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INTEGRA MINE COMPLEX MODIFICATION 1

ENVIRONMENTAL ASSESSMENT

PREPARED FOR INTEGRA COAL OPERATIONS PTY LIMITED

02 DECEMBER 2011

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Environmental Assessment

Prepared for Integra Coal Operations Pty Limited | 2 December 2011

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Integra Mine Complex Modification 1 Environmental Assessment

Final

Report RP2 | Prepared for Integra Coal Operations Pty Limited | 2 December 2011

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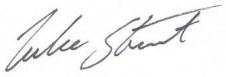
Signature		Signature	
Date	2/12/2011	Date	2/12/2011

Document Control

Version	Date	Prepared by	Reviewed by
V1	11/11/2011	Rachael Russell	Luke Stewart
V2	16/11/2011	Rachael Russell	Luke Stewart
V3	17/11/2011	Rachael Russell	Luke Stewart
V4	27/11/2011	Rachael Russell	Luke Stewart
V5	30/11/2011	Rachael Russell	Luke Stewart
V6	2/12/2011	Rachael Russell	Luke Stewart

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1 Introduction

1.1 Overview of proposed modifications

The Integra Mine Complex is owned and operated by Integra Coal Operations Pty Limited (Integra). The Complex comprises underground and open cut operations which have been active since 1991 under the former Glennies Creek and Camberwell joint ventures. The Complex currently operates under a single project approval instrument which combines the project approvals for Integra Underground and Integra Open Cut (PA 08_0101 and PA 08_0102, respectively). The project approvals were granted on 26 November 2010 under Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) and are attached as Appendix A.

Integra seeks approval from the Minister for Planning and Infrastructure to modify the project approvals under Section 75W of the EP&A Act. The proposed modifications are as follows:

- extension of the North Open Cut (NOC) out-of-pit dump to the east and south;
- increasing the maximum height of the NOC emplacements from 135m AHD to 141m AHD;
- relocation of the existing NOC crib hut site;
- extension of the timeframe stipulated in Condition 48, which requires the installation and operation of an overland conveyor from the Underground surface facilities to the Camberwell Coal Handling and Preparation Plan (CHPP); and
- extension of the timeframes stipulated in Conditions 42 and 43 which relate to the revision of Integra's biodiversity offset strategy and to the provision of long term security for the biodiversity offset areas identified in the strategy.

The modifications proposed above, taken collectively, constitute Modification 1 to the Integra Mine Complex project approval.

1.2 Site and surrounds

The Complex is located in the Hunter Coalfields of the Sydney Basin and is entirely within the Singleton Local Government Area (LGA). It is located approximately 10 km north-west of Singleton town centre, in the locality of Camberwell (Figure 1.1).

It is bound by the New England Highway to the south-west, Bridgman Road to the east and the Middle Falbrook locality to the north. The Main Northern Railway line traverses the site.

The Complex is surrounded by a number of existing mines, predominantly along the western boundary, including Mount Owen Mine and Ravensworth East Mine to the north-west, Glendell Mine and Ashton Mines to the west and Rixs Creek Mine to the south-west.

Land uses within the locality are predominately mining and mining related operations, as well as grazing and cropping.

1.3 The proponent

The proponent is Integra on behalf of the Integra Coal Joint Venture. The joint venture partners are:

- Vale Australia Pty Limited through subsidiary companies Vale Australia (GC) Pty Limited (Vale);
- NS Glennies Creek Pty Limited, a subsidiary of Nippon Steel;
- POS - GC Pty Limited, a subsidiary of POSCO;
- JS Glennies Creek Pty Limited and JFE Steel Pty Limited, both subsidiaries of Japan Steel;
- Navidale Pty Limited;
- Chubu Electric Power Integra Pty Limited;
- Toyota Tsusho Mining (Australia) Pty Limited; and
- Toyota Tsusho Corporation (Australia) Pty Limited.

Integra is the management company responsible for the operation of the Integra Underground and Open Cut. Glennies Creek Coal Management Pty Limited and Camberwell Coal Pty Limited, the employers at the individual sites, are wholly owned by Integra.

1.4 Purpose of report

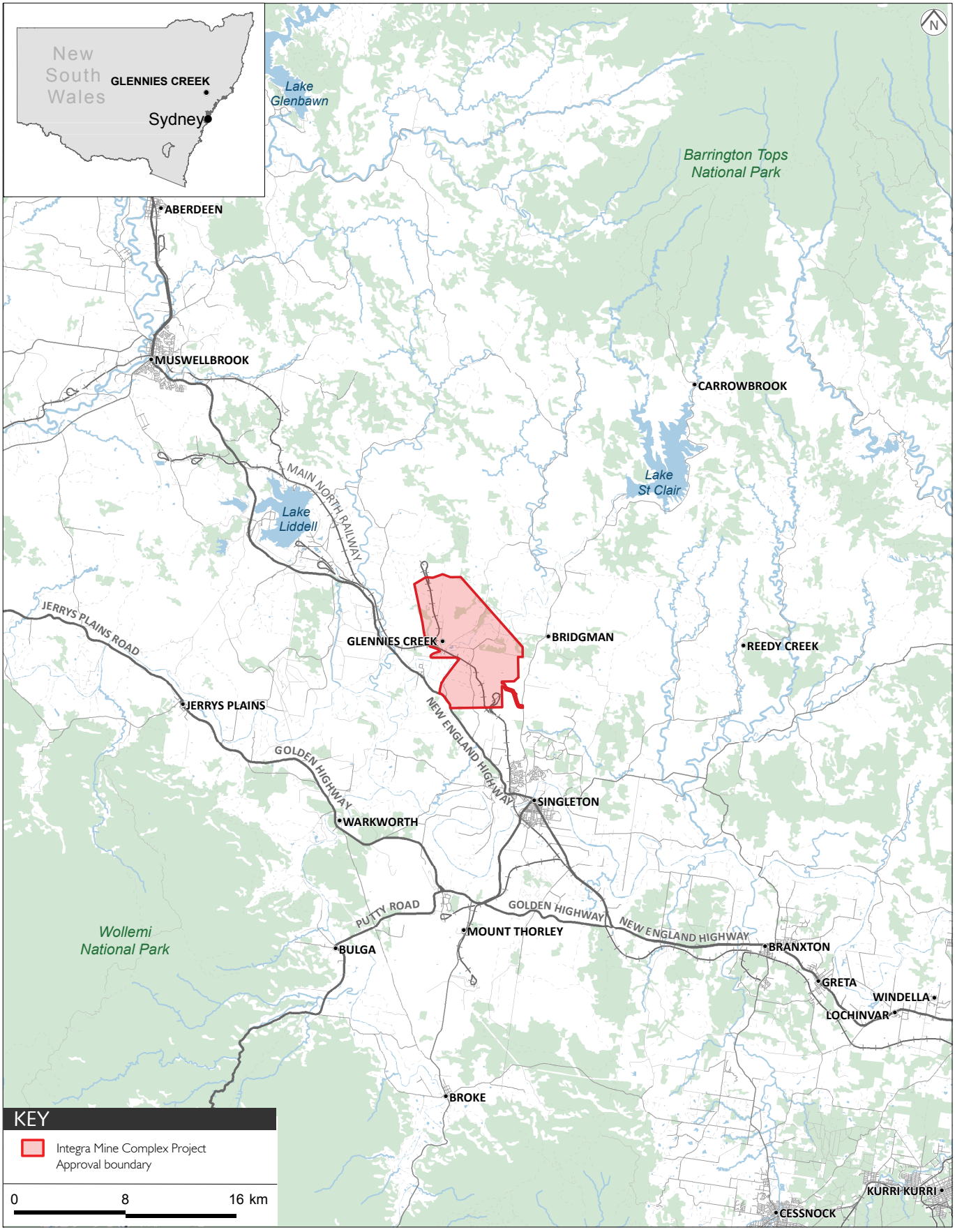
The purpose of this Environmental Assessment (EA) is to accompany an application by Integra for the proposed modifications, in accordance with Section 75W of the EP&A Act. This document is intended to provide an assessment of the potential impacts resulting from the proposed modifications in order for the Minister to make a determination.

This EA was prepared by EMGA Mitchell McLennan Pty Limited (EMM) on behalf of Integra.

1.5 Report structure

The EA has the following structure:

- Chapter 1 – Introduction to the proposed modifications, including description of the site, locality and proponent, and the purpose of this report.
- Chapter 2 – Description of the existing operations and project approvals.
- Chapter 3 – Description of the proposed modifications including alternatives considered and justification against the objects of the EP&A Act.
- Chapter 4 – Overview of the planning and statutory framework.
- Chapter 5 – Details of stakeholder engagement undertaken for the existing operations, as well as specific to the proposed modifications.
- Chapter 6 – Environmental impact assessment for the proposed modifications.
- Chapter 7 – Summary of the Statement of Commitments for the proposed modifications.
- Chapter 8 – Summary and conclusion to the report.
- Appendix A – Project approvals.
- Appendix B – Details of Integra's short-term dumping strategy.



Regional context

Integra Mine Complex Modification 1 Environmental Assessment

FIGURE 1.1

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2 Existing operations

2.1 Integra Mine Complex

2.1.1 Underground

The Underground operation produces high quality, semi-hard coking coal for export, with the current approved production level set at a maximum of 4.5 million tonnes per annum (Mtpa) of run of mine (ROM) coal.

Coal is approved to be extracted from the Hebden, Barrett and Middle Liddell seams and transported to the surface via conveyor where it is hauled by internal road to the CHPP at the Integra Open Cut. All product coal is transported by rail to the Port of Newcastle.

2.1.2 Open Cut

The Open Cut coal mining operations are located south of Integra Underground and comprise the NOC and South Open Cut (SOC), including the recently approved western extension. The open cut operations produce both semi-soft coking coal (70%) and thermal coal (30%) for export. Current approved maximum production levels are 1.5 Mtpa of ROM coal from the NOC and 4.5 Mtpa of ROM coal from the SOC.

Waste rock from the NOC operations is emplaced both in-pit within the NOC pit shell and out-of-pit in an emplacement area directly south of the NOC pit. The approved NOC out-of-pit emplacement footprint is approximately 43 ha with a maximum height of 135m AHD. Waste rock from the NOC pit is loaded onto haul trucks by excavators for transportation to the emplacement area. Depending on the location of the active emplacement face, waste rock is transported using a combination of temporary or permanent ramps and haul roads.

Infrastructure at the NOC includes a crib site located between the approved NOC emplacement area and Tailings Dam 2 (TD2) which is used by Integra staff. The site contains two portable buildings used as crib huts, an ablution block, office and a 5,000 L water tank. The site is used by mining crews as a rest/lunch area during their shifts.

