of Jerrys Plains.

The ellipse shape was applied to identify the latter consultation zone to ensure that residents potentially impacted by HVO South are captured. Those residents further to the north and south, have far greater potential to be impacted by surrounding mines (including Wambo, HVO North and MTW) and have therefore been excluded from this zone.

Key components are detailed in *Table 5.1* but generally will include:

- Phone calls with offers of face to face meetings with near neighbours, both those in the zone of affectation and nearby residents (within 5 km);
- Letters and Newsletters to residents who decline the offer of face to face meetings and those within the outer ellipse. Newsletters will provide an overview of the project, provide common questions and answers and details of the project information days;

- Newsletters mailed to local NGO's (Minewatch; Hunter Environment Lobby; Hunter Catchment Management Trust; Hunter Valley Water Users Association and Green Alliance Network);
- Newsletters mailed to neighbouring mining operations and powerstations;
- Newsletters being available at SSC;
- Advertisements placed in the Singleton Argus with the dates, times and locations of the project information days; and
- Project information days held locally (Maison Dieu and Warkworth). In addition, the project information days will allow any stakeholders to request a face to face meeting.

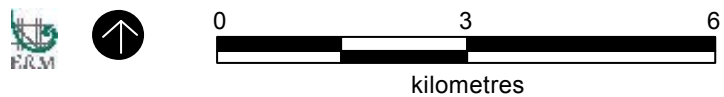
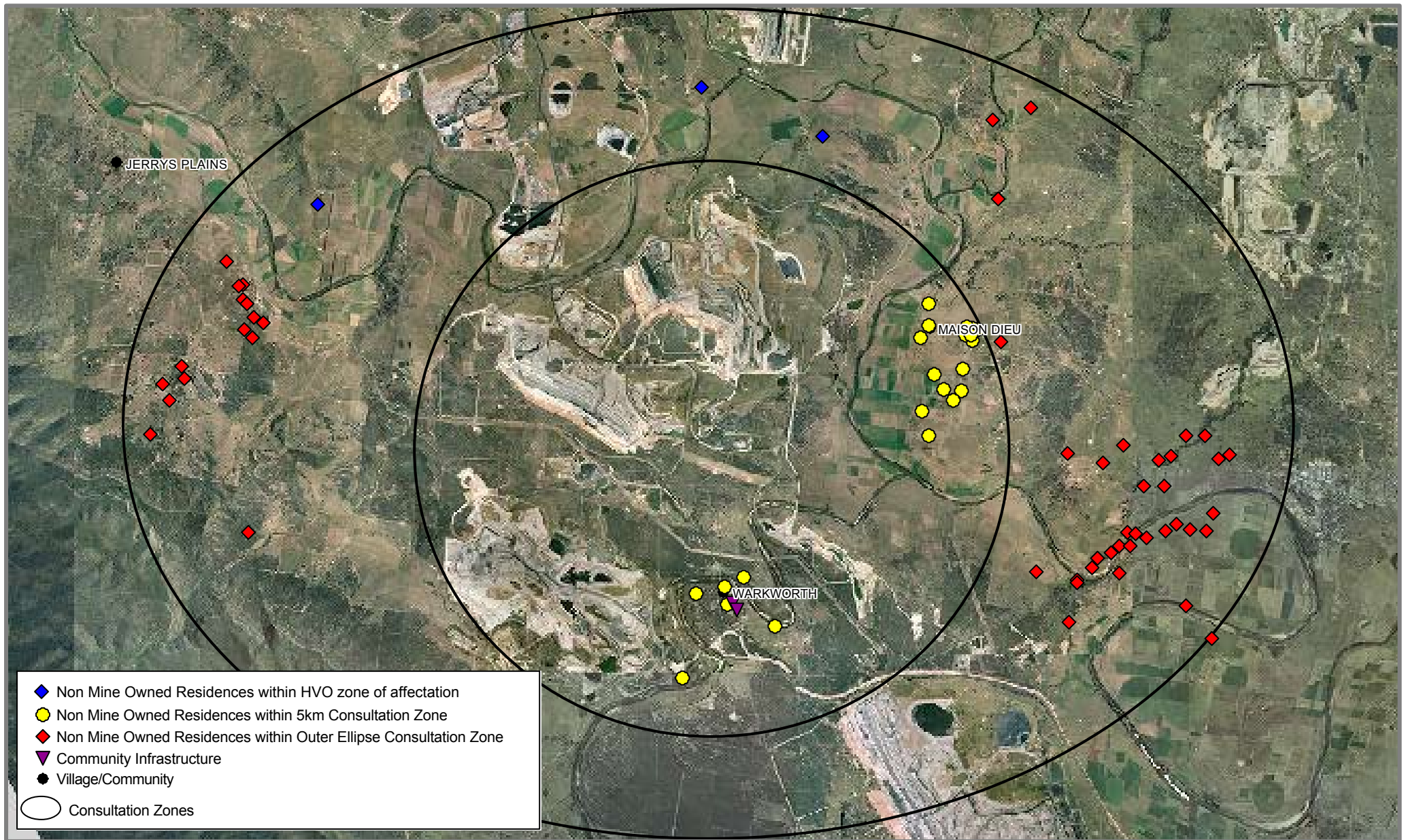


