Port Waratah Coal Services

Preliminary Environmental Assessment Kooragang Coal Terminal – Proposed Increase to Capacity Throughput

July 2006

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Environmental Consultants

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1.0 INTRODUCTION

Port Waratah Coal Services Limited (PWCS) owns and operates the Carrington and Kooragang Coal Terminals in the Port of Newcastle in New South Wales (NSW) (refer to **Figure 1.1**). These terminals receive, assemble and load Hunter Valley coal onto ships for export to customers around the world. To meet the increasing demand for Hunter coal, PWCS has implemented a continuous expansion program that has seen total throughput capacity for the two terminals increase from 46 million tonnes per annum (Mtpa) in 1996 to the present 89 Mtpa capacity.

Expansion works at the Kooragang Coal Terminal (KCT) are being progressed in accordance with the Stage 3 Expansion development consent (DA No 35/96) issued by the Minister for Urban Affairs and Planning in November 1996. This development consent provided for two additional stockpile pads (referred to as Pad C and Pad D), a third shipping berth and ship loader (referred to as K6 wharf), a third rail coal receival station and a fourth shipping berth (K7 wharf) (refer to **Figure 1.2**). It was envisaged at that time that these works would enable KCT capacity to increase from approximately 44 Mtpa to a nominal 77 Mtpa. Since 1996, PWCS has established the third rail coal receival station; the K6 wharf and shiploader; and the eastern half of the approved stockpile Pad C, the associated reclaimer and interconnecting conveyors. Works are currently underway to construct the eastern half of the approved stockpile Pad D and the associated stacker and interconnecting conveyors.

During the Stage 3 Expansion works, technological change and efficiency demands has led PWCS to look at ways to further optimise its operations. PWCS has identified ways to increase its productivity by upgrading plant and equipment using demonstrated technology. Optimisation design indicates that the approved KCT facilities have the capacity for throughput to increase from 77 Mtpa to a nominal 120 Mtpa. This can be achieved essentially by operational efficiencies and the implementation of a range of conveyor and drive changes both for approved plant and equipment yet to be constructed and retrofitting of existing plant and equipment with upgraded components. All of these capacity improvement initiatives are located internally within the major approved coal terminal facilities and will not cause any alteration to the existing approved footprint or external appearance of the approved KCT facility. However, because the proposed coal handling capacity is above the nominal capacity approved as part of the Stage 3 Expansion development consent, PWCS requires further approval under the *Environmental Planning & Assessment Act 1979* (EP&A Act) to enable KCT to operate at a nominal capacity of 120 Mtpa.

PWCS has consulted with the Department of Planning (DoP) in regard to this proposal and confirmed that the proposal is characterised as a Major Project, under Part 3A of the EP&A Act. Consequently, the Minister for Planning is the consent authority for this proposal. This Preliminary Environmental Assessment (PEA) has been prepared by Umwelt (Australia) Pty Limited on behalf of PWCS to accompany the Project Application to DoP. Following consideration of the PEA and consultation with relevant government agencies, DoP will provide Director-General's requirements for preparation of the Environmental Assessment (EA). Once completed, the EA will be provided to DoP for adequacy review, prior to being placed on public exhibition.

This document provides a brief outline of the existing, approved and proposed development; an overview of the community and environment context; an environmental risk analysis; and identifies key issues proposed to be addressed in the EA for the capacity throughput increase.

2.0 PROJECT DESCRIPTION

2.1 EXISTING AND APPROVED OPERATIONS

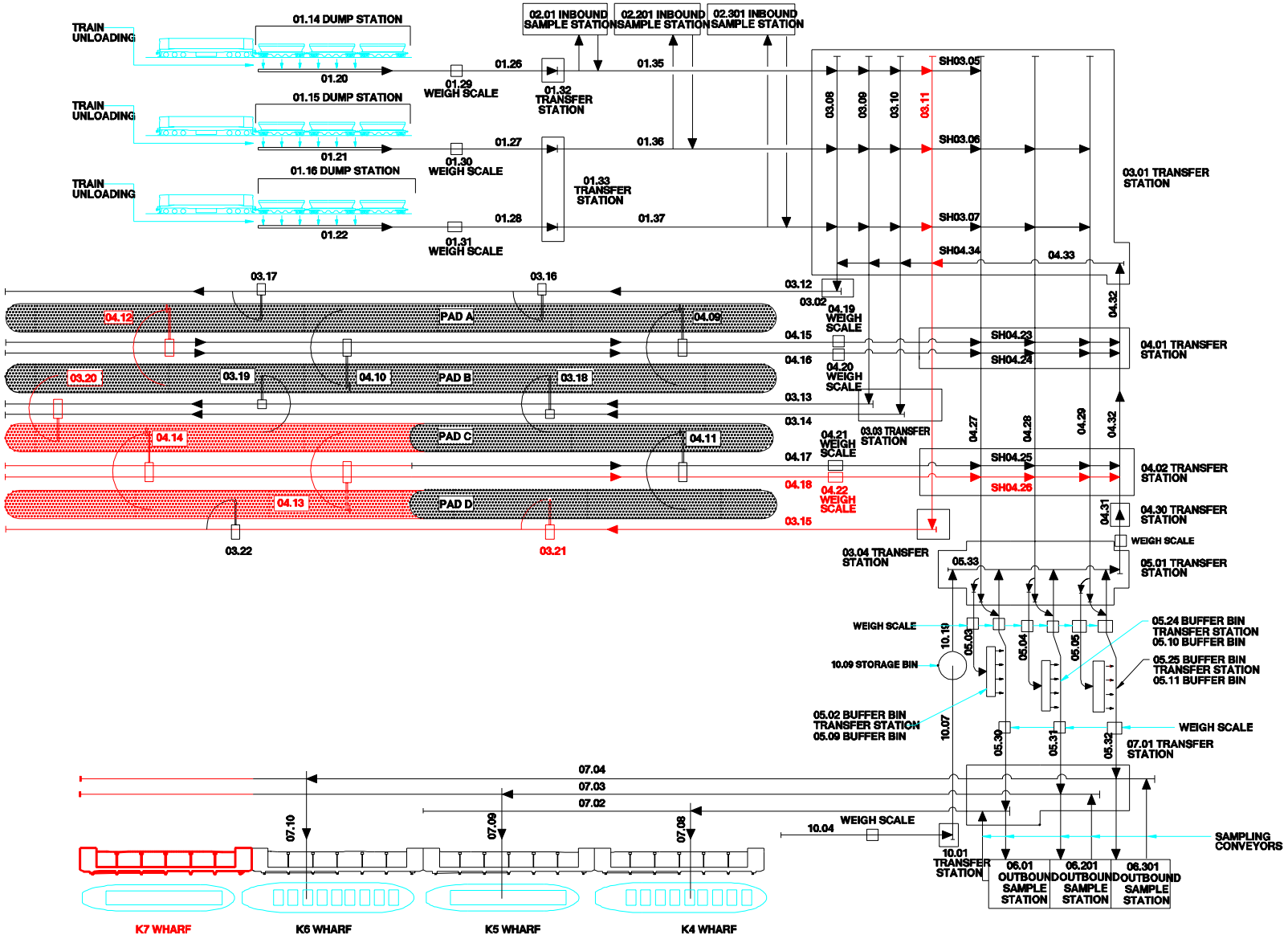
PWCS receives, stockpiles, blends and loads coal onto ships for export. It serves in the order of 20 coal producers who operate mines in the Hunter Valley, Gunnedah and Ulan regions. During the year ending 2005, PWCS handled 60.4 million tonnes of coal through the KCT facility. Road transport of coal to KCT ceased in 1999 and all coal is now delivered to the terminal by rail.

