BHP Billiton
17 May 2012

Lot 233, Industrial Drive, Mayfield

Section 75W Modification Request

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Section 75W Modification Request

Prepared for

BHP Billiton

Prepared by

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Abbreviations

AECOM	AECOM Australia Pty Ltd
BHPB	BHP Billiton
CCC	Community Consultative Committee
CLM Act	*Contaminated Land Management Act 1997*
COPC	Chemicals of Potential Concern
CWR	Coal Washery Reject
DA	Development Application
DCP 2005	Newcastle Development Control Plan 2005
DLWC	Department of Land & Water Conservation
DP&I	Department of Planning & Infrastructure
EA	environmental assessment
EIS	Environmental Impact Statement
ENM	excavated natural materials
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPA	NSW Environment Protection Authority
ha	hectare(s)
HBIL	Health Based Investigation Levels
HRRP	Hunter River Remediation Project
km	kilometre(s)
km/hr	kilometres per hour
LEP 2003	Newcastle Local Environmental Plan 2003
LGA	Local Government Area
Lot 223	Lot 223, Industrial Drive, Mayfield
L	Litre(s)
m	metre(s)
mm	millimetre(s)
NEPC	National Environment Protection Council
PM	Particulate matter
RMS	NSW Roads and Maritime Services
SEPP	State Environmental Planning Policy
SRoH	Significant Risk of Harm
SWMP	Soil and Water Management Plan
t	tonne
TSP	Total suspended particulates
VENM	Virgin Excavated Natural Material
VMP	Voluntary management proposal
VRA	Voluntary remediation agreement
VRP	Voluntary remediation proposal

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1.0 Introduction

1.1 Context

AECOM Australia Pty Ltd (AECOM) has been engaged by BHP Billiton (BHPB) to prepare an environmental assessment document to support BHPB's application to modify under Section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act) the Development Consent DA 381-12-2001-i for the remediation of Lot 223, Industrial Drive, Mayfield (referred to hereafter as Lot 223).

1.2 Site Background

Lot 223 covers an area of approximately 24.4 ha and is located on Industrial Drive, Mayfield in the City of Newcastle Local Government Area (LGA). Lot 223 is owned by BHPB and was part of the former BHP Newcastle Steelworks. The site was previously occupied by the Rotary Lime Kiln and used for the storage of spare parts and supplies. The site was declared a remediation site under section 21 of the *Contaminated Land Management Act 1997* (CLM Act) and required various levels of site remediation in response to soil/groundwater contamination. A voluntary remediation proposal (VRP) (under section 26 of the CLM Act) and an Environmental Impact Statement (EIS) for the remediation of Lot 223 were subsequently prepared.

Development consent DA 281-12-2001-i was issued on 2 August 2002 by the then Minister for Planning and provides for the remediation of Lot 223 by capping the site with coal washery reject (CWR) from the Oceanic Coal Macquarie Coal Preparation Plant at Teralba. The purpose of the remediation is to reduce the risk of harm to human health and the environment due to the presence of contaminants in the soils and groundwater of the site. Remediation activities, as described in the EIS supporting the development consent, involved the following:

- Recontouring of the site, requiring excavation and relocation of contaminated materials, without removal of contaminated materials from the site;
- Capping of contaminated materials with CWR; and
- Construction of new drainage within the site.

Since the development consent was issued, remediation works have already been completed over most of Lot 223. The unoccupied and unsealed areas of Lot 223 that remain to be remediated are shown in Figure 1 and include the West and South parcels.

1.3 Areas to be Remediated

The completion of remediation of Lot 223 West and Lot 223 South is the subject of this report. Investigations undertaken during the original EIS (GHD, 2001) identified that the remediation of these two parcels presented lower risk than the northern, central and eastern portions of Lot 223 as they contained lower levels of contaminants.

1.3.1 Lot 223 West

Lot 223 West contains new Lot 4 and part of new Lot 7 (refer to Figure 1), and occupies an area of approximately 3.6 ha. In February 2006, BHPB submitted a voluntary remediation proposal (VRP) for Lot 223 West. In April 2006, the NSW Environment Protection Agency (EPA) entered into a voluntary remediation agreement (VRA) with BHPB for the site. The below activities at Lot 223 West subsequently followed:

- The parcel was capped with 0.5 m of CWR and 0.1 m of uncompacted CWR medium.
- In mid-2006, it was found that the CWR cap used had acid generating potential, triggering need for further monitoring and remediation.
- Although subsequent monitoring has confirmed no material change in groundwater quality, improvement of the cap is proposed to minimise residual environmental risks associated with the acid generating potential from previous work.

1.3.2 Lot 223 South

Lot 223 South contains proposed new Lot 10 and part of proposed new Lot 8 (refer to Figure 1), and occupies an area of approximately 2.8 ha. In January 2006, a VRP for Lot 223 South (Lot 8 only) was submitted to the NSW EPA. In March 2006, the EPA entered into a VRA with Moltoni Adams (on behalf of BHPB) for the site. The below activities at Lot 223 South subsequently followed:

- Capping of approximately 75% of Lot 223 South was completed in 2006. The cap comprised 0.4 m of compacted, reclaimed, on-site clay overlaid with approximately 0.5 m of less engineered natural materials.
- In September 2011, following site audit statement/reports prepared by an EPA accredited Independent Site Auditor, BHPB submitted a report to the EPA which confirmed that:
- Chemicals of Potential Concern (COPC) in the:
    - Groundwater were historically stable or decreasing; and
    - Soils were generally below NEPC HBIL F and EIS criteria.
- The existing cap had met the intent of the VRA, namely to:
    - Prevent normal contact to potentially contaminated fill material; and
    - Reduce infiltration / leaching of COPC from the fill material.
- In November 2011 the EPA confirmed that the requirements of the VRA had been met and that the significant risk of harm (SRoH) classification for Lot 223 South would be lifted upon the completion of equivalent remediation across the remainder of the site.

1.4 Scope

BHPB proposes to modify the development consent so that alternative material (other than the currently approved CWR) can be used to cap the remaining areas of Lot 223 (South and West parcels). BHPB proposes to cap the remaining parcels using virgin excavated natural materials (VENM) or excavated natural materials (ENM) (or equivalent) (South) and applying a DGB20 (road base) and bitumen seal (West) instead of CWR. The alternative capping material would be supplied from sources other than that nominated in the original EIS (not the Oceanic Coal Macquarie Coal Preparation Plant at Teralba) and arrive to the site via alternative transport routes (other than those specified in the development consent). Additionally, the disposal of waste materials would not be exclusively undertaken at the nominated Summerhill Waste Management Centre, but other additional licenced facilities would be used as required.

The alternate remediation strategy, if approved, would lead to the effective remediation of contaminated soils/fill within the sites in a manner that satisfies regulatory requirements for environmental protection and is not incompatible with intended future land use (i.e. industrial activity).

BHPB and AECOM held a meeting with the NSW Department of Planning and Infrastructure (DP&I) on 12 April 2012 to discuss the nature of the proposed modification and to seek the Minister's approval to submit a modification application under Section 75W of the EP&A Act. Based on the information provided, a representative of the Department advised that given the minor nature of the proposed modification, no environmental assessment requirements were considered necessary.

The objectives of this report are to:

- Provide a context to the project and background to Lot 223 (Section 1.0);
- Describe the proposed activities to be undertaken at Lot 223 (Section 2.0);
- Introduce the planning context for the proposed project and development consent modification (Section 3.0);
- Outline the consultation process undertaken for the project (Section 4.0);
- Conduct a high level, desktop environmental assessment (EA) of the proposed activities (Section 5.0 & 6.0); and
- Summarise the development consent modifications sought by BHPB to undertake the proposed activities (Section 7.0).

Lot 223
Lot 223 South
Lot 223 West
Areas to be Remediated
Cadastre Boundaries

Location Plan & Site Boundaries
Lot 223, Industrial Drive, Mayfield
Aerial Source: ESRI (2012)
0 25 50 100
Meters

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Fig. 1

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2.0 Proposed Activities

2.1 Proposed Works

2.1.1 Lot 223 West

The proposed works at the Lot 223 West parcel include:

- Removal and stockpiling of a thin veneer of the existing cap in order to remove organics and enable the binding of the new cap barrier;
- Vegetation clearing (maximum of 3.6 ha) and stockpiling;
- Transport and disposal of stockpiled vegetation material;
- Import of approximately 5,000 m^3 of capping materials;
- Spread, place, compact and contour approximately 100 -200 mm of DGB20 (road base or equivalent) material to provide a new barrier over the existing cap; and
- Placement of a two-coat asphalt seal (including a tack coat) over the DGB20 barrier to effectively seal the surface, further reducing risk for contaminated runoff and water infiltration.
- Site inspection/monitoring and maintenance activities, as required, to ensure the performance of the cap over time.

2.1.2 Lot 223 South

The proposed works at the Lot 223 South parcel include:

- Removal and disposal of redundant rail line;
- Vegetation clearing (maximum of 2.8 ha);
- Cut and fill works on-site to provide compatible landform for capping;
- Import of approximately 10,000 to 15,000 m^3 of clay-based VENM or ENM (or equivalent) and construct a 0.5 m thick (as two 250 mm layers) cap of permeability ($K = 10^{-7}$ ms^{-1}) over the remaining area not subject to previous capping;
- Installation of site drainage features and erosion control measures cap surface (e.g. revegetation, asphalt seal or equivalent); and
- Site inspection/monitoring and maintenance activities, as required, to ensure the performance of the cap over time.

2.2 Proposed Drainage

2.2.1 Lot 223 West

The final topography across Lot 223 West is subject to final design, however it would generally be in accordance with the existing topography and status of the current site. It is noted that a Site Audit Statement that followed the 2006 capping works concluded that the capping works met condition 8 of the development consent which specifies that the capping must “consist of a material that is at least 500 mm thick with a permeability of 10^{-7} ms^{-1}, and this layer must be constructed and maintained to permit free drainage and prevent surface water ponding”.

2.2.2 Lot 223 South

The final topography across Lot 223 South is subject to final design. A Stormwater Management Plan was prepared by GHD in 2010 as part of a revised subdivision application, and was based on providing for a 1 in 100 year flood event. The existing main drainage channel (running north along the eastern boundary of the site) would be widened to prevent adjacent properties being flooded, and would carry the majority of the site’s water flows to the north of the site. Water flows would then flow through the adjoining OneSteel property before entering the Hunter River.

2.3 Raw Materials

2.3.1 Lot 223 West

Raw materials for the capping of Lot 223 West would include approximately 5,000 m^3 of DGB20 (road base) or equivalent and asphalt. It is currently expected that these raw materials would be locally sourced and would be transported to the site via truck and trailer vehicles. A nominal volume of binding and sealing agents would also be used, which are expected to be locally sourced.

It is anticipated that up to 13 loads (using ten trucks) would be delivered each day to the site for a duration of four weeks. This amounts to 26 truck movements per day in and out of the construction site.

2.3.2 Lot 223 South

Raw materials for the capping of Lot 223 South would include approximately 10,000 to 15,000 m^3 of VENM/ENM or equivalent material. These materials would be sourced from locations/quarries ideally in the local area. VENM/ENM, or equivalent, would be transported to the site by truck and trailer vehicles. A nominal volume of binding and sealing agents would also be used, which are expected to be locally sourced.