Figure 5.1

Residence Locations and Consultation Zones

Table 5.1 Stakeholders and Proposed Engagement Strategies

Stakeholder	Consultation Approach	Comments
Government Agencies		
• DoP • DNR • DEC • DPI-MR • SSC • MSC • RTA • RLPB	• Project briefing meeting; • Briefing paper; • Planning Focus Meeting; • Newsletters; and • Ongoing liaison.	Consultation at project commencement to determine agency requirements in relation to the project. Consultation with SSC will support community consultation processes.
Local and Regional Community		
Neighbours in current HVO zone of affectation and nearby residents < 5km	• Phone call; • Offer of face to face meetings; • Project newsletter; and • Invitation to project information sessions.	Initial contact and face to face meetings led by CNA. Support available from ERM as required.
Nearby residents/local communities of Maison Dieu and Warkworth and part of Jerrys Plains (residents within ellipse)	• Project newsletter; and • Invitation to project information sessions.	Project information sessions are planned for Maison Dieu and Warkworth.
Aboriginal groups or individuals	• Face to face meetings with parties that show interest in the project; • Review of field assessment methodology; • Participation in field assessment; and • Review of assessment.	Consultation will be undertaken in accordance with DEC interim consultation guidelines and Rio Tinto Cultural Heritage Management System.
Village of Jerrys Plains	• Project newsletter; and • Opportunity to attend project information sessions.	Information sessions and newsletters will be arranged at the commencement and conclusion of the environmental assessment. It is recommended that the final community information session includes the exhibition of the environmental assessment.
Mining Related Community and Landowners		
Employees	• Briefings; and • Newsletters.	-
Community Consultative Committee	• Presentation of project to CCC; • Newsletters; and • Invitation to attend project information sessions.	The CCC can be used as part of the consultation process to identify key community concerns, level of interest in the project and approaches to consulting the community.
CFMEU (including representatives and as landowners)	• Briefings; and • Newsletters.	Acquisition of land integral to integration proposal.

Stakeholder	Consultation Approach	Comments
Neighbouring mines and powerstations	- Briefings; and - Newsletters.	-
Local Organisations and Associations		
Progress Associations	- Letter; and - Newsletters.	-
HVGC	- Close liaison and consultation throughout project; and - Provide multiple newsletters for distribution to members.	HVCG is a key stakeholder for the project given the potential impact on the airstrip and facilities.
Gun Club	- Meetings with CNA representatives; - Letter; and - Newsletters.	Gun club to be notified of implications of the project on the Club's occupancy. CNA will investigate possible alternative locations.
Environmental NGOs	- Newsletters; - Phone contact as required; and - Issues monitoring.	-
Media		
Media	- Newsletters; - Press releases and media responses as required; and - Phone contact as required.	-

5.3 **ISSUE IDENTIFICATION**

The environmental assessment process seeks to ensure that all relevant environmental matters are considered and community and interest groups are consulted throughout the environmental assessment. The environmental assessment will quantify and assess potential adverse impacts and document the likely benefits of the proposal. It will also outline the type of environmental management measures available to reduce adverse impacts, and discuss opportunities created by the proposal. The information in the environmental assessment will also provide a basis for future monitoring of the environmental performance of the proposal.

5.3.1 **Environmental Issues**

The key environmental issues are detailed below. Local residents and regulatory agencies will expect to be provided with information in relation to these issues at the outset of the project through discussion about the scope of the project and changes to current mining operations, and at the conclusion of the environmental assessment in regards to the outcomes of specialist findings.

Air Quality

Of the 10 complaints received by CNA and recorded in their 2005 Annual Environmental Management Report (AEMR), three were related to dust caused by mine operations. It should be noted that one resident can make multiple complaints about more than one issue. Concerns about air quality may be raised as a result of increased transport of coal between mine areas, and transport for storage at MTCL. Operational decisions regarding truck and shovel or dragline extraction will consider dust impacts. The process for monitoring air quality will be explained to residents at project information days.

Noise and Vibration

As reported in the CNA 2005 AEMR, nine complaints received were in relation to blast or other noise impacts. Noise impacts will be assessed through the environmental assessment. This process and the approach taken to modeling noise data will be explained to residents through newsletters and project information sessions.

Water

Information in relation to water management including groundwater resources, water conservation and recycling practices and continued protection of the Hunter River, Wollombi Brook and other bodies, will be addressed in stakeholder communications.

Visual Amenity and Lighting

Residents may be concerned about visual impacts associated with the proposal. Concerns will be identified through the consultation process and considered through the environmental assessment. No complaints about lighting or visual amenity were logged by CNA in 2005.

Cumulative Impacts

Some residents may be concerned about the cumulative impacts for the area as a result of the project and in the context of neighbouring operations. The Upper Hunter Cumulative Impact Study will be referenced for this issue.

In previous consultations undertaken when a similar project was canvassed in 2003, there was community concern that the integration of consents may lead to a much larger operation. This concern can be addressed in stakeholder communications.