Legend

Kooragang Coal Terminal

FIGURE 1.1

Location of Kooragang Coal Terminal



	CONV. No.	WIDTH mm.	SPEED m/s	DESIGN CAPACITY t/h	REMARKS
STAGE 1	01.20	3200	1.5	6600	TRAIN UNLOADING
	01.26	2000	5.0	6600	TRAIN UNLOADING
	01.35	2000	5.0	6600	STACKING
	03.08	2000	5.2	6600	STACKING
	03.09	2000	5.2	6600	STACKING
	03.12	2000	5.2	6600	STACKING
	03.13	2000	5.2	6600	STACKING
	04.15	2200	5.0	8000	RECLAIMING
	04.27	2200	5.0	8000	CONV. DIRECT TO SHIP
	04.31	1400	4.3	2500	RETURN
	04.32	2000	5.0	6600	RECIRCULATION
	04.33	2000	5.0	6600	RECIRCULATION
	05.03	2200	5.2	8000	BUFFER BIN CONV.
	05.30	2500	5.0	10500/3500	SHIPLOADING AND RETURNS
	05.33	1400	4.1	2500	RETURN CONVEYOR
	07.02	2500	5.0	10500	SHIPLOADING
SHIP RECEIVAL	10.04	1400	5.0	3000	SHIP RECEIVAL
	10.07	1400	5.0	3000	SHIP RECEIVAL
	10.19	1400	5.5	3500	SHIP RECEIVAL
	05.33	1400	5.5	3500	EXTENSIONS & UPGRADE
	04.31	2000	5.5	3500	SPEED INCREASED
STAGE 2A	04.16	2200	5.05	8000	RECLAIMING
	07.02	2500	5.05	10500	315m EXTENSION
	03.12	2000	5.2	6600	STACKING EXTENSION
	03.13	2000	5.2	6600	STACKING EXTENSION
	04.15	2200	5.05	8000	RECLAIM EXTENSION
	04.16	2200	5.05	8000	RECLAIM EXTENSION
STAGE 2B	01.21	3200	1.5 MAX	8000	TRAIN UNLOADING, SPEED VARIABLE
	01.27	2000	5.05	8000	TRAIN UNLOADING
	01.36	2000	5.05	8000	TRAIN UNLOADING
STAGE 2C	04.28	2200	5.0	8000	CONV. DIRECT TO SHIP
	05.04	2200	5.2	8000	BUFFER BIN CONV.
	05.31	2500	5.2	10500/3500	SHIPLOADING AND RETURNS
	05.33	1400	5.5	3500	RETURN CONVEYOR
	07.03	2500	5.0	10500	SHIPLOADING
STAGE 3A	07.03	2500	5.05	10500	336m EXTENSION
STAGE 3 - (STEPS 1 TO 4)	01.22	3200	1.5 MAX	8000	TRAIN UNLOADING, SPEED VARIABLE
	01.28	2000	5.2	8000	TRAIN UNLOADING
	01.37	2000	5.2	8000	TRAIN UNLOADING
	03.10	2000	5.2	6600	STACKING
	03.14	2000	5.2	6600	STACKING
	04.17	2200	5.2	8000	RECLAIMING
	04.29	2200	5.2	8000	CONV. DIRECT TO SHIP
	05.05	2200	5.2	8000	BUFFER BIN CONV.
	05.32	2500	5.2	10500/3500	SHIPLOADING
	07.04	2500	5.2	10500	SHIPLOADING
STAGE 3	03.11	2000	5.2	6600	STACKING
	03.15	2000	5.2	6600	STACKING
	04.17	2200	5.2	8000	RECLAIMING EXTENSION
	04.18	2200	5.2	8000	RECLAIMING
	07.03	2500	5.0	10500	SHIPLOADING EXTENSION
	07.04	2500	5.2	10500	SHIPLOADING EXTENSION

Source: PWCS, ref no.:KSK 01734/A

Legend

- Existing (or under construction) Facility
- Stage 3 Expansion - Approved 1997 (Not yet Constructed)
- Stockyard Reclaimers
- Stockyard Stackers

FIGURE 1.2

Schematic of Existing & Approved Kooragang Coal Terminal Operations

The layout of current and approved operations is shown in **Figure 1.2**. On arrival at the terminal, coal is discharged within the enclosed rail receival station and transferred by conveyors to the stockpile areas, referred to as the stockyard. Coal can also be conveyed directly from the receival station to the ship loading facility; however, this is only as a contingency for late coal arrivals. All in-bound coal is sampled for quality checks as it leaves the rail receival station.

As noted in **Section 1.0**, stockpile Pads A and B and half of stockpile Pad C, are established and used during current operations. The eastern half of stockpile Pad D is currently being constructed. The full extent of stockpile Pads C and D are approved for construction within the footprint shown on **Figure 1.2**. These remaining approved stockpile areas are planned to be established and operational progressively to meet the future demands of the export coal industry. In the stockyard, rail mounted luffing/slewing "stackers" place coal in pre-designated pad areas. Different types of coal are stacked into separate stockpiles. Cargo assembly is planned to maximise port throughput with cargoes being assembled in three to four days. The total existing working stockpile capacity is 1.6 million tonnes (Mt) and this will increase to a nominal 3 Mt when all stockpiles are operational.

Coal is retrieved from the stockyard by rail mounted "bucket-wheel reclaimers". It is then either conveyed directly to the ship loading facility or recirculated within the stockyard for blending. The terminal currently handles over 80 different coal types.

Coal is loaded onto ships at the berths by shiploaders. The existing facility has three shiploaders and three berths. Each shiploader, and its associated system of conveyors, buffer bins and transfer stations, is referred to as a shiploading stream. Buffer bins allow continuous coal reclaiming and transfer during the changing of ship hatches by the shiploader. As noted in **Section 1.0**, PWCS has approval to construct a fourth shipping berth (K7). The current shiploaders for the third shipping berth (K6) will also service K7 when constructed, allowing for a higher utilisation of the shiploader system during the period in which ships are being prepared for loading and dispatch.

All out-bound coal is sampled for quality prior to shiploading. The average time to load and dispatch a ship is less than two days.