Consistent with the underground mine, ROM coal is hauled by internal road to the CHPP and product coal transported by rail to the Port of Newcastle.

2.1.3 Underground and Open Cut interactions

The Underground and Open Cut are two separate operations; however, a number of activities are integrated or jointly undertaken including:

- management of water;
- coal handling and preparation;
- management of coarse and fine rejects; and
- transport of product coal.

2.2 Project approvals

Integra was granted two project approvals (PA 08_0101 and PA 08_0102) in a single approval instrument under Part 3A of the EP&A Act on 26 November 2010. This proposal seeks to amend the project approvals to enable the minor modifications to the NOC dumping strategy and extension of the timeframes set out in Conditions 42, 43 and 48.

Environmental management at the Complex is undertaken in accordance with the above project approvals, the associated environmental assessments, mining lease conditions, subsidence management plans, Integra's Environmental Management System and various other approvals and licences.

Three Mining Operations Plans (MOPs) have been prepared for the Complex: Integra Open Cut (excluding NOC); NOC; and Integra Underground. An amendment to the NOC MOP will be required to accommodate changes associated with the proposed modifications. It is noted that under the amended *Mining Act 1992*, Rehabilitation Environmental Management Plans (REMPs) will replace MOPs.

The recently approved project approvals require a number of management plans to be prepared for the operations. Management plans required under the project approvals comprise:

- Noise Management Plan;
- Blast Management Plan;
- Air Quality and Greenhouse Gas Management Plan;
- Extraction Plan (for all second workings on site, but not for second workings covered by an existing Subsidence Management Plan);
- Water Management Plan;
- Biodiversity Management Plan;
- Heritage Management Plan;
- Waste Management Plan; and
- Rehabilitation Management Plan.

The majority of these draft plans have recently been submitted to DP&I and comments are currently being incorporated into the final documents.

Schedule 5, Condition 4 of the project approvals requires that management plans be reviewed within three months of any modification to the project approvals and revised as necessary. Subject to approval of the proposed modifications, management plans will be reviewed and revised if necessary. It is likely that minor amendments may be required to the water, noise, air quality, waste, and rehabilitation management plans as a result of the proposed modifications.

3 Proposed modifications

3.1 North Open Cut emplacement extension

A recent preliminary study was undertaken by Integra to reassess the waste rock emplacement requirements for the NOC. The study identified insufficient dump space by December 2011 and then again in 2015. Without resolution, this will significantly impact the development of the pit, and ultimately, cause mine operations to cease.

Integra has developed a short-term dumping strategy, presented in Appendix B, which occurs over three stages. Stage 1 and some components of Stage 2 are generally in accordance with the current NOC emplacement strategy, comply with the project approvals and therefore, do not require further approval. This proposed modification seeks approval for the components of Stage 2 that vary from the current approved NOC emplacement strategy.

Stage 2 activities which are in accordance with the approved emplacement strategy comprise:

- the rehabilitation of Area 3, which is within the approved NOC emplacement and approximately 16.5 ha in size; and
- emplacement within approved areas as they become available, including in-pit emplacement within an area of approximately 5 ha in the north-eastern corner of the NOC pit shell.

Stage 2 activities which require modification to the approved emplacement strategy comprise:

- the extension of the approved NOC out-of-pit emplacement to the east and south, into an area referred to as ex-pit dump Area 9. This area is approximately 39 ha and comprises tailings dam 3 (TD3). The waste rock will be used to cap the tailings dam; and
- increasing the height of approved NOC emplacements from 135m AHD to 141m AHD.

Areas described above are shown on Figure 3.1.

In summary, the changes to the approved NOC emplacement strategy (as described in Section 2.1.2) are an extension to the out-of-pit emplacement footprint from 43 ha to 82 ha and an increase in height from 135m AHD to 141m AHD. There will be no change to the methods or approach to emplacement.

It is noted that the approved emplacement height documented in the NOC MOP is 145m AHD. The MOP will be amended in accordance with the proposed modification. Consultation with DP&I and the Department of Resources and Energy in this regard is ongoing.

Stage 2, in combination with Stage 1, will afford emplacement capacity until 2015. Stage 3 is the subject of a separate application and will afford emplacement capacity beyond 2015.

Rehabilitation and development of the final landform within ex-pit dump Area 9 and other approved emplacements will continue to be undertaken progressively across the mined area, consistent with the existing approved approach, methodologies and final land use options described in the existing NOC MOP. However, as identified in Section 2.2, the NOC MOP will be updated to accommodate relatively minor changes associated with the proposed modifications including a final landform resulting from the proposed modifications will be provided in the updated MOP.

The proposed modifications will not result in changes to the approved tailings management strategy. A tailings dam capping strategy and lifecycle plan will be developed by Integra, prior to capping of TD3, for all tailings dams at the Complex.

The extension of the emplacement area will require the relocation of the crib site located between the approved NOC emplacement area and TD2. In addition to the existing elements of the crib site described in Section 2.1.2, the new site will also include a second 5,000 L water tank and a 45 kVA diesel electric generator with local distribution and compressor. One of the crib huts and the ablution block will also be replaced. An approximate 8.5 m by 8.5 m covered area and parking facility for trucks will also be provided within the site.

The new site will be established approximately 600 m west of the existing crib site on the western edge of the approved NOC emplacement area (see Figure 3.1). The site will be approximately 2.25 ha in size and located within an area previously disturbed by mining activities. The proposed site is highly disturbed with patchy covering comprising introduced grass species. The construction will require minimal earthworks with excavation to a maximum depth of 2 m for cables, and minor cut and fill for site levelling, preparation and drainage. Construction is expected to be completed by the end of February 2012. An existing stand of trees adjacent to the new crib site will not be impacted with any excavation to occur outside of the trees' root zone.

Applications under Part 4A of the EP&A Act will be lodged with Singleton Council to obtain construction and occupation certificates in accordance with Schedule 2 Condition 14 of the project approvals.

3.2 Extension to approval timeframes

3.2.1 Biodiversity offset areas

Schedule 3, conditions 41 to 44 of the project approval state that:

> *41. "The proponent shall implement the offset strategy summarised in Table 18, described in the open cut and underground project EAs, and shown conceptually in the figure in Appendix 8 to the satisfaction of the Director-General."*

Table 18 - Biodiversity offsets strategy for the Integra Mining Complex

Offset areas	***Minimum size (ha)***
Northern offset area	*121*
Southern offset area	*39*
Western offset area	*94*
Supplementary offset area	*33*
Bridgman offset area	*86*

> *42. "By the end of June 2011, unless the Director-General agrees otherwise, the Proponent (Integra) shall revise the (biodiversity) offset strategy referred to above, in consultation with DECCW (now OEH), and to the satisfaction of the Director General. The revised offset strategy must:*
>
> > *(a) ensure provision of at least 140 hectares of Narrow-leaved Ironbark-Spotted Gum-Forest Red Gum Forest (or a suitable equivalent) to further offset the impact of the open cut project; and*

(b) include an additional 6 hectares of Central Hunter Swamp Oak Forest (or a suitable equivalent) to offset the impact of the underground project on the Glendell Biodiversity Offset Area.

Long Term Security of Offsets

43. "By the end of December 2011, the proponent shall make suitable arrangements to provide appropriate long term security for all the areas in the revised offset strategy to the satisfaction of the Director-General.

Biodiversity Management Plan

44. "The proponent shall prepare and implement a Biodiversity management plan for the projects to the satisfaction of the Director-General. This plan must:

a) be prepared in consultation with DECCW, and submitted to the Director-General for approval by end of December 2011."

A biodiversity management plan for the biodiversity offsets is currently being prepared in accordance with Condition 44.

Extensions are sought to the timeframes stipulated in Conditions 42 and 43 for two reasons. Firstly, investigations into the feasibility of proposed mechanisms for providing long term security over the land that is the subject of the biodiversity offsets areas, as required under Condition 43, are ongoing. Whilst Integra can make a commitment in relation to its own land, further time is required to complete arrangements with third party landowners and to obtain any required mortgagee consents.

Secondly, recent geological information indicates that the biodiversity offset areas described in Condition 41 overlie substantial coal resources. Whilst there are currently no plans to disturb or mine these areas, Integra does not wish to take any immediate action that will potentially sterilise this identified resource.

Therefore, this modification seeks an extension to the timeframes stipulated in Conditions 42 and 43 to 30 June 2012. Subject to the progress of investigations, it may be necessary for Integra to seek an additional extension, which would be sought via a written request by Integra to DP&I at the appropriate time.

The proposed extension will allow sufficient time to:

- complete further investigations into the feasibility and suitability of a range of possible mechanisms to provide long term security over the biodiversity areas as required under condition 43. This may include restrictions on the use of relevant biodiversity offset areas (whether in the form of covenants or other mechanisms) and, in particular, the appropriate mechanism with respect to land not currently owned by Integra;

- identify opportunities for re-establishment of vegetation communities, such as the *Threatened Species Conservation Act 1995* listed Central Hunter Ironbark – Spotted Gum – Grey Box Forest, to be further considered; and

- further consider the current biodiversity strategy and formulate a revised strategy, if required.

Should the above investigations demonstrate that an alternative offset package which provides similar long term biodiversity outcomes is feasible, further approval will be sought for any proposed alternative

offsets and this proposal would be fully assessed in consultation with DP&I and relevant agencies, including the Office of Environment and Heritage (OEH). If this is not feasible, the proposed extension affords Integra sufficient time to resolve matters associated with the mechanism for providing long term security over the current biodiversity offset areas and, in particular, over land not currently owned by Integra.

3.2.2 Overland conveyor

Schedule 3, Condition 48 of the project approval states that:

"By the end of December 2011, the Proponent shall cease truck haulage of ROM coal from the underground surface facilities to the CHPP, and transport such coal only via overland conveyor, except in an emergency situation with the prior written approval of the Director General."

ROM coal extracted from the underground operations is currently transported from the RL100 stockpile to the CHPP by off-road truck haulage. The haul road is shown in Figure 3.1.

Integra is seeking, in a separate modification application, to amend Condition 48 to remove the requirement for the installation and operation of an overland conveyor from the Underground surface facilities to the CHPP condition from its project approvals. To support this application, a detailed assessment of potential impacts associated with the amendment will be undertaken. Potential investment in additional dust amelioration measures will also be investigated as part of the separate modification application.