5.3.2 *Transport And Traffic*

Traffic and transport issues may include:

- Concern that introduction of a rail loop and load out facilities within CNA lands may increase noise to residents of Maison Dieu and Warkworth;
- Concern about dust impacts across the Jerrys Plains Road;

- Increased road closures due to blasting requirements; and
- Concerns that traffic on the Jerrys Plains Road and local road networks may increase as a result of the project.

5.3.3 *Land Acquisition Requirements*

The acquisition of land impacted by mining is a key concern to some local residents. This proposal is unlikely to trigger compulsory acquisition; however this issue may need to be addressed in the context of stakeholder communication.

5.3.4 *Consultation Practices*

CNA has actively developed open communication processes with local residents and seeks to further develop these in the context of the current proposal. In 2003, the HVO Community Consultative Committee (CCC) was formed from SSC, community and CNA representatives. CCC meetings are held quarterly and provide a forum in which information is exchanged and issues raised. CNA consultations will need to be clear about the range of activities being undertaken and the community's role in the decision making process.

5.3.5 *Environmental Management Practices*

CNA have developed an Environmental Management System (EMS) that is certified in accordance with ISO14001. The EMS covers CNA corporate and Hunter Valley mine sites, including HVO. It is designed so that CNA can:

- Efficiently manage its environmental issues;
- Ensure compliance with regulatory requirements;
- Continually improve its environmental performance; and
- Satisfy the expectations of stakeholders and the local community.

The EMS uses environmental policy to feed into planning which in turn feeds into implementation and operation, then measurement and evaluation and finally review and improvement. These then feed back into the environmental policy and each relates back to the ISO14001 standard (international standard for environmental management systems). Procedures provide the minimum requirements for all CNA activities.

6.1 INTRODUCTION

To meet the requirements of the Part 3A legislation for the assessment of environmental impacts associated with Project Applications, CNA and ERM conducted an initial risk assessment workshop to define the areas of greatest risk to the environment arising from the proposal within HVO South.

This workshop was based on a diagnostic tool which allowed project risks to be quantified through facilitating the exploration of each environmental aspect to provide a thorough understanding of the project and the potential risks associated with its activities.

The outputs from the workshop were then analysed to provide a preliminary understanding of the relative significance of the impact on each environmental aspect and the key issues associated with each aspect. This output has been condensed into a table which summarises the following:

- Existing knowledge base;
- Major environmental risks for each aspect;
- Proposed scope of works for the environmental assessment; and
- Justification for the proposed scope of works to be undertaken.

6.2 RISK ASSESSMENT

Initially, *Table 6.1* was prepared to provide key stakeholders (prior to the PFM) with an understanding of the key environmental risks identified for the project and a justification for the scope of works needed to address the issues. The table has now been updated following input received from government agencies during the PFM.

Table 6.1 Project Risk Assessment

Aspect	Sub Topic	Existing Knowledge Base	Identified Environmental Risks associated with the Project	Level of Risk	Proposed Scope of Works for Environmental Assessment	Justification
Noise and vibration	Noise model and field validation	The assessment methodology for noise is well established and has been accepted by DEC and DoP to date. Validation of the noise model has been undertaken in the field for mining in the Cheshunt Pit (previously) and in the South Lemington, Riverview and Riverview South East Pits more recently in 2006.	Obtaining a realistic representation of noise emissions for actual weather conditions.	Low	In addition to standard INP modeling, provide a noise probability distribution chart for selected receivers to better understand received noise levels.	Discussions with DEC and DoP have confirmed and accepted the assessment methodology. Additional field validation will also assist in demonstrating the accuracy of the model for additional areas of the mining operations in HVO South.
	Ongoing mining in HVO South pits	Numerous noise assessments have been completed for existing HVO operations including modeling for all previous environmental assessments, quarterly attended noise monitoring and real time noise monitoring data.	Ongoing mining in South Lemington Pit 1 and Riverview Pit south west and south east into the South Lemington Pit 2 may increase noise and vibration levels at nearby residences in the villages of Warkworth and Maison Dieu.	High	The noise assessment will be undertaken based on DEC's Industrial Noise Policy (INP) and a range of mining scenarios assessed including the anticipated "worst case".	By modeling a range of mining scenarios CNA will be provided with data to allow management of operational activities to minimize potential noise impacts on the surrounding community.
	Modifications to infrastructure including LCPP upgrade	Studies have been undertaken for the original LCPP and the recently approved rail transport for Wambo Mine and for a rail	Rail noise and the increase in production throughput in the LCPP may impact on nearby residents in the villages of Warkworth and	Medium	The noise assessment will include the upgrade to the LCPP and a number of transport options including a rail loop, truck transport and conveyor to determine potential noise impacts in	Undertaking noise assessments for the increased throughput in the LCPP and a range of transport options will assist CNA in choosing the best option which balances operational requirements while