2.2 NEED FOR THE PROJECT

This proposal seeks to accommodate the anticipated growth in demand for Hunter Valley coal internationally. Customers have provided PWCS with binding forecast commitments for future coal shipments which exceed the current combined capacity of 102 Mtpa for both PWCS Carrington and Kooragang Terminals. The latent capacity in the approved KCT plant and equipment can be realised by increasing the approved throughput capacity from 77 Mtpa to a nominal 120 Mtpa

At a national level, constraints in coal transport and handling infrastructure in New South Wales and Queensland in recent years have limited, to some extent, Australia's ability to respond to strong growth in world thermal coal demand (ABARE 2006). Over the past year, significant investment has been proposed to provide expansions in transport and handling infrastructure, which is expected to result in a significant increase in thermal coal exports in the next few years.

The Australian Rail Track Corporation (ARTC) is currently implementing an infrastructure upgrade strategy of the Hunter Rail network in order to meet projected future growth in coal production. The Hunter Rail network currently transports coal from the Gunnedah, Hunter, and Western Coal fields.

With the anticipated further development of coalfields in the Hunter Valley and Gunnedah basin there will be a significant increase in the production of coal. This extra supply of coal will increase the need for coal handling and export services in the Port of Newcastle.

2.3 THE PROJECT

The current approval for Stage 3 Expansion of the Kooragang Terminal has a nominal capacity throughput of 77 Mtpa. The proposal is to increase the approved capacity throughput to a nominal 120 Mtpa.

The proposed increase in capacity does not require any change to the size of the approved footprint or operational area or additional plant and equipment. The increase in capacity will be achieved by the following operational improvements:

1. An increase in the capacity of the three receival and stacking streams.

2. An increase in the capacity of the coal reclaim system.

3. An increase in the capacity of the ship loading system.

   Increased capacities will be achieved by:

   - installing new low noise drives of higher power and increased speed;
   - increasing the coal profile on the belt;
   - changing to higher capacity chutes and introducing soft flow design for more efficient movement of the coal.

4. Upgrade works on services including power supply and control systems.

Throughout the last 10 years of implementing the Stage 3 expansion, PWCS has consistently developed and implemented new approaches and technologies to improve operational capacities and to ensure the safety and health of its workforce. PWCS remains conscious of its obligations to its neighbouring communities and the environment in which it operates. While the upgrade is operationally significant, with streamlining of systems and the use of new available technology the projected impact on surrounding communities and the local environment can be demonstrated to be minimal, as discussed in **Section 4.0**. Key features of the proposed capacity throughput expansion that need to be borne in mind when considering potential impacts are provided below.

The project will:

1. not involve any change to the approved footprint or approved facilities of KCT. All works involved in achieving the capacity increase are either optimised design for currently approved drives and conveyors or retrofitting these with higher capacity components;

2. maintain current internal road traffic movements as all coal will be moved by conveyors;

3. continue to progressively replace existing conveyor components with significantly quieter units (as part of the ongoing maintenance activities), so reducing operating noise. Similarly, new conveyors installed as part of construction of the approved Stage 3 works will be this new, quieter technology (refer to **Section 4.3.1**);

4. install improved belt cleaning systems to remove greater quantities of coal and reduce the potential for carryback dust (refer to **Section 4.3.2**);

5. introduce soft flow chutes to eliminate coal boiling typical of traditional chutes and so reduce dust at transfer points (refer to **Section 4.3.2**);

6. continue to enclose coal transfer chutes within Transfer Houses;

7. continue to receive rail deliveries in enclosed buildings and minimise unloading dust by minimising drop heights into receival bins;

8. continue to control the dust from the stockpiled coal by ensuring the surface of stockpiles are kept at an appropriate moisture level by the stockpile yard spray system, controlled automatically from an on-site weather station;

9. continue to limit stacker drop heights to minimise the 'drop zone' of the coal, thereby controlling dust. Automated stacker/reclaimers are used which assists with minimising this 'drop zone' and also provides for greater operational efficiency.

Implementing the capacity throughput increase will not require mobilisation of a major construction workforce. The work will be completed in small steps by small teams to suit equipment availability and the anticipated coal demand. The capacity throughput increase does not require any change to the operational workforce and the facility will continue to operate 24 hours a day, 365 days of the year.

3.0 PLANNING CONSIDERATIONS AND CONSULTATION

3.1 PLANNING CONSIDERATIONS

As noted in **Section 1.1**, the project requires approval under Part 3A of the EP&A Act as it is of a class of development listed in Schedule 1 of the State Environmental Planning Policy (SEPP) (Major Projects) 2005.

The KCT site is zoned Port and Industrial 4(b) under Newcastle Local Environmental Plan 2003 (LEP). The primary objective of this zoning is:

> 'To accommodate port, industrial and maritime industrial and bulk storage facilities, which by their nature or scale of their operations require separation from residential areas and other sensitive land uses.'

The proposed capacity expansion of the terminal is consistent with the objectives of the LEP and is permissible with development consent.

If the Project is granted project approval under Part 3A of the EP&A Act, subsequent approval is not required under the *Fisheries Management Act 1994*, *Heritage Act 1977*, *National Parks and Wildlife Act 1974* and *Water Management Act 2000*. Irrespective of this provision, these approvals would not have been relevant for this project as there is not a proposed change to the currently approved footprint of KCT or the approved water management system.

In addition to approval under Part 3A of the EP&A Act, there are other Commonwealth and State legislation and policies that are potentially relevant to this project. These are listed in **Table 3.1** together with an indication as to whether any further assessment or approval is likely to be required under such legislation.

Table 3.1 – Other Potentially Relevant Acts and State Planning Policies

Planning Provision	Comments	Relevant Licences/ Approvals/Assessments
Commonwealth Legislation		
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	KCT is located adjacent to a RAMSAR wetland (Kooragang Nature Reserve) and a number of migratory and threatened species listed in the EPBC Act are known to occur in the area. The proposed development does not involve any change to the approved footprint, external character, or water management system for KCT. Predicted off-site impacts (noise and dust) are also expected to be consistent with, or lower than, existing approved levels. On this basis, it is anticipated that the proposed development will not have a significant impact on the wetland or listed species, and therefore will not need to be assessed as 'controlled action' under the EPBC Act.	A Preliminary Referral will be made to the Department of Environment and Heritage to confirm that approval of the Commonwealth Minister for Environment is not required.
NSW Legislation – State Environmental Planning Policies		
State Environmental Planning Policy 11 (SEPP 11)	*SEPP 11* requires that the Roads and Traffic Authority (RTA) is made aware of and given the opportunity to make representations in respect of, developments listed in Schedule 1 of the SEPP.	The Project does not propose to increase the land or gross floor area of buildings utilised for the handling, storage and transport of coal by more than 8,000 square metres. As such the provisions of SEPP 11 are not applicable to the Project.
State Environmental Planning Policy 33 (SEPP 33)	*SEPP. 33* requires the consent authority to consider whether an industrial proposal is a potentially hazardous industry or a potentially offensive industry. A hazard assessment is completed for potentially hazardous development to assist the consent authority to determine acceptability.	The existing PWCS operation is not considered as hazardous or offensive and as this project is essentially only a throughput expansion of an existing land use; a hazard assessment is not considered necessary.
State Environmental Planning Policy 44 (SEPP 44)	*SEPP 44* restricts granting development consent for proposals on land identified as core koala habitat without preparation of a plan of management. There is no clearing required for this development and no off-site impacts on koala habitat; therefore this SEPP does not apply.	Not applicable.
State Environmental Planning Policy (Major Projects)	As discussed above, this project is of a class of development listed in the SEPP. The project therefore requires approval under Part 3A of the EP&A Act and the Minister for Planning will be the consent authority.	Assessment under Part 3A of the EP&A Act.