Depending on the selected construction timeframe, it is anticipated that up to 22 loads (for a construction timeframe of six weeks) or 39 loads (for a construction timeframe of three weeks) would be delivered each day to the site. This amounts to 44 or 78 truck movements per day in and out of the construction site, respectively.

Additionally, and depending on the cap surface selected for erosion control (yet to be determined); the following raw materials may need to be imported:

- Approximately 2,100 m^3 of topsoil if the site is to be revegetated; and
- Approximately 400 m^3 of asphalt if the site is to be sealed with asphalt.

2.4 Transport Requirements

2.4.1 Traffic

Traffic associated with the proposed project would include the delivery of raw materials to site and the transport of wastes for disposal offsite at appropriately licensed facilities. All transport would be undertaken by licensed contractors and by suitably equipped vehicles.

The current development consent requires BHPB (or its contractors) to use specific routes for the import of CWR to site from the Oceanic Coal Macquarie Coal Preparation Plant (Schedule 2 Condition 47) and for the disposal of wastes at the Summerhill Waste Management Centre (Schedule 2 Condition 48).

BHPB proposes to dispose of construction wastes at suitably licensed waste facilities in addition to the currently nominated Summerhill Waste Management Centre, such as for instance the Sita Newline Road Landfill in Raymond Terrace. No designated route to these waste facilities is specified, and travel routes would be confined to heavy vehicle routes to avoid local traffic congestion, residential areas, and the potential for public interaction.

2.4.2 Access

Access to Lot 223 would be gained via Ingall Street, which intersects Industrial Drive approximately 900 m south-east of Lot 223 South (Figure 2). The intersection of Ingall Street and Industrial Drive is signalised and allows for all turning movements including right turn lanes for traffic on Industrial Drive.

North from the intersection with Industrial Drive, Ingall Street intersects with Bull Street, and then becomes a private access road into OneSteel property. Security gates, operated by OneSteel, restrict access from Ingall Street into OneSteel's industrial precinct. Beyond the security gate, inside OneSteel's property, vehicles would then travel north along Steel Works Road for approximately 700 m before taking a left turn onto George Bishop Drive, and travelling west to reach Lot 223. George Bishop Drive runs along the northern boundary of Lot 223 and would provide access to both Lot 223 South and Lot 223 West. The proposed traffic route inside OneSteel's industrial precinct is outlined in Figure 2.

Consultation has been undertaken with OneSteel (refer to Section 4.0) and BHPB has reached an agreement with OneSteel for right of access through OneSteel's property via Ingall Street to Lot 223 for the duration of the project.

2.4.3 Parking

Parking would be provided to contractor staff within the proposed compound areas. It is anticipated that a maximum of 22 private small vehicles would travel to and from site each day.

2.5 Equipment

The construction activities for the proposed works would require a variety of plant and equipment. Indicative types of equipment to be operated on site include:

- D6 Dozer;
- 30t Excavator;
- 30t Articulated Dump Truck;
- 18,000L Water cart;
- Trailer Mounted Mulcher;
- 12H Grader;
- CP563 Pad foot Roller;
- Caterpillar 815 Compactor;
- Generators for both sites; and
- Smooth Drum Roller.

2.6 Site Facilities and Structures

2.6.1 Site Compounds

Two temporary compound areas would be established for the proposed works. The compound area for Lot 223 South would include a small crib shed, site office, storage container, amenities and a bunded refuelling area, and would be located along the north-eastern boundary of the Donhad site. Lot 223 West's compound area would be likely confined to a small crib shed and amenities, and would be located north-west of Lot 223 West, across George Bishop Drive (see Figure 2). Both compound areas would also be used as the parking area for contractor staff and visitor vehicles.

The sourcing of utilities required to service the compound areas (electricity, water) would be at the discretion of the engaged contractors. Possible options are to reach an agreement with surrounding landowners/industry neighbours to attain mains power and direct potable water, or to utilise portable generators and import water to the site.

2.6.2 Other Structures

In addition to the facilities within the compound areas, the proposed works would require other structures to be installed. Temporary fences would be erected around the boundaries of Lot 223 South and Lot 223 West. In the absence of other controls, facilities such as a rumble grid and/or a wheel wash or equivalent would be installed at the point of exit of Lot 223 South to prevent contaminated materials being tracked from the site. Another rumble grid (or similar mechanism) and/or a wheel wash would be installed at the entry/exit point of Lot 223 West in the absence of other site controls to manage this risk.

Lot 223 Boundaries — Proposed traffic routes

Proposed contractor's parking and compound areas

Vegetation to be cleared

Internal Site Access Requirements

Lot 223, Industrial Drive, Mayfield

Aerial Source: ESRI (2012)

0 50 100 200 Meters

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Fig. **2**

2.7 Hours of Operation and Construction Timeframe

All works would be carried out in accordance with the hours of construction outlined in the existing development consent (condition 34), namely:

- Between 7 am and 6 pm Monday to Friday;
- 8 am and 1 pm Saturdays if audible at sensitive receivers, otherwise 7 am to 1 pm; and
- No work on Sundays or public holidays.

The haulage of capping material for Lot 223 West would occur over a period of four weeks. Capping material haulage for Lot 223 South would follow (expected to occur from the end of July to early October 2012) and would take between three to six weeks. The remediation works are expected to be completed within the 2012/13 period.

It is anticipated that works at Lot 223 West would take approximately 4-6 weeks to complete, while works at Lot 223 South would be completed within approximately 10-12 weeks.

2.8 Construction Workforce

The construction workforce numbers would be at the discretion of the engaged contractors. Indicative estimates of the workforce to be present at each of the construction sites are as follows:

- *Lot 223 West*: approximately nine staff including five plant operators and four personnel (1 x foreman, 1 x engineer and 2 x labourers).
- *Lot 223 South*: approximately 13 staff including seven plant operators and six personnel (1 x project manager, 1 x foreman, 1 x engineer, 1 x health and safety officer and 2 x labourers).

It is expected that the workforce would generally remain consistent throughout the construction period for both sites.

2.9 Project Cost

Project cost estimates to complete the proposed works are in the order of $1.25-1.75 million for Lot 223 South and $1.2 million for Lot 223 West, for a cumulative cost of approximately $3 million for the project. It is noted that these costs are indicative only and may be subject to change.

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3.0 Planning Context

3.1 State Planning

3.1.1 Environmental Planning and Assessment Act 1979

Development Consent History

On 2 August 2002, the then Minister for Planning granted development consent to BHPB for the proposed remediation of Lot 223 (DA 381-12-2001-i) under Part 4 of the EP&A Act (the development consent is provided at Appendix A). The development consent applied to Lot 223, Industrial Drive, Mayfield, and included the excavation and re-contouring of contaminated material within the site, importing CWR from the Oceanic Coal Macquarie Coal Preparation Plant at Teralba, and capping the re-contoured contaminated material with the CWR.

The development consent was subsequently modified 23 February 2005 following an application by BHPB. The modification application related to staging of remediation works, noise monitoring, site access, and community consultation (a copy of the modification is provided at Appendix B). The approved modification allowed BHPB to stage the remediation of the site. Stage 1 was described as Lot 223 West (shown on Figure ND12625 at Appendix B). Stage 2 was described as the remainder of the land to which the consent applied, being described as Lot 223 East (and including the area now known as Lot 223 South).

Under the 2005 modified consent, sections of Lot 223 were remediated including parts of Lot 223 West and parts of Lot 223 South.

In 2010, Koppers sought to acquire the portion of Lot 223 known as Lot 223 North from BHPB in order to expand its operations (Lot 223 North is shown in Figure 3 at Appendix C). Consequently, a further application to modify the development consent was made to enable Koppers to undertake the remediation of Lot 223 North while BHPB would complete the remediation of Lot 223 East. The modification to consent was approved 28 July 2010 (a copy of the modification is provided at Appendix C). Under the modification, Stage 1 remained as Lot 223 West. Stage 2 was extended to include the remainder of the land to which the development consent applied, being described as Lot 223 East, Lot 223 North, and Lots 2 and 11 (which were not included as part of the original proposal).

Proposed Modification

Clause 8J(8) of the *Environmental Planning and Assessment Regulation 2000* provides that development consents granted by the Minister with respect to State Significant Development prior to 1 August 2005 are taken to be Part 3A approvals and subject to modification through section 75W of the EP&A Act (rather than section 96, which would ordinarily be applied to Part 4 consents). The development consent is only taken to be a Part 3A approval for the purpose of modification (and does not automatically become a Part 3A approval in other cases).

For the purpose of the current modification proposal, the existing development consent for the remediation of Lot 223 is taken to be a Part 3A project approval. The savings and transitional provisions in Schedule 6A of the EP&A Act therefore make the development consent a 'transitional Part 3A approval' for the purpose of modification, and allow for the continued operation of section 75W, despite the recent repeal of that section as part of the Part 3A repeal process. As such, any modification to the approval is to be considered under section 75W of the EP&A Act.

BHPB and AECOM held a meeting with DP&I on 12 April 2012 to discuss the nature of the proposed modification and to explain that the project as modified would be consistent with the existing approval. Based on the information provided, a representative of the Department advised that given the minor nature of the proposed modification, no environmental assessment requirements were considered necessary.

3.1.2 Protection of the Environment Operations Act 1997

Schedule 1 of the *Protection of Environment Operations Act 1997* identifies "scheduled activities" which are required to be licensed by the NSW Environment Protection Authority (EPA). The proposed remediation activities are not identified as a scheduled activity. Nevertheless, the proponent is still required to prevent any pollution to air, noise or water associated with their activities and immediately notify of such events to the nominated authorities.

3.1.3 Contaminated Land Management Act 1997

The primary objective of the *Contaminated Land Management Act 1997* (CLM Act) is to establish a process for investigating and remediating land areas where contamination presents a significant risk of harm to human health or some other aspect of the environment. Where land is identified as potentially contaminated, consultation with the NSW EPA should be undertaken.

Two site audit statements and site audit reports were prepared by Mr Graeme Nyland of Environ for the Lot 223 South site. The reports were commissioned by Moltoni Adams and aimed to determine the land use suitability of the Lot 223 South area and Lot 223 South "Axehandle" area respectively. Both reports certified that the respective lands were suitable for use as a commercial/industrial sites, subject to compliance with the respective site maintenance plans. Both statements noted that the contaminants (mainly manganese and PAH's) remaining on the site have been capped and recommended that the site maintenance plan should be reviewed by an accredited EPA site auditor when the development is undertaken.

3.1.4 Water Act 1912

To obtain the original development consent, the approval of the Department of Land and Water Conservation (DLWC) was required as the proposed remediation works impacted on groundwater. In accordance with the *Water Act 1912*, all works impacting on groundwater must be licensed with the DLWC (under Part V of the Act). In the original remediation proposal, excavation for the construction of sediment basins required works to break through the fill aquifer layer. Consequently, the DLWC's approval was sought by the then Department of Planning, and DLWC granted General Terms of Approval for the proposal which were incorporated into the proposed conditions of consent.