In order to allow time for a robust assessment, this modification seeks approval for a short term extension to the timeframe stipulated in Condition 48 of the project approvals from 31 December 2011 to 30 June 2012. During this period, ROM coal will continue to be hauled by internal road to the CHPP. Subject to the progress of those investigations, it may be necessary for Integra to seek an additional extension, which would be sought via a written request by Integra to DP&I at the appropriate time.

3.3 Project justification

3.3.1 Need for modifications

A recent study of the volume of waste rock to be produced and the approved emplacement strategy for the NOC has identified a significant deficiency in emplacement capacity. The short-term dumping strategy, proposed as part of Modification 1 and described in Section 3.1, will address this deficiency. Without resolution, the capacity constraints will significantly impact the efficient development of the pit, and ultimately, cause mine operations to cease.

Extension to the timeframes stipulated in Conditions 42 and 43 will allow Integra sufficient time to complete further investigations into the feasibility of mechanisms to provide long term security for the biodiversity offset areas, and revise the biodiversity offset strategy in order to provide an appropriate and potentially improved biodiversity conservation value to be fully investigated.

Studies have indicated that the overland conveyor required under Condition 48 is not economically viable and its construction would result in significant disruption to existing operations, with only minimal environmental benefits. Extension to the timeframe stipulated in Condition 48 for the installation and construction of the conveyor will allow a robust assessment of, and consultation on, the potential impacts associated with its removal from the project approvals. It will also enable a detailed study of potential additional dust amelioration measures to be implemented in this area for underground coal haulage. Further investigations into the potential construction and operation of the conveyor will also be

continued during this period. The potential removal of this condition will be the subject of a separate application. If an extension to the timeframe is not granted and trucking is required to cease then production of coal from the Underground operations would be suspended resulting in the loss of employment for Underground workers.

3.3.2 Alternatives considered

i North Open Cut emplacement extension

Discussions on the emplacement constraints were held with DP&I and the Department of Trade and Investment Regional Infrastructure and Services (DTIRIS) during which alternatives for an emplacement strategy were considered. The alternatives included:

1. do nothing option;
2. maximisation of in-pit emplacement;
3. haulage of waste rock material to SOC;
4. increase in maximum emplacement height; or
5. a lesser height increase in combination with the extension of the approved emplacement area into already disturbed areas.

Option 1 was not preferred as it would significantly impact the development of the pit, and ultimately, cause mine operations to cease. This would result in significant socio-economic impacts from the closure of the NOC and the loss of the already approved NOC resource.

Option 2 was not considered feasible as the mine plan has changed, since the approved emplacements strategy was developed, in response to requirements for additional space to provide access to the mine floor. The anticipated in-pit emplacement capacity that was identified in the approved emplacement strategy was therefore not available to allow the required emplacement volumes.

Option 3 was not preferred as it is not economically viable and it was considered that there would be a potential increase in dust and noise emissions associated with the increased haulage distance.

Option 4 was not preferred due to the potential visual and noise impacts associated with a significant increase in emplacement height.

Option 5 was considered the most suitable and practical option and was the option preferred by all parties. An extension to the existing emplacement area would allow an increase in emplacement capacity with minimal potential environmental impacts as it would extend into areas previously disturbed and would also allow the capping of TD3.

The location for the new crib site is considered suitable given its previously disturbed nature and proximity to the NOC operations. Accordingly, no alternatives for siting the crib site were considered.

ii Extension to approval timeframes

The alternatives to requesting an extension to the timeframes for Conditions 42, 43 and 48 were either:

- to not request an extension; or

- request a shorter or longer extension time period.

As discussed above, not requesting an extension would not enable Integra sufficient time to complete its investigations into the feasibility of mechanisms to provide long term security for the biodiversity offset areas over land not amended by Integra. It would also result in the potential sterilisation of the coal resource located under the biodiversity offset areas.

A shorter extension period was also not considered sufficient to allow the necessary investigations to be undertaken and approvals obtained. An application for a longer time period was not considered necessary; however, if subject to the progress of the investigations outlined above, an additional extension is required this would be sought via a written request by Integra to DP&I at the appropriate time.

3.3.3 Objects of the Environmental Planning and Assessment Act 1979

The consistency of the proposed modifications with key relevant objects of the EP&A Act is considered below.

"To encourage the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment".

The NOC contains a substantial coal resource, with approval for a maximum extraction rate of 1.5 Mtpa ROM coal and continuation of operations until 31 December 2022. The proposed modifications would enable the continued approved extraction of this valuable natural resource and does not sterilise future potential resource extraction in this area.

"The promotion and co-ordination of the orderly and economic use and development of land."

The proposed modifications allow for the orderly and economic development of land and resource already approved for the purposes of mining.

"The protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats."

The impacts of the Underground and Open Cut operations, as originally proposed, have been fully assessed and were determined to be acceptable by the then Minister for Planning. The environmental assessment presented in this document has examined the potential impacts of the proposed modifications and has found that they would be minor to negligible compared with those assessed in the original proposal.

"Ecologically sustainable development"

Ecologically sustainable development (ESD) is defined by the Commonwealth government as*: "using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased."* The proposed modifications satisfy the intent of ESD in that they would continue to use resources to contribute towards national and global energy needs thereby maintaining quality of life.

Each of the individual principles of ESD is considered below.

Precautionary Principle: in practice this means that development should not cause serious or irreversible environmental impact. Such impact can be avoided by, firstly, understanding the potential for environmental impact to occur by undertaking a full environmental assessment and, secondly, ensuring effective mitigation or compensation measures are incorporated into development proposals. The approved Underground and Open Cut operations have fulfilled both of these requirements and incorporate the full range of necessary safeguards. The Minister will impose any necessary additional conditions to address the proposed modifications. Thus, the proposed modified project meets the precautionary principle.

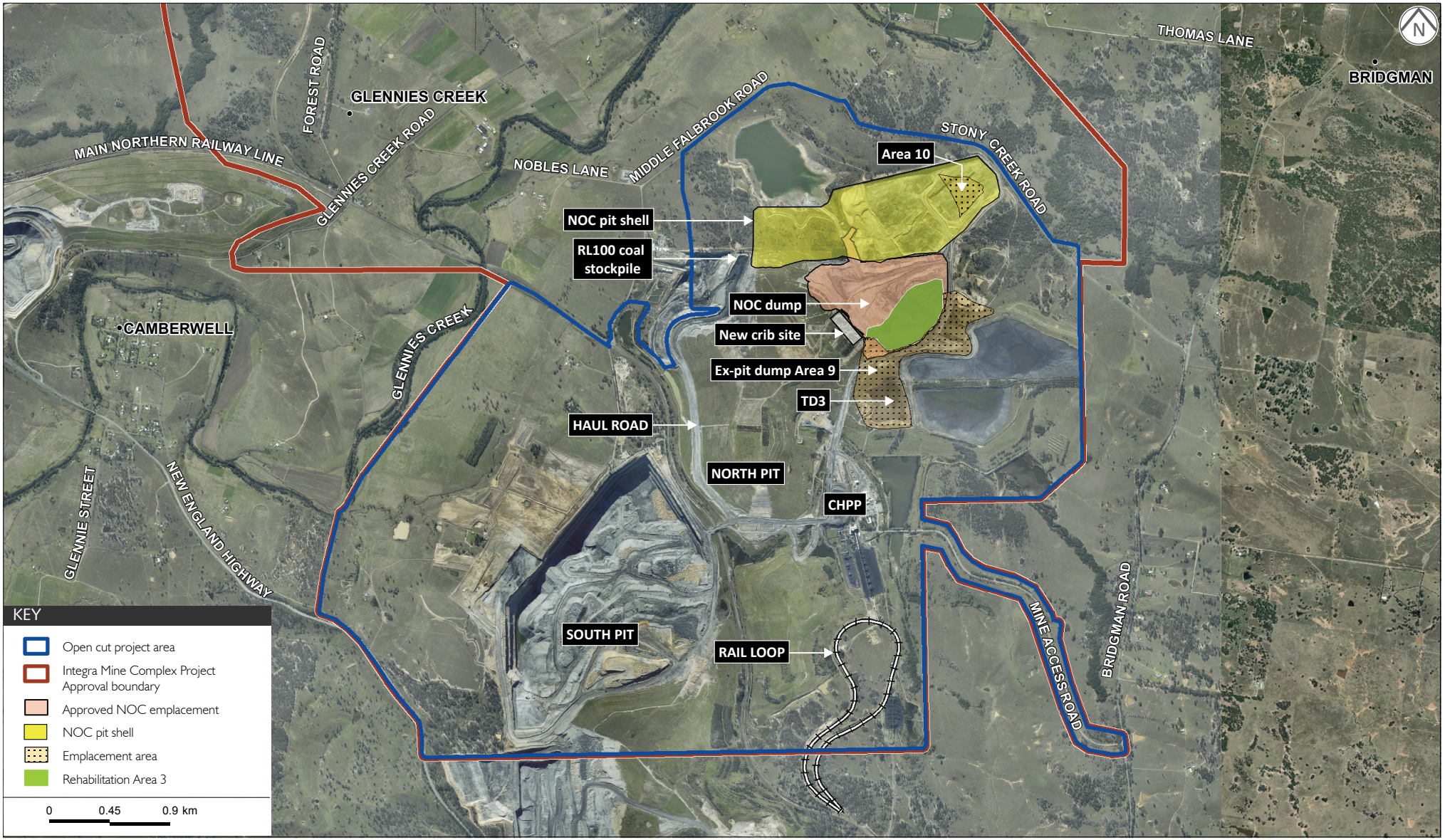
Social equity including intergenerational equity: the proposed modifications will ensure that existing employment, both direct and indirect, is ongoing and secure which contributes towards social and intergenerational equity. Royalties received by government from mining activities also result in state wide social benefits.

Conservation of biological diversity and maintenance of ecological integrity: the approved Underground and Open Cut operations include measures to conserve biological diversity and maintain ecological integrity through the provision of biodiversity offset areas. The proposed modifications seek an extension to the timeframe for securing these offsets; however, this extension is necessary to ensure that the offset areas and the strategy for these areas are developed appropriately to provide the most beneficial and enduring ecological outcome.

Improved valuation and pricing of environmental resources: the Complex was granted project approvals in 2010 and, to this extent, the government has valued and priced the environmental resources relevant to the Complex. The proposed modifications would have a minimal or neutral effect in the application of this principle.

While the modifications alone would be of little consequence in terms of ESD, they would ensure the ongoing use of a significant natural resource and ensure employment security.

The overall conclusion is that the proposed modifications are minor and consistent with key relevant objects of the EP&A Act.