Table 3.1 – Other Potentially Relevant Acts and State Planning Policies (cont)

Planning Provision	Comments	Relevant Licences/ Approvals/Assessments
NSW Legislation – Acts		
Protection of the Environment Operations Act 1997 (POEO Act)	The PoEO Act is administered by the Department of Environment and Conservation and requires licences for environmental protection including waste, air, water and noise pollution control.	PWCS currently holds an Environment Protection Licence (EPL) for KCT. Modification to this licence will not be required for the proposed increase to capacity throughput.
Roads Act 1993	The *Roads Act* 1993 is administered by the RTA, local council or the Department of Lands; the RTA has jurisdiction over major roads, the local council over minor roads, and the Department of Lands over road reserves.	The project has no potential to impact on Crown Roads and road reserves and Council Roads and road reserves and no approval will be required under this Act.

3.2 AUTHORITY CONSULTATION

Initial project briefings have been provided to DoP to confirm the application of the Part 3A approval process to this proposal. In addition, other key organisations that have been briefed to date are:

- Department of Environment and Conservation (DEC);
- NSW Maritime;
- Newcastle City Council;
- Port Stephens Council;
- Newcastle Port Corporation.

DoP has advised that this PEA will be provided to all relevant agencies prior to the conduct of a Planning Focus Meeting to further discuss the project and the identification and assessment of key environmental issues.

As noted in **Section 3.1**, the Commonwealth Department of Environment and Heritage will be consulted regarding this project, and a Preliminary Referral made under the EPBC Act, to confirm that this project is not a 'controlled action' under the EPBC Act.

3.3 COMMUNITY CONSULTATION

PWCS maintains an ongoing relationship with the local community by participation in a number of community forums and Council committees. PWCS also maintains a 24 hour phone line system to allow for the notification of environmental and community issues. All notifications are recorded on a community complaints register. In the previous six years of the operation, there have been a very low number of notifications from the community. In the 12 months from July 2004 to June 2005, there were two KCT related community enquiries registered with PWCS relating to environmental issues.

For the neighbouring communities of Fern Bay, Stockton and Mayfield, the optimisation of PWCS's existing operations will be of interest. To accommodate this interest and encourage open engagement, PWCS is conducting a comprehensive community consultation process for the project.

The engagement process is in two stages. The first stage, at the time of lodging the PEA, is to notify and receive initial feedback from a broad cross-section of the community. The second stage is a more detailed process to inform and engage a wide range of stakeholders who may be interested in the project.

The approach for the community engagement process is as follows:

Stage One: Initial Consultation

As an existing operator in the region with a desire to be a good industrial neighbour, PWCS has established a solid and productive working relationship with its immediate neighbours and the local community.

Initial briefings are being made to the following stakeholders relevant to PWCS's operations:

Neighbouring Industry – Existing and Proposed

- Cargill Oil
- Kooragang Bulk Facilities
- Newcastle Coal Infrastructure Group

Community

- Environmental Protection and Pollution Advisory Committee (EPAPAC)
- Fern Bay Community
- Mayfield Residents Action Group
- Mayfield Resident Forum
- Carrington Residents Action Group
- Citizens and Kooragang Alliance
- Stockton Residents Forum
- Kooragang Wetland Rehabilitation Project
- Hunter Coastal and Estuary Management Committee

PWCS

- Employees, contractors and suppliers.

In addition, the Newcastle Business Club and Hunter Business Chamber have been briefed in order to inform a wider network of the local business community.

Stage Two: Detailed Engagement

The second stage of the community involvement plan will draw on PWCS's existing community links and networks across a number of local groups and associations. This stage will include those groups contacted during the lodging of the PEA, together with a range of other stakeholders.

The community engagement plan will use a range of methods to ensure PWCS consultation reaches a wide range of people. To support the engagement process, public information about the project will be accessible on PWCS's website, distributed in newsletters to local residents, and be contained in regular briefings in the media. Relevant PWCS personnel will be available to respond to enquiries in relation to the proposed development.

It is expected that during the consultation, other groups or individuals of interest will emerge and be included in the consultation process.

All findings will be recorded, summarised and presented for inclusion in the EA report.

4.0 PRELIMINARY ENVIRONMENTAL ASSESSMENT

4.1 ENVIRONMENT AND COMMUNITY CONTEXT

Kooragang Island is essentially reclaimed land created by joining Dempsey, Moscheto and Walsh Islands. The area was originally developed in the early to mid 1900s as the industrial centre for Newcastle. Officially named in 1968, Kooragang Island is a total area of approximately 2600 hectares and is bounded by the South and North Arms of the Hunter River. KCT is strategically located in the south-eastern portion of Kooragang Island, providing ready shipping access via the Hunter River and Newcastle Harbour.

As shown on **Figure 1.1**, the nearest urban areas are Fern Bay located approximately 1.7 kilometres to the east; the suburb of Stockton (North), located approximately 1.5 kilometres to the south-east of the site; and Mayfield located 1.7 kilometres to the south-west. The former BHP steelworks and current OneSteel operations area are located to the south and south-west, across the Hunter River.

4.1.1 Existing and Proposed Land Use – Kooragang Island

Industry and port facilities are located on the southern part of Kooragang Island (refer to **Figure 4.1**). PWCS is one of a number of operations on the Island including Cargill Australia, Air Liquide, Orica, Incitec Pivot, Newcastle Woodchipping, Cleanaway, Mountain Industries, Blue Circle Cement, Boral, Port Hunter Commodities, Sims Metals, Kooragang Bulk Facilities and Transfield. Existing land uses include heavy industrial, light industrial, transport and distribution, port facilities and vacant industrial land.

Heavy industrial land uses within the Kooragang Island industrial area include a range of large scale operations associated with cement production, concrete batching, oilseed processing, fertiliser manufacturing and distribution, and ammonium manufacturing. In addition, surrounding heavy industrial land use includes a hazardous waste disposal facility, LPG gas production and distribution facilities and a scrap metal reclamation facility. Light industrial land uses within proximity to the KCT site include a number of engineering and fabrication operations and industrial building supplies.

There are a number of other port facilities within proximity to the KCT site. These port facilities are primarily utilised for the delivery of raw materials, including alumina, petroleum coke, wood chips, phosphate rock, and a number of agricultural products, most of which are utilised in the range of manufacturing operations associated with the heavy industry land uses within the area. There are also a number of transport and logistic companies located within the Kooragang Island industrial area associated with fertiliser manufacturing operations, and aluminium production.