The current proposal for remediation (sought under this modification application) does not involve any changes to groundwater. There are no new bores proposed, or changes to existing bores. No changes that would affect licencing under the *Water Act 1912* are proposed.

3.2 Environmental Planning Instruments

3.2.1 Newcastle Local Environment Plan

The Site is located within the Newcastle City LGA where the relevant local Environmental Planning Instrument is the *Newcastle Local Environmental Plan 2003* (LEP 2003). However, clause 16 of LEP 2003 identifies the proposed Site as lying within the boundary of Three Ports Site (*State Environmental Planning Policy (Major Projects) Amendment (Three Ports) 2009*), and thus falling under the provisions of the *State Environmental Planning Policy (Major Development) 2005* (Major Development SEPP). By virtue of Part 20(4) of Schedule 3 Major Development SEPP, the provisions of the LEP 2003 do not apply to the proposed Site.

3.3 State Policy Initiatives

3.3.1 State Plan: A New Direction for NSW

The revised *NSW State Plan: A New Direction for NSW* (NSW State Plan) released in March 2010, sets out priorities for Government action over a ten year time span.

Chapter 2 of the *NSW State Plan* addresses business investment and employment as well as the timely processing of major project determinations and planning proposals.

The NSW State Plan aims to double new business from around $40 billion per year in 2006 to around $80 billion per year by 2016 and to support jobs during the economic downturn. The remediation of the lots and increasing the availability of port side industrial land is aligned with this priority.

3.3.2 NSW Ports Growth Plan

The three major NSW ports, including the Port of Newcastle, Port Botany and the Port Kembla, have been nominated as State Significant Sites in the *Three Ports State Significant Sites (SSS) Proposal* prepared by the then Department of Planning in 2008. This designation recognises the economic importance of the three Ports to the State of NSW and the directions outlined in the *NSW Ports Growth Plan*.

The then Minister for Planning and the Minister for Ports and Waterways have determined that the ports and related industrial land should be State Significant Sites, and have listed them as such in Schedule 3 of the *SEPP (Major Developments) 2005*. The State Significant Sites designation aims to protect the Ports and associated nearby transport corridors from encroachment by residential and commercial land uses and spot rezonings.

As part of the State Significant Sites status, the NSW Government has developed a planning regime for the three NSW ports that would provide for their expansion and preserve these areas for port related activities and industry. Under the planning regime the sites are zoned SP1 Special Activities (Port Industry). The remediation works fit well within the planning framework for the Port and also assists in the diversification of port and industrial activities in Newcastle.

3.3.3 State Environment Planning Policy No. 33 – Hazardous and Offensive Development

State Environmental Planning Policy 33 – Hazardous and Offensive Development (SEPP 33) was designed to ensure that sufficient information is provided to consent authorities to determine whether a development is hazardous or offensive. Development to which SEPP 33 applies, that is considered potentially hazardous or offensive, requires a Preliminary Hazard Analysis (PHA) to be undertaken to identify and assess potential effects to both people and the environment.

The terms of SEPP 33 apply to development for the purposes of industry (or associated materials storage). SEPP 33 does not apply to remediation works such as the proposed capping at Lot 223.

3.3.4 State Environmental Planning Policy No. 55 – Remediation of Land

State Environment Planning Policy 55 – Remediation of Land (SEPP 55) promotes the remediation of contaminated land to reduce the risk of harm to human health or other environmental systems. Clause 7 of SEPP 55 requires a consent authority to consider whether the land is contaminated and whether it is suitable (or can be made suitable) for the proposed development. It states:

(1) A consent authority must not consent to the carrying out of development on land unless:

(a) it has considered whether the land is contaminated, and

(b) if the land is contaminated, it is satisfied that the land is suitable in its contaminated state (or would be suitable, after remediation) for the purpose for which the development is proposed to be carried out, and

(c) if the land requires remediation to be made suitable for the purpose for which the development is proposed to be carried out, it is satisfied that the land would be remediated before the land is used for that purpose.

(2) Before determining an application for consent to carry out development that would involve a change of use on any of the land specified in subclause (4), the consent authority must consider a report specifying the findings of a preliminary investigation of the land concerned carried out in accordance with the contaminated land planning guidelines.

The proposed capping works at Lot 223 are to remediate the site in accordance with the *Contaminated Land Management Act 1997* (CLM Act). With the approval and commencement of the proposed capping of Lot 223, remediation activities are scheduled for completion by mid-2013.

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4.0 Consultation

4.1 Consultation Background

Lot 223 is part of the former BHP-owned Newcastle Steelworks site. During the time the Steelworks operated, by-products from steel-making made their way into the Hunter River, settling in the sediment alongside the Steelworks site. Since the closure of the Steelworks, BHPB has implemented the Hunter River Remediation Project (HRRP) which has involved the dredging and treatment of river sediments contaminated by these industrial processes.

Consultation with the local community, Government, and industrial neighbours was ongoing as part of the HRRP from 2007 until its completion in early 2012. HRRP consultation has involved many engagement mechanisms, and primarily included:

- Regular Community Consultative Committee (CCC) meetings;
- Biannual Community Newsletters;
- Regular meetings with regulatory authorities; and
- Regular meetings with landowners and industrial neighbours.

Consultation with key stakeholders, including landowners and regulatory authorities, has continued beyond HRRP completion. More recent consultation activities with community, including the final CCC meeting held in December 2011 included a feature presentation and discussion on the proposed Lot 223 activities.

4.2 Community Engagement

4.2.1 Community Consultative Committee

At the final HRRP CCC meeting held on 14 December 2011, committee members were provided a presentation on the background to and proposed remediation activities at Lot 223. None of the CCC members, which included representatives from Mayfield, Stockton, Hunter River users (fisheries/marine) and Newcastle City Council, raised any issues or concerns in relation to the proposed activities. All members were invited to contact BHPB if they wished to receive any further information. To date, none of the committee members has requested further information. This meeting is considered adequate to satisfy any regulatory expectation to hold a CCC meeting prior to the start of works.

4.2.2 Community Newsletter

A biannual HRRP Community Newsletter has been distributed to approximately 11,000 households in the local area, and to interested stakeholders since mid-2008. The distribution area includes Mayfield and Carrington which are the nearest suburbs to the proposed remediation activities at Lot 223. A feature insert presenting and explaining the proposed activities at Lot 223 is proposed to be included in the final HRRP Community Newsletter to be distributed around mid-2012 with contact details for any further information.

4.2.3 Wider Community Engagement

Wider community engagement is not proposed at this stage given the minor scale and short term nature of the Lot 223 remediation activities outlined in this document. If any community members do contact BHPB during the proposed works – perhaps as a result of seeing activity at the site, or requesting further information as a result of the community newsletter, they would be personally provided appropriate information on the project and have any enquiries or complaints appropriately investigated and resolved.

BHPB has also engaged with its industry neighbours, including OneSteel and Koppers, regarding the proposed Lot 223 remediation activities during which the joint investigation, as appropriate, of community enquiries or complaints received by any party has been discussed and agreed using successful protocols established for the HRRP.

4.3 Industrial Neighbours

Lot 223's industrial neighbours (OneSteel, Koppers, Donhad, M&E Equipment Traders and Asia Pacific Shipping) have been contacted and advised of the proposed remediation activities. Consultation was undertaken with each of the neighbours to provide them with a background to the project and details of the proposed works and to identify and address any issues.

A summary of all issues raised by industrial neighbours, including OneSteel, during these rounds of consultation and BHPB's response to each matter raised is provided in Table 1.

Table 1 Consultation – Industry Neighbours

Stakeholder	Date	Key issues discussed	Action(s)
OneSteel	27 March 2012 24 April 2012 7 May 2012 8 May 2012	The key industrial neighbour potentially most impacted by the proposed works, particularly to secure access to both sites via Ingall Street, is the adjacent property owner, OneSteel. BHPB met with OneSteel on 27 March, 24 April, 7 May and 8 May 2012. OneSteel's main issue was to maintain the common road access to the Lot 223 site and minimise any disruption to their operations caused from maintaining sole access to both sites, except in emergency circumstances, via Ingall Street. OneSteel requires access through the site and is keen to ensure that their access would not be unduly interrupted due to the proposed works.	All contractors (including sub-contractors) working on the Lot 223 remediation project are to be OneSteel inducted unless otherwise agreed with OneSteel. An activity/risk workshop, convened by BHPB and facilitated by the appointed remediation contractor, will be held with OneSteel and all contractors. It is anticipated for this workshop to be conducted in June 2012. All BHPB contractor trucks entering OneSteel site will have visible signage to ensure they are easily recognised by security when arriving/leaving site.
		A 15 m exclusion zone will need to be maintained at all times around the electrical substation located at Lot 9.	BHPB contractors will be required to ensure their activities don't impede within 15 m of the electrical substation on Lot 9.
		Water quality controls will need to take into account the downstream environment which is monitored and managed by OneSteel.	A range of stormwater/runoff controls will be applied during construction works.
Koppers	11 May 2012	Koppers pipeline – need to ensure the proposed works will not impact on the existing Koppers supply line.	BHPB will review and confirm this point in a follow up meeting.
		Landform – need to ensure compatibility as far as practical in the final remediation surfaces between Lot 223 South and Koppers. This includes discussion of any related surface water management/drainage issues.	BHPB will review and confirm this point in a follow up meeting.
		Traffic – maintain Koppers current access and minimise potential vehicles interaction issues.	BHPB will invite Koppers to participate in the activity risk/workshop to be conducted for the project.
Donhad	3 May 2012	Traffic – vehicle interactions and preserving western access. Drainage – not adversely impact on Donhad site drainage and ensure outlet	BHPB agreed and committed to implementing response actions to address these concerns (refer to Appendix A) and Donhads had no further objection to the proposed works.

Stakeholder	Date	Key issues discussed	Action(s)
		from stormwater drainage pipes from Donhad to the eastern drain are adequate for loadings but had no objection to the proposed works provided BHPB implemented the agreed actions.	Donhads were also invited to attend the activity/risk workshop prior to the commencement of works.
M&E Equipment Traders	30 April 2012 15 May 2012	M&E Equipment Traders did not raise any issues regarding the proposed works, but would like BHPB to implement measures to prevent any potential pollution/contamination from entering their property	Measures will be implemented during remediation works to ensure to contamination/pollution impacts on M&E Equipment Traders property.
Asia Pacific Shipping	30 April 2012 7 May 2012	Telephone and email conversations were conducted with Asia Pacific Shipping to consult about the proposed works. Asia Pacific Shipping advised that they had an outstanding issue related to site drainage since the original remediation works were conducted at Lot 223.	After being presented with the proposed works and proposed drainage arrangements, Asia Pacific Shipping were satisfied and had no objections to the proposed remediation works (refer to Appendix A).

4.4 Government Agencies

BHPB arranged meetings with the following agencies:

- DP&I;
- EPA;
- NSW Roads and Maritime Services (RMS), formerly the NSW Roads and Traffic Authority; and
- Newcastle City Council (NCC).

A summary of the issues raised by government agencies and BHPB's response to each matter raised is provided at Table 2.