Aspect	Sub Topic	Existing Knowledge Base	Identified Environmental Risks associated with the Project	Level of Risk	Proposed Scope of Works for Environmental Assessment	Justification
	and rail spur	loop in the same proximity as is currently proposed, but no assessments have been undertaken for upgrade of LCPP.	Maison Dieu.		accordance with the INP.	maintaining the noise amenity of the surrounding community.
	Impact Assessment	Current Riverview/Cheshunt mining consent criteria are derived in accordance with the INP. South Lemington consent criteria pre-date the INP.	A single Project Approval may tighten noise criteria based on current consents.	High	Identification and incorporation of all feasible and reasonable noise mitigation. Consolidated criteria will be a combination of the two consents for Riverview/Cheshunt and South Lemington (eg 35dBA+35dBA = 38dBA).	Discussions with DEC have confirmed and accepted the assessment methodology.
	Cumulative noise	Cumulative noise assessments have recently been completed for HVO North operations. In addition, HVO quarterly attended noise monitoring provides data on actual noise emissions which includes the neighboring mines of Wambo and United.	Cumulative noise from ongoing operations inclusive of surrounding mines may adversely affect surrounding residences in the villages of Warkworth and Maison Dieu.	Medium	A full cumulative noise assessment will be undertaken which will take into account the most recent modeling data for surrounding operations as well as assessments for HVO North and HVO South. Results will be compared against recent monitoring data.	A cumulative assessment of the noise generated by the surrounding mines together with HVO South is required to determine potential cumulative impacts to allow management of HVO South operational requirements while minimising potential impacts on the surrounding community.
	Blasting	All blasts within HVO are monitored for blast overpressure and vibration in accordance with DEC recommended ANZECC	Noise and vibration effects from blasting recommencing in South Lemington Pit 1 and continuing in Riverview Pit south west and south east	Low	Blasting impacts will be assessed in accordance with the DEC recommended ANZECC criteria. These criteria are used to assess human annoyance, discomfort and potential	Assessments will identify mining areas that may require additional management of blasting practices to reduce potential blast and vibration impacts.

Aspect	Sub Topic	Existing Knowledge Base	Identified Environmental Risks associated with the Project	Level of Risk	Proposed Scope of Works for Environmental Assessment	Justification
Air Quality		criteria. Detailed studies and predictions have been undertaken for all environmental impact assessments.	into the South Lemington Pit 2 on the Warkworth St Phillips Church and nearby residences in the villages of Warkworth and Maison Dieu.		property impacts from blasting activities.	
	Air quality model and validation	The air quality assessment methodology is a well accepted "in house" methodology that follows DEC's guidelines. The assessment methodology has been utilized for the majority of air quality assessments in the Hunter Valley.	Lack of validation data for additional areas within HVO South mining operations. The existing model over predicts short term PM10 concentrations when compared to monitoring data which may limit operations.	Low	The assessment will be based on the NSW DEC's <i>Guideline on the use of Air Quality Models for Modelling Assessments</i> using the ISCST3 computer-based dispersion model to predict concentration and deposition rates of particulate matter. In addition, a calibration factor based on existing monitoring data for HVO will be developed to ensure that predictions are realistic, but still conservative and applied to the modeling outcomes for 24 hour PM10.	Discussions with DEC and DoP have confirmed and accepted the assessment methodology. Alternatively, if appropriate, the results of a calibration study being undertaken as part of the conditions of consent for the Mt Owen Mine will be used.
	Ongoing mining and modifications to transport activities	Numerous air quality assessments have been completed for existing HVO operations including modeling for all previous environmental assessments in addition to monthly depositional dust and real time air quality monitoring data.	Ongoing mining and modifications to transport activities may adversely impact a number of nearby residences in the villages of Warkworth and Maison Dieu.	Medium	The assessment will cover a range of operational scenarios including realistic scenarios and potential "worst case". The outcomes of the assessments for the realistic scenarios can be validated against current monitoring data.	By modeling a range of mining scenarios CNA will be provided with data to allow management of operational activities to minimize potential air quality impacts on the surrounding community.

Aspect	Sub Topic	Existing Knowledge Base	Identified Environmental Risks associated with the Project	Level of Risk	Proposed Scope of Works for Environmental Assessment	Justification
	Modifications to infrastructure including LCPP upgrade and rail loop	As above	Operation of train load out facilities and operation of the LCPP may increase dust emissions which may impact on nearby residents in the villages of Warkworth and Maison Dieu.	Medium	As above	As above
	Cumulative assessment	Cumulative assessments have been conducted for HVO North. Air quality assessments and monitoring data are available for surrounding mines.	Cumulative dust from ongoing operations inclusive of surrounding mines may adversely affect surrounding residences in the villages of Warkworth and Maison Dieu.	Medium	A cumulative assessment will be undertaken based on the most likely operational scenario and include available information from assessments for surrounding mines. Note - It will be assumed that these neighbouring mines have developed to the extent approved in their conditions of consent.	A cumulative assessment is required to understand the air quality interactions of the project with the air quality impacts from surrounding mines. Note – In some cases neighbouring mine development has not proceeded in accordance with that operation's consent conditions. The cumulative assessment will make use of the best forecast that can be made using published information. The assessment will clearly state the assumptions.
	Greenhouse gas emissions from continuation of mining (Methane release from	Records of energy use as well as volumes of coal produced are maintained by CNA for their HVO operations and reported annually in the Rio Tinto Sustainability Report.	Increased focus on identification and implementation of programmes to assist with the reduction of greenhouse gas emissions.	Low	Greenhouse gas emissions for the proposal will be calculated and provided as part of the assessment. The report will contain a description of energy efficiency projects implemented by CNA to reduce overall emissions.	No criteria for greenhouse gas emissions on an operational basis currently exist. Current and proposed emissions from HVO operations will be calculated and presented in the report.

