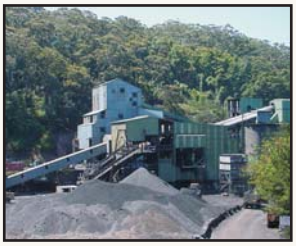
METROPOLITAN MINE

REPLACEMENT DRIFT CONSTRUCTION MODIFICATION ENVIRONMENTAL ASSESSMENT

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METROPOLITAN COAL

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1 INTRODUCTION

The Metropolitan Mine is owned and operated by Helensburgh Coal Pty Ltd (HCPL), a wholly owned subsidiary of Peabody Energy Australia Pty Ltd (Peabody).

HCPL was granted approval (08_0149) for the Metropolitan Coal Project (the Project) under Section 75J of the New South Wales (NSW) *Environmental Planning and Assessment Act, 1979* (EP&A Act) on 22 June 2009 (the Approval). A copy of the Project Approval is provided in Attachment 1.

The Project comprises the continuation, upgrade and extension of underground coal mining operations and surface facilities at the Metropolitan Mine, located some 30 kilometres (km) north of Wollongong (Figures 1 and 2).

The Metropolitan Mine Major Surface Facilities Area is located off Parkes Street in Helensburgh (Figure 3). A range of upgrades of the Major Surface Facilities will be undertaken over the first five years of the approved Project, as described in the Metropolitan Coal Project Environmental Assessment (the Project EA) (HCPL, 2008).

HCPL has made an application to the Minister for Planning under Section 75W of the EP&A Act to modify the Project to allow for the additional construction of a replacement underground drift (the Modification), including construction of a new drift portal at the Major Surface Facilities Area.

This Environmental Assessment (EA) has been prepared in support of the Modification and sets out the details of the Modification and an assessment of the potential environmental implications of the Modification.

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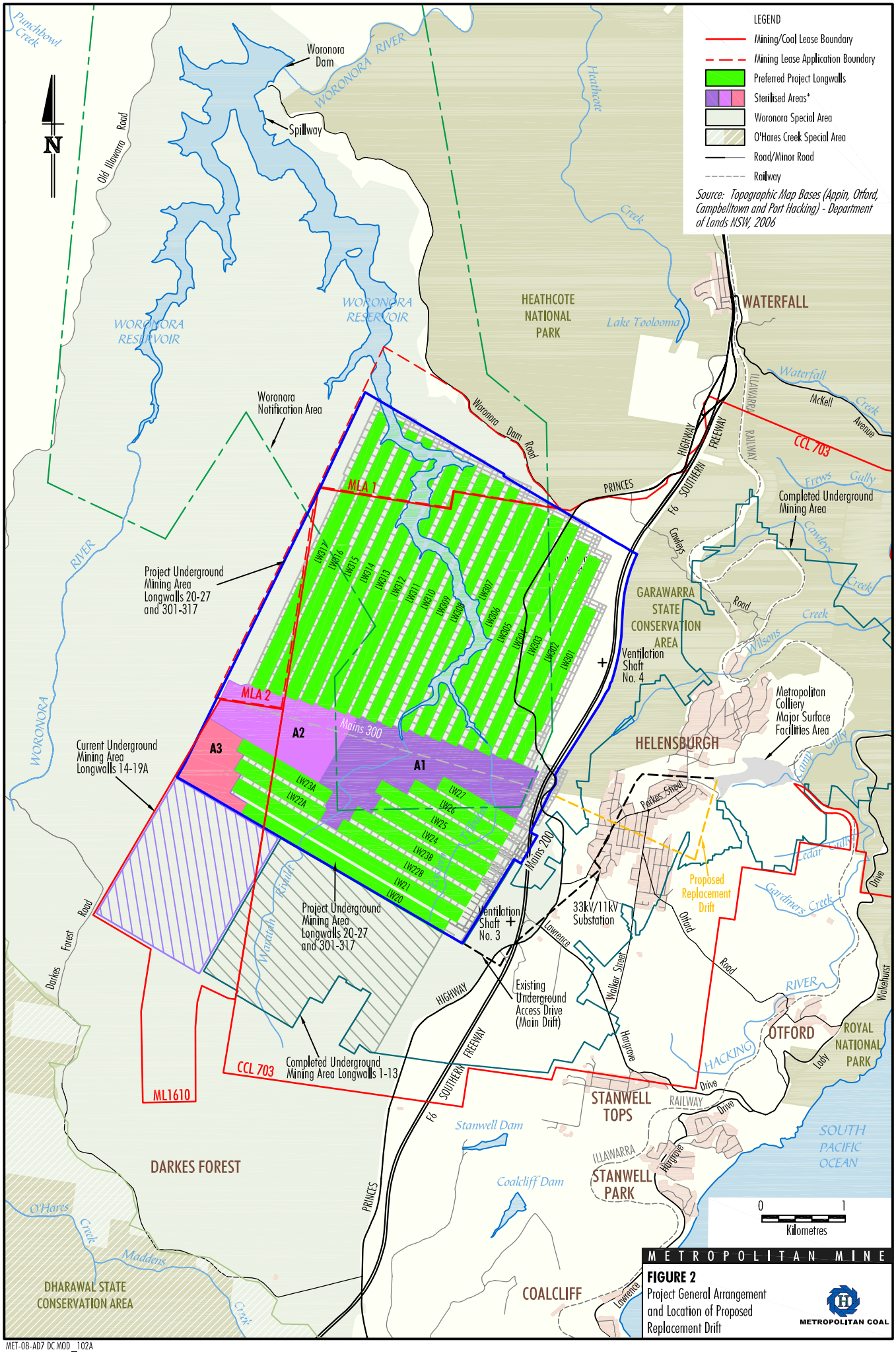

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FIGURE 3
Locations of the Proposed Drift Portal and New Electrical Substation

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2 PURPOSE AND JUSTIFICATION OF THE PROPOSED MODIFICATION

The existing underground drift (Figure 2) and associated mains conveyor system that services the Metropolitan Mine need to be upgraded in support of the approved 3.2 million tonnes per annum (Mtpa) run-of-mine (ROM) coal production rate.

Engineering studies conducted on behalf of HCPL that examined the engineering requirements and operational risks to upgrade the current drift and conveyor system (i.e. while the existing mine continued using the same system) have identified that:

- upgrading the drift/conveyor capacity while the existing systems continued to operate would be technically challenging; and
- the risk of production outages due to potential construction related accidents during the upgrades would be high.

As a result of these investigations HCPL concluded that it would be lower cost and lower operational risk to develop a replacement underground drift and associated main conveyor system in parallel with the operation of the existing drift and conveyor. Once the replacement drift and conveyor is operational, the existing drift and conveyor system would be decommissioned.

Due to the long lead time involved in constructing the replacement underground drift (i.e. approximately 30 months), the development of the drift would be undertaken in parallel with the ongoing engineering design and then the construction of the major surface upgrades that are part of the approved Project, but for which designs are yet to be finalised. This EA therefore focuses on the drift construction and associated surface activities.

3 DESCRIPTION OF THE PROPOSED MODIFICATION

3.1 OVERVIEW

The Modification comprises minor changes to the currently approved Project and the Major Surface Facilities Area. The extent of the approved Major Surface Facilities Area is shown in Appendix 4 of the Project Approval (Attachment 1).

The key aspects of the Modification include:

- construction of a replacement underground drift (i.e. 5.5 metres [m] x 5.7 m materials and man access tunnel to the underground workings) and associated surface facilities;
- three small areas of vegetation clearing associated with the initial portal construction and beneficial use of drift waste rock material for approved surface upgrades; and
- disposal of excess drift waste rock that cannot be used in construction to old workings via the approved Project paste plant and/or transport off-site within approved coal reject trucking limits (e.g. to Glenlee Washery for disposal).

Table 1 provides a summary of the Modification components as compared with a summary of the approved Metropolitan Mine operations.

Table 1
Modification Summary

Project Component	Summary of the Approved Metropolitan Coal Project	Summary of Drift Construction Modification
Life of Mine	• An additional mine life of approximately 23 years.	• No change.
ROM Coal Production	• Production of up to approximately 3.2 Mtpa of ROM coal.	• No change.
CHPP	• The Coal Handling and Preparation Plant (CHPP) and associated material handling systems will be upgraded to increase CHPP throughput up to approximately 600 tonnes per hour (tph).	• No change.
Product Coal	• Production of approximately 2.8 Mtpa of hard coking and semi-hard coking coal (including minor quantities of thermal coal) for export and domestic markets. • Product coal transport by train to the Port Kembla Coal Terminal with increased rail movements in line with increased coal production. • Trucking of product coal to the Corrimal and Coalcliff Coke Works at the existing maximum rate of annual road movements.	• No change.
Coal Reject Management	• Coal reject production to increase in line with increased ROM coal production. • Trucking of coal reject to Glenlee Washery at the existing maximum rate of annual road movements. • Construction of a coal reject paste plant and associated infrastructure to facilitate underground backfilling of the mine void by goaf injection. • In the event that the quantity of coal reject is greater than anticipated or commissioning of the underground goaf injection technique is delayed, emplacement may take place into the old underground workings via Ventilation Shaft No. 1.	• No change.

Table 1 (Continued)
Modification Summary

Project Component	Summary of the Approved Metropolitan Coal Project	Summary of Drift Construction Modification
Water Management	• Continued use and (where required) upgrade and augmentation of existing water management infrastructure, including upgrade of underground water management systems. • Installation of an additional water tank.	• No change.
General Surface Facilities and Supporting Infrastructure	• The existing surface facilities will be utilised, however, the Project will include the upgrade of some infrastructure and construction of additional components as required. • Supporting infrastructure systems will be extended and upgraded as required.	• Additional upgrades associated with the establishment of the new drift portal. • Additional electrical substation located at the mine manager's residence.
Employment	• The operational workforce is expected to remain at approximately 320 people. • It is anticipated that a peak construction workforce of up to 50 employees would be required.	• Operational workforce unchanged. • Peak construction workforce of up to 80 employees.

The majority of the surface activities required for the Modification would be undertaken only during the daytime, would be short-term in nature and would be generally consistent with the range of general site upgrade works that are already approved for the Project. Daytime surface activities associated with the Modification would include:

- Minor clearing/earthworks, demolishing part of two existing operational buildings and daytime construction works to establish the new drift portal adjacent to the workshop.
- Internal site transport and beneficial use of drift waste rock material from a small surface stockpile at the portal for use as construction fill material for approved surface facilities upgrades.
- Upgrade of on-site electricity distribution systems with the establishment of a new substation at the mine manager's residence (Figure 3), and associated on-site electricity distribution including installation of buried electrical cables along existing site roads.

Once the drift portal and associated minor fixed plant are established, underground drift construction would be undertaken for a period of approximately 30 months, 24 hours per day. Associated with underground development would be the following 24 hour activities at the Major Surface Facilities Area:

- Operation of on-site supplementary electricity generation adjacent to the portal for a period of up to 12 months, to supply the electricity demand of the drift construction equipment prior to the site electricity supply being upgraded.
- Operation of the drift conveyor that transports waste rock material from the road header to the surface, and deposits the material at a temporary stockpile located at the portal entrance.
- Operation of a temporary ventilation fan to maintain suitable air quality at the drift working face.

Further detail on the proposed Modification is provided in the sub-sections below.

3.2 INITIAL CONSTRUCTION

3.2.1 Vegetation Clearing

In order to gain equipment access to the portal construction site and to establish the working area for the construction of the portal, and for some of the approved upgrades of surface facilities, limited clearing of vegetation at the margins of the site would be required.

Areas to be cleared for construction are shown on Figure 4 and include:

- portal footprint and temporary portal site access track for equipment access;
- transfer station and ROM conveyor area footprint; and
- an access track extension for on-site transport and use of waste rock extracted from the drift for use in general approved construction activities (e.g. upgrade of surface water management structures).

3.2.2 Establishment of the Drift Portal

Drift portal establishment would involve the following general steps:

- battering back the Newport Sandstone ledge at the back of the portal construction area;
- demolishing two existing operational buildings (a workshop extension and the adjoining store) to provide a drift construction pad;
- shotcreting the batter at the back of the portal construction site;
- excavating the portal area to establish a highwall;
- installing pre-formed concrete portal culvert structures (to minimise noise propagation) and grouting these to the highwall;
- installing a construction ventilation fan; and
- installing an electricity generator(s) in an acoustic enclosure adjacent to the existing workshop building.

An indicative drift construction layout once the portal has been established is provided on Figure 5.

3.3 DRIFT DEVELOPMENT

The estimated rate of drift development is anticipated to be between 20 to 30 m per week, with an average target of approximately 25 m per week advance. The drift would have a cross section of approximately 5.5 m x 5.7 m with a slope of 1:8 and would extend for approximately 2.7 km.

A road header (e.g. Mitsui S200 or similar) would be used to excavate the drift. Initially the road header would commence works within the portal culverts and would only operate in the daytime for the first 20 m of advance. An Eimco would be utilised for a short period to transport excavated rock from the road header to the temporary stockpile, until sufficient drive length is available to establish the conveyor system.