Within the Kooragang Island industrial area there are considerable areas of vacant land, currently zoned for industrial land uses under the Newcastle LEP 2003. The Regional Land Management Corporation (RLMC) controls much of this land, with commercial leases being established between the Corporation and entities to utilise land within the area. A recent agreement has been reached between the RLMC and Newcastle Coal Infrastructure Group (NCIG) for the potential use of a large area of vacant industrial land for a proposed third coal loading facility, located to the south west of KCT operations (refer to **Figure 4.1**). NCIG have submitted a project application under Part 3A of the EP&A Act, and are understood to be preparing an EA for the Project.

Legend

- Kooragang Coal Terminal
- Heavy Industry
- Light Industry
- Vacant Land
- Urban
- Port Facilities
- Newcastle Golf Course
- Nature Reserve
- Proposed NCIG Coal Export Terminal

FIGURE 4.1

Land Use

Kooragang Nature Reserve adjoins the northern boundary of the KCT site. Following an investigation into the natural areas and environmental importance of the site, parts of Kooragang Island were internationally recognised as a RAMSAR site in 1984. The Kooragang Wetland Rehabilitation Project was created in 1993, with ongoing support from government, local industries (including PWCS) and the community. This Project includes work on Ash Island, to the north-west of KCT, Stockton Sandspit to the east and Tomago wetlands to the north.

4.2 PRELIMINARY ENVIRONMENTAL RISK ANALYSIS

To assist in identifying the key environmental and community issues that require further assessment, a preliminary environmental risk analysis has been completed for the project and is included in **Appendix 1**.

The preliminary environmental risk analysis identifies those issues requiring detailed investigation in the EA, as being noise and dust issues. Further assessment is not considered necessary for other potential environmental issues as indicated in **Appendix 1**.

The proposed approach to further consideration of the key environment and community issues is discussed in **Section 4.3**, whilst an overview of other issues is provided in **Section 4.4**.

4.3 KEY ENVIRONMENT AND COMMUNITY ISSUES

4.3.1 Noise

Heggies Australia (Heggies) has undertaken ongoing noise management, including monitoring and assessment for PWCS since the inception of the Stage 3 expansion, including the preparation of the Stage 3 EIS. This work has included focus on noise control optimisation and validation to achieve substantial reductions in noise emissions from on-site plant and machinery. Heggies will complete the detailed noise assessment for the EA, in consultation with DEC and DoP.

4.3.1.1 Existing Noise Limits and Performance

The current development consent covers the construction (in phases) and operation of the KCT Stage 3 Expansion, with Stages 1, 2 and 3 approved to operate on a 24 hours, 7 days per week basis. Noise limits specified by the current development consent are summarised in **Table 4.1**.

Table 4.1 – Existing Noise Limits

	Stage 1 + 2	**Stage 3**	**Stage 1 + 2 + 3**
Residential	40 dBA	40 dBA	43 dBA
Industrial	n/a	n/a	65 to 70 dBA
General	Intrusive LA10(15minute) noise emission limits measured or computed at the boundary under acoustically neutral atmospheric conditions. Noise emissions must be substantially free of tonal impulsive or intermittent characteristics.		

The existing consent has provided an effective mechanism for managing KCT noise.

Existing noise monitoring locations are shown on **Figure 4.2**. Noise monitoring and modelling of the KCT facility confirm that the operations comply with these noise limits, and indeed, Stage 1 + 2 + 3 development is well below the relevant limit at nearest residential areas. This is also confirmed by the low level of community concern regarding noise from the site with only four community enquiries received by PWCS in relation to noise issues for KCT, over the last five years.

Source: Maztrow Pty. Ltd. Drafting Service

Legend

- Kooragang Coal Terminal
- Depositional Dust Gauge Location
- High Volume Air Sampler Location
- Noise Monitoring Locations

FIGURE 4.2

Environmental Monitoring Locations

File Name (A4): R01_V1/2285_002.dgn

4.3.1.2 Ongoing Noise Mitigation Strategy

PWCS has implemented an Acoustical Design, Procurement, Construction and Commissioning process throughout the Stage 3 Expansion to meet approved noise limits and ensure that the noise risk management procedure was consistent with current regulatory and community standards. This process has included:

- noise limits and acoustical specifications for all individual items of plant;
- desktop design validation and supplier shop testing during plant procurement;
- *in-situ* acceptance testing during plant commissioning;
- ongoing acoustical modelling of the installed plant;
- regular on and off site noise emission monitoring and reporting;
- identifying potential noise controls at the source and propagation path; and
- ranking the noise controls based on site noise reduction cost effectiveness.

In many cases PWCS has gone well beyond Best Available Technology by promoting research and development of acoustical solutions not previously considered economically achievable. In comparison to earlier operations, specific noise control achievements implemented during Stage 3 development have included a 15 to 18dBA reduction in conveyor drive sound power levels, and a 13 to 14 dBA reduction in sound power levels of stockyard and transfer conveyors.

It is proposed to use this low noise emission technology as part of the works required for the throughput capacity increase at KCT. This will include implementation of this technology for Stage 3 operations yet to be constructed and also where retrofitting of conveyor drives and idlers for existing operations is necessary to achieve the proposed capacity throughput increase.

4.3.1.3 Preliminary Findings and Further Assessment

As noted above, the assessment conducted to date has demonstrated that KCT fully complies with noise limits in the current development consent, with noise emissions less than 43 dBA under neutral (calm) weather conditions. Preliminary assessment indicates that implementation of Best Available Technology during completion of construction of approved Stage 3 infrastructure will ensure that existing noise levels received at nearest residential areas will remain unchanged during future operations. Furthermore, KCT noise emissions are expected to be marginally reduced by proposed capacity enhancement modifications.

The detailed noise assessment will consider noise enhancing weather conditions, in accordance with DEC's Industrial Noise Policy. Further background monitoring, assessment and discussion with DEC and DoP is planned in order to confirm appropriate noise goals for the project. Preliminary assessment indicates that, with continued adoption of Best Available Technology, the proposed capacity throughput increase can be achieved without increasing noise levels received at nearest residential urban areas and in accordance with the maximum cumulative noise criteria for protection of noise amenity in these areas.

4.3.2 Air Quality

Pavel Zib and Associates has undertaken detailed air quality monitoring and assessment for PWCS since the approval of the Stage 3 expansion. The following is an overview of the preliminary assessment of the implications of the proposed capacity throughput increase, in regard to potential dust emissions from the site.

As discussed in **Section 2.0**, the proposed increase in capacity throughput at the KCT does not require an extension of the approved operational area or the introduction of new handling techniques. The increase in coal throughput capacity will be achieved by technological improvements resulting in higher rates of existing coal handling and loading operations.