Aspect	Sub Topic	Existing Knowledge Base	Identified Environmental Risks associated with the Project	Level of Risk	Proposed Scope of Works for Environmental Assessment	Justification
Ground water	coal seams and energy use)					
	Groundwater modeling methodology	Groundwater modeling has occurred for the previously consented operations. The assessment methodology has been accepted by DoP and DNR. Piezometer construction data and groundwater monitoring data is being collected to contribute to the model development, although data availability to date has been more limited than originally anticipated.	There is a need to determine the cumulative impacts of the proposal taking into account, where possible, impacts from surrounding operations. Key areas of concern identified in conjunction with DNR include alluvial groundwater resources, deep extraction at Cheshunt, and implications of final void and tailings dam placement. Recent feedback from DNR suggests that long-term validation of model predictions may be required prior to consenting to adjustments for the alluvial buffer zone.	Medium	A numerical groundwater model (FEFLOW) which splits HVO South into two entities – South Lemington and Riverview/Cheshunt will be constructed and calibrated against existing data. The progression of mining will be simulated over multiple time steps to assess the influence of mining on the local and regional groundwater quality and quantity throughout mining and in the long-term after mine closure. The model and outputs will be peer reviewed. Note that additional field investigation may be required as an approval condition to justify potential adjustments to the alluvial buffer zone.	Modeling techniques have improved and become more detailed since initial modeling was undertaken for individual pits within HVO South. It is proposed to produce two models designed to effectively represent available site data and robustly capture the potential impacts of mining to greater depths in the Cheshunt Pit and other ongoing mining activities. Note that whilst FEFLOW is designed to better simulate the hydrogeologic stresses imposed by mine dewatering than previous modeling codes, indication from DNR is that future validation of modeling predictions would be required prior to consenting to adjustments to the alluvial mining set back.
	Local and regional aquifer impacts	Data from installation of numerous exploration and monitoring bores, validation of previous modeling	Ongoing mining operations and access to deeper coal seams in the Cheshunt Pit may result in increased local	Medium	The model described above will simulate the progression of mining over multiple time steps to assess the influence of mining on the local and	The proposed modeling approach will assess the potential impacts from mining including the removal of the saline coal measures, the construction of

Aspect	Sub Topic	Existing Knowledge Base	Identified Environmental Risks associated with the Project	Level of Risk	Proposed Scope of Works for Environmental Assessment	Justification
		predictions and regular groundwater monitoring data collection and trend analysis.	and regional aquifer drawdown or depressurisation leading to a loss to local groundwater users and or groundwater dependent ecosystems.		regional groundwater quality and quantity throughout mining and in the long-term after mine closure. The model and outputs will be peer reviewed.	overburden landforms and the impacts of the final voids.
	Groundwater impacts on riparian vegetation and groundwater dependent ecosystems.	As above	Mining in the vicinity of the Hunter River and Wollombi Brook may impact the alluvium and riparian vegetation. Mining in other areas may cause draw down and may impact on groundwater dependent ecosystems.	Medium	Numerical modeling as described above will be undertaken to determine the potential extent of groundwater impacts and assign appropriate buffer distances from water courses as well as provide mitigation measures to negate or reduce impacts to groundwater dependent ecosystems.	The proposed modeling approach will define the potential extent of impacts of mining on the alluvium, local water courses and groundwater dependent ecosystems.
	Final void/ tailings facilities	Groundwater assessments previously undertaken for HVO operations. Geotechnical assessments of tailings facilities.	The location of final voids and their potential use as tailings facilities may adversely affect local and regional groundwater quality and quantity.	Medium	The location of final voids and their use as tailings facilities will be assessed within the numerical model to determine the extent of impacts on groundwater quality and quantity.	Groundwater modeling for the assessment of final voids and their use as tailings facilities is required to enable CNA to choose an option which balances operational requirements with maintaining groundwater resources to an appropriate level.
Surface Water	Surface water model	Surface water modeling has occurred for the previously consented operations. The assessment methodology has been accepted by DoP	There is a need to determine the cumulative impacts of the proposal and the final constructed landform on the surrounding natural landform	Low	The need for broader hydrological model will be assessed for the entire lease area. If required, output from this model will be compared against previous studies and model outputs as	A refined hydrological model, if required, would provide an adequate assessment of surface water movements based on final landform and vegetation cover.