The drift conveyor would initially operate with a small 160 kilowatt (kW) drive, with this drive subsequently being replaced with a larger twin drive system after approximately one year. The drift conveyor would transfer the drift waste rock material to a 600 tonne (t) temporary stockpile (Figure 5).

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FIGURE 4
Remnant Vegetation
Clearing Areas

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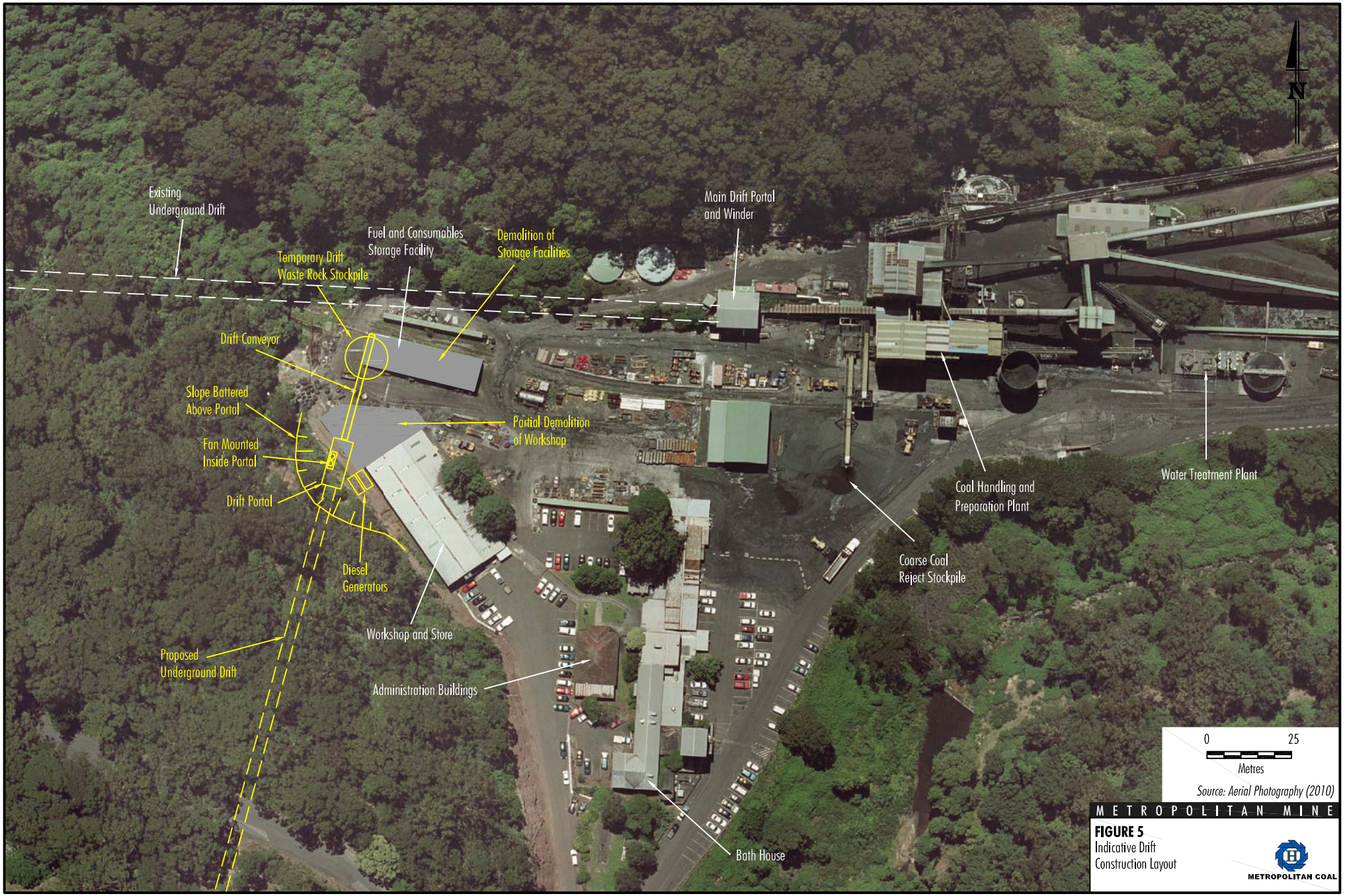

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3.3.1 Ventilation Requirements

In order to maintain suitable air quality conditions in the underground drift, construction activities would be serviced by ventilation 24 hours per day.

For the first three months a small 100 kW axial fan would be located outside the portal. A larger 250 kW axial fan would be installed in the portal (Figure 5) after approximately 3 months to provide drift ventilation for the remainder of the construction period.

3.3.2 Use of Excavated Material

Over the 30 months of drift construction it is estimated that some 90,000 cubic metres (m^3) or approximately 220,000 t of waste rock (i.e. primarily sandstone) would be produced.

Where practicable the waste rock material excavated from the drift would be utilised for construction and remediation activities at the approved upgrades of the surface facilities.

Waste rock material that cannot be utilised on-site for construction and development activities would be placed underground via the approved paste plant and paste injection system and/or transported off-site within approved coal reject trucking limits (e.g. to Glenlee Washery for disposal).

3.4 MOBILE FLEET

Comparison of the Project EA and the proposed Modification construction fleets indicates that a limited number of additional items would be required (Table 2).

Most of the additional items would only be used for short term daytime activities (e.g. use of a Cat D10 dozer for site clearing and preparation). However, to transport drift waste rock material from the portal stockpile a front end loader (FEL) and 30 t truck would operate for the 30 month drift construction period (in the daytime only).

Table 2
Surface Construction/Development Fleet

Fleet Item	Project EA Number	Revised Number
30 t Mobile Crane	1	1
50 t Mobile Crane	1	1
30 t Excavator	1	1
Concrete Delivery Truck	2	2
Semi-Trailer Low Loader	2	1
Cat D10 Dozer (clearing/earthworks)	-	1
Shotcrete Machine (shotcreting portal)	-	1
Eimco (waste rock movement) *	-	1
30 t on-road truck (transporting waste rock on-site)	-	1
988 FEL (loading waste rock from stockpile)	-	1

After: HCPL (2008)

*Only used until the drift conveyor is established.

The Modification would not result in any material change to the general surface fleet that operates at the Metropolitan Mine (Table 3).

Table 3
Major Surface Mobile Fleet

Description	Project EA Number	Revised Number
988 Cat FEL	4	3
980 Cat FEL	1	2
WA470-3 Komatsu FEL	1	1
Street Sweeper	1	1
D7 Cat Dozer	1	1
D8 Cat Dozer	1	1
Water Cart	2	1
Grader	1	1
Bobcat	1	1
Screen	1	1
Off-road 30 t Truck	3	2

After: HCPL (2008)

3.5 ELECTRICITY SUPPLY

New Electrical Substation

The Project EA indicated that upgrades of electricity supply would be required over the life of the Project. As a component of these upgrades a new fully enclosed 33 to 11 kilovolt (kV) electricity substation would be built off-site and delivered to the site by low loader and installed using a crane onto a pad located at the mine manager's residence (Figure 3). The substation would also have suitable safety and operational lighting installed.

The electricity supply to the substation would be provided via buried cable along Parkes Street (subject to separate environmental assessment and approval by the electricity supplier) and then down the mine manager's residence driveway to the substation site. Electricity supply from the new substation to the other surface facilities would be via the existing site roads with the installation of buried cabling in existing disturbance corridors.

Temporary Supply

Due to existing capacity limitations with the Metropolitan Mine electricity supply, the initial drift construction works (i.e. the road header) would be powered by diesel generator(s) until the general electricity supply can be upgraded. It is anticipated that diesel powered drift construction may be required for a period of six to twelve months.

The generator(s) would be located outside the drift portal within an acoustically designed sound dampening enclosure. A single larger generator or two smaller generators may be used, however the electricity demand is anticipated to be approximately 2 megavolt amps.

3.6 WORKFORCE

It is estimated that the drift construction would require a workforce of approximately 48 people, working rotating shifts, with not all employees being present on-site every day. With the expected sequencing of other approved surface facility upgrade activities on-site this indicates that the maximum number of construction employees would increase from 50 to approximately 80 people (Table 4) and this peak is expected in 2011.

Table 4
Estimated Construction Workforce

Context	Project EA Number	Revised Number
Peak	50	80
Typical	20	45
Average over 5 years	5	35

After: HCPL (2008)

4 ENVIRONMENTAL ASSESSMENT

The following section presents the environmental assessment for the Modification. The impact assessment findings presented in the Project EA and Metropolitan Coal Project Preferred Project Report (HCPL, 2009) for the majority of environmental aspects would be unchanged by the Modification, as no change to approved longwall mining operations, no change to approved coal production levels and only minor changes to the approved Major Surface Facilities are proposed.

Specialist reviews conducted for the Modification included consideration of noise (Appendix A) and air quality emissions (Appendix B) associated with construction surface works and a review of the groundwater implications (Appendix C) of the replacement drift.

A range of general site upgrades were described in the Project EA and are approved at the Major Surface Facilities Area. These include activities such as:

- upgrades of the CHPP to facilitate increased production of washed coal;
- construction of a coal reject paste plant and associated coal reject stockpile, pumping, pipeline and underground delivery systems;
- upgrades and/or extension of the existing supporting infrastructure systems (e.g. underground access, water management system, yard area, conveyor transfers and drives, ventilation, gas management and electrical systems) as required; and
- associated minor infrastructure, plant, equipment and activities.

HCPL review of the construction areas that are required for some aspects of the approved upgrades, and the establishment of the drift portal indicate some 0.6 hectares (ha) of remnant vegetation clearing on the margins of existing operational areas is required (Figure 4). While it could be argued that the majority of these works are within the approved extent of the Major Surface Facilities (Attachment 1 – Appendix 4), for completeness consideration of potential flora and Aboriginal heritage impacts associated with these disturbance areas has been included below and in Appendices D and E.

4.1 CONSTRUCTION NOISE

Background

The Metropolitan Colliery has been operating since the 1880s and the township of Helensburgh originally developed around the Major Surface Facilities Area in order to accommodate the mine workforce. As a result, suburban residential areas of Helensburgh are located in close proximity to the Major Surface Facilities Area (Figures 2 and 3). Some nearby residences are therefore exposed to industrial noise associated with the approved mining operations.

HCPL has conducted a number of noise investigations and studies to address Pollution Reduction Programs (PRP) initiated by the Department of Environment, Climate Change and Water (DECCW) that relate to operational noise reduction, including the *PRP 12 Noise Reduction Programme – Stage 2 Noise Mitigation Investigation* (Heggies, 2008a). Following the completion of the PRP 12 study a noise impact assessment of the Project was conducted by Heggies Pty Ltd (2008b).

In this assessment Heggies modelled three scenarios based on the planned development of the Project, including an existing scenario, a Year 3 scenario and a Year 15 scenario. An inherent component of the approved Project is the progressive reduction in operational noise emissions that will be achieved via the approved upgrades to the CHPP, associated upgrades to materials handling systems and various acoustical improvements (e.g. use of low noise equipment) over a period of approximately five years.

In recognition that progressive reductions in operational noise emissions of the Major Surface Facilities Area will take some time, the Project Approval (Attachment 1) includes operational noise criteria that apply post 2014. A draft Noise Management Plan (NMP) (HCPL, 2010a) has been prepared for consideration by the Department of Planning (DoP) that provides for the establishment of quarterly attended and real-time noise monitoring at the Major Surface Facilities Area to monitor noise emissions and site operational noise reduction progress.

Complaints Record

HCPL records Metropolitan Mine complaints in a complaint register. Review of the number of on-site operational noise complaints received over recent years (Figure 6) indicates that only six complaints have been received in the period 2007-2009 and in the first quarter of 2010.

Recent off-site transport noise complaints are described in Section 4.7.

Environmental Review

Heggies Pty Ltd (Heggies) has completed a review of the potential noise implications of the proposed Modification (Appendix A), including evaluation of three phases of the drift construction works and identification of suitable noise control measures for additional fixed plant items.

The specific noise mitigation measures that have been identified as being required to minimise noise emissions associated with additional fixed plant items are detailed in Table 5.

Table 5
Modification Fixed Plant Noise Management Measures

Equipment	Indicative Capacity or Specification	Indicative Noise Mitigation Measure	Operating Sound Power Level (L_{Aeq})
Initial Axial Fan	100 kW	High Performance Silencer - 12 decibel amps (dBA) reduction. Indicatively 2D silencer on the fan inlet and exhaust. Fan supply louver to be directed in the east.	103 dBA
Drift Conveyor	1000 t/hr	Install low noise idlers – 10 dBA reduction.	95 dBA/100 m
Drift Conveyor Drive	160 kW	Install low noise drive – 7 dBA reduction.	93 dBA/unit
	2 x 250 kW	Install low noise drive – 7 dBA reduction.	95 dBA/unit
Diesel Gensets	2 x 1,320 kilovolt amps	High Performance Enclosure - 15 dBA reduction. Indicatively double skin construction (typically metal decking//100 millimetres (mm) insulation//10 mm fibrous cement sheeting) fully internally lined with 50 mm insulation faced with perforated metal. Acoustic louvers to be provided by supply and return air located on the eastern side of the building. High performance exhaust muffler to limit the sound pressure to less than 85 dBA at 1 m from the exhaust.	101 dBA/unit
Larger Axial Fan	250 kW	High Performance Silencer – 18 dBA reduction. Indicatively 2D podded silencer on the fan inlet and exhaust. Fan housed within the portal to reduce noise breakout from the fan casing.	101 dBAa

After: Appendix A

In addition, when the Cat D10 Dozer is used on-site for intermittent daytime clearing and site preparation works, operators would be restricted to low gear when reversing, to reduce the potential for track slap noise.