Table 2 Consultation – Government Agencies

Agency	Date	Key issues discussed	Action(s)
DP&I	12 April 2012	During the meeting BHPB outlined the proposed project modifications and the proposed planning pathway for approval.	DP&I confirmed the s75W application process as relevant and raised no major issues of concern.
EPA	24 April 2012	Discussed the project and also conducted a site visit of Lot 223. The EPA requested more clarity regarding the type of material to be used for the capping works at Lot 223 South. Due to the lengthy history of remediation, subdivision and landownership changes at the site, the EPA indicated it would need to clarify it position regarding the legal applicability of the existing Voluntary Management Proposal (VMP, previously referred to as VRP) for Lot 223 South.	EPA confirmed it was generally supportive of the proposed remediation activities, including scope of work at each site. Subsequent EPA correspondence confirmed that the existing VMP (previously referred to as VRP) for Lot 223 South could not be amended to include the proposed works, and that a new VMP was required. In response, a new VMP is currently being prepared by BHPB but this will have no bearing on this modification application as it exclusively relates to a separate EPA process.

Agency	Date	Key issues discussed	Action(s)
RMS	3 May 2012	Discussed the project and associated potential road and traffic issues. The RMS expressed strong opposition to the use of Tourle Street as access to Lot 223, as was originally proposed by BHPB for the project. Rather, the RMS indicated its preference for the already approved (under the current consent) Ingall Street access. The RMS had no other objections to the proposed project.	Following the meeting with RMS, BHPB further consulted with OneSteel to arrange access to the site via Ingall Street, and subsequently advised the RMS of the agreement reached with OneSteel.
NCC	7 May 2012	BHPB presented and discussed the project with NCC. NCC questioned the removal of a need for a CCC for the project activities. The temporary and minor scale of works as part of the reasoning was acknowledged. Site Maintenance Plan available “on request” as the project doesn’t have a website to upload the plan. NCC requested that truck routes to Stockrington and Summerhill facilities be designated to ensure trucks do not use back roads and keep to heavy vehicles roads. NCC expressed that their preferred route to/from Summerhill is the route specified in the existing Development Consent (DA No. DA-381-12-2001-I), i.e. To: Ingall Street, Industrial Drive, Pacific Highway, Wallsend Road, Sandgate Road, Newcastle Inner City Bypass, Newcastle Road, Longworth Avenue, Minmi Road. From: Minmi Road, Longworth Avenue, Newcastle Road, Newcastle Inner City Bypass, Sandgate Road, Wallsend Road, Pacific Highway, Industrial Drive, Ingall Street. NCC also expressed their preferred route to / from Stockrington Quarry as: To: Ingall Street, Industrial Drive, Maitland Road, New England Highway, John Renshaw Drive, Sydney – Newcastle F3, Blackhill Road, Lenaghans Drive, Stockrington Road, Dog Hole Road. From: Dog Hole Road, Stockrington Road, Lenaghans Drive, Blackhill Road, Sydney – Newcastle F3, John Renshaw Drive, New England Highway, Maitland Road, Industrial Drive, Ingall Street.	NCC will further consider the CCC option and confirm its response to DoPI. BHPB will ensure contractors will use the specified heavy vehicle roads.

5.0 Prioritisation of Issues

The EIS titled “Remediation of Lot 223, Industrial Drive, Mayfield” (GHD, 2001) provided an assessment of the potential environmental impacts associated with the remediation of Lot 223 in its entirety, based on knowledge of the site and site history, desktop investigations and specialist studies.

A review of the original EIS was conducted along with a desktop assessment in light of the proposed modification changes in order to identify potential environmental issues. A risk analysis was undertaken to rank these issues according to the level of environmental risk.

5.1 Risk Matrix

Potential impacts are ranked according to the risk matrix (refer to Table 3) as being High, Medium, Low or Very Low risk to the environment.

Potential Consequences

1) Broad scale environmental impact
2) Regional environmental impact
3) Local environmental impact
4) Minor environmental impact
5) Insignificant environmental impact

Likelihood of adverse impact:

a) Almost certain
b) Likely
c) Possible
d) Unlikely
e) Rare

Table 3 Risk matrix

Potential Consequence	Likelihood of adverse impact					
		A	B	C	D	E
	1	High	High	Medium	Low	Very Low
	2	High	High	Medium	Low	Very Low
	3	Medium	Medium	Medium	Low	Very Low
	4	Low	Low	Low	Low	Very Low
	5	Very Low	Very Low	Very Low	Very Low	Very Low

5.2 Risk Analysis

The prioritisation of potential environmental issues related to the proposed project is provided in Table 4.

This ranking aims to allow the prioritisation of issues for assessment and does not consider the application of mitigation measures to manage the environmental effects. In all cases, appropriate and proven mitigation measures chosen based on experience with other similar projects would be used to minimise and manage potential impacts identified in this risk analyses. These measures are described throughout Section 6.0 of this EA.

Table 4 Risk assessment

Environmental Aspect	Potential Environmental Issue	Consequence	Likelihood	Ranking
Land use	No change to existing footprint. Proposed land use is with adjoining land uses and zoning of the site.	5	E	Very Low
Visual amenity	No change to current site footprint or use.	5	E	Very Low
Socio-economic effects	Employment generating opportunity.	5	E	Very Low
Heritage	No change to existing footprint.	5	E	Very Low
Traffic and access	Traffic impacts on Industrial Drive and local road network due to additional truck movements required for the project.	3	C	Medium
Flora and Fauna	No change to existing footprint.	5	E	Very Low
Air quality	Generation of fugitive emissions associated with operation of machinery and transport vehicles.	4	A	Low
	Generation of dust associated with excavation and capping activities.	4	B	Low
Noise	Noise impacts on nearby sensitive receivers through the use of equipment and machinery and transport vehicles.	4	C	Low
Surface water	Erosion of disturbed materials and discharge of potentially contaminated sediments offsite.	3	D	Low
	Erosion of exposed material and sedimentation of local waterways.	3	D	Low
	Increased runoff from site following capping.	4	C	Low
	Accidental spills and pollution of local waterways.	4	D	Low
Geology, Hydrogeology and soils	No impact on geology as excavation depth would not reach natural sediments.	5	E	Very Low
	Exposition of contaminated groundwater and potential contamination of surface water.	5	E	Very Low
	Exposition of contaminated soils. Due to previous capping works, it is anticipated that no contaminated soils would be impacted	3	E	Very Low
Waste management	Generation of demolition and construction waste requiring disposal.	4	C	Low
Hazards and risks	Contamination levels of West and South parcels are low. Minimal earthworks or interaction with contaminated materials are anticipated for the proposed works.	2	E	Very Low
Energy and Resource consumption	Use of electricity and fossil fuels for demolition and construction activities and transport vehicles.	5	E	Very Low
Cumulative impacts	No change to existing footprint. No cumulative impacts with other approved or proposed developments are anticipated.	5	E	Very Low

5.3 Key Issues

Based on the risk analysis presented above, the key issues requiring detailed assessment within this EA were identified and include:

- Traffic and access
- Air Quality
- Noise
- Surface Water
- Waste.

These key issues are assessed in Sections 6.1 - 6.5 of this EA. Each issue is reviewed in light of the original EIS findings (GHD, 2001) and a statement of consistency (or change) is provided. For issues with inconsistent or significantly changed impact from the original EIS, additional desktop assessments are conducted.

Other issues considered to have little or no anticipated impact include land use, visual amenity, socio-economic effects, heritage, flora and fauna, geology and soils, hazard and risk, energy and resource consumption and cumulative impacts.

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6.0 Environmental Assessment

6.1 Traffic and Access

6.1.1 Introduction

The remediation of the West and South areas of Lot 223 would involve the importation of fill in separate campaigns for the respective West and South areas over an expected total period of up to 10 weeks. Vehicles used are anticipated to be 32t truck and dog where available, which would access the site via Industrial Drive at the Ingall Street intersection. The origin of the materials may vary and for this assessment it has been assumed that materials would be sourced to the west of the site, via Industrial Drive, which is considered representative of the main source options.

6.1.2 Changes to original EIS

The original EIS prepared for the remediation of Lot 223 assumed that the activity would be undertaken as one project. Consequently the assessment assumed a longer duration and lower number of movements on the local road network. Remediation of the area however has been undertaken in stages, with two areas to the south and west previously remediated under separate contracts. This proposal would involve the final remediation of these respective areas.

The original EIS prepared by GHD assumed that access to the site would be via Ingall Street. Trucks were to travel from the coal preparation plant at Teralba over an estimated 18 month period with a traffic generation of 13 trucks movements per day. The access at Ingall Street is retained as the site access in accordance with preference of the NSW Roads and Maritime Service (RMS), following consultation with them during the preparation of this Environmental Assessment. The maximum number of truck movements is estimated to be six round trips (12 truck movements) per hour and an estimate of 114 truck movements per day. This estimate is based the existing approved construction hours of 7 am to 6 pm and is likely to take place over a 3-4 week period.

6.1.3 Road Network

6.1.3.1 Regional Road Network

F3 (Sydney – Newcastle Freeway)

The F3 Freeway is a 127 km motorway linking Sydney to the Central Coast, Newcastle and Hunter Regions. The freeway alternates between two and three lanes in each direction for its length. The northern section of the freeway in the vicinity of the site, from north of Wyong to its terminus at John Renshaw Drive, has two lanes in each direction. The freeway has a speed limit varying between 80 and 110 km/hr.

Pacific Highway

The Pacific Highway is a 1,025 km major transport route which links Sydney and Brisbane along the east coast of Australia. The section of the Pacific Highway in the vicinity of Mayfield has two lanes in each direction and a speed limit that varies between 60 km/hr and 80 km/hr. The Hexham Bridge carries the Pacific Highway over the Hunter River and has two lanes in the southbound direction and three lanes in the northbound direction. Currently, the section of road between the F3 Freeway and the Raymond Terrace bypass (12.2 km) is being upgraded from a single carriageway to a dual carriageway to improve safety and relieve traffic congestion.

New England Highway

The New England Highway connects to the Pacific Highway at Hexham and travels west towards Maitland. It is an alternative inland route to the Pacific Highway travelling between Sydney and Brisbane. The majority of the route is single carriageway; however, between Hexham and Maitland, it has two lanes in each direction. For most of its length the New England Highway has a 100 km/hr speed limit.

Cormorant Road

Cormorant Road is located on Kooragang Island, the site of a deep water port for the export of coal, and a major heavy industry area in the Newcastle area. Cormorant Road is a sealed road that predominantly consists of one lane in each direction; the eastern section of the road widening into a dual carriageway in each direction. There is a speed limit of 60 km/hr in the westbound direction and 80 km/hr in the eastbound direction.

Tourle Street

Tourle Street is the continuation of Cormorant Road over the South Arm of the Hunter River to the southern mainland. Tourle Street provides a direct route between Newcastle, the industrial area and Newcastle Port facilities on Kooragang Island. The new Tourle Street Bridge opened in May 2009, and consists of one lane in each direction, with 2 m shoulders. Tourle Street has a speed limit of 60 km/hr in both directions.

6.1.3.2 Local Road Network

Lot 223 is located on an existing industrial area on the South Arm of the Hunter River. The northern portion of the site is connected to the regional road network through Industrial Drive, via Ingall Street intersection, while the southern portion of the site is connected to Industrial Drive via Selwyn Street and George Street.