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		and DNR. Surface water monitoring data has been collected to contribute to the model validation.	and on surface water flows and quality.		well as recorded flow data and discrepancies would be noted. Output would then be available for the development of an expanded and updated version of the mine water balance model(s). Potential impacts of proposed (staged) changes to the surface drainage network would also be assessed over the expected life of the mine(s).	
	Upstream flooding due to mine levee construction	Assessments on levee construction requirements and potential upstream flooding impacts in the Hunter River and Wollombi Brook, have been previously assessed in EIS documents for South Lemington and HVO South.	Levees required to protect mine workings adjacent to the Hunter River and Wollombi Brook may increase upstream flooding from these water courses.	Low	A desktop review will be undertaken to confirm the location of potential flood affected land, the validity of flood information and existing flood models. However no hydraulic modeling will be undertaken for the proposed project.	The ongoing mining will not require the construction of new levees or other structures which may impact upon the hydraulic characteristics of the Hunter River or Wollombi Brook. A review of existing data and reports will be sufficient to describe the potential for flooding as a result of the existing and proposed operation.
	Changes to surface water drainage	Existing topography, mine plans including MOPs and previous surface water assessments.	Proposed mining operations will cause existing drainage lines to be disrupted, reducing flows to the Hunter River and Wollombi Brook as well as potential for dirty water from mine workings to be discharged to natural creek lines.	Low	Changes to surface water drainage resulting from ongoing mining operations will be assessed. Requirements for new drainage systems would then be identified and options for new piped drainage, channels, erosion control, pollution/spill containment and treatment and management of runoff quality will be	A review of the previous hydrological model and new drainage systems will provide an adequate assessment of the likely impacts the proposal will have on existing drainage lines and will assist in the development of a management plan to mitigate the identified impacts.

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	Water balance	HVO water management plan, monitoring data and previous assessments.	Ongoing mining, the increase in throughput in the LCPP and inefficient operational use of water may lead to an increase in the volume of water extracted from the Hunter River under license.	Low	proposed. A water balance, based on additional metering, will be assessed for the site to adapt an integrated approach to water management across the site. A water management plan will be developed based on two scenarios, one including the increase in throughput in the LCPP which will use significant quantities of water.	A water balance is required to comply with internal Rio Tinto requirements for the operation of HVO. It will be used by the operation to understand the risk of water shortages and the potential for overflows into the Hunter River.
	Water quality	Water quality monitoring around HVO South and previous assessments.	Ongoing mining may result in mine affected water being discharged to local drainage lines and waterways.	Low	Initial water quality testing will be undertaken to determine background levels in the extension areas and an ongoing water monitoring plan will be developed as part of an integrated water management plan.	The proposed level of assessment will provide CNA with sufficient information to develop a water management plan to reduce potential impacts to water quality as a result of the proposed extension by identifying and managing potential sources of water pollution.
Ecology	Threatened flora and fauna species	Ecological survey of HVO South undertaken in 2004 plus surveys undertaken to obtain consents for Cheshunt, Riverview and Lemington pits. <i>Figure 6.1</i> shows areas that have been surveyed additional to those surveyed for previous EISs, while <i>Figure 3.1</i> shows	The proposed extension and integration of HVO South may impact on the habitat of threatened flora and fauna species through clearing and other disturbance processes such as reduced groundwater levels and diversion of creeklines. Threatened fauna species	Low	A desktop assessment and literature review will be undertaken of the many flora and fauna surveys undertaken in and around HVO. A gap analysis will be completed and field survey with an appropriate level of detail will be undertaken for areas which have not been surveyed or require additional survey. In addition, the results of the groundwater modeling process will be	The approach is based on the extensive knowledge base in place from previous assessments of HVO South, much of which has already been assessed and consented for clearing (Refer <i>Figure 3.1</i>). While it is acknowledged that species may have moved into these areas since previous field assessments, it is considered that the level of survey proposed will provide sufficient

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		areas for which consent has already been obtained.	include the Squirrel Glider, Grey-crowned Babbler and Speckled Warbler. Threatened flora include the threatened population <i>Eucalyptus camaldulensis</i> (River Red Gum) in the Hunter Catchment.		incorporated into the report to assess potential impacts to groundwater dependent ecosystems such as the River Red Gums.	information on which to base an impact assessment and develop mitigation measures for inclusion in a Statement of Commitments.
	Endangered ecological communities	As above	The proposed extension and integration of HVO South may impact on endangered ecological communities including Warkworth Sands Woodland and Hunter Lowland Redgum Forest through clearing and other disturbance processes.	Low	As above	As above
Aboriginal Heritage	Aboriginal Relations	Detailed communication programmes in progress.	Sensitive relationships with Aboriginal groups.	High	Ensure ongoing communication with Aboriginal groups.	Will maintain or improve current relationships.
	Aboriginal Archaeological Assessment – Survey/Salvage (methodology)	Standard and accepted protocols used for Aboriginal archaeological assessments and salvage.	DoP, Aboriginal Groups or DEC may reject proposed methodology.	Low	Assessment will focus on areas of continued mining but will capture areas previously assessed.	Sites that may be required to be destroyed will be captured.
	Aboriginal	Numerous surveys and	Significant Aboriginal sites	Medium	A cultural heritage management plan	The salvage work may not be required