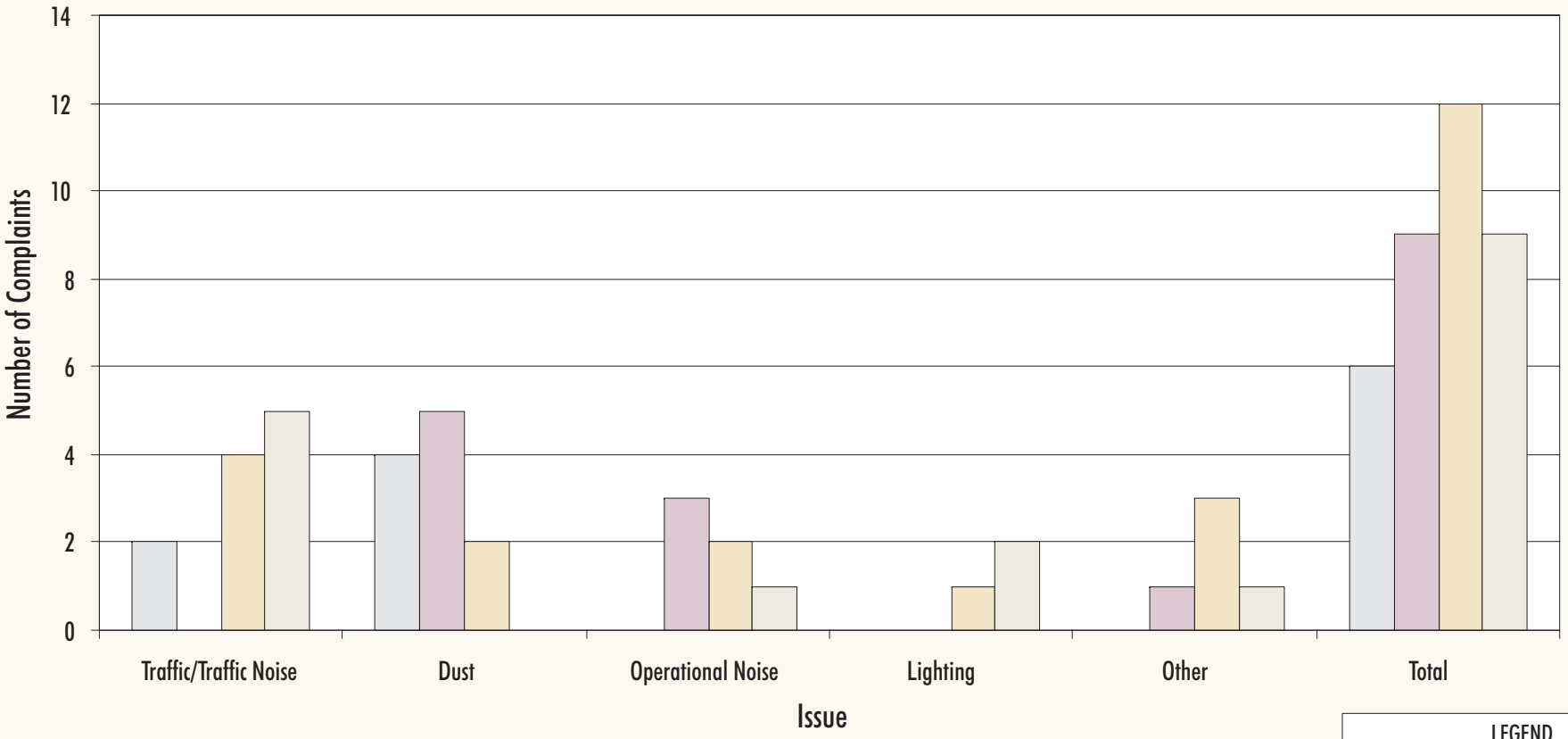

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FIGURE 6
Metropolitan Mine Complaints
Record 2007-2010

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With the implementation of the above noise controls, Heggies (Appendix A) evaluation of potential impacts on Major Surface Facilities daytime noise concluded:

> *Portal establishment works would be short term and the use of mobile construction equipment associated with initial construction would be limited to the daytime only. Review of sound power levels of the approved Project and the approved Project incorporating the Modification indicates that the Modification would not result in any material change to the daytime sound power levels of the surface facilities area.*

With the implementation of the above noise controls, Heggies (Appendix A) evaluation of potential impacts on Major Surface Facilities on evening and night-time noise concluded:

> *A range of noise management measures for additional fixed plant items that would operate 24hrs per day during the construction of the new underground drift have been identified and would be employed for the Modification. With the implementation of these measures the sound power of the site during the evening and night-time would also be largely unchanged by the proposed Modification.*

Mitigation Measures and Management

In addition to the noise controls identified in Table 5 the Metropolitan Mine has developed a NMP that includes a commitment to quarterly attended monitoring and on-going real-time noise monitoring that will be used to track noise performance and implement additional noise controls if required.

As the engineering design of the surface facilities upgrades progresses, HCPL would continue to consult with the DoP regarding the final design of the upgraded surface facilities and would undertake supplementary noise assessment as required to examine whether additional noise control measures are required to maintain noise reduction progress towards the noise criteria that are stipulated in the Project Approval (Attachment 1) and apply post 2014.

4.2 AIR QUALITY

Background

Suburban residential areas of Helensburgh are located in close proximity to the existing Major Surface Facilities Area. Some residences in Helensburgh are therefore exposed to dust emissions associated with the operation of the Major Surface Facilities Area and associated road and rail transport of coal products and coal reject.

In recognition of the existing dust generation of the Metropolitan Mine and the close proximity of neighbouring residential areas, the DECCW initiated a number of PRPs for the Major Surface Facilities Area and HCPL has established a dust monitoring network and upgraded site dust controls over recent years.

Current dust management measures include:

- watering of unsealed haul roads and hardstand areas;
- enclosure of crushing and screening processes;
- enclosure of transfer conveyors;
- fixed water sprays located on conveyors and stockpiles;
- truck wash for all heavy vehicles travelling off-site; and
- progressive sealing of car parks and yard areas.

An Air Quality Impact Assessment for the Project was undertaken as a component of the Project EA by Holmes Air Sciences (2008). In this assessment Holmes Air Sciences modelled two scenarios (Year 3 and Year 15). This assessment indicated that applicable air quality criteria would be met at all of the nearest private receivers under both modelled scenarios.

A draft Air Quality and Greenhouse Gas Management Plan (AQMP) (HCPL, 2010b) has been prepared for consideration by DoP that provides for the continuation of the existing air quality monitoring network plus the establishment of real-time particulate monitoring at the Major Surface Facilities Area.

Complaints Record

HCPL records Metropolitan Mine complaints in a complaint register. Review of the number of site dust complaints received over recent years (Figure 6) indicates that some 11 dust related complaints have been received in the period 2007-2009 and in the first quarter of 2010.

Environmental Review

PAEHolmes has completed a review of the potential air quality implications of the proposed Modification, including identification of suitable general construction dust control measures for the Modification.

PAEHolmes concluded (Appendix B):

> *The estimated dust emissions from construction of the new drift portal and associated works are small relative to the total emissions from the approved mine itself.*
>
> *The existing air quality monitoring indicates that Metropolitan Colliery is currently compliant with the DECCW criterion and generally below the applicable air quality goals.*
>
> *The modification works if managed in accordance with general construction dust minimisation techniques would generally be consistent with the emissions from approved surface facilities upgrades as detailed in the 2008 Environmental Assessment. Subsequently, emissions from the Metropolitan Coal Mine would not be significantly altered and would not likely result in any detectable change at sensitive receptors.*
>
> *Once the construction of the drift is complete, providing the new operational conveyors and associated upgraded material handling systems incorporate the dust management controls that were described in* ***Holmes Air Sciences, 2008,*** *the operation of the replacement drift would not increase the total dust burden of the surface facilities, as it is a replacement rather than an additional facility.*
>
> *It is concluded, therefore, that the construction of the new drift portal would not have a detectable impact on dust levels in the Helensburgh area.*

Mitigation Measures and Management

As described in Appendix B, a range of construction dust controls are available and would be implemented as required during construction to minimise dust emissions. These measures are generally consistent with the existing Major Surface Facilities Area dust management measures.

The Metropolitan Mine AQMP includes ongoing static and real-time air quality monitoring adjacent to the Major Surface Facilities Area. The results of the air quality monitoring program will be used to track dust management performance at the surface facilities and implement additional dust controls if required.

4.3 GROUNDWATER

A groundwater assessment was conducted by Heritage Computing as a component of the Project EA (Heritage Computing, 2008). The assessment found that the there are three groundwater systems associated with the mining area, a perched groundwater system associated with swamps and shallow sandstone, a shallow groundwater system and a deep groundwater system. A hydraulic disconnect between the deep and shallow groundwater systems exists through the very low permeability of the Upper Bulgo sequence (i.e. Hawkesbury Sandstones and Bald Hill Claystones) (HCPL, 2008).

The Modification would not involve any change to the approved longwall mining operations.

Heritage Computing conducted a review of the Modification to determine if the findings of the groundwater study conducted for the Project EA would change as a result of construction and operation of the replacement drift (Appendix C).

Analysis of the alignment of the replacement drift found that there would be very similar groundwater conditions to that of the current drift, and the replacement drift would be expected to receive less groundwater inflow than the current drift (Appendix C).

Heritage Computing concluded (Appendix C):

> *…the construction of the new drift will not compromise in any material way the findings of the groundwater assessment component of the Environmental Assessment (i.e. there will be negligible difference in potential groundwater effects as a result of the construction and operation of the proposed replacement drift).*

4.4 FLORA AND FAUNA

Baseline terrestrial flora surveys were conducted for the Project by Bangalay Botanical Surveys (2008). The potential impacts of the Project on terrestrial flora and their habitats were assessed by FloraSearch and Western Research Institute (2008). Baseline terrestrial fauna surveys were conducted for the Project by the Western Research Institute and Biosphere Environmental Consultants (2008). The potential impacts of the Project on terrestrial fauna and their habitats were assessed by the Western Research Institute (2008).

A flora inspection of the three proposed remnant vegetation clearing areas that adjoin the existing surface facilities (Figure 4) was conducted by FloraSearch in May 2010 (Appendix D).

The inspection was undertaken to determine whether any species, populations or communities listed as threatened under the NSW *Threatened Species Conservation Act, 1995* or the Commonwealth *Environment Protection and Biodiversity Conservation Act, 1999* (EPBC Act) occur in these areas. Targeted searches of these three areas did not identify any listed threatened flora species, populations or communities (Appendix D).

FloraSearch concluded that the three proposed clearance areas have a Moist Blue Gum – Blackbutt Forest vegetation community that has been highly modified by disturbance associated with historical mining activities. The current vegetation is in poor condition relative to the original undisturbed communities owing to a considerable loss of groundcover and shrub diversity and dominance by aggressive weeds (Appendix D).

Given the past land disturbance, the degraded nature of the current vegetation communities and the small area to be disturbed (approximately 0.6 ha in total), it can be concluded that it is highly unlikely that Modification would have any significant impact on habitat resources for terrestrial fauna.

4.5 ABORIGINAL HERITAGE

An Aboriginal Cultural Heritage Assessment of the Project was completed by Kayandel Archaeological Services (2008). The Aboriginal Cultural Heritage Assessment utilised the results of extensive previous fieldwork and the results of Project supplementary survey and inspections conducted by archaeologists and representatives of the Aboriginal community.

Kayandel Archaeological Services conducted a supplementary archaeological inspection of the three additional disturbance areas (Figure 4) at the Major Surface Facilities in May 2010 (Appendix E).

The archaeological inspection found the three areas had been previously disturbed by historical mining activities and no Aboriginal artefacts or culturally modified scars on mature trees were identified (Appendix E). Kayandel Archaeological Services concluded that the proposed disturbance areas had minimal potential to contain Aboriginal archaeological material and monitoring of ground disturbance was not considered to be warranted (Appendix E).

4.6 NON-ABORIGINAL HERITAGE

A Non-Aboriginal Heritage Assessment for the Project was conducted by Dr Michael Pearson of Heritage Management Consultants Pty Ltd (2008). The Metropolitan Colliery heritage complex has been identified as a site of regional significance (HCPL, 2008). The Metropolitan Colliery is listed in the Wollongong Local Environmental Plan (LEP) 2009 as an item of local significance (item 5921).