Industrial Drive

Industrial Drive is a classified dual carriageway that provides connections to the Pacific Highway, site, and to the north bank of the South Arm of the Hunter River. It serves as a major link between Maitland and Newcastle CBD providing access to the Honeysuckle Precinct and is an alternative to the Pacific Highway for southbound traffic. It is a B-Double approved vehicle route signed at 80 km/hr.

RMS has advised that Industrial Drive is fully developed and no further upgrades are planned. The existing road reserve for Industrial Drive has no provision for future widening except for a small parcel opposite the Tourle Street junction.

6.1.3.3 Daily Traffic Counts

RMS traffic volume data has been obtained to determine the historical traffic growth surrounding study area. Table 5 shows historical Average Annual Daily Traffic (AADT) volumes at two stations in the vicinity of the site for the years 1998, 2001 and 2004. Both stations are located on Industrial Drive to the west of the site. Dedicated surveys were also undertaken in 2006 and 2010 and have been provided below.

Table 5 RMS published and surveyed traffic volumes

Location	Count	1998	2001	2004	2006	2010	2012
Industrial Drive – North West of Woodstock Street	AADT	29,549	30,334	30,717	-	-	-
Industrial Drive – West of Werribi Street	AADT	21,608	21,559	23,339	-	-	-
Industrial Drive – North of George Street	Vehicles	-	-	-	22,635	25,247	-
Ingall Street – North of Industrial Drive	Vehicles	-	-	-	-	-	2,736
Industrial Drive – West of Ingall Street (Eastbound)	Vehicles	-	-	-	-	-	16,280

Source: RTA Traffic Volume Data

The data as provided in Table 5 indicates that traffic growth has been in the order of 0% - 2.5% per annum. It is likely that the closure of the BHP Steelworks complex and the developments at Kooragang Island, the former Mayfield Steelworks site and Steel River precincts have influenced traffic growth over periods since 1998.

6.1.3.4 Peak Hour Volumes

The AM and PM peak periods, along Industrial Drive, adjacent to Vine Street, occur between the hours of 7.30 am – 8.30 am and 4.45 pm – 5.45 pm respectively. Provided in Table 6 are traffic volumes which were obtained during dedicated surveys undertaken in February 2011 and May 2012.

Table 6 Peak Hour Volumes Industrial Drive

Industrial Drive AM Peak Hour Direction Flow (7.30-8.30)	
Westbound	1,423 vehicles per hour
Eastbound	1,672 vehicles per hour
Total AM Peak	3,095 vehicles per hour
AM Tidal Split **Eastbound (%) / Westbound (%)**	54% / 46%
Industrial Drive PM Peak Hour Direction Flow (16:45-17:45)	
Westbound	1,973 vehicles per hour
Eastbound	1,506 vehicles per hour
Total PM Peak	3,479 vehicles per hour
PM Tidal Split **Eastbound (%) / Westbound (%)**	43% / 57%

Table 7 Peak Hour Volumes Ingall Street

Ingall Street AM Peak Hour Direction Flow (7.30-8.30)	
Northbound	76 vehicles per hour
Southbound	157 vehicles per hour
Total AM Peak	233 vehicles per hour
AM Tidal Split **Northbound (%) / Southbound (%)**	33% / 77%
Ingall Street PM Peak Hour Direction Flow (16:45-17:45)	
Northbound	20 vehicles per hour
Southbound	115 vehicles per hour
Total PM Peak	135 vehicles per hour
AM Tidal Split **Northbound (%) / Southbound (%)**	15% / 85%

6.1.4 Proposed Traffic Operations

The capping material for Lot 223 is likely to be sourced from Summerhill Waste Management Centre, however may also be sourced from alternate locations upon award of the contract. The material would be delivered to the site via intersection of Industrial Drive and Ingall Street. This intersection is currently signalised and accommodates heavy vehicles generated by OneSteel, located within Ingall Street north of Industrial Drive. This access route is preferred by RMS for the proposed remediation activities at Lot 223, as confirmed by them during the stakeholder consultation undertaken by BHP Billiton with AECOM in preparing this Environmental Assessment.

A designated area would be provided for contractor parking during the site works. It is anticipated that nine contractors will be working on the Lot 223 West site and 13 on the Lot 223 South site. Therefore in the worst case a maximum contractor workforce size of around 22 would be involved in both of the remediation projects at Lot 223. Site contractors would also access the site via Ingall Street and it is assumed these vehicles would only involve one trip per day per contractor.

The proposed heavy vehicle haulage route is illustrated in Figure 3.

6.1.5 Impact Assessment

Provided below is an assessment of the predicted impact of traffic generated from the proposed remediation based on the forecast vehicle movements and current traffic volumes on the surrounding road network to Lot 223.

Provided in Table 8 is a summary of traffic movements generated by the remediation activities during peak and normal site operations.

Table 8 Peak and average truck movements Lot 223

Time	No. of Truck Movements per hour	Total Truck Movements per day	Percentage increase in AM peak hour traffic	Percentage increase in PM peak hour traffic
Peak Operations (3-4 weeks)	12 Heavy Vehicles (i.e. 6 inbound and 6 outbound movements per hour)	114 Heavy Vehicles (i.e. 57 inbound and 57 outbound movements per day)	0.35% (eastbound)	0.30% (westbound)

It has been assumed there is an even distribution of deliveries over the working day. Based on the current traffic along Industrial Drive, this would result in a daily peak hour traffic increase of approximately 0.4% and 0.3%, for AM and PM peaks respectively, over a 3-4 week period.

No traffic modelling has been undertaken given the low number of proposed traffic movements and the relative short duration of the works.

Potential contractors for the works have identified that some waste materials such as concrete and metal may be transported north to facilities located on Kooragang Island. It is anticipated given the amount of waste materials on the site, traffic movements associated with the activity would be low. These movements are also proposed to utilise the existing signalised intersection of Ingall Street and Industrial Drive.

6.1.6 Conclusion

For the remediation of Lot 233 South and West it is proposed that the signalised intersection of Ingall Street and Industrial Drive will be used for the delivery of remediation material, removal of waste material and contractor access. This intersection currently accommodates heavy vehicles that access OneSteel and is the preferred option of RMS for the remediation activities. BHP Billiton has obtained consent from OneSteel for the shared use of this intersection.

It is estimated that the maximum number of truck movements over the peak three to 3-4 week period will be 12 per hour (six inbound and six outbound movements) which results in a 0.4% and 0.3% increase in traffic volume on Industrial Drive for AM and PM peaks respectively. Contractor access to the site is estimated to be a maximum of 22 if both West and South sites are remediated concurrently, which is considered unlikely. This would add 22 car-based inbound trips prior to the AM peak and 22 outbound trips after the PM peak.

Given the relatively low number of truck movements and temporary nature of the proposed remediation works the impact to the existing road network is anticipated to be minimal, not requiring specific mitigation measures.

Lot 223

Proposed Traffic Route

Heavy Vehicle Haulage Routes

Lot 233, Industrial Drive, Mayfield

Aerial Source: ESRI (2012)

0 125 250 500 Meters

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Fig. 3

6.2 Air Quality

6.2.1 Background

Climate

The closest meteorological station (Newcastle University) is located approximately 2.5 km west of the site (refer to Figure 4). Data from 1998-2012 indicate that average monthly maximum temperatures range from 17.7°C in July (winter) to 29.0°C in February (summer). Rain generally falls on 98 days per year with an average recorded rainfall of 1,148.4 mm per annum. Annual average relative humidity levels are 73% and 56% at 9 am and 3 pm respectively.

Summer winds are predominantly from the east-northeast, indicating the direction of the sea breeze, while north-westerly winds usually dominate the winter months. There are low occurrences of calm conditions, which is typical of coastal environments.

Ambient air quality

Newcastle's air quality has improved in recent years following the cessation of steel manufacturing in the area. A number of pollutant sources remain, however, including industrial, domestic and transportation activities, with motor vehicles considered to provide the greatest emission load to local air sheds.

Lot 223 is located within a heavy industrial area on the right bank of the South Arm of the Hunter River. Residential areas of Mayfield occur south of the site across Industrial Drive. The air quality within the area is considered to be typical to that of an industrial area, with existing sources which contribute to air pollution including:

- Industrial emissions from established local industries at Carrington, Mayfield West and on Kooragang Island;
- Dust emissions from the nearby coal and grain terminals;
- Odour emissions from seed processing (Cargill) and coal tar processing (Koppers);
- Emissions from motor vehicles travelling on the local road network; and
- Dust and pollens in drier and windy conditions.

The NSW EPA operates an ambient monitoring station at Wallsend, which is approximately 6 km west of the Lot 223 site. The Wallsend station monitors levels of ozone, sulfur dioxide, nitrogen dioxide and particulate matter (PM_{10} and $PM_{2.5}$). Monthly monitoring results from last year's period (01/4/2011 to 01/4/2012) show that concentrations of all air quality indicators are all well below the EPA ambient criteria.

Dust deposition and total suspended particulates (TSP) in the area were reported in the Kooragang Coal Terminal 4 Project report (PEA Holmes, 2009). The Terminal 4 project area is located just north of Lot 223 across the Hunter River. The monitoring data for 2008 indicate that annual average TSP and PM_{10}, and dust deposition levels are well below the OEH assessment criteria. Periodic exceedances of the maximum 24hr-average PM_{10} criterion of 50 $\mu g/m^3$ have been recorded, such as on two days in 2008 at Fern Bay, possibly due to dust storms or bushfires rather than industrial emissions.

Based on the data available, PAE Holmes (2009) calculated background dust concentrations at residential areas in the vicinity of the Terminal 4 area to be:

- Annual average TSP of 45 $\mu g/m^3$ (OEH criterion is 90 $\mu g/m^3$);
- Annual average PM_{10} of 21 $\mu g/m^3$ (OEH criterion is 30 $\mu g/m^3$); and
- Annual average dust deposition of 2g/m^2/month (OEH criterion is 4g/m^2/month).

6.2.2 EIS Findings

The original EIS anticipated that the proposed remediation of Lot 223 had the potential to result in air quality impacts on nearby sensitive receivers (refer to Figure 4) through the generation of dust associated with excavation and capping works and the transport of material within the site.

The Air Quality Assessment conducted as part of the EIS found that minor exceedances of Annual TSP and 24 hour PM10 levels would occur in an area closest to the site. Potential air quality impacts could be mitigated through implementation of safeguards and management measures, including ceasing works in areas close to sensitive receivers during excessive winds blowing in the direction of the receiver, water spraying of exposed

materials and minimising the area exposed at one time. With such measures being implemented, the EIS concluded that the proposed works would not have a significant impact on local or regional air quality.

6.2.3 Potential Impacts and Consistency with EIS

The proposed works have the potential to result in air quality impact through dust generated during earthworks, capping and other materials handling activities. The transport of capping materials to site also has the potential to general dust.

The proposed works are consistent with the currently approved remediation activities, and would be conducted at a smaller scale than that investigated during the original EIS. Consequently, impacts on local air quality are anticipated to be equal to or less than those described in the EIS, and the mitigation measures as proposed in the EIS are considered sufficient to minimise and mitigate the impacts.