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Complex overview

Integra Mine Complex Modification 1 Environmental Assessment

FIGURE 3.1

4 Planning and statutory framework

4.1 Environmental Planning and Assessment Act 1979

Integra requests that the Minister modifies project approvals PA 08_0101 and PA 08_0102, both part of a single approval instrument, which were originally granted in 2010 for the purpose of carrying out mining activities at the Complex under Part 3A of the EP&A Act.

Part 3A was recently repealed by the *Environmental Planning and Assessment Amendment (Part 3A Repeal) Act 2011* (Part 3A Repeal Act) which was passed by the NSW parliament on 22 June 2011, and commenced on 1 October 2011. Under the Part 3A Repeal Act, projects deemed to be 'transitional Part 3A projects' will continue to be subject to Part 3A of the EP&A Act (as in force immediately before the repeal and as modified by the Part 3A Repeal Act). Transitional Part 3A projects include certain projects that were the subject of an existing approval under Part 3A.

As the Complex has project approvals that were granted under Part 3A of the EP&A Act, it is understood to be a transitional Part 3A project.

Section 75W of the EP&A Act enables the Minister to modify a project approval granted under Part 3A of the EP&A Act. In determining whether changes to a Part 3A project can be modified under Section 75W of the EP&A Act, consideration is given to the proposed modifications and any possible change in potential associated environmental impacts.

Section 75W states:

> *"(1) In this section:*
>
> ***Minister's approval** means an approval to carry out a project under this Part, and includes an approval of a concept plan.*
>
> ***modification of approval** means changing the terms of a Minister's approval, including:*
>
> *(a) revoking or varying a condition of the approval or imposing an additional condition of the approval, and*
>
> *(b) changing the terms of any determination made by the Minister under Division 3 in connection with the approval.*
>
> *(2) The proponent may request the Minister to modify the Minister's approval for a project. The Minister's approval for a modification is not required if the project as modified will be consistent with the existing approval under this Part.*
>
> *(3) The request for the Minister's approval is to be lodged with the Director-General. The Director-General may notify the proponent of environmental assessment requirements with respect to the proposed modification that the proponent must comply with before the matter will be considered by the Minister.*
>
> *(4) The Minister may modify the approval (with or without conditions) or disapprove of the modification."*

Based on the scope and scale of the proposed modifications, the proposed modifications are not predicted to result in significant environmental consequence beyond the current project approvals and are proposed to be assessed under Section 75W. Detailed assessments provided in Chapter 6 quantify these impacts.

4.2 Other NSW legislation and policies

4.2.1 Legislation

The following NSW Acts of legislation are relevant to the proposed modifications:

- *Protection of the Environment Operations Act 1997* (POEO Act);
- *Mining Act 1992*; and
- *Coal Mine Health and Safety Act 2002.*

The POEO Act requires that scheduled premises, which are defined in Schedule 1 of the Act, are required to obtain and operate under an Environment Protection Licence (EPL). The Complex is a scheduled premise and has an existing EPL (EPL 3390). If required, the Complex's EPL will be updated in accordance with the modifications.

As outlined in Section 2.2, the Complex currently has three MOPs which were approved under the *Mining Act 1992*. Minor modifications to the NOC MOP will be needed as a result of the proposed modifications.

The Complex currently holds a Life of Mine Tailings Emplacement S100 approval under the NSW *Coal Mine Health and Safety Act 2002*. The proposed modifications, specifically the capping of TD3, will not require any changes to this approval.

4.2.2 State Environmental Planning Policies

State environmental planning policies (SEPPs) are environmental planning instruments prepared by the Minister to address issues significant to NSW. The following SEPPs are relevant to the proposed modifications:

- SEPP (Mining, Petroleum Production and Extractive Industries) 2007;
- SEPP (Major Development) 2005; and
- SEPP (State and Regional Development) 2011.

The SEPP (Mining, Petroleum Production and Extractive Industries) 2007 (Mining SEPP) aims to provide for the proper management and development of mineral, petroleum and extractive material resources for the social and economic welfare of the State. The policy establishes appropriate planning controls to encourage ESD. The proposed modifications are consistent with the aims and controls of this policy.

SEPP (Major Development) 2005 previously defined classes of development to which Part 3A of the EP&A Act applied. This SEPP was amended by SEPP (State and Regional Development) 2011 in accordance with the repeal of Part 3A, though it is still relevant to the proposed modifications as it continues to apply to transitional Part 3A projects. Clause 6 of SEPP (Major Development) 2005 states:

> *(1) Development that, in the opinion of the Minister, is development of a kind:*

(a) that is described in Schedule 1 or 2, or

…

is declared to be a project to which Part 3A of the Act applies.

Coal mining is a form of development described in Schedule 1 of SEPP (Major Development) 2005.

4.2.3 Singleton Local Environmental Plan 1996

The project is located within the Singleton LGA. Under the provisions of the Singleton Local Environmental Plan (Singleton LEP), the project site is zoned No.1 (a) Rural. Mining is a permissible land use within this zone with development consent or project approval under the EP&A Act. This modification is consistent with the provisions of the Singleton LEP.

4.3 Commonwealth legislation

The *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) aims to protect matters deemed to be of national environmental significance (NES) including:

- world heritage properties;
- places listed on the National Heritage Register;
- Ramsar wetlands of international significance;
- threatened flora and fauna species and ecological communities;
- migratory species;
- Commonwealth marine areas; and
- nuclear actions (including uranium mining).

If an action (or project) will, or is likely to, have a significant impact on any of the matters of NES, it is deemed to be a Controlled Action and requires approval from the Commonwealth Environment Minister or the Minister's delegate. To determine whether a proposed action will or is likely to be a Controlled Action, an action may be referred to the Department of Sustainability, Environment, Water, Population and Communities.

The proposed modifications will not have a significant impact on any matters of NES and, accordingly, approval under Commonwealth legislation is not required.

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5 Stakeholder engagement

5.1 Stakeholder engagement strategy

A comprehensive stakeholder engagement strategy is in place for the Complex. As outlined below, this strategy will be supplemented by activities that apply specifically to the proposed modifications. The planned stakeholder activities are based on the nature and scale of the proposed modifications.

Integra's stakeholder engagement strategy allows for consideration of stakeholders' views and timely feedback of any matters raised. The existing consultation program includes the following key components.

- A 24-hour community information line – this service aims to promptly and effectively address community concerns.
- Integra Coal Open Cut Community Consultative Committee (CCC) – meets quarterly (previously biannually) to discuss environmental management and discuss any issues raised by members of the community.
- Integra website – includes updates on current and future operations.
- Newsletters – these are prepared and circulated to disseminate information on Integra's operations.
- Management of a complaints register – to record complaints received and steps to follow up complaints.

5.2 Project specific stakeholder engagement

5.2.1 Government

Consultation related to the proposed modifications has been ongoing, with meetings held between Integra and DP&I on 20 September 2011, 6 October 2011 and 4 November 2011. At these meetings the proposed modifications and other modification elements subject to a separate application were discussed. At the 4 November 2011 meeting, it was confirmed that the proposed modification elements would be separated from other elements due to constrained timeframes associated with these.

A meeting with Council is proposed for early December 2011 to discuss, amongst other matters, the proposed modifications.

5.2.2 Community

i Engagement activities

In addition to the consultation initiatives listed in Section 5.1, Integra has prepared a communications and community engagement sub-plan associated with NOC's emplacement activities (see Appendix B). The purpose of this sub-plan is to ensure the community is informed, updated and engaged on the matters pertaining to NOC's dumping. Key features of this plan are:

- various communication tools and materials, including:

- posting details of the dumping strategy on Integra's website;
- distribution of fact sheets to the community via letterbox drops and Integra's website;
- press advertising in local and regional newspapers;
- incorporation of details in the Integra Community Newsletter;
- use of the 24hr community information line to address questions and concerns relating to the dumping strategy; and
- a consultation management system to capture all stakeholder enquiries and feedback;

- stakeholder mapping to identify relevant groups and organisations and other key stakeholders;
- commissioning a Social and Economic Diagnosis Study;
- presentation of the strategy at the November 2011 CCC meeting;
- one-on-one meetings with neighbours; and
- briefings of and meetings with key stakeholders.

ii Outcomes of engagement

Engagement activities regarding the NOC emplacement strategy are ongoing. Feedback received during stakeholder engagement was considered in the options analysis (Section 3.3.2) and within this EA. This included feedback at the most recent CCC meeting.

A CCC meeting was held on 15 November 2011 at which the proposed modifications were introduced and discussed. The following outcomes of the CCC meeting were relevant to the proposed modifications:

- exhibition period for the EA;
- results of recent environmental monitoring; and
- matters raised by local residents between March and October 2011 relating mostly to the NOC operations.

Other community consultation outcomes of this meeting included:

- the Complex hotline now goes to Australian call centre to support Integra's timely response;
- a new Integra website is now online;
- that community newsletters should be produced more regularly; and
- CCC meetings to be held quarterly instead of biannually to increase communication between Integra and the community.

The outcomes of this meeting have been included in this report, in particular, issues relating to matters raised. Additional monitoring undertaken to address these matters is discussed in Section 6.1.2.

6 Environmental impact assessment

This chapter examines the change in the potential impacts of the proposed modifications as compared to the approved development. It provides, where required, mitigation and monitoring measures to manage potential impacts. The chapter has been divided into potential impacts associated with the NOC emplacement extension and the extension of timeframes stipulated in Conditions 42, 43 and 48 of the project approvals.

Impacts associated with the relocation of the crib site are considered negligible. The entire footprint of the crib site has been previously disturbed. It comprises only patchy covering of introduced grass species. AS described in Section 3.1, works associated with the relocation of primarily existing infrastructure are only minor. Accordingly, the crib site relocation has not been considered further in this assessment.

6.1 NOC emplacement extension

6.1.1 Air quality

i Existing environment

Air quality at the Complex and surrounding areas is mainly influenced by dust emissions from the mine itself and other nearby mines, with minor emissions attributable to traffic on unsealed roads and local building and construction activities.

The Complex maintains a network of air quality monitoring equipment including dust deposition gauges, high volume air samplers and TEOMs (tapered elemental oscillating microbalances) with the locations shown on Figure 6.1. The data collected from this monitoring network, in conjunction with air dispersion modelling and assessments for the existing operations, provide accurate information on existing air quality around the mine.

The nearest residential concentrations are Camberwell and Obanvale, generally to the west and east respectively. There are also a number of residences situated in the immediate vicinity of the Complex. A variety of dust controls and safeguards are currently in place to achieve compliance with approved limits. These include regular monitoring in accordance with the project approvals and environmental licensing conditions.