A large array of dust controls and safeguards is currently in place to ensure that air quality outside the terminal is not adversely affected by emissions from the operation. The introduction of improved technology of coal handling associated with the proposal will further strengthen the dust controls. This includes the introduction of soft flow chutes to maintain a better coal trajectory from one conveyor to the next and thereby minimise dust emissions. In addition, improved belt cleaning systems will continue to be installed to remove greater quantities of coal and further reduce the potential for carryback dust.

An integral part of the safeguards is the continuing implementation of a specific air quality monitoring program. The program was designed in consultation with the DEC and Newcastle City Council and the location of existing monitoring sites is shown on **Figure 4.2**. The focus of the program is to monitor compliance with air quality standards in the nearby residential areas. The monitoring program also seeks to document the contribution of the operations at the terminal to the air quality in the area in general. By doing so, the results of the monitoring program identify any need for further strengthening of dust controls in certain areas of the operation.

Historically, early monitoring programs in the Kooragang and Stockton areas indicated dust levels well in excess of all current air quality goals. Over time, spanning three decades, the dust levels have been declining. The results of the current air quality monitoring program demonstrate that the air quality standards in the nearby residential areas of Fern Bay and Stockton are fully met.

Compliance has been achieved and maintained in terms of suspended particulates, both PM10 and TSP, as well as for dust fallout. The rates of dust deposition at Fern Bay and Stockton are consistent with normal residential environments.

A significant conclusion reached from the analysis of the monitoring results since 2000 is the fact that the levels of particulate matter in the ambient air of the residential areas have not risen with the increase in coal throughput at the KCT. By contrast, a general decline in the levels of ambient particulate matter has been recorded since the drought period of 2001 to 2002. During this time detailed analysis has also been undertaken in relation to the amount of coal particles reaching the residential areas. This amount has also remained unchanged or declined despite the increase in coal throughput delivered to the terminal since 2000.

The assessment to date indicates that with the existing and proposed dust controls and safeguards, the proposal will not adversely affect the current compliance with air quality goals. A detailed air quality assessment will be completed following further consultation with DEC and DoP and be included in the EA.

4.4 OTHER ENVIRONMENT AND COMMUNITY ISSUES

4.4.1 Hydrology and Water Quality

Current Water Management

PWCS has established a totally closed water management system to meet the design requirement of a one in one hundred year storm event or equivalent. To enable greater water harvesting and reduce dependence on potable water, the water management system for the complete Stage 3 expansion has already been implemented and is operational.

Recycled Water

The water management system operates to collect water from operational activities and to harvest storm water for recycling. All areas of the plant, including the wharf, capture water and channel it back to settling ponds for clarification prior to being held in storage ponds for re-use.

On site there are two 12 ML settling ponds and two 10 ML clarifying ponds. The ponds are located within the rail loop and are adjacent to large bunded areas, which provide a further nominal 70 ML of storage, when needed. The water from this additional storage area can be recovered to the clarified water ponds for re-use. Water only overflows from the ponds during extreme or prolonged wet weather.

Once the captured water passes through the clarifying ponds it is available for delivery to the pumphouse for reticulation across the site for wetting coal and stockpiles to control dust, wash down and clean up, fire fighting systems and landscape irrigation.

The water quality is regularly monitored to ensure it is suitable for the purpose of recycling.

Potable Water

The potable water purchased from Hunter Water Corporation is for domestic use in the office areas, employee amenities, and as make up water to supplement the recycled supply on an as needed basis.

With the proposed increased volume of coal throughput, it is anticipated that there will be a slight increase in water usage. This increase in water usage will be due to the water sprayed into the coal to control dust as it is being received. With the proposed additional 43 Mt of coal passing through the terminal, an estimated further 43 ML of water per year will be required. This will take the total consumption of water from the Hunter Water Corporation for KCT to around 393 ML/year.

Currently water is sourced from a combination of on-site collection processes and purchased from Hunter Water Corporation. Additional supplies will be sought from Hunter Water Corporation while PWCS continues to investigate opportunities to make greater use of recycled water across the site and alternate sources of water supply.

As there is no proposed change to the footprint of KCT or the existing water management system, and the existing system is performing effectively, it is not proposed to conduct further water management investigations for the EA.

4.4.2 Traffic

Implementing the capacity throughput increase will not require mobilisation of a major construction workforce, the work will be completed in small steps by small teams to suit equipment availability and the anticipated coal demand. Neither is it proposed to increase operational employee numbers, as the proposed capacity throughput increase will be achieved without installing additional plant and equipment. Also, changes are not proposed to the existing site access roads. Consequently, no further traffic assessment is considered necessary for this project.

4.4.3 Maritime Safety

The increase in the throughput capacity of KCT operations as a result of the proposed project will require an increased number of ships utilising the KCT. The proposed project will increase coal shipping traffic through the Port of Newcastle to approximately 1300 vessels per year (or 3 – 4 per day), which represents an increase of 380 vessels per year (or 1 per day) over ship movements at the current throughput capacity of KCT. Consultation with the Newcastle Port Corporation by PWCS has confirmed that sufficient navigational capacity is available for the additional shipping and that marine safety would not be jeopardised as a result of the Project.

The Newcastle Port Corporation is responsible for the management of maritime incidents in the Port. It has conducted appropriate maritime oil spill response training and has a detailed environmental management plan and an environmental manual in place.

4.4.4 Energy and Greenhouse Management

As the project essentially involves optimisation of existing processes, it is not expected that energy consumption will significantly increase as a result of the higher capacity throughput. This will be confirmed and details of energy consumption and management will be included in the EA. Similarly, an assessment of greenhouse emissions from the existing and proposed KCT activities will be included in the EA.

4.4.5 Ecology and Cultural Heritage

All relevant ecology and cultural heritage considerations were taken into account during the Environmental Impact Statement process and subsequent development consent requirements for the Stage 3 Expansion. The capacity increase does not alter the approved footprint in any way and off-site impacts such as dust and noise are not expected to increase above existing levels. Therefore there are no aquatic, wetland, or terrestrial ecology issues or cultural heritage considerations for this project.

4.4.6 Visual Aspects

The proposed capacity increase does not involve any change to the construction footprint or the bulk external appearance of the approved KCT. There will be no visual impact as a result of the proposed capacity expansion.

4.4.7 Socio-Economic

The KCT capacity increase will provide significant socio-economic benefits on a local, regional and state level. Further detail regarding socio-economic considerations will be included in the EA.

5.0 PROJECT SCHEDULE

PWCS is seeking to lodge the EA with DoP, for adequacy review during August 2006. Project Approval is sought by the end of 2006.

6.0 REFERENCES

Australian Bureau of Agricultural and Resource Economics (2006) Australian Commodities06.2 June Quarter 2006

Australian Rail Track Corporation (2005) Hunter Valley Corridor Capacity Improvement Strategy

APPENDIX 1

Potential Environmental Risk Analysis

Preliminary Environmental Risk Analysis

An environmental risk assessment has been undertaken for the Project to identify the key issues which warrant further detailed assessment and discussion. The methodology used for this process follows the general principles outlined in Australian Standard AS/NZS 4360:1999 Risk Management and Environmental Risk Management – Principles and Process (Standards Australia, 2000). The results of the risk assessment are included in Attachment A.