6.2.4 Mitigation Measures

- In line with conditions 27-31 of the current development consent, a Construction Air Quality Management Plan would be developed and implemented, and would include a Construction Air Quality Monitoring Program. This would allow appropriate safeguards to be implemented to reduce impacts to below acceptable levels.
- Dust minimisation measures such as water spraying of haulage roads and exposed areas would be undertaken as necessary.
- The disturbance area at any one time would be minimised.
- The recontouring works would be reviewed and monitored/managed to minimise works in areas of the site that may generate dust impacts on nearby sensitive receivers during periods of strong wind (more than 7m/sec).
- The retention of the majority of trees along the southern boundary would provide a buffer against air borne dust.
- Where monitoring indicates that the wind direction and speed may result in adverse impacts on the nearby sensitive receivers works in the vicinity of these receivers would be modified and/or cease.
- Revegetation or placement of an asphalt seal over the capping layer may further minimise the potential for dust generation following the completion of the proposed works.

Lot 223

Meteorological Monitoring Station (061390)

Sensitive Receivers

#	Receiver Name	Distance (km)	#	Receiver Name	Distance (km)
1	Six Hats Early Childhood Service	0.1	7	BCS Retirement Village	1.1
2	Hunter Christian School	0.1	8	Mater Hospital	1.9
3	My Kindy Early Learning Centre	0.4	9	Hunter Institute TAFE	2.0
4	Mayfield West Primary School	0.5	10	Maroba Retirement Village	2.2
5	San Clemente High School	0.7	11	Callaghan College & Waratah West Primary School	2.3
6	Mayfield East Primary School	0.9		*Note: Distances are approximate*	

Air Quality Sensitive Receivers

Lot 223, Industrial Drive, Mayfield

Aerial Source: ESRI (2012)

0 125 250 500 Meters

15/05/2012

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Fig. 4

6.3 Noise

6.3.1 Background

A number of sensitive human receivers are located in the vicinity of Lot 223. Sensitive receivers within 1 km of Lot 223 include two infant day-care centres (My Kindy Early Learning Centre located near Mayfield Fire Station approximately 400 m west from the West parcel, and Six Hats Childhood Service located approximately 100 m south-east of Lot 223 South). The Hunter Christian School is situated approximately 100 m from the South parcel. Mayfield West Primary School and Mayfield East Primary School are located approximately 500 m to the south-west and 900 m to the south-east of Lot 223, respectively. San Clemente High School is situated approximately 700 m south of the site. All these receivers are situated at approximately 10 m or higher in elevation than Lot 223 site. Additionally, many residential properties are located in proximity to the site across from Industrial Drive. Sensitive receiver locations are presented in Figure 4.

The original EIS (GHD, 2001) and the "*Noise Impact Assessment, Marstel Terminals Newcastle, Mayfield (BHP) Site, NSW*" (Spectrum Acoustics, 2008) reported ambient noise levels at the following locations in the vicinity of the site:

- 73 Bull Street, Mayfield – south of the site, not immediately adjacent to Industrial Drive with direct line of sight to the site;
- 27 Groongal Street, Mayfield West – south-west of the site within a residential area with line of sight to the site;
- 2 Crebert Street, Mayfield – south-east of the site within a residential area along Industrial Drive; and
- 32 Elizabeth Street, Carrington – south-east of the site.

Table 9 lists the measured ambient noise levels (2008) at each location, expressed with L_{90} and L_{eq} parameters, which are commonly used measures for assessing noise impacts. These results are assumed to still be relevant as the nature and intensity of industrial activities in the area have not significantly changed since then.

Table 9 Ambient noise levels in the vicinity of Lot 223

Location	Noise level descriptor, dB(A)	Day 7 am – 6 pm	Evening 6 pm – 10 pm	Night 10 pm – 7 am
73 Bull Street, Mayfield	L_{90}	53	52	51
	L_{eq}	56	57	59
27 Groongal Street, Mayfield West	L_{90}	54	48	44
	L_{eq}	72	67	69
2 Crebert Street, Mayfield	L_{90}	46	47	43
	L_{eq}	63	59	56
32 Elizabeth Street, Carrington	L_{90}	42	41	37
	L_{eq}	62	67	57

6.3.2 EIS Findings

Noise modelling was carried out to determine the impact of the remediation works and road traffic associated with the original project. The results of the modelling showed that even under extreme weather and maximum operational conditions, noise levels for the majority of the receivers would be below EPA planning limits (the EPA Environmental Criteria for Road Traffic Noise, 1999) relevant at the time of the assessment

Only noise levels at the playground of the Mayfield campus of the Hunter Christian School would marginally exceed EPA planning limits (55dB(A) L_{eq}), and only during short periods of school days when students are in the playground. Any exceedances would be of a short-term nature and no significant long-term adverse impacts were anticipated.

The EIS concluded that with the implementation of noise management measures, the proposed works would not have a significant impact on the local environment.

6.3.3 Potential Impacts and Consistency with EIS

In the development consent, the Department set noise criteria for the proposed construction works so that the Applicant would be required to:

- Carry out the proposed works during regular construction hours;
- Prepare and implement a detailed Construction Noise Management Plan for the proposed works; and
- Conduct regular noise monitoring during the proposed works.

The noise criteria set in the development consent is shown in Table 10.

Table 10 Noise Criteria - Condition 32 of the development consent

Location	Noise Limits (L_{eq}, 15 min)
73 Bull Street, Mayfield	58
27 Groongal Street, Mayfield West	59
Cnr Bull and Woodstock Street, Mayfield	52
78 Crebert Street, Mayfield	50

The noise modelling assessment in the original EIS assumed the plant items (and associated sound power levels) detailed in Table 11 and road traffic noise based on maximum haulage rates of 13 truckloads of CWR per day.

Table 11 Plant and equipment used for original remediation works

Item	No. on site (max)	Total L_w dB(A)
Hydraulic excavator	5	113
Truck (20 tonne)	3	112
Backhoe	2	107
Fuel truck	2	109
Water truck	2	111
Bulldozer	1	115
Soil compactor	1	117

The sound power levels of plant in Table 11 are presumed to remain consistent in the current proposal, however, the numbers of trucks have increased. The types of plant and equipment now proposed to be operated on site (refer to Section 2.5) are similar to those assumed for the noise assessment conducted as part of the EIS, and the number of machinery equipment necessary to carry out the proposed works is expected to be less than that assumed in the EIS. Consequently, it is anticipated that noise impacts associated with the construction activities would be of a comparable level or less than the impacts predicted during the EIS.

In July 2009 the NSW Department of Environment and Climate Change (now the EPA) published the *Interim Construction Noise Guidelines (ICNG)* for use in construction noise assessments. This document replaced the previous publication the *Environmental Noise Control Manual (ENCM)* and is used as the basis for establishing construction noise management levels (NMLs) for the proposed works.

The ICNG recommends that a quantitative assessment is carried out for all *'major construction projects that are typically subject to the EIA process'*. Predicted noise levels at nearby noise sensitive receivers (residential and industrial premises) are compared to the levels provided in Section 4 of the ICNG. Where an exceedance of the NMLs is predicted the ICNG advises that the proponent should apply all feasible and reasonable work practices to minimise the noise impact.

This activity is not considered a "major construction project" and therefore current mitigation measures relating to the operation of construction machinery are considered appropriate to satisfactorily mitigate noise impacts on sensitive nearby receivers.

However, haulage rates of up to 114 truckloads of raw material per day are now anticipated for the proposed project. This is markedly higher than the rates assumed during the EIS noise assessment. There is therefore the potential for temporary additional traffic noise impacts from the proposed project.

In July 2011, the Road Noise Policy (RNP) issued by the then NSW Department of Environment, Climate Change and Water replaced the Environmental criteria for road traffic noise. The RNP outlines the range of measures needed to minimise road traffic noise and its impacts. Its intended use includes projects and land use developments that generate additional traffic on existing roads. The RNP noise assessment criteria for existing residences affected by additional traffic on existing arterial/sub-arterial roads generated by land use development is LA_{eq}, (15 hour) 60 (external). From 7 am to 10 pm.

The proposed remediation works will only be undertaken during daylight hours (between 7 am to 6 pm Monday to Friday, and 8 am and 1 pm Saturdays) and no work would occur on Sundays and public holidays. Traffic noise impacts are not anticipated to be significant given the existing industrial noise environment associated with the heavy industry operating 24/7 adjacent to the Lot 223 South and West sites at the former Steelworks complex and from regular heavy traffic along Industrial Drive (also refer to Section 6.1).

6.3.4 Mitigation Measures

- In line with conditions 37-39 of the current development consent, a Construction Noise Management Plan would be developed and implemented, and would include a Construction Noise Monitoring Program. This would allow appropriate safeguards to be implemented to reduce impacts to below acceptable levels should departures above predicted levels be recorded.
- Construction works and transportation of raw materials or wastes would be restricted to the hours of construction outlined in the current development consent, namely between 7 am to 6 pm Monday to Friday and 8 am to 1 pm Saturday, with no works undertaken on Sunday or public holidays.
- Where noise monitoring indicates that exceedances are occurring within residential areas, any works being undertaken in close proximity to these areas would cease. Noise monitoring will be tailored for need and so be limited given the general low risk of impact on nearby sensitive receivers from, in particular, activities being confined to daylight hours only.
- Machinery, equipment and vehicles would be regularly inspected and be maintained to ensure efficient operation. Where practical, machinery may also be fitted with noise suppression equipment to further minimise noise generation where noise was identified as an issue particular to an item of equipment.

6.4 Surface Water

6.4.1 Background

Hydrology

There are no natural watercourses within the site, which was originally created by the infilling of tidal mudflats and creeks with waste materials from the Steelworks.

The closest watercourse to the site is the South Arm of the Hunter River, located approximately 400 m from the northern boundary of the site. The South Arm of the Hunter River generally flows in a south-easterly direction before its confluence with the North Arm approximately 5 km south-east of the Lot 223 site. The Hunter River then flows into Newcastle Harbour.

There are several constructed drainage lines within the site and drainage generally flows in a northward direction. The main drainage channel within Lot 223 South consists of an open drain located along the eastern boundary. To the north, twin 1,200 mm diameter culverts drain the water from this channel for eventual discharge in the Hunter River. Open drainage lines run along both the northern, southern and eastern boundaries of Lot 223 West. The drainage lines feed into one of the two stormwater detention basins located on the north eastern and south eastern boundaries of the site. The stormwater detention basins are designed to discharge during periods of high rainfall into twin 1,200 mm diameter culverts, which lie north under George Bishop Drive, into an open drainage line through the OneSteel site prior to eventual discharge into the Hunter River (South Arm). Lot 223 site drainage is represented in Figure 6.

Flooding

The Lower Hunter River Flood Study (NCC and Port Stephens Council, 1994) indicates that all land containing Lot 223 is above the 1% annual exceedance probability (AEP) flood level. The Study predicted that a 1% AEP flood in the South Arm of the Hunter River would result in water levels corresponding to 1.5 m Australian Height Datum (AHD). As the site has a minimum elevation of 6 m AHD the site would be a minimum of 4.5 m above the 1% AEP flood level (GHD, 2001).