Recent air quality monitoring results, presented in the NOC's 2010/2011 Annual Environmental Management Report (AEMR), were reviewed by PAEHolmes (previously Holmes Air Sciences) for this report. The data shows that the annual average dust deposition levels at all monitoring locations were compliant with approved levels, except for one monitoring location (DG06 – located at the Dulwich property shown on Figure 6.1) situated within the Complex boundary.

PM_{10} monitoring during this period also showed that there were no exceedences of the annual average PM_{10} maximum of 30 µg/m^3 criteria and only one exceedence of the short term 24hr average PM_{10} criteria of 50 µg/m^3 at monitoring location HV3 (located in the Glennies Creek locality shown on Figure 6.1) in February 2011, which was attributed to external influences. There was no exceedence of the annual average Total Suspended Particulates (TSP) criteria for the reporting period and an improvement from the 2009/10 reporting period in the annual average TSP and PM_{10} concentrations was seen at all sites.

An Air Quality Management Plan, prepared in accordance with Condition 26 of the project approvals, is currently with DP&I for assessment.

The potential for particulate matter (PM) to disperse and result in impacts at a residence is dependent on the quantity of PM generated, the particle size, and the prevailing wind direction and speed. Annual and seasonal windroses of meteorological data used in the previous assessments (Figure 6.2), show that in summer the wind is predominantly from the south-east, while in winter, the wind is predominantly from the north-west. Autumn and spring months experience a combination of these wind conditions.

ii Impact assessment

The emplacement area situated within ex-pit dump Area 9 is approximately 500 m closer to neighbouring receivers than the approved NOC emplacement area. Receivers include those to the north-east towards Stony Creek Road and Thomas Lane, along with receivers directly to the east along Bridgman Road (Figure 6.1).

The use of ex-pit dump Area 9 for emplacement of waste rock will result in emissions associated with haulage of the waste rock to the site, fugitive emissions associated with emplacement of material, and wind erosion from exposed land. Emissions from these activities have the potential to result in higher concentrations of particulates at nearby residences. As shown in Figure 6.2, the prevailing winds are to the north-west and south-east, and therefore, residences situated to the south-east of the emplacement area (Figure 6.1) are at the most risk of additional impact.

However, as shown in Table 6.1, the predicted impacts at receivers in this area are below the relevant air quality impact assessment criteria, even when considering the cumulative impact of the Complex and other sources of dust (including other mines). Due to the minor change in total emissions from the proposed modification (Table 6.2), it is not considered necessary to complete dispersion modelling to assess the potential impacts and a semi-quantitative assessment is provided below.

The air quality assessment completed for the *Glennies Creek Coal Mine Open Cut Environmental Assessment* (Corkery 2007) (NOC EA) by Holmes Air Sciences (2007) modelled emissions from operations in Year 1, Year 3, Year 6 and Year 8. PAEHolmes has reviewed the potential change in particulate emissions associated with the emplacement of waste rock in ex-pit dump Area 9 and compared them with the emissions contained in the NOC air quality impact assessment (Holmes Air Sciences 2007) and also in the air quality assessment prepared for the Open Cut EA (Holmes Air Sciences 2010).

Current operations are considered most similar to those previously modelled in the NOC and Open Cut EAs for Year 3 operations (Holmes Air Sciences 2007; Holmes Air Sciences 2010). Table 6.2 compares the estimated TSP emissions for Year 3 operations with the estimated TSP emissions from actual Year 3 operations, which includes the use of ex-pit dump Area 9 for overburden emplacement.

Emissions would be slightly higher under the proposed modification (with 0.77 kg TSP per tonne ROM removed compared with 0.74 kg per tonne ROM removed under the approved operations), with negligible impacts at receivers expected to occur due to the use of ex-pit dump Area 9 for overburden emplacement and associated wind erosion from the emplacement area. Further, as significantly less overburden has been moved compared with the assumptions in the dispersion modelling completed for both the NOC and Open Cut EAs (approximately 4 Million bank cubic metres (Mcbm) moved, compared with approximately 8 Mbcm assessed in the EAs), there is a reduction in overall emissions from waste activities. The increase in height of the emplacement from 135m AHD to 141m AHD will not result in a change in overall emissions from waste activities. In addition, temporary rehabilitation of part of the approved NOC emplacement area in Area 3 will result in no increase in total exposed area compared with the assumptions in the NOC and Open Cut EAs.

Table 6.1 **Predicted PM_{10} and TSP concentrations and dust deposition levels at representative receivers**

		Year 3 - proposal alone[(a)]								Year 3 - proposal and other sources[(a)]					
		PM_{10} ($\mu g/m^3$)				TSP ($\mu g/m^3$)		Dust deposition (g/m^2/month)		PM_{10} ($\mu g/m^3$)		TSP ($\mu g/m^3$)		Dust deposition (g/m^2/month)	
Averaging period		24-hour		Annual		Annual		Annual		Annual		Annual		Annual	
		Impact Assessment Criteria													
		50		*-*		*-*		*2*		*30*		*90*		*4*	
NOC ID	Complex ID[(b)]	NOC	Complex	NOC	Complex	NOC	Complex	NOC	Complex	NOC	Complex	NOC	Complex	NOC	Complex
2	6	8	14	1	3	1	3	0.3	0.3	15	16	21	49	1.4	1.0
3	7	8	13	1	2	1	2	0.3	0.3	13	15	19	48	1.1	1.0
4	8	8	16	1	3	2	3	0.3	0.3	15	16	22	49	1.4	1.1
5	9	9	16	1	3	2	3	0.4	0.4	16	16	22	49	1.4	1.1
6	10	10	17	1	3	2	3	0.4	0.4	15	16	22	49	1.4	1.1
7	11	12	19	2	3	2	3	0.4	0.4	15	16	21	49	1.3	1.1
-	12	-	15	-	2	-	2	-	0.3	-	15	-	48	-	1.0
8	13	12	19	2	3	2	3	0.5	0.4	15	16	21	49	1.3	1.1
9	14	10	16	2	2	2	3	0.4	0.4	14	16	20	49	1.3	1.1
10	15	10	14	1	2	2	2	0.3	0.3	13	15	19	48	1.1	1.0
11	16	14	17	2	3	2	3	0.5	0.4	15	16	21	49	1.4	1.2
12	17	13	15	1	2	2	3	0.4	0.3	13	15	19	48	1.1	1.0
13	18	14	16	1	2	2	3	0.4	0.3	14	16	19	48	1.1	1.0
14	20	13	16	1	2	1	2	0.1	0.1	13	15	19	48	0.9	0.9
15	19	11	12	1	2	1	2	0.1	0.1	13	15	18	47	0.9	0.9
16	21	13	15	1	1	1	2	0.1	0.1	13	15	18	47	0.9	0.8
17	22	14	15	1	1	1	1	0.0	0.1	12	14	18	47	0.8	0.8
-	23	-	16	-	1	-	2	-	0.1	-	15	-	47	-	0.8
18	24	7	11	0	1	0	1	0.0	0.0	11	14	17	46	0.8	0.8
24	25	6	10	0	1	0	1	0.0	0.0	11	14	16	46	0.8	0.7
25	31	7	10	0	1	0	1	0.0	0.0	12	14	18	47	0.8	0.8
27	34	10	13	1	1	1	1	0.0	0.1	13	15	19	48	1.0	0.9
28	35	15	20	1	2	1	2	0.1	0.1	14	16	20	49	1.1	1.0
35	64	21	26	3	5	4	6	0.7	0.7	20	21	28	55	2.0	1.8
37	47	31	42	2	4	3	4	0.3	0.3	18	19	24	52	1.4	1.3

Note (a) = Source of predicted impacts: NOC - Holmes Air Sciences (2007); Complex - PAEHolmes (2010).

Note (b) = Receivers shown on Figure 6.1 represent Complex IDs.

Table 6.2 Summary of estimated TSP dust emissions – Year 3 NOC operations approved compared with proposed (kg/y)

Activity	Year 3 approved	Year 3 proposed
WR - Scraper stripping topsoil	11,200	-
WR/CL - Drilling	9,887	9,887
WR/CL - Blasting	13,420	13,420
WR - Sh/Ex/FELs loading	53,582	27,063
WR - Hauling to emplacement area	235,116	265,734
WR - Emplacing at emplacement area	53,582	27,063
WR - Dozers on O/B	58,574	58,574
CL - Dozers ripping/pushing ROM coal	57,010	57,010
CL - Loading ROM to trucks using excavators/FELs	101,330	101,330
CL - Hauling ROM coal to CHPP	43,125	78,000
CL - Unloading ROM coal at CHPP	15,000	15,000
CL - Reloading ROM coal at CHPP	101,330	101,330
CL - Handling coal at CHPP	4,589	4,589
CL - Unloading Product coal to stockpile	15,000	15,000
CL - Reloading Product coal from stockpile to trains	101,330	101,330
WE - WR spoil area	105,120	105,120
WE - Open pit	77,088	126,144
Scraper - rehabilitation	16,990	16,990
Dozers - rehabilitation	33,471	33,471
Grading roads	2,246	2,246
TOTAL O/C Northern TSP	1,108,991	1,159,301
ROM	1,500,000	1,500,000
TSP:ROM ratio	0.74	0.77

Notes: WR – waste rock activity; CL – coal activity; WE – wind erosion.

As shown in Table 6.2, the predicted impacts at receivers are below the relevant air quality impact assessment criteria, even when considering the cumulative impact of the Complex and other sources of dust (including other mines). The modelling in Table 6.1 for potentially affected residences is for any year of operations. Whilst higher impacts were predicted at some residences for other years of operations in past assessments (Holmes Air Sciences 2007; Holmes Air Sciences 2010), none of these residences included the residences listed in Table 6.1.

The Dulwich property (ID 153 on Figure 6.1) is approximately 2km west of the proposed overburden emplacement area. As the prevailing winds are to the north-west and south-east, no additional impacts are anticipated at this residence, and other residences further west, as a result of the modification.

Therefore, potential air quality impacts associated with dumping to ex-pit dump Area 9 are expected to be negligible when considering the relative change to the approved development. There would be no additional properties located within the acquisition zone as a result of the proposed modification.

iii Mitigation and monitoring

Although it is expected that fugitive emissions from the proposal would remain negligible, dust control measures may be implemented to further minimise airborne emissions. Control strategies will include:

- regular watering of unsealed access roads and exposed surfaces;
- minimisation of exposed surfaces;
- managing dust-generating construction activities during adverse wind conditions; and
- minimising the drop heights between front-end loader buckets and trucks carrying overburden materials.