The method used for the environmental risk assessment encompasses the following key steps:

1. Establish the context for the risk assessment process

2. Identify environmental risks

3. Analyse risks

4. Evaluate risks to determine significant issues

Each of these steps is discussed further below.

Establish the Context

The risk assessment undertaken for the Project considers risks to the natural environment and members of the public. The 'Project' was considered to be the processes and activities described in Section 2.3 of the Preliminary Environmental Assessment, categorized as shown in **Table 1**.

Table 1 - Process Areas and Activities Considered

Process Area	Process Boundary	Activities
Installation	Installation of proposed equipment upgrades to increase throughput	Installation and upgrade of existing and approved receival, stacking, reclamation and loading systems
Operation	Continued operations with increased throughout capacity	The receival, stacking, reclaiming and loading of product coal through KCT
Ancillary Areas	Other activities undertaken to support installation and operation	Storage & handling of goods, maintenance

Risk Identification

Risk identification involves identifying the environmental risks to be managed, and in its simplest form involves the analysis of the severity and frequency of potential impacts and the operational processes underlying any impact.

In order to provide a systematic framework to identify environmental risks, the following basic process was used:

1. Select a component of the surrounding environment that may be impacted by the Project.

2. Identify the activities from Table 1 that may affect the value.

3. Identify the potential environmental impacts (positive or negative, acute or chronic) for each value, as a result of these activities.

Risk Analysis

Risks are typically analysed by combining possible consequences and their likelihood, in the context of existing measures to control the risk. The consequence and likelihood of each risk determines the level of risk.

Each risk was assessed using a five level qualitative ranking of consequence and likelihood as listed in **Table 2** and **Table 3** respectively. This yields a five by five risk analysis matrix and results in four levels of risk: "catastrophic", "major", "moderate" and "minor", as shown in **Table 4**.

Table 2 - Qualitative Measures of Environmental Consequence

Severity Level	Natural Environment	Legal / Government	Heritage	Community/Reputation/ Media
(1) Insignificant	Limited damage to minimal area of low significance.	Low-level legal issue. On the spot fine. Technical non-compliance prosecution unlikely. Ongoing scrutiny / attention from regulator	Low-level repairable damage to commonplace structures.	Low level social impacts. Public concern restricted to local complaints. Could not cause injury or disease to people.
(2) Minor	Minor effects on biological or physical environment. Minor short-medium term damage to small area of limited significance	Minor legal issues, non-compliances and breaches of regulation. Minor prosecution or litigation possible. Significant hardship from regulator	Minor damage to items of low cultural or heritage significance. Mostly repairable. Minor infringement of cultural heritage values	Minor medium-term social impacts on local population. Could cause first aid injury to people. Minor, adverse local public or media attention and complaints.
(3) Moderate	Moderate effects on biological or physical environment (air, water) but not affecting ecosystem function. Moderate short-medium term widespread impacts (e.g. significant spills).	Serious breach of regulation with investigation or report to authority with prosecution or moderate fine possible. Significant difficulties in gaining approvals	Substantial damage to items of moderate cultural or heritage significance. Infringement of cultural heritage / scared locations	Ongoing social issues. Could cause injury to people which requires medical treatment. Attention from regional media and/or heightened concern by local community. Criticism by NGOs. Environmental credentials moderately affected
(4) Major	Serious environmental effects with come impairment of ecosystem function. Relatively widespread medium-long term impacts	Major breach of regulation with potential major fine and/or investigation and prosecution by authority. Major litigation. Project approval seriously affected	Major permanent damage to items of high cultural or heritage significance. Significant infringement and disregard of cultural heritage values	On-going serious social issues. Could cause serious injury or disease to people. Significant adverse national media/public or NGO attention. Environment/management credentials significantly tarnished
(5) Catastrophic	Very serious environmental effects with impairment of ecosystem function. Long term, widespread effects on significant environment (e.g. national park)	Investigation by authority with significant prosecution and fines. Very serious litigation, including class actions. License to operate threatened	Total destruction of items of high cultural or heritage significance. Highly offensive infringements of cultural heritage	Very serious widespread social impacts with potential to significantly affect the well being of the local community. Could kill or permanently disable people. Serious public or media outcry (international coverage). Damaging NGO campaign. Reputation severely tarnished. Share price may be affected

Table 3 - Qualitative Measure of Likelihood

Level	Descriptor	Description	Guideline
A	Almost Certain	Consequence is expected to occur in most circumstances	Occurs more than once per month
B	Likely	Consequence will probably occur in most circumstances	Occurs once every 1 month – 1 year
C	Occasionally	Consequence should occur at some time	Occurs once every 1 year - 10 years
D	Unlikely	Consequence could occur at some time	Occurs once every 10 years – 100 years
E	Rare	Consequence may only occur in exceptional circumstances	Occurs less than once every 100 years

Source: AS/NZS 4360:1999 Risk Management

Table 4 - Qualitative Risk Matrix

	Maximum Reasonable Consequence				
Likelihood of the Consequence	(1) Insignificant	(2) Minor	(3) Moderate	(4) Major	(5) Catastrophic
(A) Almost certain	High	High	Extreme	Extreme	Extreme
(B) Likely	Moderate	High	High	Extreme	Extreme
(C) Occasionally	Low	Moderate	High	Extreme	Extreme
(D) Unlikely	Low	Low	Moderate	High	Extreme
(E) Rare	Low	Low	Moderate	High	High

Source: AS/NZS 4360:1999 Risk Management

The level of risk assessed was based on a risk level with the existing environmental management controls at KCT operations in place. This allows for the identification of the extent of potential project related impacts and the identification of the major issues warranting further assessment.

Although the risk rating gives no quantification of the actual value of the risk for a particular aspect, it does allow a relative comparison between issues to enable risks to be prioritised, facilitate informed decisions about treating risks and help identify whether a risk is acceptable.

Table 5 shows the format used for the Project environmental risk assessment contained in **Attachment A**.

Table 5 – Format for Preliminary Project Environmental Risk Assessment

Project Activities	Environmental Value	Potential Impacts/ Consequences	Status and Proposed Control	Risk Assessment	Further Assessment required	Key Issue
Identifies the Project's activities that may affect the Environmental Value	Components of the surrounding environment that can be affected by the Project	This describes any change to the environment, whether adverse or beneficial, wholly or partly resulting from the Project's activities	Details current understanding of the existing environment and existing controls	Assessment of likelihood, consequence and risk score. Assumes no controls	Identifies potential impacts that warrant further assessment based on risk of potential impacts	Highlights the key issues requiring further assessment

Risk Evaluation

Risk evaluation concerns setting priorities for decisions about risk. The purpose of risk evaluation is to compare risks against significance criteria to determine the degree of assessment required. The application of significance criteria will reduce the number of activities that require specific management attention and provides an opportunity to prioritise environmental issues based on predetermined criteria.