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Historical Heritage	Archaeological Assessment – Survey/Salvage (completion)	assessments conducted pre 2002. Surveys conducted by reputable consultants in accordance with accepted criteria at the time and supported by Aboriginal groups.	identified. When undertaking additional survey work previous sites may be missed or further artifacts are discovered.		will be prepared and will ensure that the survey and salvage are conducted by reputable consultants and interested Aboriginal groups. Identification of previously identified sites and inclusion in new survey and salvage.	until after the project is approved. The cultural heritage management plan will ensure that the proposed protocols are endorsed by the relevant bodies.
	Current sites	Assessments completed before 2000.	When undertaking additional survey work previous sites are missed or further sites are discovered.	Low	Identification of previously identified sites and inclusion in new survey.	By including these sites any additional issues are identified.
	European Archaeological Assessment – Survey/Salvage (methodology)	Standard and accepted protocols used for European archaeological assessments and salvage.	DoP, DEC (NSW Heritage) may reject proposed methodology.	Low	Assessment will focus on areas of continued mining but will capture areas previously assessed.	Sites that may be required to be destroyed will be captured.
	European Archaeological Assessment – Survey/Salvage (completion)	Numerous surveys have been conducted by reputable consultants in accordance with accepted criteria at the time and supported by NSW Heritage.	Significant European heritage sites identified.	Low	Identification of previously identified sites and inclusion in new survey.	By including these sites any additional issues are identified.
Traffic and transport	Road transport of coal	Previous assessments for Hunter Valley South No. 1.	Dust generation on roads and disruption to traffic on the Jerrys Plains Road.	Low	A preliminary assessment is proposed to define the likely level of impact. Should this option be adopted for the	The transport of coal from the LCPP to the MTCL is already consented and is unlikely to be exceeded by the proposal;

Aspect	Sub Topic	Existing Knowledge Base	Identified Environmental Risks associated with the Project	Level of Risk	Proposed Scope of Works for Environmental Assessment	Justification
					project, a traffic assessment which describes the current external road and rail networks and the likely impact of the proposal on these networks will be undertaken. No detailed traffic modeling is proposed. The noise assessment will also assess noise generated by road transport.	as such the level of traffic assessment proposed is considered to be appropriate to identify mitigation measures for inclusion in the Statement of Commitments for the project.
	Rail/road transport of coal to Wambo rail spur	Previous assessment for Lemington rail loop.	Noise generation and disruption to traffic on the Jerrys Plains Road when crossing the highway to access Wambo Rail spur.	Medium	A preliminary assessment is proposed for this option to define the likely level of impact. Should this option be included in the project, a traffic assessment which describes current external road and rail networks and the likely impact of the proposal on these networks will be undertaken. No detailed traffic modeling is proposed. The noise assessment will also assess noise generated by the rail spur under the INP.	The level of assessment will reflect the level of the potential impact to the road network resulting from the preferred option.
	Relocation of Comleroi Road	None	Temporary disruption to users of Comleroi Road.	Low	The proposed assessment will include a description of the existing and proposed diversion of Comleroi Road and an assessment of the potential impacts associated with the relocation of the road. This will include an analysis of the new intersection (traffic flows etc).	This level of assessment is considered to be appropriate as the impacts associated with the relocation of Comleroi Road can be managed to limit inconvenience to Comleroi Road users (one property owner and one property lessee). CNA will commit to maintaining access to those users throughout the relocation.

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	Road closures due to blasting	Previous assessments, recognized and approved road closure practices	Temporary disruption to users of the Jerrys Plains Road.	Low	Impacts associated with temporary road closures due to blasting will be included in the assessment. No detailed traffic modeling is proposed.	Road closures along the Jerrys Plains Road due to blasting are common practice. This level of assessment is considered to be appropriate as CNA has developed procedures which are approved by Singleton Council and RTA for the closure of roads due to blasting.
	Operation of LCPP	Previous assessments for Lemington Mine	Increased traffic on Jerrys Plains Road as a result of the operation and upgrade of the LCPP.	Low	The likely impacts of additional traffic movements on the Jerrys Plains Road resulting from additional employees during the construction phase at the LCPP, will be assessed and mitigation measures developed.	This level of assessment is considered to be appropriate as the LCPP is consented to operate and traffic impacts from employee use of Jerrys Plains Road have already been assessed and consented. In addition, employee numbers are not expected to be increased as a result of the operation of the upgraded LCPP.
Land Use	Land use, soil capability and soil type; rehabilitation and closure	Previous assessments	Potential loss of high quality (Class II) agricultural lands, soil erosion and inappropriate rehabilitation and final landforms.	Low	Review previous land resource surveys of HVO South; describe the study areas' landform; describe the soil, land capability and agricultural suitability; describe the study areas' pre-mining land capability and agricultural suitability; map soil types within the study area; describe the physical and chemical characteristics of soil types in the study area; identify any potentially adverse soil materials; comment on the	The level of assessment is considered to be appropriate to identify potential impacts and develop mitigation measures and rehabilitation plans including final landforms which will be consistent with the existing landscape. In addition, CNA has land management plans and procedures in place and in use.

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					suitability of topsoils for use as topdressing material and recommend appropriate soil amelioration measures for stabilising soils; provide recommendations for stockpile handling methods, post mining land capability and guidelines for post mining landform configuration.	
Landscape Management and Restoration	Mine Rehabilitation	A Mine Life Plan has recently been developed for HVO. In addition, MOPs are currently implemented at Riverview and Cheshunt Pits. The Hunter Valley synoptic plan and previous ERM ecological assessments will also be referenced.	Unsatisfactory landscape management concept.	Low	The environmental assessment will contain a chapter that details the conceptual landscape management for HVO South comprising rehabilitation, green offsets, ecological corridors, final voids and final landform.	The proposal provides a significant opportunity to further promote a holistic approach to land management within HVO South. This will be reported in the EA.
Visual	Users of the Jerrys Plains Road and surrounding residents	Existing assessments.	Ongoing visual impacts as Riverview Pit approaches the Jerrys Plains Road.	Low	The assessment will include a description of the local and regional visual setting, establish potential view points to the proposed project and consented operations and describe the potential impacts to visual amenity. It is not proposed to prepare photo montages.	This level of assessment is considered to be appropriate as the visual landscape in this area is dominated by mining and mining associated operations.