Air quality management associated with emplacement of waste rock in ex-pit Area 9 will be undertaken in accordance with the Air Quality Management Plan which will be revised to incorporate this area. The revised Plan will be submitted to DP&I for assessment.

6.1.2 Noise

i Existing environment

The existing noise climate for local receiver areas surrounding the Complex varies. Residences to the east, along Bridgman Road, are exposed to low level mining noise from current NOC operations and from surface facilities. However, these areas can be described as typical of rural residential settings adjacent to a collector road. Properties further east and set back from Bridgman Road are in a typical rural setting comprised of mostly natural sounds with little exposure to noise emissions from the Complex. The areas to the north of the site have occasional exposure to noise emissions from current NOC activities, but are also afforded a noise climate typical of rural settings at other times. To the west, Camberwell Village and nearby properties are surrounded by mining operations, a major railway line, or a major road, depending on their specific location. These properties have noise climates typical of rural settings, though with intermittent exposure to mining and road traffic noise.

Noise monitoring at the Complex consists of attended and unattended measurement and real-time monitoring. Attended monitoring is conducted quarterly. In accordance with the project approvals, monitoring is undertaken at a representative receiver within the noise assessment groups identified in Schedule 3, Condition 2. There are no prescribed noise monitoring locations within the project approvals; however, a real-time management system and a monitoring program are contained within the Noise Management Plan which, in accordance with Condition 10 Schedule 3 of the project approvals, is required to be prepared in consultation with OEH and to the satisfaction of the Director-General of DP&I. Additional monitoring can also be undertaken in special circumstances, for example, additional monitoring was undertaken to ensure compliance with the project approvals at eight nearby receivers during the 2010/2011 AEMR reporting period in response to noise and blast related matters raised by several residents. Monitoring at these receivers showed that measured levels were all below the site specific criteria, with the exception of one marginal exceedance (2 dB) at a residence located 2 km to the north of the NOC. There were no exceedances of the amenity criteria specified in the NOC Noise Monitoring Program. Noise management measures are discussed further in Section 6.1.2.iii.

All monitoring is conducted in accordance with Australian Standard (AS) 1055:1997 Acoustics – Description and Measurement of Environmental Noise and the *NSW Industrial Noise Policy* (INP) (OEH 2000). The results of monitoring, in conjunction with existing modelling and previous assessments for the Complex, provide an accurate evaluation of noise impacts resulting from current operations.

In addition, recent unattended and short term attended noise monitoring was completed for the months of winter 2011. This monitoring identified management zones for a small number of residences to the north and the east of the NOC.

ii Impact assessment

Acoustic impacts associated with the extension of the NOC emplacement into ex-pit dump Area 9 and the proposed increase in maximum emplacement height from 135m AHD to 141m AHD have been reviewed and compared against current emissions from the NOC emplacement area and combined site noise from the Complex. The review has considered several aspects that influence noise propagation including source height (to a maximum of 141m AHD) and the reduced distance (approximately 500 m) of ex-pit dump Area 9 to receivers in the north through to the south-east.

Calculations have identified that receivers nearest to ex-pit dump Area 9, including those situated to the north-east towards Stony Creek Road and Thomas Lane (Figure 6.1), along with receivers directly to the east and south-east along Bridgman Road, may experience a maximum increase of between 1 to 1.5 dB in respect of the mine's $L_{eq,15minute}$ noise contribution from haulage associated with the emplacement due to the proposed modification. It should be noted that changes in noise levels of up to 3 dB are only just perceptible by the general public.

A semi-quantitative assessment was considered commensurate to the level of disturbance associated with the proposal, since a 1 dB to 1.5 dB change is not expected to result in a perceptible increase in noise levels to affected receivers. A desktop noise assessment approach was adopted to calculate potential changes to noise emissions from the Complex to the nearest potentially affected receivers adjacent to ex-pit dump Area 9. The calculations included fundamental acoustic principles (*Reference: Noise and Vibration Control, L.L. Beranek (ed) McGraw-Hill 1971, pp. 174-177*) that influence the propagation of noise including insertion loss and distance loss.

The proposed modifications have not differentiated the height and area of the emplacement area on a year to year basis. Therefore, the calculations have adopted the highest proposed elevations and minimal possible buffer distances from the ex-pit dump Area 9 to eastern receivers. Calculations are considered to represent the potential worst case impact scenario.

In summary, the acoustic impact from the proposed modification combined with existing mine noise from the Complex is not expected to be significant. An estimation of the noise contribution associated with emplacement activities in ex-pit dump Area 9 is provided below in Table 6.3.

Recent attended monitoring results conducted for Integra throughout the winter months of 2011 have been used to provide semi-quantitative review of potential noise emissions to receivers nearest to ex-pit dump Area 9. The summary reproduced in Table 6.3 provides measurement results of mining noise emissions throughout winter 2011 for the worst case meteorological conditions during the day and evening periods at representative receiver locations. Generally, the 1 to 1.5 dB increase associated with the NOC emplacement into ex-pit dump Area 9 would see impacts at the majority of receivers unchanged and where noise levels have been identified to be currently above the operational criteria, additional increases associated with ex-pit dump Area 9 operations will not result in changes to the noise management or acquisition zones for the Complex at these receivers. The exception is receiver 32, where there is a potential for the increase of noise emissions to result in the operational criteria being exceeded by worst case 0.5 dB, which is an imperceptible difference. However, actual emissions at this receiver are still expected to be at the operational criteria. The predicted increase in noise emissions will not result in an exceedance of the mitigation or acquisition limits for this receiver. Therefore, the proposed modification will not result in changes to the noise management or acquisition zones for the Complex.

Table 6.3 Estimated noise contribution associated with proposed modifications

Receiver Number	Measured Estimated Integra Contribution dB(A) Leq,15min (from 2011 monitoring)	Estimated new contribution +1.5 dB Leq,15min	Day and Evening Consent Limits Operational/Mitigation /Acquisition	Change against existing consent limits
7	38	39[1]	39/44/47	No
11	37	38[1]	41/42/45	No
12	<40	<41[1]	40/44/47	No
14	<42	<43[1]	42/44/47	No
15	36	37[1]	40/44/47	No
16	35	35[1]	42/44/47	No
20	39	40.5	37/44/47	No
31	37	38.5	36/42/45	No
32	36	37.5	37/42/45	Yes
48	39	40.5	36/43/46	No

Note[1]: indicative noise contribution increase from ex-pit dump Area 9 dump for these receivers taking into consideration existing contributions from processing and other mining sources.
Note: operations to the NOC emplacement into ex-pit dump Area 9 is only expected to be undertaken during day and evening periods.

It is expected that noise levels at residences located to the west of the Complex would decrease due to the increase in distance of dumping to ex-pit dump Area 9 compared to currently dumping to the NOC. For example, noise levels at the Dulwich residence (receiver location 153 on Figure 6.1) are expected to decrease by between 1 dB(A) to 1.5 dB(A). Further, the overall cumulative increase/decrease when dumping to ex-pit dump Area 9 is expected to be negligible at the Dulwich receiver (and in fact all receivers to the west), as the acoustical environment at this receiver is dominated by sources situated in the SOC, NOC and processing plant and other sources (North England Highway and Ashton Coal Mine).

iii Mitigation and monitoring

The Complex is in the process of developing additional noise management measures to reduce noise emissions. A Noise Management Plan and Blast Management Plan for the Complex have been prepared in accordance with Conditions 10 and 19 respectively of the project approvals and are currently with DP&I for assessment. These plans identify management measures and a monitoring program for the Complex to achieve compliance with criteria as well as to be more proactive in the management of noise emissions.

Mitigation and monitoring measures proposed to manage potential impacts resulting from the proposed modifications are listed below.

- Attended monitoring will be undertaken in accordance with the INP during the hauling associated with the emplacement of waste rock in ex-pit dump Area 9 to confirm the mine noise contribution is not significant, in particular at residences situated to the north-east of the mine. This will form part of the Complex's current monitoring program.

- It is expected that noise emissions associated with this temporary change in operations would not be significant. Notwithstanding, provision of all reasonable and feasible mitigation measures would be adopted.

- The Noise Management Plan will be revised, subject to approval, to reflect any management or monitoring measures associated with quantifying impacts from the hauling associated with the emplacement of waste rock in ex-pit dump Area 9.

It is noted that a detailed noise assessment of the revised dumping strategy as described in Section 3.1 and provided in Appendix B is currently being undertaken as part of a separate application for approval of Stage 3. This will incorporate the increase in NOC emplacement height and extension of emplacement into ex-pit dump Area 9.

6.1.3 Other environmental considerations

The proposed NOC emplacement extension into ex-pit dump Area 9 and increase in the approved maximum height from 135m AHD to 141m AHD will have a minimal or negligible impact on the environmental attributes addressed below. Assessment outcomes, and where applicable, management measures for these attributes are provided.

i Ecology

Flora and fauna assessments were undertaken for the NOC EA prepared by Geoff Cunningham Natural Resource Consultants (2007a) and Countrywide Ecological Service (2007) respectively.

The majority of ex-pit dump Area 9, the area proposed for the extension of the approved NOC out-of-pit dump, was classified as 'Rehabilitated and Disturbed Land' in the NOC EA (Geoff Cunningham Natural Resource Consultants 2007a). This vegetation community was determined as having low ecological value and was not required to be offset as part of the offset strategy proposed in the NOC EA that was subsequently subsumed into the Complex's project approvals. The majority of the ex-pit dump Area 9 remains disturbed with only small areas of rehabilitated vegetation still in its early phases of development.

A portion of ex-pit dump Area 9, which incorporates TD3 and an area between the southern boundary of the NOC project site and TD2, was not assessed in the NOC EA. This area has been entirely previously disturbed by mining operations and is mostly devoid of vegetation apart from some partially grassed areas and a few small shrubs.

The proposed NOC emplacement extension area and new crib site are entirely within an area that has been previously disturbed and utilised as an emplacement area for waste rock from the Camberwell Coal Mine North Pit which ceased mining in 1999. A small portion of this area has since been rehabilitated, though no substantial vegetation clearing will be undertaken to accommodate the proposed modification with only immature planted trees and shrubs to be removed. Therefore, there will be no significant impacts on ecology as a result of the proposed extension of the NOC emplacement. Biodiversity will be managed in accordance with the Biodiversity Management Plan currently being prepared in line with project approval Condition 44. No mitigation or monitoring measures specific to the extension of the NOC emplacement are required.

ii Aboriginal heritage

An Aboriginal heritage assessment of the NOC area was undertaken by HLA Envirosciences Pty Limited in 2007 for the NOC EA (Corkery 2007). This assessment identified 19 areas as either containing or having the potential to contain Aboriginal archaeological deposits, none of which were located in ex-pit dump Area 9. The NOC area is highly modified by past disturbance and the majority of the area, including ex-pit dump Area 9, was assessed as having low archaeological sensitivity. As mentioned previously, the proposed NOC emplacement extension area is entirely within an area that has been previously disturbed

and utilised as a waste rock emplacement for the Camberwell Coal Mine. HLA's assessment determined that areas identified as low sensitivity required no further archaeological work.