Water Quality

Water quality data is available from several locations in the Hunter River estuary. BHPB has regularly sampled at several locations in the Hunter River since 1989. The EPA had also undertaken water quality monitoring in the area, but ceased sampling in 1992. These results are assumed to be still relevant, as it is understood that no significant increases in the discharges to the Hunter River have occurred since then. Water quality data from BHPB and from the EPA within the Hunter estuary is summarised in Table 12 and Table 13, respectively. Water monitoring locations are identified in Figure 5.

Table 12 BHPB water quality data summary

Parameter	Location						
	1	2	3	4	5	6	7
Non-filtrable residues (mg/L)	16.22	18.25	14.69	-	13.13	13.56	16.56
pH	8.0	8.1	8.1	8.0	8.1	8.1	8.1
Manganese (µg/L)	54.8	61.2	67.1	44.3	39.9	52.65	43.3
Temperature (ºC)	21.2	20.7	21.2	20.8	20.2	20.1	20
Nitrate Nitrogen (mg/L)	0.32	0.32	5.04	0.30	0.28	0.28	2.51
Orthophosphate (mg/L)	0.04	0.04	0.03	0.03	0.03	0.03	0.04
Phenols (mg/L)	0.002	0.010	0.015	0.002	0.003	0.003	0.003
Dissolved Oxygen (mg/L)	7.2	7.3	7.3	7.3	7.4	7.4	7.4
Cyanide (mg/L)	0.003	0.008	0.007	0.005	0.004	0.003	0.003

Source: BHPB (1998)

Table 13 EPA water quality data summary

Parameter	Location						
	71	73	80	90	100	110	120
Cadmium (µg/L)	<100	<100	<100	-	-	30	30
Chromium (µg/L)	<200	<200	<200	<200	<200	-	-
Copper (µg/L)	<150	<150	<150	<150	<150	-	-
Iron (µg/L)	600	550	250	<300	470	730	600
Nickel (µg/L)	<400	<400	<400	<400	<400	-	-
Lead (µg/L)	<500	<500	<500	<500	<500	440	420
Zinc (µg/L)	<50	<50 to 930	<50	<50	<50	20	30

Source: ERM Mitchell McCotter, 1996

Lot 223

BHP Water Quality Monitoring Locations

EPA Water Quality Monitoring Locations

Water Quality Monitoring Locations

Lot 223, Industrial Drive, Mayfield

Source: GHD (2001), ESRI (2012)

0 250 500 1,000 Meters

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Fig. **5**

6.4.2 EIS Findings

The EIS identified that the main potential water quality and hydrological impacts associated with the remediation works at Lot 223 could occur due to erosion of disturbed material (including contaminated materials) and increased runoff following capping. There was also a risk of fuels and chemicals leaking from construction machinery and equipment and from fuel and chemical storage areas. If not managed, contaminated surface water would drain from the site and contaminate surface water on adjoining properties and eventual discharges to the Hunter River.

Overall, it is anticipated that these impacts could be mitigated through the installation of appropriate stormwater management infrastructure.

With the proposed management measures, the EIS concluded that the remediation works would not have a significant impact on local surface water quality, and that the remediation works would eventually improve water quality compared to previous levels.

6.4.3 Potential Impacts and Consistency with EIS

Surface water impacts are anticipated to be of the same nature but of lower intensity than those described in the EIS. Indeed, the extent and scale of works are smaller than that of the original remediation works. It is anticipated that only limited contaminated materials would be impacted during the proposed works, with the cut and fill of the existing capping materials at Lot 223 South that may be contaminated and the removal of a veneer of the Lot 223 West cap. The risk of erosion of contaminated materials is low.

The proposed works have the potential to lead to erosion of exposed materials during the construction phase, leading to sedimentation of local waterways. There is also a risk of unplanned fuel and chemical leaks occurring from construction machinery and equipment and from fuel and chemical storage areas. However, with the implementation of the proposed mitigation measures, it is anticipated that the potential for these impacts is minimal.

6.4.4 Mitigation Measures

- An Erosion and Sediment Control Plan (ESCP) will be prepared for the management of soil and water during the remediation works at Lot 223.
- Sediment control measures such as sand bags and geotextile fabric sediment fences would be installed around excavation and filling sites, as appropriate.
- Capping activities would commence as soon as practical after completion of recontouring works.
- Stockpiling of material would be minimised through coordination of excavation, filling, regrading and compaction works. Where stockpiling is required, stockpiles would be surrounded by sediment control measures such as sand bags and geotextile fabric sediment fences and located away from major drainage features.
- Removal of soil from vehicles prior to their departure from the site. Vehicles would be required to pass through a designated truck entry/exit point, which will include controls to prevent mud and other materials from being tracked off site.
- During recontouring works, surface water generated within the excavation area would be diverted to temporary drainage channels and directed to stormwater detention basins (if required). Water would be assessed, treated (if required) and used for dust suppression otherwise disposed of by licensed contractor off-site if the water quality meant it was unable to be released from site.
- Diversion of surface water around excavation areas through use of bunds and diversion drains where practical to do so.
- Storage of all fuels and chemicals kept on site within temporary bunding with appropriate spill response facilities available in the event of a leak/spill incident.
- Regular inspection and maintenance of equipment and machinery to minimise potential for fuel and chemical leaks.
- Ensure the workforce is suitable trained in spill response.

Note: All locations shown are approximate only

- Lot 223
- Newcastle City Council Easement
- Above Ground Drainage
- Below Ground Drainage
- Stormwater Detention Basins

Site Drainage and Newcastle City Council Easement

Lot 223, Industrial Drive, Mayfield

Aerial Source: ESRI (2012)

0 50 100 200 Meters

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Fig. **6**

6.5 Waste

6.5.1 Background

The wastes generated by the proposed remediation activities would include:

- Approximately 300 m of redundant rail line to be removed including scrap steel, timber from sleepers and demolition wastes;
- Small amount of vegetation (maximum of 2.8 ha at Lot 223 South and 3.6 ha at Lot 223 West), typically shrubs and grasses, required to be cleared/removed to access and create the new capping surfaces;
- Any uncovered material not suitable for re-integration into the site (e.g. scrap concrete, steel, waste bitumen, etc.);
- Potential (considered low) for hazardous wastes (e.g. asbestos) to be encountered during the cut and fill activities at Lot 223 South;
- Small volumes of general waste from the site facilities; and
- Small volumes of effluent wastes from the site amenities.

The current development consent requires BHPB to dispose of all generated wastes that are not recyclable or reusable at the Summerhill Waste Management Centre located in Wallsend, approximately 9 km west of the site. The development consent specifies the route that contractors are required to use for waste disposal.

As part of this consent modification application, it is proposed that other licensed waste disposal facilities may be used for disposing of construction wastes, in addition to the Summerhill Waste Management Centre, and that transport routes to these facilities are not specified but will rely on major commuter roads wherever possible.

6.5.2 EIS Findings

The EIS concluded that demolition and construction activities at the site would be in keeping with the waste minimisation goals of the region and are not expected to impact significantly on waste management operations.

The majority of waste generated by the proposed development would be reused on site or collected for recycling or reprocessing for reuse. Waste that could not be reused or recycled would be transported for disposal at a licensed waste management facility.

6.5.3 Potential Impacts and Consistency with EIS

Given the remediation works already completed for Lot 223, the amount of waste generated by the proposed activities would be significantly less than the quantities assumed during the original EIS. Provided that the recommended mitigation measures are implemented, it is anticipated that the impact of waste generation would not be significant.

Likewise, the use of other waste management facilities and flexible transport routes would not impact on local traffic considering the low level of waste (thus transport requirements) to be generated and major commuter roads available to access most licensed waste disposal facilities.

6.5.4 Mitigation Measures

- The resource management hierarchy principles would be adopted as follows:
  - Unnecessary resource consumption would be avoided as a priority;
  - Avoidance would be followed by resource recovery (including reuse of materials, reprocessing, recycling); and
  - Disposal would be undertaken as a last resort.
- Rubbish and recycling bins will be provided at the site compounds as appropriate.
- Any wastes uncovered that are unable to be re-integrated into the site would be loaded into trucks and transported to an appropriate license facility located off-site.
- Any hazardous waste encountered during earthworks would be removed and transported off site by appropriately licensed contractors and disposed of at licensed facilities.

- All general waste from the compound facilities and all effluent waste from the ablution facilities will be disposed of at an appropriately licensed waste facility located off-site.
- Trucks transporting waste materials from site will be maintained and covered as appropriate when travelling to landfill or waste disposal facilities.

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7.0 Proposed DA Modification

BHPB is seeking a minor modification to the existing development consent approval to undertake minor alterations to the project scope, as approved. The proposed changes would require a modification to the existing approval under section 75W of the EP&A Act. The modifications relate to changes in process with no change to the original environmental outcomes.

This environmental assessment has determined that the proposed activities at Lot 223 South and West do not increase the environmental risks as described in the original EIS (GHD, 2001).

An outline of the proposed modifications is provided in Table 14.

Table 14 Proposed DA modifications

Condition Number	Existing Consent Condition	Recommended Condition	Reason for Proposed Change
6A	DA-381-12-2001-i MOD 2: The Applicant shall provide copies of all relevant contamination reports to Council, including: - Investigation reports; - Remedial action plan; - Validation and monitoring reports; - Site Audit Report and Site Audit Statement; and - Long-term EMP.	For Stage 2 works at Lot 223 North, Lot 11 and Lot 2, the Applicant shall provide copies of all relevant contamination reports to Council, including: - Investigation reports; - Remedial action plan; - Validation and monitoring reports; - Site Audit Report and Site Audit Statement; and - Long-term EMP.	These actions are not applicable to the proposed remediation activities described in this consent modification application. Similarly, the other consent conditions varied in the Section 75W consent modification dated 28 July 2010 are not applicable to the activities the subject of this modification application and it is requested that this be duly recognised in the varied conditions.
14	The Applicant must conduct regular groundwater monitoring on the site to determine: a) Groundwater flow paths and changing groundwater gradients; b) Groundwater contamination levels across the site; and c) The concentration of contaminants in the groundwater migrating off the site.	The Applicant must conduct regular groundwater monitoring on the site to determine: a) Groundwater flow paths and changing groundwater gradients; b) Groundwater contamination levels across the site; and c) The concentration of contaminants in the groundwater migrating off the site. Or as otherwise agreed with the EPA.	Long-term groundwater monitoring results from across the site indicate that: - the chemicals of potential concern (CPOC) in the groundwater are generally stable or decreasing in concentration; and, - the existing fill material isn't adversely impacting upon the quality of groundwater in the underlying estuarine and bedrock aquifers. BHP Billiton has proposed to EPA to remove the need for any further groundwater monitoring within the areas subject to this consent modification application. This proposal is subject to completion of the remediation activities as described in this modification application. Feedback to date from EPA suggests this is likely to be agreed to hence this proposed amendment is not considered a departure from the intent of the original condition nor will be onerous on EPA as the process is already entrained.