Following completion of the Project EA, HCPL developed a Conservation Management Plan (CMP) for the Metropolitan Mine (Heritage Management Consultants, 2009) that includes conservation policies and strategies for the Major Surface Facilities Area and provides guidance for the management of heritage items during the detailed design, construction and operational phases of development at the Metropolitan Mine.

The CMP identifies a number of key surviving aspects of the Major Surface Facilities Area that demonstrate significant periods in the evolution of the mine (Heritage Management Consultants, 2009):

- Shaft No. 1 headframe;
- railway infrastructure elements (Tunnels No. 4 and 5, railway siding viaduct, Camp Creek culvert);
- 1889 water tank;
- Shaft No. 2 Koepe winder headframe and fan evase;
- underground horse stables (base of No. 2 shaft);
- powerhouse and power pylon;
- colliery office;
- mine manager's residence;
- drift portal and winder house, and winder;
- bathhouse and reduction pond; and
- the weir on Camp Creek.

The CMP also identifies elements of the surface facilities that reflect ongoing operations of a working colliery, but are not assessed as being of heritage significance (Heritage Management Consultants, 2009):

- coal washery;
- the workshops and store;
- bulk store;
- washery workshop;
- current office accommodation, lunch room, lamp room complex north of the bathhouse; and
- stockpiles and conveyors.

As described in Section 3 and shown on Figure 5, the Modification would involve demolition of two existing buildings (i.e. part of the workshop and an existing store), however, these buildings are not assessed as being of heritage significance. Notwithstanding, as a general mitigation measure and in accordance with the CMP, an inspection and photographic recording of any buildings or structures to be demolished for the Modification would be undertaken by a suitably qualified heritage consultant.

The proposed new substation (Figure 3) would be sited in the garden/carpark at the mine manager's residence, which is listed in the CMP as a surviving aspect of the mine that contributes to the mine's overall heritage significance. HCPL would refer to the CMP and seek specialist advice with respect to minimising potential impacts on the mine manager's residence grounds during the installation of the substation.

The existing drift, portal, winder and winder house are listed in the CMP as a key surviving aspect of the Major Surface Facilities Area (Heritage Management Consultants, 2009). This Modification does not propose any change to these facilities. However, once the replacement drift and associated conveyor systems are operational, the existing drift and associated surface facilities would no longer operate. HCPL would refer to the CMP and seek the advice of a suitably qualified heritage consultant to determine a suitable long term management solution for these heritage features. Solutions may include conservation *in situ* and/or transfer of particular components to an external heritage conservation or research organisation.

4.7 ROAD TRANSPORT

Background

A Traffic Assessment for the approved Project was prepared by Masson Wilson Twiney (2008).

Parkes Street forms the primary access road through Helensburgh and functions as a collector road for the Helensburgh township. Parkes Street provides access to local streets in the Helensburgh area and to local shopping. Access to the Major Surface Facilities Area is via the mine access road, off Parkes Street, Helensburgh.

The approved Metropolitan Mine haulage of coal reject to the Glenlee Washery located to the west of Campbelltown and product coal haulage to the Corrimal and Coalcliff Coke Works south-east of Helensburgh (Figure 1) contribute to existing heavy vehicle movements on the public road network.

Approved Project surface construction works will be undertaken intermittently over a period of up to five years and will be undertaken generally during daytime hours up to seven days per week.

Traffic generation during construction comprises both light vehicles and small truck/heavy vehicle movements associated with employee transport and deliveries/services, respectively.

Masson Wilson Twiney (2008) estimated Project daily peak construction traffic generation is provided in Table 6.

Table 6
Estimated Daily Peak Construction Traffic Generation

Trip Generation	Project EA Estimated Movements[1]
Light vehicles	
Employees (car)	50
Visitors and sales reps (car and small truck)	6
Small Deliveries (van and small truck)	12
Heavy vehicles	
Large Deliveries (truck)	12
Semi-trailer/oversize	2
Total	**82**

After: Masson Wilson Twiney (2008)

[1] One visit to site generates two movements

Masson Wilson Twiney (2008) found the additional traffic expected to be generated by the Project during the on-street peak hours would be sufficiently low that potential impacts on the operation of the surrounding intersections was considered to be negligible. Post-construction, Project employment is expected to return to existing levels and there will be less light vehicle traffic movements compared to the Project construction period.

Complaints Record

HCPL records Metropolitan Mine complaints in a complaint register. Review of the number of site transport and transport noise complaints received over recent years (Figure 6) indicates that 11 complaints have been received in the period 2007-2009 and in the first quarter of 2010.

Environmental Review

Construction heavy vehicle and delivery movements for Project construction incorporating the Modification are expected to be generally within the predicted Project EA peak construction levels (Table 6).

The Metropolitan Mine surface facilities are constrained for space and workforce parking is limited. To reflect the limited available parking facilities and to limit construction employee light traffic movements HCPL would work with the construction contractors to use car pooling and/or mini-bus shuttles to keep light vehicle movements within predicted Project EA construction traffic levels (Table 6).

4.8 OTHER ENVIRONMENTAL ASPECTS

Visual Amenity

The Major Surface Facilities Area is located in a densely vegetated valley in close proximity to suburban areas of Helensburgh (Figure 3). Due to the steepness of the valley and presence of tall dense vegetation, restricted views of the Major Surface Facilities Area are available only from a limited number of immediately surrounding dwellings and publicly accessible locations.

The Major Surface Facilities Area is generally lit 24 hours per day for operational and safety requirements. The night-time visual landscape in Helensburgh in close proximity to the Major Surface Facilities Area reflects the influence of this existing lighting, including visible light glow over the existing facilities.

The Modification would not involve any significant alteration to the surface features or life of the approved Metropolitan Mine. Potential visual impacts would therefore be limited to the new drift portal and associated surface infrastructure and limited remnant vegetation clearing. Lighting would be installed on the new infrastructure as required to comply with operational and safety requirements, and would be similar in nature and location to the existing night-lighting of the approved Metropolitan Mine.

Due to the restricted public views of the Major Surface Facilities Area and the existing mass and scale of the buildings, structures (e.g. conveyors, water management structures, access tracks, haul roads), exposed areas and material stockpiles, minimal alteration of the existing visual character of the Major Surface Facilities Area would to arise from the Modification.

Hazard and Risk

A preliminary hazard analysis (PHA) was conducted for the Project EA in accordance with State Environmental Planning Policy (SEPP) 33 to evaluate the potential hazards associated with the Project. The PHA identified the potentially hazardous materials required for the Project including diesel, petrol, hydrocarbons (oils, greases, degreaser and kerosene), conventional explosives and gas cylinders.

HCPL has prepared and implemented a number of hazard prevention and mitigation measures as part of the existing Metropolitan Mine management plans to address the potential hazards and risks associated with the construction and operation of the Metropolitan Mine.

The Modification would not significantly alter the consequences or likelihood of a hazardous event occurring at the Metropolitan Mine, as the operational activities on-site would be generally unchanged. Notwithstanding, environmental management plans would be revised or replaced where necessary to incorporate the proposed Modification.

Rehabilitation

As described in the Project EA the Project rehabilitation program will include:

- the progressive rehabilitation of minor Project surface disturbance areas; and
- the rehabilitation of surface disturbance areas remaining at the cessation of the Project (i.e. the Major Surface Facilities Area).

In accordance with Schedule 6, Condition 2 of the Project Approval (Attachment 1), HCPL is required to prepare a Rehabilitation Strategy for the Surface Facilities Area by the end of October 2011.

The Modification would not result in any major alteration to the rehabilitation requirements or commitments associated with the Major Surface Facilities Area. In accordance with the *Mining Act, 1992*, final rehabilitation would be subject to regulatory authority agreement and approval.

Along with the other existing access points into the underground mine the replacement drift portal would be closed in accordance with Industry and Investment NSW requirements and this would be detailed in the Metropolitan Mine Rehabilitation Strategy.

5 STATUTORY CONTEXT

The Project was approved under Part 3A of the EP&A Act by the Minister for Planning in June 2009 (Project Approval 08_0149 – Attachment 1).

HCPL consulted with the DoP in 2010 with regard to seeking the necessary approvals for the Modification and based on this consultation, this EA has been prepared under Section 75W of the EP&A Act.

Section 75W of the EP&A Act states:

> **75W Modification of Minister's approval**
>
> *(1) In this section:*
>
> ***Minister's approval** means an approval to carry out a project under this Part, and includes an approval of a concept plan.*
>
> ***modification of approval** means changing the terms of a Minister's approval, including:*
>
> *(a) revoking or varying a condition of the approval or imposing an additional condition of the approval, and*
>
> *(b) changing the terms of any determination made by the Minister under Division 3 in connection with the approval.*
>
> *(2) The proponent may request the Minister to modify the Minister's approval for a project. The Minister's approval for a modification is not required if the project as modified will be consistent with the existing approval under this Part.*
>
> *(3) The request for the Minister's approval is to be lodged with the Director-General. The Director-General may notify the proponent of environmental assessment requirements with respect to the proposed modification that the proponent must comply with before the matter will be considered by the Minister.*
>
> *(4) The Minister may modify the approval (with or without conditions) or disapprove of the modification.*
>
> *….*

5.1 GENERAL STATUTORY REQUIREMENTS

Wollongong Local Environmental Plan, 2009

Since the preparation of the Project EA the *Wollongong Local Environmental Plan, 2009* (WLEP) has come into force. The Metropolitan Mine is wholly within the WLEP area.

The WLEP refers throughout to "Council" in its capacity as consent authority. The Metropolitan Mine has a Project Approval under Part 3A of the EP&A Act, for which the consent authority is the NSW Minister for Planning. References to "Council" in the WLEP should therefore be interpreted as references to the Minister for Planning for this Project.

Clause 2.3 (2) of the WLEP relevantly provides:

> *The consent authority must have regard to the objectives for development in a zone when determining a development application in respect of land within the zone.*

The Metropolitan Mine Major Surface Facilities Area is zoned RU1 "Primary Production" under the WLEP.

The objectives of the Primary Production zone are:

- *To encourage sustainable primary industry production by maintaining and enhancing the natural resource base.*
- *To encourage diversity in primary industry enterprises and systems appropriate for the area.*
- *To minimise the fragmentation and alienation of resource lands.*
- *To minimise conflict between land uses within the zone and land uses within adjoining zones.*

Under the WLEP "Mining" is permissible on lands zoned Primary Production with development consent.

State Environmental Planning Policy (Major Projects) 2005

As outlined above, the Project was approved under Part 3A of the EP&A Act by the NSW Minister for Planning in June 2009 (Project Approval 08_0149 – Attachment 1).

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

The *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries)* (Mining SEPP), which commenced on 16 February 2007, regularises the various environmental planning instruments that previously controlled mining activities.

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

- ***Clause 2***

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

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

- ***Clause 7***

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

> *(a) underground mining carried out on any land,*
>
> *…*

The Project comprises underground mining.

- ***Clause 8***

Clause 8 of the Mining SEPP provides:

> *8 Determination of permissibility under local environmental plans*
>
> *(1) If a local environmental plan provides that development for the purposes of mining, petroleum production or extractive industry may be carried out on land with development consent if provisions of the plan are satisfied:*
>
> *(a) development for that purpose may be carried out on that land with development consent without those provisions having to be satisfied, and*
>
> *(b) those provisions have no effect in determining whether or not development for that purpose may be carried out on that land or on the determination of a development application for consent to carry out development for that purpose on that land.*
>
> *(2) Without limiting subclause (1), if a local environmental plan provides that development for the purposes of mining, petroleum production or extractive industry may be carried out on land with development consent if the consent authority is satisfied as to certain matters specified in the plan, development for that purpose may be carried out on that land with development consent without the consent authority having to be satisfied as to those specified matters.*

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

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

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

A PHA was conducted for the Project EA in accordance with SEPP 33 to evaluate the potential hazards associated with the approved Project (Section 4.8). The proposed Modification does not significantly alter the consequences or likelihood of a hazardous event occurring at the Metropolitan Mine, as the operational activities on-site would be generally unchanged (Section 4.8).

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

State Environmental Planning Policy No. 44 - Koala Habitat Protection (SEPP 44) requires the council in certain LGAs (including Wollongong LGA) to consider whether the land which is to be the subject of the development consent is "potential koala habitat" or "core koala habitat".

An assessment of Koala habitat was completed for the Project EA. This assessment concluded that the lands in the Project area contain potential Koala habitat, however, do not fall within the definition of "core koala habitat" for the purposes of SEPP 44 (i.e. there was no evidence of a resident population of Koalas). Based on this conclusion, the provisions of SEPP 44 are not applicable to the Project or the Modification.

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

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

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

(a) whether the land is contaminated, and

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

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

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

Because the proposed Modification is within the existing Project Application Area (refer Attachment 1 – Appendix 2), no change of use is proposed and no preliminary land contamination investigation is required.