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Socio-economic considerations	Economic benefits to local and regional communities and government from the project; potential impacts to amenity; and social benefits from mining	Existing assessments.	Socio-economic impacts associated with loss of amenity as a result of mining.	Low	Document the relationship between mining and the socio-economic status of the community; assess potential social and economic impacts associated with the project; and provide management measures.	The proposed overview of potential socio-economic impacts is considered to be appropriate as the socio-economic impacts of mining on the Hunter Valley are well understood and this project is an extension to an existing mine rather than a new mine.

Note – Risk weightings are based on the activity taking place with no management measures in place.

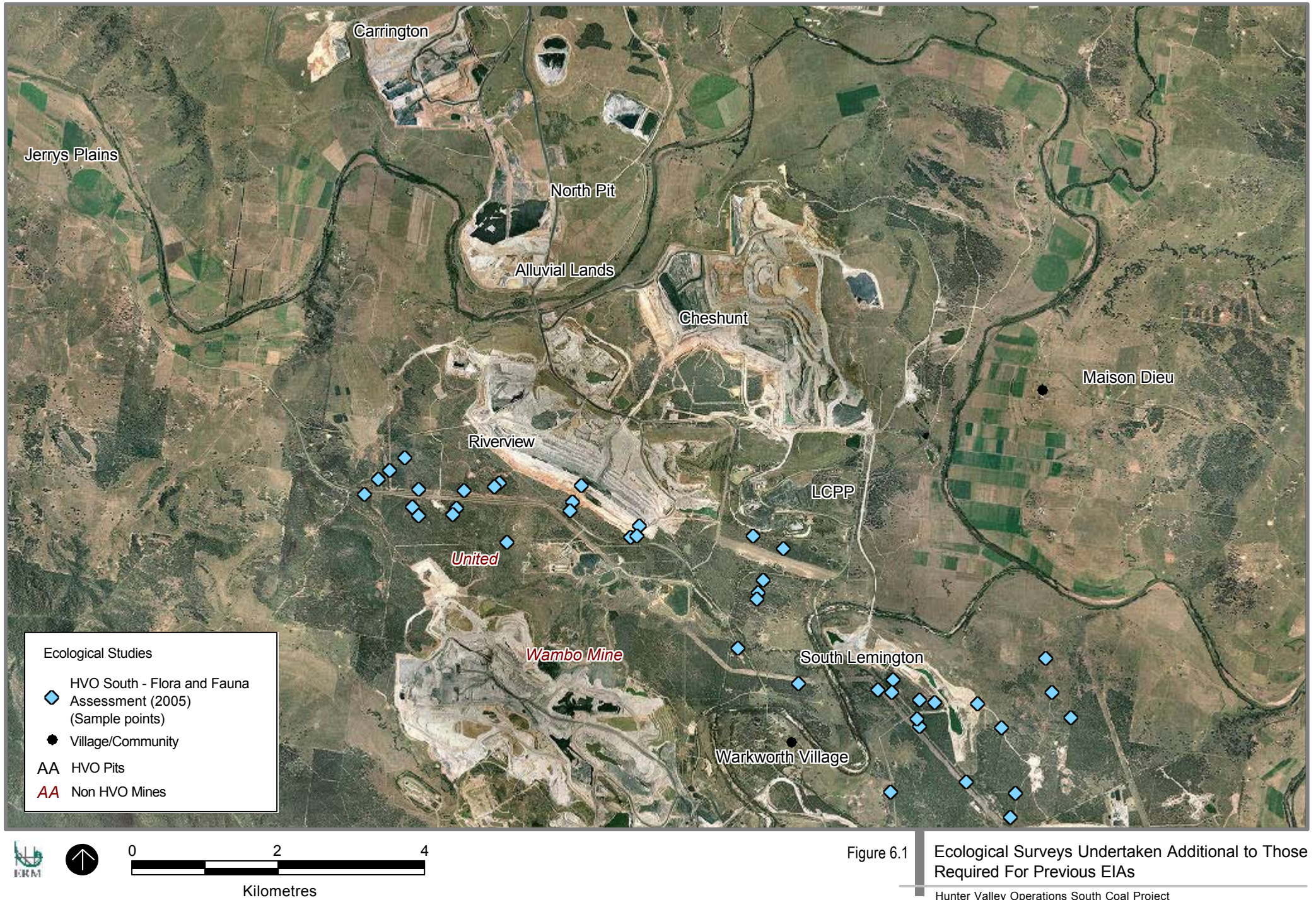


Figure 6.1

Ecological Surveys Undertaken Additional to Those Required For Previous EIAs

Hunter Valley Operations South Coal Project

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