It is concluded there will be no impacts on Aboriginal heritage as a result of the proposed modifications and no mitigation or monitoring measures are required.

iii Non-Aboriginal heritage

A search of the National, State and local heritage registers conducted by EMM on 9 November 2011 identified one non-Aboriginal heritage item of significance, namely the Middle Falbrook Road Bridge over Glennies Creek which is listed under the *Heritage Act 1977*. This item is located approximately 2 km to the north-west of ex-pit dump Area 9, and will not be impacted by the extension of the NOC into this area.

The Open Cut Project EA prepared by URS in 2009 assessed the impacts of this proposal on the Dulwich Homestead Site which is listed as a heritage item of local significance under Singleton LEP. This item is located approximately 2 km to the west of ex-pit dump Area 9, and will not be impacted by the extension of the NOC into this area.

No items or places of non-Aboriginal heritage significance are located within the ex-pit dump Area 9. Accordingly, there will be no impacts and no mitigation or monitoring measures are required.

iv Soils and land capability

The NOC EA (Corkery 2007) included a soils survey and land capability assessment undertaken by Geoff Cunningham Natural Resources Consultants (2007b). This assessment has been reviewed for the proposed modifications. Soil surveys and SOILOSS analyses undertaken by Cunningham indicated that all soils in the NOC area have moderate erodibility.

Ex-pit dump Area 9 was classified in the NOC assessment as land not capable of being regularly cultivated and land previously disturbed by mining activities which has poor to no suitability for agriculture.

Soil management techniques specific to the NOC area were presented in the NOC EA (Corkery 2007). An Erosion and Sediment Control Plan (a sub-component of the Water Management Plan), prepared in accordance with Condition 40 of the project approvals, is currently with DP&I for assessment. Subject to approval, this plan will be amended to incorporate the elements of the proposed emplacement strategy.

v Rehabilitation

The NOC area is currently a mix of active mining activity, ongoing waste rock placement, and rehabilitated land. The NOC EA (Corkery 2007) outlines the rehabilitation objectives at the site and the proposed final landform. These are reflected in the NOC MOP.

Rehabilitation is conducted on an ongoing basis. Where feasible, areas where mining and/or waste rock emplacement have been completed are rehabilitated quickly to ensure the stability of the proposed post-mining landform.

As described in Section 3.1, rehabilitation and development of the final landform within the NOC out-of-pit extension area and other approved emplacements will continue to be undertaken progressively across the mined area. This rehabilitation will be consistent with the existing approved approach, methodologies and final land use options described in the existing NOC MOP. However, as identified in Section 2.2, the NOC MOP will be updated to accommodate relatively minor changes associated with the proposed modifications.

In addition, a Rehabilitation Management Plan, prepared in accordance with Condition 58 of the project approvals, has been submitted to DP&I for assessment. Subject to approval, this plan will be amended as required to include ex-pit dump Area 9 and final landform plans for the NOC emplacement area.

vi Waste

There are a number of waste streams that result from activities at the Complex. Waste rock from overburden and interburden and waste reject materials from the beneficiation of coal are emplaced on site and are used in the final landform.

The proposed modifications will not result in any increase in the production of waste rock, rather the strategy simply proposes to extend the existing NOC out-of-pit emplacement into ex-pit dump Area 9.

A Waste Management Plan, prepared in accordance with Condition 54 project approvals, has been submitted to DP&I for assessment, and will be amended to reflect the changes proposed in the dumping strategy.

The proposed modifications will not contribute to any potential impacts resulting from other waste streams at the Complex.

vii Visual

The Complex's existing visual environment is typical of rural areas within the upper Hunter Valley, with the outlook from most residences including agricultural lands, open cut pits, overburden dumps, rehabilitated former mining areas, infrastructure and biodiversity conservation areas. The Complex is fully or partially screened from the majority of surrounding residences by topography, vegetation and screening bunds.

A visual assessment for the NOC was undertaken by Corkery in 2007. Surrounding residences were determined as either having full, partial or no visibility of the NOC area. The majority of residences had no visibility of the NOC with some residences to the west and south-east having partial visibility and some residences to the north having full visibility. Elements of the NOC can also be viewed from some points on local roads including Middle Falbrook Road, Bridgman Road and Stony Point Road. The NOC was determined by Corkery (2007) to have a low visual impact from sensitive view points. This assessment was confirmed by URS (2009) for the Open Cut EA.

The ex-pit dump Area 9 is located to the south of the approved NOC emplacement and will be at the same elevation. The most sensitive viewpoints, residences to the north that have full visibility, will have no increase in visual impact as the extension will be located behind the existing emplacement area and therefore will not be visible from this direction.

Sensitive view points to the south-east will have only partial views of ex-pit dump Area 9 due to the intervening topography and vegetation. Again the direction of the view points and the location of ex-pit dump Area 9 in relation to the existing emplacement area will mean that it will be indiscernible visually. It is unlikely that there will be a significant increase in visual impact for these residences.

The proposed ex-pit dump Area 9 may be partially visible to some views points to the west that already have a partial view of the NOC emplacement, as well as other facilities at the Complex. However, as this area will be consistent with the existing NOC emplacement in terms of height and features, it will be relatively indiscernible from these views. As these views are only partial, and are more than 2 km from the ex-pit dump with an existing mining outlook, the modification is expected to have minimal to no visual impact.

It is considered that the proposed NOC emplacement extension is consistent with the surrounding landform and will not have a significant additional impact. Management of potential visual impacts will continue to be undertaken in accordance with Conditions 51 and 52 of the project approvals (Appendix A).

viii Water

The existing water management system involves the full containment of "dirty" process water and surface runoff from disturbed areas on the site and the diversion of "clean" surface runoff from undisturbed or rehabilitated catchments into the downstream drainage system to Glennies Creek. Dirty water currently flows to three main water storage dams – the Portal Sump (west of the NOC pit), Possum Skin Dam (located north of the NOC pit) and Dam 1 (south of TD3). There are also a number of smaller dirty water storage dams east of the approved NOC emplacement area.

Ex-pit dump Area 9 will be located in the catchment area which contains the approved NOC emplacement. There is currently sufficient capacity in the approved dirty water storage dam network to accommodate any changes resulting from the extension of the NOC emplacement in ex-pit dump Area 9. It is considered that the extension to the NOC emplacement can be incorporated within the existing surface water management system. Therefore, there will be no significant impacts on surface water as a result of the proposed modifications.

A Water Management Plan, prepared in accordance with Condition 40 of the project approvals, is currently with DP&I for assessment. Subject to approval, this plan will be updated to include the extension to the emplacement area into ex-pit dump Area 9.

The extension to the NOC emplacement will not impact groundwater.

6.2 Extension to approval timeframes

6.2.1 Biodiversity offset areas

In accordance with Conditions 41 to 44 of the project approvals, a biodiversity offset strategy was developed for the Complex. This strategy includes the five offset areas detailed in Condition 41 of the project approvals (see Section 3.2.1). The proposed modification seeks to extend the deadline for long term security of these offset areas, as required under Condition 43 of the project approvals. The biodiversity offset areas will continue to be managed in accordance with the strategy during the extension period.

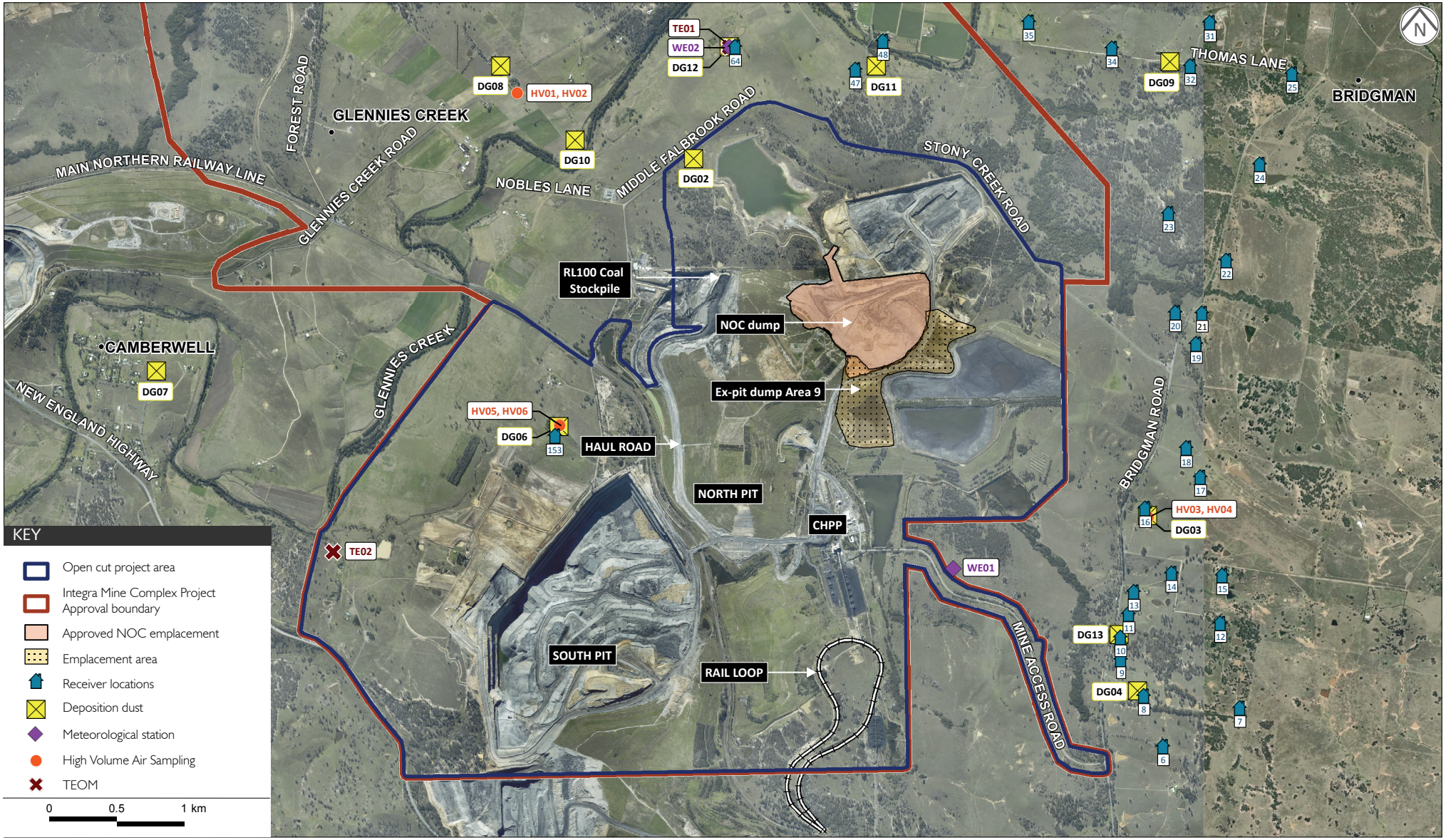
The biodiversity offset strategy will form the basis for the Biodiversity Management Plan currently being prepared as required under Condition 44 of the project approvals.