Illawarra Regional Environmental Plan No 1

The *Illawarra Regional Environmental Plan No 1* (Illawarra REP) applies to land within the Wollongong LGA.

Part 15 of the Illawarra REP contains provisions relating to environmental heritage. Items of environmental heritage are defined as a building, work, relic, or place of historic, scientific, cultural, social, architectural, archaeological, natural or aesthetic significance described in Schedule 1 of the Illawarra REP. Schedule 1 of the Illawarra REP includes the following items at the Metropolitan Colliery:

- Power Pylon;
- Shaft No. 1 head frame;
- Shaft No. 2 fan evase;
- No. 4 tunnel (Illawarra Railway); and
- No. 5 tunnel (Illawarra Railway).

Clause 124 of the Illawarra REP outlines the objectives with respect to such listed items of environmental heritage:

(a) to encourage the conservation of the environmental heritage of the region, and

(b) to control the demolition and renovation of items identified by this plan as items of the environmental heritage of the region.

HCPL has developed a CMP for the non-Aboriginal heritage items at the Major Surface Facilities Area, including those listed in Schedule 1 of the Illawarra REP (Section 4.6). The Modification does not include any proposed alteration of the Illawarra REP listed components.

A detailed consideration of the Project against the aims and relevant provisions of the Illawarra REP is provided in the Project EA. No significant alteration to this previous review would be raised by the proposed Modification, which is restricted to the replacement underground drift and associated minor alterations to the approved Major Surface Facilities Area.

Greater Metropolitan Regional Environmental Plan No 2—Georges River Catchment

The *Greater Metropolitan Regional Environmental Plan No 2—Georges River Catchment* (Greater Metropolitan REP) applies to the catchment of the Greater Metropolitan Region. The catchment consists of parts of a range of LGAs that are within the Georges River Catchment, including Wollongong City. The Greater Metropolitan REP contains planning principles to help councils prepare local environmental plans that apply to the land within the catchment.

A detailed consideration of the Project against the aims and objectives, planning principles and planning requirements of the Greater Metropolitan REP is provided in the Project EA. No significant alteration to this previous assessment would be raised by the proposed Modification, which is restricted to the underground drift and associated minor alterations to the approved Major Surface Facilities Area.

Environment Protection and Biodiversity Conservation Act, 1999

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

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

5.2 PLANS, LICENCES AND AGREEMENTS THAT REQUIRE REVISION

5.2.1 Project Approval Conditions

No significant changes to the existing Project Approval conditions (Attachment 1) are anticipated. However, minor administrative changes may be required, including adding a reference to this EA in Schedule 2, Condition 2.

5.2.2 Management/Monitoring Plans

No significant changes to the Project management and monitoring plans are anticipated.

5.2.3 Mining Operations Plan

The current Mining Operations Plan (HCPL, 2005) would require revision to reflect the addition of the replacement drift as a result of the Modification.

6 REFERENCES

Bangalay Botanical Surveys (2008) *Metropolitan Coal Project Baseline Flora Survey - Proposed Longwall Mining Area.* Report prepared for Helensburgh Coal Pty Ltd.

FloraSearch and Western Research Institute (2008) *Metropolitan Coal Project Terrestrial Flora and Fauna Impact Assessment*. Report prepared for Helensburgh Coal Pty Ltd.

Helensburgh Coal Pty Ltd (2005) *Metropolitan Colliery Mining Operation Plan September 2005 to August 2012*.

Helensburgh Coal Pty Ltd (2008) *Metropolitan Coal Project Environmental Assessment*.

Helensburgh Coal Pty Ltd (2009) *Metropolitan Coal Project Preferred Project Report*.

Helensburgh Coal Pty Ltd (2010a) *Metropolitan Mine Noise Management Plan*.

Helensburgh Coal Pty Ltd (2010b) *Metropolitan Mine Air Quality and Greenhouse Gas Management Plan.*

Heggies Pty Ltd (2008a) *PRP 12 Noise Reduction Programme - Stage 2 Noise Mitigation Investigation.* Report prepared for Helensburgh Coal Pty Ltd.

Heggies Pty Ltd (2008b) *Metropolitan Coal Project Noise Impact Assessment*. Report prepared for Helensburgh Coal Pty Ltd.

Heritage Computing (2008) *Metropolitan Coal Project Groundwater Assessment.* Report prepared for Helensburgh Coal Pty Ltd.

Heritage Management Consultants Pty Ltd (2008) *Metropolitan Coal Project Non-Aboriginal Heritage Assessment.* Report prepared for Helensburgh Coal Pty Ltd.

Heritage Management Consultants Pty Ltd (2009) *Metropolitan Colliery Conservation Management Plan.* Report prepared for Helensburgh Coal Pty Ltd.

Holmes Air Sciences (2008) *Air Quality Impact Assessment: Metropolitan Coal Project.* Report prepared for Helensburgh Coal Pty Ltd.

Kayandel Archaeological Services (2008) *Aboriginal Cultural Heritage Assessment Metropolitan Coal Project.* Report prepared for Helensburgh Coal Pty Ltd.

Masson Wilson Twiney (2008) *Metropolitan Colliery Traffic Assessment.* Report prepared for Helensburgh Coal Pty Ltd.

Western Research Institute and Biosphere Environmental Consultants (2008) *Terrestrial Vertebrate Fauna Survey.* Report prepared for Helensburgh Coal Pty Ltd.

METROPOLITAN MINE

REPLACEMENT DRIFT CONSTRUCTION MODIFICATION ENVIRONMENTAL ASSESSMENT




ATTACHMENT 1

METROPOLITAN MINE PROJECT APPROVAL

Peabody

METROPOLITAN COAL

Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

I approve the project application referred to in schedule 1, subject to the conditions in schedules 2 to 7.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

The Hon Kristina Keneally MP
Minister for Planning

Sydney 22 June 2009

SCHEDULE 1

Application Number:	08_0149
Proponent:	Helensburgh Coal Pty Ltd
Approval Authority:	Minister for Planning
Land:	See Appendix 1
Project:	Metropolitan Coal Project

TABLE OF CONTENTS

DEFINITIONS

Approved mine plan	The mine plan depicted in the figure in Appendix 3
Adaptive management	Adaptive management includes monitoring subsidence impacts and subsidence effects and, based on the results, modifying the mining plan as mining proceeds to ensure that the effects, impacts and/or associated environmental consequences remain within predicted and designated ranges
ARTC	Australian Rail Track Corporation
BCA	Building Code of Australia
Built features	Includes any building or work erected or constructed on land, and includes dwellings and infrastructure such as any formed road, street, path, walk, or driveway; any pipeline, water, sewer, telephone, gas or other service main
CC	Campbelltown City Council
CCC	Community Consultative Committee
Cliffs	Continuous rock face, including overhangs, having a minimum height of 10 metres and a slope of greater than 66^0
Conditions of this approval	Conditions contained in schedules 2 to 7 inclusive
Construction	The demolition of buildings or works, carrying out of works and erection of buildings covered by this approval
CPI	Consumer Price Index, as published by the Australian Bureau of Statistics
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
DECC	Department of Environment and Climate Change
Department	Department of Planning
Director-General	Director-General of the Department, or delegate
DPI	Department of Primary Industries
DSC	Dams Safety Committee
DWE	Department of Water and Energy
EA	Environmental assessment titled *Metropolitan Coal Project Environmental Assessment, Volumes 1-3,* dated September 2008, and associated response to issues raised in submissions, titled *Metropolitan Coal Project Responses to Submissions, Parts A – C*, excluding the Statement of Commitments attached to the document
Environmental consequences	The environmental consequences of subsidence impacts, including: damage to infrastructure, buildings and residential dwellings; loss of surface flows to the subsurface; loss of standing pools; adverse water quality impacts; development of iron bacterial mats; cliff falls; rock falls; damage to Aboriginal heritage sites; impacts on aquatic ecology; ponding
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPL	Environment Protection Licence issued under the POEO Act
Evening	The period from 6pm to 10pm
Feasible	Feasible relates to engineering considerations and what is practical to build
First workings	Development of main headings and gate roads to establish access to the coal in the mining area
Glenlee washery	The washery located near Narellan (see Appendix 5)
Dispute resolution process	The independent dispute resolution process as described in Appendix 6
Incident	A set of circumstances that causes or threatens to cause material harm to the environment, and/or breaches or exceeds the limits or performance measures/criteria in this approval
Land	In general, the definition of land is consistent with the definition in the EP&A Act. However, in relation to the noise and air quality conditions in Schedules 4 and 5 it means the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval
Material harm to the environment	Harm to the environment is material if it involves actual or potential harm to the health or safety of human beings or to ecosystems that is not trivial
Mining Area	The area outlined with a solid blue line on the figure in Appendix 3
Minister	Minister for Planning, or delegate
Mitigation	Activities associated with reducing the impacts of the project
MSB	Mine Subsidence Board
Negligible	Small and unimportant, such as to be not worth considering
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
POEO Act	*Protection of the Environment Operations Act 1997*

PPR	Preferred Project Report titled *Metropolitan Coal Project Preferred Project Report,* dated May 2009, excluding the Statement of Commitments attached to the report
Privately-owned land	Land that is not owned by a public agency, or a mining company (or its subsidiary)
Project	The project described in the EA, as modified by the Preferred Project Report
Project Area	The areas identified with hatching on the figure in Appendix 2
Proponent	Helensburgh Coal Pty Ltd, or its successors in title
Reasonable	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements
Reasonable Costs	The costs agreed between the Department and the Proponent for obtaining independent experts to review the adequacy of any aspects of the extraction plan, or where such costs cannot be agreed, the costs determined by the Dispute Resolution Process
Rehabilitation	The treatment or management of land disturbed by the project for the purpose of establishing a safe, stable and non-polluting environment
Remediation	Activities associated with partially or fully repairing or rehabilitating the impacts of the project or controlling the environmental consequences of this impact
ROM coal	Run-of-mine coal
RTA	Roads and Traffic Authority
Safe, serviceable & repairable	Safe means no danger to users, serviceable means available for its intended use, and repairable means damaged components can be repaired economically
SCA	Sydney Catchment Authority
Second workings	Extraction of coal from longwall panels, mini-wall panels or pillar extraction
Site	All land to which the project application applies, comprising the mining area and the surface facilities area, as listed in Appendix 1 and shown in Appendices 2 to 4
Steep slopes	An area of land having a natural gradient of between 33^0 and 66^0
Subsidence	The totality of subsidence effects, subsidence impacts and environmental consequences of subsidence impacts
Subsidence effects	Deformation of the ground mass due to mining, including all mining-induced ground movements, including both vertical and horizontal displacement, tilt, strain and curvature
Subsidence impacts	Physical changes to the ground and its surface caused by subsidence effects, including tensile and shear cracking of the rock mass, localised buckling of strata caused by valley closure and upsidence and surface depressions or troughs
Surface facilities area	The area outlined with a solid red line on the figure in Appendix 4
Swamps 76, 77 and 92	See the figure in Appendix 6
WCC	Wollongong City Council
WSC	Wollondilly Shire Council

SCHEDULE 2
ADMINISTRATIVE CONDITONS

OBLIGATION TO MINIMISE HARM TO THE ENVIRONMENT

1. The Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the project

TERMS OF APPROVAL

2. The Proponent shall carry out the project generally in accordance with the:
   (a) EA;
   (b) PPR; and
   (c) conditions of this approval.

   Note: The general layout of the project is shown in Appendices 2 to 4.

3. If there is any inconsistency between the above documents, the most recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.

4. The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of:
   (a) any strategies, plans, programs, reviews, audits, or correspondence that are submitted in accordance with this approval; and
   (b) the implementation of any actions or measures contained in these documents.

LIMITS ON APPROVAL

5. The Proponent may undertake mining operations in the mining area for up to 23 years from the date of this approval.

   Note: Under this approval, the Proponent is required to rehabilitate the site and perform additional undertakings to the satisfaction of the Director-General. Consequently, this approval will continue to apply in all other respects other than the right to conduct mining operations until the site has been properly rehabilitated.

6. The Proponent shall not:
   (a) extract more than 3.2 million tonnes of ROM coal from the mining area in a calendar year, or
   (b) transport more than 2.8 million tonnes of product coal from the site in a calendar year.

7. The Proponent shall not export any coal reject from the site after 2021 without the written approval of the Director-General.

8. The Proponent shall not emplace coal reject on the surface of the site without the written approval of the Director-General.

   Note: This condition applies to the Camp Gully Emplacement Area, as well as to the rest of the surface of the site. It does not apply to the proposed additional coal reject stockpile shown in Appendix 4.

STRUCTURAL ADEQUACY

9. The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structure, are constructed in accordance with:
   (a) the relevant requirements of the BCA; and
   (b) any additional requirements of the MSB in areas where subsidence effects are likely to occur.

   Notes:
   - *Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.*
   - *Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.*

DEMOLITION

10. The Proponent shall ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601-2001: The Demolition of Structures,* or its latest version.