Condition Number	Existing Consent Condition	Recommended Condition	Reason for Proposed Change
16	The Applicant must prepare and implement a detailed Groundwater Monitoring Plan for the site. This plan must: a) Describe the proposed groundwater monitoring network in detail, including the relevant details for each bore such as ground level, depth of monitoring bore, bore log, level of top of casing, piezometer materials, screened interval and grid coordinates; b) Demonstrate that the proposed network would be able to record watertable levels during "drought" conditions; c) Demonstrate that the proposed network would comply with the industry standards in *"Minimum Construction requirements for Water Bores in Australia"*, ARMCANZ; d) Identify the proposed parameters for monitoring contaminants on the site with reference to Table 20.1 in Volume 1 of the EIS; and e) Describe how the monitoring would be conducted, recorded and reported to the Department, EPA and DLWC.	The Applicant must prepare and implement a Groundwater Monitoring Plan for the site prior to the commencement of remediation works or as otherwise agreed with the EPA. This plan must: a) Describe the proposed groundwater monitoring network in detail, including the relevant details for each bore such as ground level, depth of monitoring bore, bore log, level of top of casing, piezometer materials, screened interval and grid coordinates; b) Demonstrate that the proposed network would be able to record watertable levels during "drought" conditions; c) Demonstrate that the proposed network would comply with the industry standards in *"Minimum Construction requirements for Water Bores in Australia"*, ARMCANZ; d) Identify the proposed parameters for monitoring contaminants on the site with reference to Table 20.1 in Volume 1 of the EIS; and e) Describe how the monitoring would be conducted, recorded and reported to the Department, EPA and the NSW Office of Water.	As above.
23 (53)	The Applicant shall prepare and implement a detailed Soil and Water Management Plan for the whole site in consultation with Council. This plan must: a) Accurately establish the likely volume, velocity, and general quality, of stormwater flows leaving the site during a 100 year flood event; b) Ensure that the integrity of Council's easements on the site is maintained; c) Specify the standards and performance criteria for the proposed stormwater management	It is recommended that this condition be removed as being applicable to the proposed activities.	It is understood that at the time of the original development consent being granted in 2002, it was anticipated that the entire Lot 223 would be remediated as a single activity or as concurrent works. Indeed, this condition states it pertains to the "whole site". This has changed to the extent that Lot 223 has been, and will continue in the proposed activities, to be remediated as several smaller discrete stages. Considering that each stage will involve less scope, resources and time than

Condition Number	Existing Consent Condition	Recommended Condition	Reason for Proposed Change
	system; d) Describe the detailed design of this system, including any pollution control devices; e) Describe the proposed staging of these works; f) Demonstrate that this design, including any existing stormwater infrastructure on the site, would satisfy the relevant standards and criteria for the system until the site is redeveloped; g) Describe how the effectiveness of this system would be monitored until the site is redeveloped, clearly indicating who would conduct this monitoring, how often this monitoring would be conducted, how the results of this monitoring would be conducted and reported to the Director-General; and if any non-compliance is detected h) Describe what procedures would be followed to ensure compliance; and i) Describe what procedures would be implemented to ensure this system is maintained until the site is redeveloped.		remediating the entire Lot 223 site as a single activity, the cumulative scale of the activity is reduced. On this basis, it is recommended that the requirement for this Management Plan be removed from Conditions 23 (and 53) where it is referred. The requirement for a wider Construction (Environmental) Management Plan is unaffected by this change.
27	The Applicant must conduct ambient air quality monitoring for the duration of the proposed remediation works as follows: a) Continuous real-time ambient monitoring of TSP and PM10 concentrations at the site boundary; and b) Ambient air quality monitoring for TSP, PM10, and dust deposition rates at the nearest sensitive receiver(s), or an alternative location(s) approved in writing by the EPA.	It is recommended that this condition be removed as being applicable to the proposed activities.	It is understood that at the time of the original development consent being granted in 2002, it was anticipated that the entire Lot 223 would be remediated as a single activity or as concurrent works. This has changed to the extent that Lot 223 has been, and will continue in the proposed activities, to be remediated as several smaller discrete stages. Considering that each stage will involve less scope, resources and time than remediating the entire Lot 223 site as a single activity, the cumulative scale of the activity is reduced.

Condition Number	Existing Consent Condition	Recommended Condition	Reason for Proposed Change
			During consultation with EPA in preparing this Environmental Assessment, EPA indicated a reluctance to be repeatedly deferred to for having to grant approvals as part of any modified conditions and therefore only where a process is entrained, such as for groundwater monitoring (see above), is reference to agreement with EPA referred to.
48	MOD-133-12-2004-i: The Applicant shall use the following route to transport demolition waste to the Summerhill Waste Management Centre: Ingall Street, Industrial Drive, Pacific Highway, Wallsend Road, Sandgate Road, Newcastle Inner City Bypass, Newcastle Road, Longworth Avenue and Minmi Road route.	The Applicant shall use the following route to transport demolition waste to the Summerhill Waste Management Centre: Ingall Street, Industrial Drive, Pacific Highway, Wallsend Road, Sandgate Road, Newcastle Inner City Bypass, Newcastle Road, Longworth Avenue and Minmi Road route. Other appropriately licensed waste management facilities can be used to receive and dispose of demolition and other wastes.	During consultation with Newcastle City Council in preparing this Environmental Assessment, Council indicated a strong preference for the transport route identified in the original consent for transporting materials to and from the Summerhill Waste Management Centre be adhered to for the proposed activities. Council confirmed that this advice was specific to Summerhill Waste Management Centre and not other waste receival facilities. During consultation with RMS (RTA) in the lead up to this submission, RMS confirmed their strong preference for access to be via Ingall Street only to undertake the proposed remediation activities hence the change in route to reference Ingall St. In addition, since this consent was first granted, other licensed waste facilities including the Sita Newline Road Landfill, Raymond Terrace, have become available to receive some demolition and other waste materials. This is an example of an “other appropriately licensed waste management facility” referred to in the recommended modified condition.

Condition Number	Existing Consent Condition	Recommended Condition	Reason for Proposed Change
56	MOD-133-12-2004-i: The Applicant must submit this plan *[Site Maintenance Plan]* to the Director-General for approval at least 6 months before the proposed works are completed.	The applicant must submit the Site Maintenance Plan for each Stage of the Development (as defined under condition 4A, of this consent) to the Director-General for approval prior to the completion of works for that Stage.	As part of the proposed remediation activities, BHP Billiton has introduced a new step in the preparation of this Plan which is to involve an EPA-accredited Site Auditor to review this Plan for adequacy. This step requires additional time but will lead to a more robust outcome for BHP Billiton and regulatory authorities including EPA. In addition, there may also be learnings/observations made by the Site Auditor during the completion of works that impact on the scope of this Plan. On this basis, it is requested that this condition be modified to have this Plan needing to be submitted before works completion rather than before works start.
58	The Applicant shall ensure that a copy of the Site Maintenance Plan is made publicly available.	The Applicant shall ensure that a copy of any Site Maintenance Plan is made publicly available upon request.	There is understood to be little public interest in the proposed remediation activities given the minor scale and temporary nature of works and in addition there is no project website available to make publicly available such documents. On this basis, it is requested that documents only be made available upon request by a member of the public.
59	MOD-133-12-2004-i: The Applicant must establish a Community Consultative Committee to oversee the environmental performance of the proposed works, and ensure that this committee holds its first meeting before the proposed works start. This Committee must: a) Act as an interface between the Applicant and the broader community; b) Be comprised of: • 1 independent chairperson nominated by	It is recommended that this condition be removed as being applicable to the proposed activities.	Considering the following factors, BHPB believes that this condition should be omitted: - The cumulative scale of the remediation of Lot 223 has been reduced by remediating the site in several discrete, smaller parcels, the potential level of impact to the environment and community is therefore significantly less than originally predicted. - The timeframe of proposed works at Lot 223 South and West is anticipated to be

Condition Number	Existing Consent Condition	Recommended Condition	Reason for Proposed Change
	the Council, and agreed to by the Applicant, • 2 representatives from the Applicant, • 1 representative from Council, and • 4 representatives from the local community within 2 kilometres of the site's boundary, whose appointment has been approved by the Director-General in consultation with the Council; c) Be chaired by the independent person; d) Meet regularly from the date of this consent, as determined by the independent chairperson; and e) Develop a charter for the operation of the Committee for the approval of the Director-General.		a maximum of 12 and 8 weeks respectively. - The local community has been engaged regarding the proposed works via the final meeting of the Hunter River Remediation Project Community Consultative Committee (CCC) held in December 2011. This CCC comprised members representing Stockton, Mayfield, the river users and Newcastle City Council. To date, no community interest has been expressed in these works from either this meeting or other consultative mechanisms in place for the HRRP. - MOD-133-12-2004-i states that a CCC is not required for the remediation works carried out at Lot 223 West and each stage of the proposed works will be less substantial than these approved West works.
63	Within 6 months of completing the proposed works, and then as directed by the Director-General until the site redeveloped, the Applicant must commission and pay the full cost of an Independent Environmental Audit of the development. The audit must: a) Be conducted by a suitably qualified, experienced, and independent person whose appointment has been endorsed by the Director-General; b) Be consistent with ISO 14010 – Guidelines and General Principles for Environmental Auditing, and ISO 14011 – Procedures for	Within 3 months of completing the proposed activities, and then as directed by the Director-General, the Applicant must commission and pay the full cost of Independent Auditor who is accredited by the NSW EPA under the CLM Act to develop a report to assess whether the development has met the remediation outcomes as specified in Condition 8. This report is to be submitted to the Director-General and the EPA.	Given the minor scale and temporary nature of the proposed activities, such an audit is considered excessive and unnecessary, and instead the current EPA-accredited audit process of remediation works is advocated as replacement of this condition. The timeframe to complete this report has also been reduced to three months as further compensation for not requiring a larger audit.

Condition Number	Existing Consent Condition	Recommended Condition	Reason for Proposed Change
	Environmental Auditing, or updated versions of these guidelines/manuals; c) Assess whether the proposed works have been carried out in accordance with this consent; d) Assess whether that the development is complying with the relevant standards, performance measures, and statutory requirements; e) Review the adequacy of the Applicant's Site Maintenance Plan; and, if necessary, and f) Recommend measures or actions to improve the environmental performance of the development, and/or its environmental management and monitoring systems.		
64	Within 2 months of commissioning this audit, the Applicant must submit a copy of the audit report to the Director-General, along with a detailed response from the Applicant to any of the recommendations contained in the audit report.	Within 2 months of commencing this audit, the Applicant must submit a copy of the audit report to the Director-General, along with a detailed response from the Applicant to any of the recommendations contained in the audit report.	Given BHP Billiton's internal processes, "commissioning" the audit will need to be undertaken well prior to the job being started, possibly months, therefore "commencing" is preferred as language in the consent. This would be understood to also the meet the intent of the original wording.

8.0 Conclusion

The proposed alterations to the approved project are considered minor, and as demonstrated in Section of 6.0 this report, would not significantly change the environmental impacts or risks associated with the project as originally assessed.

Mitigation and management measures detailed in this report would supplement the measures provided in the original EIS, and would contribute to minimising the impacts of the proposed modified activities. These measures would be suitably incorporated in the environmental management plans required for the project by existing consent conditions.

Consequently, it is recommended that the Minister (or delegate) approve the modification request in accordance with Section 75W of the EP&A Act.

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9.0 References

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