Although guidelines and regulations provide great detail on risk identification and characterisation, there is less guidance on what constitutes an acceptable level of risk. This is because the development of risk acceptance criteria is quite subjective and is not an exact science or based on a complex formula. For each risk assessment process there is a degree of flexibility in defining its own criteria to determine which impacts are potentially "significant" and which are not. For the purposes of this Preliminary Environmental Assessment, significant risks have been defined as those with a risk rating of high or extreme, as defined by **Table 4**.

It is important to note that certain impacts associated with the Project's activities may be predetermined as significant by State or Federal legislation. These 'regulated' impacts, whilst not always rated as significant based on risk score alone, will also require further assessment to be undertaken.

Attachment A

Port Waratah Coal Services – Kooragang Coal Terminal Capacity Throughput Increase

Preliminary Environmental Risk Analysis

Activity	Environmental Value	Potential Impact	Status and Proposed Control	Risk Assessment			Further Assessment Requirements	Key Issue?
				C	L	R		
INSTALLATION PHASE								
Installation and modification of existing and approved coal handling equipment	European Heritage	Disturbance of sites of European heritage significance.	The project will not increase the footprint of existing and approved operations. Assessment of impacts covered as part of Stage 3 Approval – no outstanding requirements	1	E	L	No further assessment required	No
	Wetland Ecology	Loss of native flora and fauna.	The project will not increase the footprint of existing and approved operations. Assessment of impacts covered as part of Stage 3 Approval – no outstanding requirements	3	E	M	No further assessment required	No
	Aquatic Ecology	Loss of native flora and fauna.	The project will not increase the footprint of existing and approved operations. Assessment of impacts covered as part of Stage 3 Approval – no outstanding requirements	3	E	M	No further assessment required	No
	Cultural Heritage	Disturbance of Aboriginal places or objects.	The project will not increase the footprint of existing and approved operations. Assessment of impacts covered as part of Stage 3 Approval – no outstanding requirements	2	E	L	No further assessment required	No
	Erosion and sediment runoff	Sedimentation of local waterways.	Existing controls sufficient to mitigate potential impact from project. Controls include an integrated water management system designed collect and treat site 'dirty water' for up to a 1 in 100 year storm event.	2	E	L	No further assessment required	No

Activity	Environmental Value	Potential Impact	Status and Proposed Control	Risk Assessment			Further Assessment Requirements	Key Issue?
				C	L	R		
	Dust Generation	Degradation of air quality.	No potential for significant dust emissions during installation phase. Existing controls are sufficient to minimise potential dust impacts from installation activities. Controls include dust suppression sprays, equipment modifications and dust control safeguards	2	E	L	No further assessment required	No
	Noise Generation	Degradation of noise amenity (cumulative).	Installation phase does not involve significant noise generation – activities consistent with existing maintenance activities. Existing controls are sufficient to minimise potential noise impacts from installation activities. Controls include noise attenuation measures fitted to equipment, noise monitoring	2	E	L	No further assessment required	No
	Visual Amenity	Change to the aesthetics of operations in landscape	The project will not increase the footprint of existing and approved operations. All works within existing and approved built structures. Assessment of impacts covered as part of Stage 3 Approval – no outstanding requirements	1	E	L	No further assessment required	No
	Hydro geological impacts	Disturbance to existing hydro geological regime	The project will not increase the footprint of existing and approved operations. Assessment of impacts covered as part of Stage 3 Approval – no outstanding requirements	3	E	M	No further assessment required	No
	Traffic	Supply of materials for installation phase resulting in increased traffic.	Installation of upgraded plant and equipment will occur progressively and will not involve any additional traffic generation beyond current construction and maintenance traffic. Assessment of impacts covered as part of Stage 3 Approval – no outstanding requirements	1	E	L	No further assessment required	No

Activity	Environmental Value	Potential Impact	Status and Proposed Control	Risk Assessment			Further Assessment Requirements	Key Issue?
				C	L	R		
OPERATION PHASE								
Operation of equipment with increased throughout capacity	Erosion and sediment runoff	Sedimentation of local waterways.	Existing controls sufficient to mitigate potential impact from project. Controls include an integrated water management system designed to collect and treat site 'dirty water' for up to a 1 in 100 year storm event.	2	E	L	No further assessment required	No
	Water Demand	Increased water demand for dust suppression, washdown etc.	Operation of project has potential to increase water demand for dust suppression purposes. Controls in place to maximise re-use of water.	2	C	M	No further assessment required	N
	Dust Generation	Degradation of air quality.	Operation of project has potential to increase dust generation from receival, stacking, reclaiming and loading operations.	3	C	H	Further assessment required as part of Environmental Assessment	Y
	Noise Generation	Degradation of noise amenity (cumulative).	Operation of project has potential to increase noise generation in receival, stacking, reclaiming and loading operations.	3	C	H	Further assessment required as part of Environmental Assessment	Y
	Visual Amenity	Aesthetics of modified operation	The project will not increase the footprint or external appearance of existing and approved operations. Assessment of impacts covered as part of Stage 3 Approval – no outstanding requirements	1	E	L	No further assessment required	N
	Hydro geological impacts	Impacts on existing hydro geological regime	The project will not increase the footprint of existing and approved operations. Assessment of impacts covered as part of Stage 3 Approval – no outstanding requirements	3	E	M	No further assessment required	N

Activity	Environmental Value	Potential Impact	Status and Proposed Control	Risk Assessment			Further Assessment Requirements	Key Issue?
				C	L	R		
	Traffic	Increased traffic as a result of increased throughput capacity	There will be no increased road traffic as a result of the increased coal throughput – all coal is delivered by rail. Rail traffic is managed by others and this proposal does not seek approval to increase rail traffic on the Main Northern Rail Line– KCT receives the coal delivered by others. Increased shipping traffic is managed by NPC who advise that project shipping increase can be met without affecting maritime safety.	2	E	L	No further assessment required	N
ANCILLARY ACTIVITIES AND ISSUES								
Waste Management	Waste disposal	Pollution/contamination due to incorrect disposal. Inefficient use of resources.	All wastes generated by the project will be incorporated into existing waste streams. Existing controls are sufficient to mitigate potential impacts from waste disposal	2	E	L	No further assessment required	No
	Waste oil and grease storage	Soil and/or water contamination from spills or leaks.	Existing controls sufficient to mitigate potential impact from project. Controls include storage in sealed bunded area, disposal by licensed waste contractor	2	D	L	No further assessment required	No
Materials supply and storage	Oil, fuel and grease supply and storage	Soil and/or water contamination from spills or leaks.	No change to existing supply and storage arrangements. Existing controls sufficient to mitigate potential impact from project.	2	D	L	No further assessment required	No
	Materials delivery	Increase in traffic.	Any potential increases in traffic associated with materials delivery will be minor, short term in duration, and consistent with current traffic during ongoing maintenance activities	2	D	L	No further assessment required	No
Workforce and Amenities	Transport and access of employees to site	Increase in traffic.	The proposed project will not increase the workforce of KCT.	2	E	L	No further assessment required	No

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