OPERATION OF PLANT AND EQUIPMENT

11. The Proponent shall ensure that all plant and equipment used at the site is:
    (a) maintained in a proper and efficient condition; and
    (b) operated in a proper and efficient manner.

STAGED SUBMISSION OF STRATEGIES, PLANS OR PROGRAMS

12. With the approval of the Director-General, the Proponent may submit any strategies, plans or programs required by this approval on a progressive basis.

    Note: The conditions of this approval require certain strategies, plans, and programs to be prepared for the project. They also require these documents to be reviewed and audited on a regular basis to ensure they remain effective. However, in some instances, it will not be necessary or practicable to prepare these documents for the whole project at any one time; particularly as these documents are intended to be dynamic and improved over time. Consequently, the documents may be prepared and implemented on a progressive basis. In doing this however, the Proponent will need to demonstrate that it has suitable documents in place to manage the existing operations of the project.

SCHEDULE 3
SPECIFIC ENVIRONMENTAL CONDITIONS – MINING

PERFORMANCE MEASURES

1. The Proponent shall ensure that the project does not cause any exceedances of the performance measures in Table 1.

Table 1: Subsidence Impact Performance Measures

Water Resources	
Catchment yield to the Woronora Reservoir	Negligible reduction to the quality or quantity of water resources reaching the Woronora Reservoir No connective cracking between the surface and the mine
Woronora Reservoir	Negligible leakage from the Woronora Reservoir Negligible reduction in the water quality of Woronora Reservoir
Watercourses	
Waratah Rivulet between the full supply level of the Woronora Reservoir and the maingate of Longwall 23 (upstream of Pool P).	Negligible environmental consequences (that is, no diversion of flows, no change in the natural drainage behaviour of pools, minimal iron staining, and minimal gas releases)
Eastern Tributary between the full supply level of the Woronora Reservoir and the maingate of Longwall 26	Negligible environmental consequences over at least 70% of the stream length (that is no diversion of flows, no change in the natural drainage behaviour of pools, minimal iron staining and minimal gas releases)
Biodiversity	
Threatened species, populations, or ecological communities	Negligible impact
Swamps 76, 77 and 92	Set through condition 4 below
Land	
Cliffs	Less than 3% of the total length of cliffs (and associated overhangs) within the mining area experience mining-induced rock fall
Heritage	
Aboriginal heritage sites	Less than 10% of Aboriginal heritage sites within the mining area are affected by subsidence impacts
Items of historical or heritage significance at the Garrawarra Centre	Negligible damage (that is fine or hairline cracks that do not require repair), unless the owner of the item and the appropriate heritage authority agree otherwise in writing
Built Features	
Built features	Safe, serviceable and repairable, unless the owner and the MSB agree otherwise in writing

Note: The Proponent will be required to define more detailed performance indicators for each of these performance measures in the various management plans that are required under this approval (see condition 6 below).

CATCHMENT MONITORING PROGRAM

2. The Proponent shall prepare and implement a comprehensive Catchment Monitoring Program for the project to the satisfaction of the Director-General. This program must:
   (a) be prepared by suitably qualified and experienced experts whose appointment has been endorsed by the Director-General;
   (b) be prepared in consultation with DWE, SCA and DECC;
   (c) be approved by the Director-General before the Proponent is allowed to carry out any second workings in the mining area; and
   (d) include:
      - detailed baseline data of the existing surface and groundwater resources in the project area;
      - a program for the ongoing development and use of appropriate surface and groundwater models for the project; and

- a program to:
  - monitor and assess any impacts of the project on the quantity and quality of surface and ground water resources in the project area, and in particular the catchment yield to the Woronora Reservoir; and
  - validate and calibrate the surface and groundwater models.

SPECIFIC REQUIREMENTS FOR FURTHER MODELLING & ASSESSMENT

3. If the subsidence effects and subsidence impacts of the project exceed the relevant predictions by more than 15% at any time after mining has progressed beyond the halfway mark of Longwall 21, or if the profile of vertical displacement does not reflect predictions, then the Proponent shall use appropriate numerical modelling to supplement the subsequent predictions of subsidence effects and subsidence impacts for the project to the satisfaction of the Director-General.

   Note: The aim of the numerical modelling is to give a better insight into the mechanisms that may account for the differences between predicted and actual subsidence effects and impacts.

4. The Proponent shall not undermine Swamps 76, 77 and 92 without the written approval of the Director-General. In seeking this approval, the Proponent shall submit the following information with the relevant Extraction Plan (see condition 6 below):
   (a) a comprehensive environmental assessment of the:
      - potential subsidence impacts and environmental consequences of the proposed Extraction Plan;
      - potential risks of adverse environmental consequences; and
      - options for managing these risks;
   (b) a description of the proposed performance measures and indicators for these swamps; and
   (c) a description of the measures that would be implemented to manage the potential environmental consequences of the Extraction Plan on these swamps (to be included in the Biodiversity Management Plan – see condition 6(f) below), and comply with the proposed performance measures and indicators.

FIRST WORKINGS

5. The Proponent shall not carry out first workings in the mining area that are not consistent with the approved mine plan without the written approval of the Director-General.

SECOND WORKINGS

Extraction Plan

6. The Proponent shall prepare and implement an Extraction Plan for all second workings in the mining area to the satisfaction of the Director-General. This plan must:
   (a) be prepared by a team of suitably qualified and experienced experts whose appointment has been endorsed by the Director-General;
   (b) be approved by the Director-General before the Proponent is allowed to carry out the second workings covered by the Extraction Plan;
   (c) include a detailed plan for the second workings, which has been prepared to the satisfaction of DPI, and provides for adaptive management (from Longwall 23 onwards);
   (d) include detailed plans of any associated surface construction works;
   (e) include the following to the satisfaction of DPI:
      - a coal resource recovery plan that demonstrates effective recovery of the available resource;
      - revised predictions of the conventional and non-conventional subsidence effects and subsidence impacts of the extraction plan, incorporating any relevant information that has been obtained since this approval; and
      - a Subsidence Monitoring Program to:
        - validate the subsidence predictions; and
        - analyse the relationship between the subsidence effects and subsidence impacts of the Extraction Plan and any ensuing environmental consequences;
   (f) include a:
      - Water Management Plan, which has been prepared in consultation with DECC, SCA and DWE, to manage the environmental consequences of the Extraction Plan on watercourses (including the Woronora Reservoir), aquifers and catchment yield;
      - Biodiversity Management Plan, which has been prepared in consultation with DECC and DPI (Fisheries), to manage the potential environmental consequences of the Extraction Plan on aquatic and terrestrial flora and fauna, with a specific focus on swamps;

- Land Management Plan, which has been prepared in consultation with SCA, to manage the potential environmental consequences of the Extraction Plan on cliffs, overhangs, steep slopes and land in general;
- Heritage Management Plan, which has been prepared in consultation with DECC and the relevant Aboriginal groups, to manage the potential environmental consequences of the Extraction Plan on heritage sites or values;
- Built Features Management Plan, which has been prepared in consultation with the owner of the relevant feature , to manage the potential environmental consequences of the Extraction Plan on any built features; and

(g) include a Public Safety Management Plan, which has been prepared in consultation with DPI and the DSC (for any mining within the DSC notification area), to ensure public safety in the mining area.

Note: In accordance with condition 12 of schedule 2, the preparation and implementation of Extraction Plans for second workings may be staged, with each plan covering a defined area of second workings. In addition, these plans are only required to contain management plans that are relevant to the specific second workings that are being carried out.

7. In addition to the standard requirements for management plans (see condition 2 of schedule 7), the Proponent shall ensure that the management plans required under condition 6(f) above include:
   (a) a program to collect sufficient baseline data for future Extraction Plans;
   (b) a revised assessment of the potential environmental consequences of the Extraction Plan, incorporating any relevant information that has been obtained since this approval;
   (c) a detailed description of the measures that would be implemented to remediate predicted impacts; and
   (d) a contingency plan that expressly provides for adaptive management.

Payment of Reasonable Costs

8. The Proponent shall pay all reasonable costs incurred by the Department to engage independent experts to review the adequacy of any aspect of the Extraction Plan.

RESEARCH PROGRAM

9. The Proponent shall prepare and implement a Research Program for the project to the satisfaction of the Director-General, and allocate $320,000 towards the implementation of the program. This program must:
   (a) be prepared in consultation with DWE, SCA, DECC and DPI;
   (b) be submitted to the Director-General for approval by the end of 2010;
   (c) be targeted at genuine research, as opposed to implementing the matters required by this approval; and
   (d) be directed at encouraging research into improving:
      - the prediction of valley closure and upsidence, and the resultant subsidence impacts;
      - the assessment of the environmental consequences of subsidence impacts on natural features;
      - the remediation of subsidence impacts on watercourses;
      - the understanding of subsidence impacts and their environmental consequences on swamps;
      - the conservation of the Eastern Ground Parrot on the Woronora Plateau; or
      - the environmental management of underground mining operations in the Southern Coalfield.

10. The Proponent shall obtain the Director-General's approval for the allocation of any funding under this program.

CONSTRUCTION MANAGEMENT – WORONORA SPECIAL AREA

11. The Proponent shall prepare and implement a Construction Management Plan for all surface construction works (excluding remediation or rehabilitation works) in the Woronora Special Area to the satisfaction of the Director-General. This plan must be prepared in consultation with SCA, include detailed plans of the proposed construction works., and be approved by the Director-General before the Proponent is allowed to carry out the construction works.

SCHEDULE 4
SPECIFIC ENVIRONMENTAL CONDITIONS – GENERAL

NOISE

Noise Impact Assessment Criteria

1. By the end of 2014, the Proponent shall ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 2 at any residence on privately-owned land, or on more than 25% of any privately-owned land.

Table 2: Noise Impact Assessment Criteria

Day $L_{Aeq(15\ min)}$	***Evening*** $L_{Aeq(15\ min)}$	***Night*** $L_{Aeq(15\ min)}$	***Night*** $L_{A1(l\ min)}$
50 dB(A)	45 dB(A)	45 dB(A)	50 dB(A)

Notes:

- *To determine compliance with the $L_{Aeq(period)}$ noise limits, noise from the project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the project is impractical, alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy) may be accepted. The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*
- *To determine compliance with the $L_{A1(1\ minute)}$ noise limits, noise from the project is to be measured at 1 metre from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the project is impractical, alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy may be accepted.*
- *The noise emission limits identified in the above table apply under meteorological conditions of:*
  - *wind speeds of up to 3 m/s at 10 metres above ground level; or*
  - *temperature inversion conditions of up to 3ºC/100m, and wind speeds of up to 2 m/s at 10 metres above ground level,*

  determined in accordance with the NSW Industrial Noise Policy.

Noise Acquisition Criteria

2. If after 2014, the noise generated by the project exceeds the criteria in Table 3 at any residence on privately-owned land, or on more than 25% of any privately-owned land, then the Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 5-7 of schedule 5.

Table 3: Noise Acquisition Criteria

Day $L_{Aeq(15\ min)}$	***Evening*** $L_{Aeq(15\ min)}$	***Night*** $L_{Aeq(15\ min)}$
55 dB(A)	50 dB(A)	50 dB(A)

Note: Noise generated by the project is to be measured in accordance with the notes presented below Table 2. For this condition to apply, the exceedances of the criteria must be systemic.

Additional Noise Mitigation Measures

3. If after 2014, the noise generated by the project exceeds the criteria in Table 4 at any residence on privately-owned land, then the Proponent shall, upon receiving a written request from the landowner, implement reasonable and feasible noise mitigation measures (such as double-glazing, insulation, and/or air conditioning) at the residence in consultation with the landowner. If within 3 months of receiving this request from the landowner, the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution.

Table 4: Additional Noise Mitigation Criteria

Day $L_{Aeq(15\ min)}$	***Evening*** $L_{Aeq(15\ min)}$	***Night*** $L_{Aeq(15\ min)}$
53 dB(A)	48 dB(A)	48 dB(A)

Note: Noise generated by the project is to be measured in accordance with the notes presented below Table 2.

Rail Noise

4. The Proponent shall only use locomotives that are approved to operate on the NSW rail network in accordance with noise limits L6.1 to L6.4 in RailCorp's EPL (No. 12208) and ARTC's EPL (No. 3142) or a Pollution Control Approval issued under the former *Pollution Control Act 1970*.

5. The Proponent shall use its best endeavours to minimise night-time movements of rolling stock on the Metropolitan rail spur.

6. In the event of any rail noise or vibration issues that may arise from the haulage of coal over the life of the Project, the Proponent shall liaise with the CCC and the rail service provider to facilitate resolution of these issues and implement additional noise reduction measures where appropriate.

Blasting

7. The Proponent shall not undertake blasting operations at the surface facilities area without the written approval of the Director-General.

Noise Management Plan

8. The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Director-General. This plan must be prepared in consultation with DECC by a suitably qualified expert whose appointment has been approved by the Director-General, and submitted to the Director-General for approval by the end of June 2010. It must also provide for real-time noise monitoring.