Extension to the deadlines in Conditions 42 and 43 will have no material effect on the Complex as currently approved.

6.2.2 Overland conveyor

ROM coal extracted from the Underground operations is currently transported from the RL100 stockpile to the CHPP by off-road truck haulage as permissible under the project approvals until the end of December 2011. Emissions associated with continued trucking during the extension period will remain consistent with existing operations.

Should the cessation of trucking coal between the Underground and CHPP be required at the end of December 2011, production of coal from the Underground operations would be suspended. This would result in substantial socio-economic impacts with the loss of employment for the Underground workforce of 270 full-time Integra personnel and contractors. There would also be other significant, indirect socio-economic impacts on businesses in the surrounding areas.



Source: Aerial imagery from Integra Coal Mine

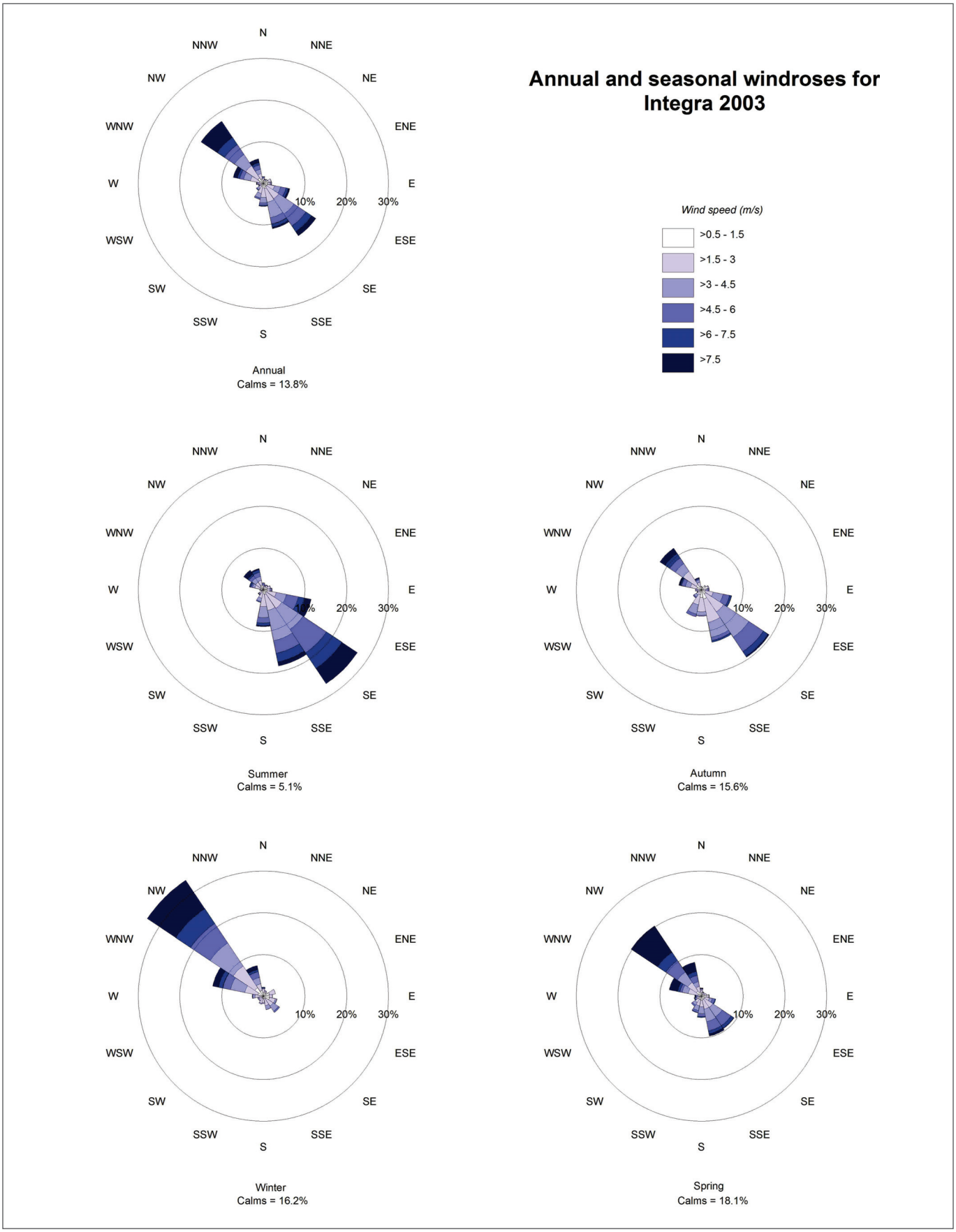
EMGA MitchellMcLennan

Integrated Design Solutions | 030609 EA - Rev C 25 November 2011

Receiver locations

Integra Mine Complex Modification 1 Environmental Assessment

FIGURE 6.1



Annual and seasonal windroses for
Camberwell Meteorological Station (2003)
Integra Mine Complex Modification I Environmental Assessment
FIGURE 6.2

7 Statement of commitments

Table 7.1 consolidates the mitigation and monitoring measures proposed to manage the potential impacts resulting from the proposed modifications. These measures have been considered in the context of the approved operations and the management plans required by the project approvals. The statement of commitments details those controls that are specific to the proposed modifications.

Table 7.1 Statement of commitments

Environmental attribute	Commitment
Air Quality	Revision of the Air Quality Management Plan to incorporate elements of the emplacement strategy. Implementation of the control strategies listed in Section 6.1.1.iii, including: • regular watering of unsealed access roads and exposed surfaces; • minimisation of exposed surfaces; • management of dust-generating construction activities during adverse wind conditions; and • minimisation of the drop heights between excavator buckets and trucks carrying overburden materials.
Noise	Implementation of the management measures listed in Section 6.1.2.iii, including: • attended monitoring in accordance with the INP during the hauling associated with the emplacement of waste rock in ex-pit dump Area 9 to confirm the mine noise contribution remains negligible, in particular at residences situated to the north-east of the mine; • in the event that unforseen events arise during haulage associated with the emplacement of waste rock in ex-pit dump Area 9 and emissions are significant then provision of reasonable and feasible mitigation measures would be required; and • revision of the Noise Management Plan to incorporate elements of the emplacement strategy.
Soils and land capability	Revision of the Erosion and Sediment Control Plan to incorporate elements of the emplacement strategy.
Rehabilitation	Revision of the Rehabilitation Management Plan to incorporate elements of the emplacement strategy.
Waste	Revision of the Waste Management Plan to incorporate elements of the emplacement strategy.
Water	Revision of the Water Management Plan to incorporate elements of the emplacement strategy.

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8 Conclusion

Integra seeks approval from the Minister for Planning and Infrastructure to modify project approvals PA 08_0101 and PA 08_0102 under Section 75W of the EP&A Act. The proposed modifications are in response to recent investigations conducted by Integra which:

- identified critical constraints in relation to NOC waste rock emplacement capacity. Without resolution, this will significantly impact the development of the pit, and ultimately, cause NOC operations to cease;

- determined that extension to the timeframes stipulated in Conditions 42 and 43 is required to allow Integra sufficient time to complete further investigations into the feasibility of mechanisms to provide long term security over the biodiversity offset areas and revise the biodiversity offset strategy to allow an appropriate biodiversity conservation option to be fully investigated and presented in a separate modification application, if applicable; and

- indicated that the overland conveyor required under Condition 48 is not economically viable and its construction would result in significant disruption to existing operations, with only very minor environmental benefits. Extension to the timeframe stipulated in Condition 48 for the installation and construction of the conveyor will allow a robust assessment of, and consultation on, the potential impacts associated with its removal from the project approvals. It will also enable a detailed study of potential additional dust amelioration measures to be implemented in this area for underground coal haulage. Further investigations into the potential construction and operation of the conveyor will also be continued during this period.

The environmental impact assessment determined that the potential impacts associated with the proposed modifications are minor to negligible.

Accordingly, the proposed modifications can be managed under the Complex's existing management systems which will be revised as necessary subject to approval of the proposed modifications. Additional management measures have been proposed for the management of potential noise and air quality impacts within the extension of the NOC emplacement into ex-pit dump Area 9, though impacts are expected to be minor.

It is considered that, on balance, the overall potential impacts of the proposed modifications are consistent with the approved development and the objects of the EP&A Act.

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Acronyms

AEMR	Annual Environmental Management Report
AHD	Australian Height Datum
AS	Australian Standard
CHPP	Coal Handling and Preparation Plant
CCC	Community Consultative Committee
DP&I	Department of Planning and Infrastructure
DTIRIS	Department of Trade and Investment Regional Infrastructure and Services
EA	Environmental Assessment
EMM	EMGA Mitchell McLennan Pty Limited
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence
ESD	Ecologically sustainable development
INP	Industrial Noise Policy
LEP	Local Environmental Plan
LGA	Local Government Area
Mbcm	Million bank cubic metres
Mtpa	Million tonnes per annum
MOP	Mining Operations Plan
NES	National environmental significance
NOC	North Open Cut
OEH	Office of Environment and Heritage
POEO Act	*Protection of the Environment Operations Act 1997*
REMP	Rehabilitation Environmental Management Plan
ROM	Run of mine
SEPP	State environmental planning policy
SOC	South Open Cut
TD2	Tailings Dam 2
TD3	Tailings Dam 3
TEOM	Tapered elemental oscillation microbalance
TSP	Total Suspended Particulates

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