AIR QUALITY & GREENHOUSE GAS

Odour

9. The Proponent shall not cause or permit the emission of offensive odours from the site, as defined under Section 129 of the POEO Act.

Greenhouse Gas Emissions

10. The Proponent shall implement all reasonable and feasible measures to minimise:
    (a) energy use on site; and
    (b) the scope 1, 2 and 3 greenhouse gas emissions produced on site,
    to the satisfaction of the Director-General.

Air Quality Impact Assessment Criteria

11. The Proponent shall ensure that dust generated by the project does not cause additional exceedances of the air quality impact assessment criteria listed in Tables 5, 6, and 7 at any residence on privately-owned land, or on more than 25 percent of any privately-owned land.

Table 5: Long term impact assessment criteria for particulate matter

Pollutant	***Averaging period***	***Criterion***
Total suspended particulate (TSP) matter	Annual	90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	30 µg/m^3

Table 6: Short term impact assessment criterion for particulate matter

Pollutant	***Averaging period***	***Criterion***
Particulate matter < 10 µm (PM_{10})	24 hour	50 µg/m^3

Table 7: Long term impact assessment criteria for deposited dust

Pollutant	***Averaging period***	***Maximum increase in deposited dust level***	***Maximum total deposited dust level***
Deposited dust	Annual	2 g/m^2/month	4 g/m^2/month

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method, or its latest version.

Land Acquisition Criteria

12. If the dust generated by the project exceeds the criteria in Tables 8, 9, and 10 at any residence on privately-owned land, or on more than 25 percent of any privately-owned land, the Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 5-7 of schedule 5.

Table 8: Long term land acquisition criteria for particulate matter

Pollutant	***Averaging period***	***Criterion***
Total suspended particulate (TSP) matter	Annual	90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	30 µg/m^3

Table 9: Short term land acquisition criteria for particulate matter

Pollutant	***Averaging period***	***Criterion***	***Percentile[1]***	***Basis***
Particulate matter < 10 µm (PM_{10})	24 hour	150 µg/m^3	99[2]	Total[3]
Particulate matter < 10 µm (PM_{10})	24 hour	50 µg/m^3	98.6	Increment[4]

[1]Based on the number of block 24 hour averages in an annual period.
[2]Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed by the Director-General in consultation with DECC.
[3]Background PM_{10} concentrations due to all other sources plus the incremental increase in PM_{10} concentrations due to the mine alone.
[4]Incremental increase in PM_{10} concentrations due to the mine alone.

Table 10: Long term land acquisition criteria for deposited dust

Pollutant	***Averaging period***	***Maximum increase in deposited dust level***	***Maximum total deposited dust level***
Deposited dust	Annual	2 g/m^2/month	4 g/m^2/month

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, AS/NZS 3580.10.1:2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter - Deposited Matter - Gravimetric Method.

Air Quality & Greenhouse Gas Management Plan

13. The Proponent shall prepare and implement an Air Quality & Greenhouse Gas Management Plan for the project to the satisfaction of the Director-General. This plan must be prepared in consultation with DECC by a suitably qualified expert whose appointment has been approved by the Director-General, and submitted to the Director-General for approval by the end of June 2010. It must also provide for real-time air quality monitoring.

SOIL & WATER

Discharges

14. The Proponent shall ensure that all surface water discharges from the site comply with the discharge limits (both volume and quality) set for the project in any EPL.

Surface Facilities Water Management Plan

15. The Proponent shall prepare and implement a Water Management Plan for the surface facilities area and two ventilation shaft sites to the satisfaction of the Director-General. This plan must be prepared in consultation with DWE and DECC by a suitably qualified expert/ whose appointment has been endorsed by the Director-General, and submitted to the Director-General for approval by the end of June 2010. In addition to the standard requirements for management plans (see condition 2 of schedule 7), this plan must:
    (a) include a comprehensive water balance for the project; and
    (b) ensure that suitable measures are implemented to minimise water use, control erosion, prevent groundwater contamination, and comply with any surface water discharge limits.

    Note: The water balance in this plan must be suitably integrated with both the Catchment Monitoring Program and the Water Management Plans that form part of the Extraction Plan.

METEOROLOGICAL

16. During the life of the project, the Proponent shall ensure that there is a suitable meteorological station in the vicinity of the surface facilities area that complies with the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales guideline.*

TRANSPORT

Parkes Street Intersection

17. By the end of 2010, the Proponent shall:
    (a) undertake a road safety audit of the Parkes Street and Colliery Road intersection, in consultation with the RTA and WCC; and
    (b) implement any recommendations of this audit,
    to the satisfaction of the Director-General.

Road Maintenance Contributions

18. From the end of 2009, the Proponent shall make a suitable annual contribution to WCC, WSC, and CC for the maintenance of local roads that are used as haulage routes by the project. If there is any dispute over the amount of the contribution, the matter must be referred to the Director-General for resolution.

Road Transport Restrictions

19. The Proponent shall not:
    (a) load coal or coal reject onto trucks, or transport it off site by road, outside the hours of 7am and 6pm Monday to Friday;
    (b) transport more than 120,000 tonnes of coal off site by road in a calendar year; or
    (c) transport any coal off site to the Port Kembla Coal Terminal by road.

20. During emergencies (such as the disruption of rail services) the Proponent may exceed the restrictions in condition 19 above with the written approval of the Director-General.

Monitoring

21. The Proponent shall monitor the amount of coal and coal reject transported from the site by road and rail each year, and report the results of this monitoring on its website every six months.

Traffic Management

22. The Proponent shall prepare and implement a Traffic Management Plan for the project to the satisfaction of the Director-General. This plan must be prepared in consultation with the RTA, WCC, local schools and the CCC, and submitted to the Director-General for approval by the end of February 2010. The primary aim of this plan is to minimise the traffic impacts of the project on the residential areas and schools within Helensburgh.

VISUAL

23. The Proponent shall minimise the visual impacts, and particularly the off-site lighting impacts, of the surface facilities area and two ventilation shaft sites to the satisfaction of the Director-General.

WASTE

24. The Proponent shall:
    (a) minimise the waste (including coal reject) generated by the project; and
    (b) ensure that the waste generated by the project is appropriately stored, handled, and disposed of, to the satisfaction of the Director-General.

25. The Proponent shall prepare and implement a Waste Management Plan for the project to the satisfaction of the Director-General. This plan must be submitted to the Director-General for approval by the end of June 2010.

SCHEDULE 5
ADDITIONAL PROCEDURES FOR AIR QUALITY AND NOISE MANAGEMENT

NOTIFICATION OF LANDOWNERS

1. If the results of the monitoring required in schedule 4 identify that impacts generated by the project are greater than the relevant impact assessment criteria in schedule 4, except where a negotiated agreement has been entered into in relation to that impact, then the Proponent shall, within 2 weeks of obtaining the monitoring results, notify the Director-General, the affected landowners and tenants (including tenants of mine owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the project is complying with the criteria in schedule 4.

2. If the results of monitoring required in Schedule 4 identify that impacts generated by the project are greater than the relevant air quality impact assessment criteria in schedule 4, then the Proponent shall send the relevant landowners and tenants (including tenants of mine owned properties) a copy of the NSW Health fact sheet entitled "Mine Dust and You" (and associated updates) in conjunction with the notification required in condition 1.

INDEPENDENT REVIEW

3. If a landowner considers the project to be exceeding the impact assessment criteria in schedule 4, then he/she may ask the Director-General in writing for an independent review of the impacts of the project on his/her land.

   If the Director-General is satisfied that an independent review is warranted, the Proponent shall within 2 months of the Director-General's decision:
   (a) consult with the landowner to determine his/her concerns;
   (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to conduct monitoring on the land, to:
      - determine whether the project is complying with the relevant impact assessment criteria in schedule 4; and
      - identify the source(s) and scale of any impact on the land, and the project's contribution to this impact; and
   (c) give the Director-General and landowner a copy of the independent review.

4. If the independent review determines that the project is complying with the relevant impact assessment criteria in schedule 4, then the Proponent may discontinue the independent review with the approval of the Director-General.

   If the independent review determines that the project is not complying with the relevant impact assessment criteria in Schedule 4, then the Proponent shall:
   (a) implement all reasonable and feasible measures, in consultation with the landowner, to ensure that the project complies with the relevant criteria, and conduct further monitoring to determine whether these measures ensure compliance; or
   (b) secure a written agreement with the landowner to allow exceedances of the relevant impact assessment criteria,

   to the satisfaction of the Director-General.

   However, if the further monitoring referred to under paragraph (a) above determines that the project is complying with the relevant impact assessment criteria, then the Proponent may discontinue the independent review with the approval of the Director-General.

   If the independent review determines that the project is not complying with the relevant land acquisition criteria in schedule 4, then the Proponent shall offer to acquire all or part of the landowner's land in accordance with the procedures in conditions 5-7 below, to the satisfaction of the Director-General.

LAND ACQUISITION

5. Within 3 months of receiving a written request from a landowner with acquisition rights, the Proponent shall make a binding written offer to the landowner based on:
   (a) the current market value of the landowner's interest in the property at the date of this written request, as if the property was unaffected by the project the subject of the project application, having regard to the:
      - existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and

- presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of 'reasonable and feasible measures' in condition 3 of schedule 4 or condition 4(a) of this schedule;

(b) the reasonable costs associated with:
- relocating within the Wollongong local government areas, or to any other local government area determined by the Director-General;
- obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is to be acquired; and

(c) reasonable compensation for any disturbance caused by the land acquisition process.

However, if following this period, the Proponent and landowner cannot agree on the acquisition price of the land and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Director-General for resolution.

Upon receiving such a request, the Director-General shall request the President of the NSW Division of the Australian Property Institute (the API) to appoint a qualified independent valuer to:
(a) consider submissions from both parties;
(b) determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in paragraphs (a)-(c) above;
(c) prepare a detailed report setting out the reasons for any determination; and
(d) provide a copy of the report to both parties.

Within 14 days of receiving the independent valuer's report, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination.

However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, they may refer the matter to the Director-General for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the independent valuer and both parties, the Director-General shall determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above and the independent valuer's report. Within 14 days of this determination, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the Director-General's determination.

If the landowner refuses to accept the Proponent's binding written offer under this condition within 6 months of the offer being made, then the Proponent's obligations to acquire the land shall cease, unless the Director-General determines otherwise.

6. The Proponent shall pay all reasonable costs associated with the land acquisition process described in condition 5 above.

7. If the Proponent and landowner agree that only part of the land shall be acquired, then the Proponent shall also pay all reasonable costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of the plan at the Office of the Registrar-General.

SCHEDULE 6
REHABILITATION & OFFSETS

REHABILITATION

Rehabilitation Objectives

1. The Proponent shall achieve the rehabilitation objectives in Table 11 to the satisfaction of the Director-General of DPI.

Table 11: Rehabilitation Objectives

Domain	***Rehabilitation objective***
Surface Facilities Area	Set through condition 2 below
Waratah Rivulet, between the downstream edge of Flat Rock Swamp and the full supply level of the Woronora Reservoir Eastern Tributary, between the maingate of Longwall 26 and the full supply level of the Woronora Reservoir	Restore surface flow and pool holding capacity as soon as reasonably practicable
Cliffs	Ensure that there is no safety hazard beyond that existing prior to mining
Other land affected by the project	Restore ecosystem function, including maintaining or establishing self-sustaining native ecosystems: • comprised of local native plant species; with • a landform consistent with the surrounding environment
Built features	Repair/restore to pre-mining condition or equivalent
Community	Minimise the adverse socio-economic effects associated with mine closure including the reduction in local and regional employment Ensure public safety

Rehabilitation Strategy – Surface Facilities Area

2. By the end of October 2011, the Proponent shall prepare a Rehabilitation Strategy for the surface facilities area to the satisfaction of the Director-General. This strategy must:
   (a) be prepared by a team of suitably qualified and experienced experts whose appointment has been endorsed by the Director-General;
   (b) be prepared in consultation with relevant stakeholders, including WCC and the CCC;
   (c) investigate options for the future use of the area upon the completion of mining;
   (d) describe and justify the proposed rehabilitation strategy for the area; and
   (e) define the rehabilitation objectives for the area, as well as the proposed completion criteria for this rehabilitation.

Progressive Rehabilitation

3. To the extent that mining operations permit, the Proponent shall carry out rehabilitation progressively, that is, as soon as reasonably practicable following the disturbance.

Rehabilitation Management Plan

4. The Proponent shall prepare and implement a Rehabilitation Management Plan for the project to the satisfaction of the Director-General of DPI. This plan must be prepared in consultation with the relevant stakeholders, and submitted to DPI for approval prior to carrying out any second workings in the mining area.

Note: In accordance with condition 12 of schedule 2, the preparation and implementation of Rehabilitation Management Plans is likely to be staged, with each plan covering a defined area (or domain) for rehabilitation. In addition, while mining operations are being carried out, some of the proposed remediation or rehabilitation measures may be included in the detailed management plans that form part of the Extraction Plan. If this is the case, however, then the Proponent will be required to ensure that there is good cross-referencing between the various management plans.

OFFSETS

Catchment Improvement Works

5. The Proponent shall:
   (a) pay SCA $100,000 by the end of 2011 to carry out catchment improvement works within the Woronora catchment area; or
   (b) carry out catchment improvement works within this area that have an equivalent value to the satisfaction of SCA.

Offsets

6. If the Proponent exceeds the performance measures in Table 1 of this approval, and either
   (a) the contingency measures implemented by the Proponent have failed to remediate the impact; or
   (b) the Director-General determines that it is not reasonable or feasible to remediate the impact,
   then the Proponent shall provide a suitable offset to compensate for the impact to the satisfaction of the Director-General.

   Note: Any offsets required under this condition must be proportionate with the significance of the impact.

SCHEDULE 7
ENVIRONMENTAL MANAGEMENT, REPORTING AND AUDITING

ENVIRONMENTAL MANAGEMENT

Environmental Management Strategy

1. The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Director-General. The strategy must:
   (a) be submitted to the Director-General for approval by the end of September 2009;
   (b) provide the strategic framework for environmental management of the project;
   (c) identify the statutory approvals that apply to the project;
   (d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;
   (e) describe the procedures that would be implemented to:
      - keep the local community and relevant agencies informed about the operation and environmental performance of the project;
      - receive, handle, respond to, and record complaints;
      - resolve any disputes that may arise during the course of the project;
      - respond to any non-compliance; and
      - respond to emergencies;
   (f) include:
      - copies of the various strategies, plans and programs that are required under the conditions of this approval once they have been approved; and
      - a clear plan depicting all the monitoring currently being carried out within the project area.

Management Plan Requirements

2. The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:
   (a) detailed baseline data;
   (b) a description of:
      - the relevant statutory requirements (including any relevant approval, licence or lease conditions);
      - any relevant limits or performance measures/criteria;
      - the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures;
   (c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;
   (d) a program to monitor and report on the:
      - impacts and environmental performance of the project;
      - effectiveness of any management measures (see c above);
   (e) a contingency plan to manage any unpredicted impacts and their consequences;
   (f) a program to investigate and implement ways to improve the environmental performance of the project over time;
   (g) a protocol for managing and reporting any:
      - incidents;
      - complaints;
      - non-compliances with statutory requirements; and
      - exceedances of the impact assessment criteria and/or performance criteria; and
   (h) a protocol for periodic review of the plan.

Annual Review

3. By the end of October 2010, and annually thereafter, the Proponent shall review the environmental performance of the project to the satisfaction of the Director-General. This review must:
   (a) describe the works that were carried out in the past year, and the works that are proposed to be carried out over the next year;
   (b) include a comprehensive review of the monitoring results and complaints records of the project over the past year, which includes a comparison of these results against the
      - the relevant statutory requirements, limits or performance measures/criteria;
      - the monitoring results of previous years; and
      - the relevant predictions in the EA, PPR, and Extraction Plan;
   (c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;

(d) identify any trends in the monitoring data over the life of the project;
(e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and
(f) describe what measure will be implemented over the next year to improve the environmental performance of the project.

Revision of Strategies, Plans & Programs

4. Within 3 months of the submission of an:
   (a) audit under condition 8 of schedule 7;
   (b) incident report under condition 6 of schedule 7; and
   (c) annual review under condition 3 of schedule 7,

   the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Director-General.

   Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.

Community Consultative Committee

5. The Proponent shall establish a Community Consultative Committee (CCC) for the project to the satisfaction of the Director-General. This CCC must be operated in general accordance with the *Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects* (Department of Planning, 2007, or its latest version) to the satisfaction of the Director-General.

   Note: The CCC is an advisory committee. The Department and other relevant agencies are responsible for ensuring that the Proponent complies with this approval. In accordance with the Guideline, the Committee should comprise an independent chair and appropriate representation from the Proponent, affected councils, recognised environmental groups and the general community in Helensburgh and the area of the project.

REPORTING

Incident

6. The Proponent shall notify the Director-General and any other relevant agencies of any incident associated with the project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.

Regular

7. The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval, and to the satisfaction of the Director-General.

INDEPENDENT ENVIRONMENTAL AUDIT

8. By end of December 2011, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:
   (a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;
   (b) include consultation with the relevant agencies;
   (c) assess the environmental performance of the project and assess whether it is complying with the relevant requirements in this approval and any relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals);
   (d) review the adequacy of strategies, plans or programs required under these approvals; and, if appropriate; and
   (e) recommend measures or actions to improve the environmental performance of the project, and/or any assessment, plan or program required under these approvals.

   Note: This audit team must be led by a suitably qualified auditor and include experts in any fields specified by the Director-General.

9. Within 6 weeks of the completing of this audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.

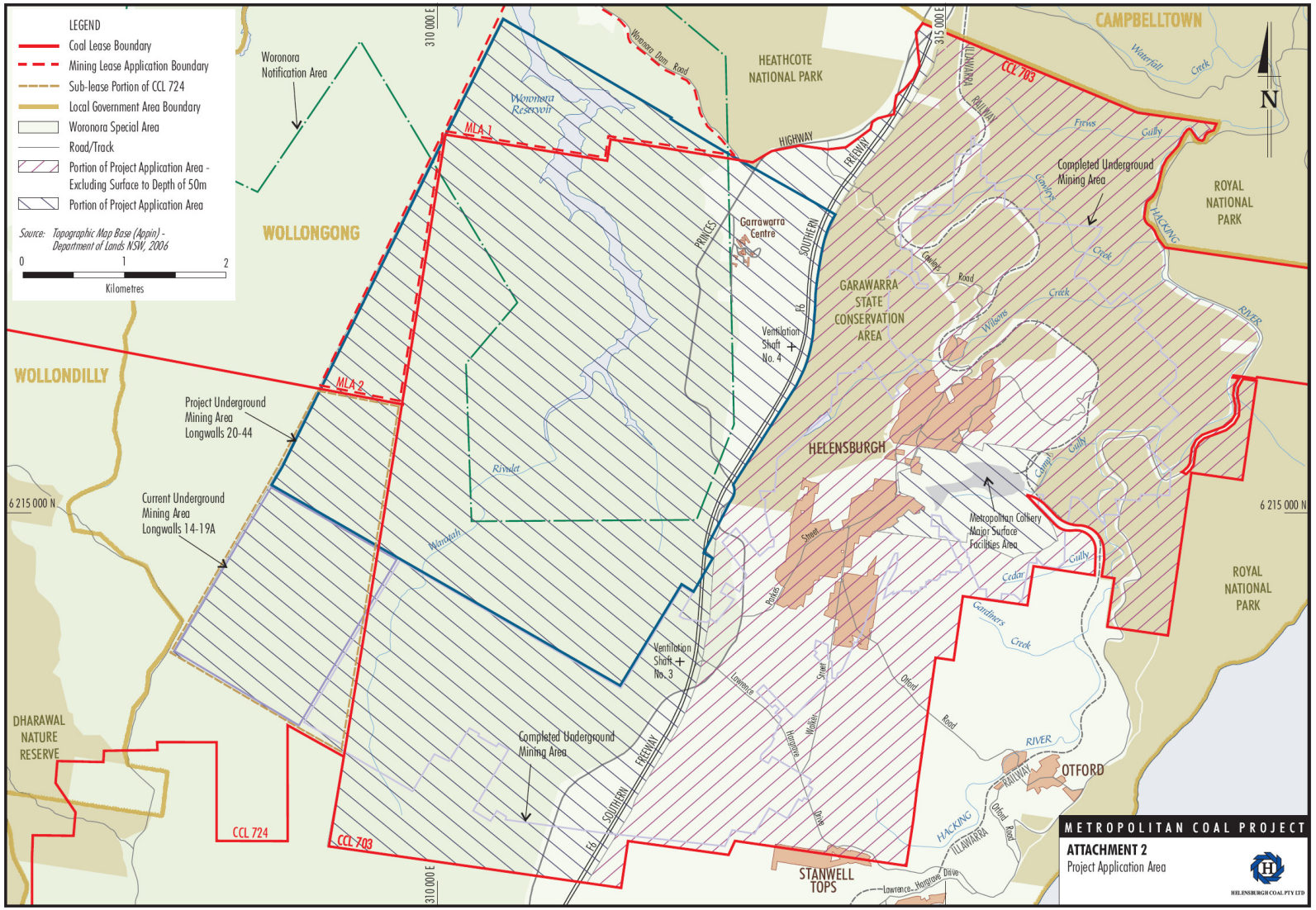
ACCESS TO INFORMATION

10. From the end of 2009, the Proponent shall make the following information publicly available on its website:

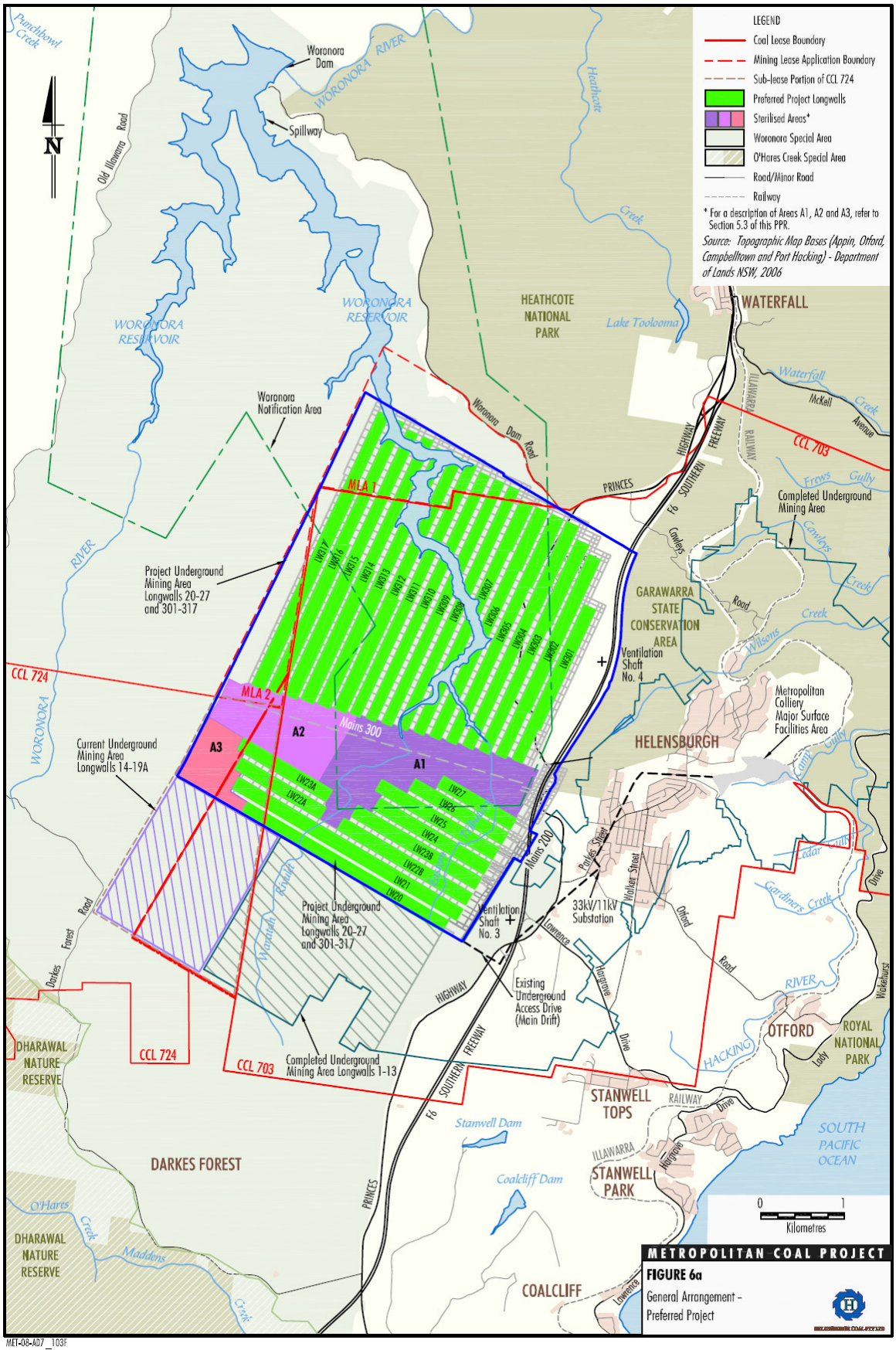
(a) a copy of all current statutory approvals;
(b) a copy of the current environmental management strategy and associated plans and programs;
(c) a summary of the monitoring results of the project, which have been reported in accordance with the various plans and programs approved under the conditions of this approval;
(d) a complaints register, which is to be updated on a monthly basis;
(e) a copy of the minutes of CCC meetings;
(f) a copy of any Annual Reviews (over the last 5 years);
(g) a copy of any Independent Environmental Audit, and the Proponent's response to the recommendations in any audit; and
(h) any other matter required by the Director-General.

APPENDIX 1
SCHEDULE OF LAND
(CD)

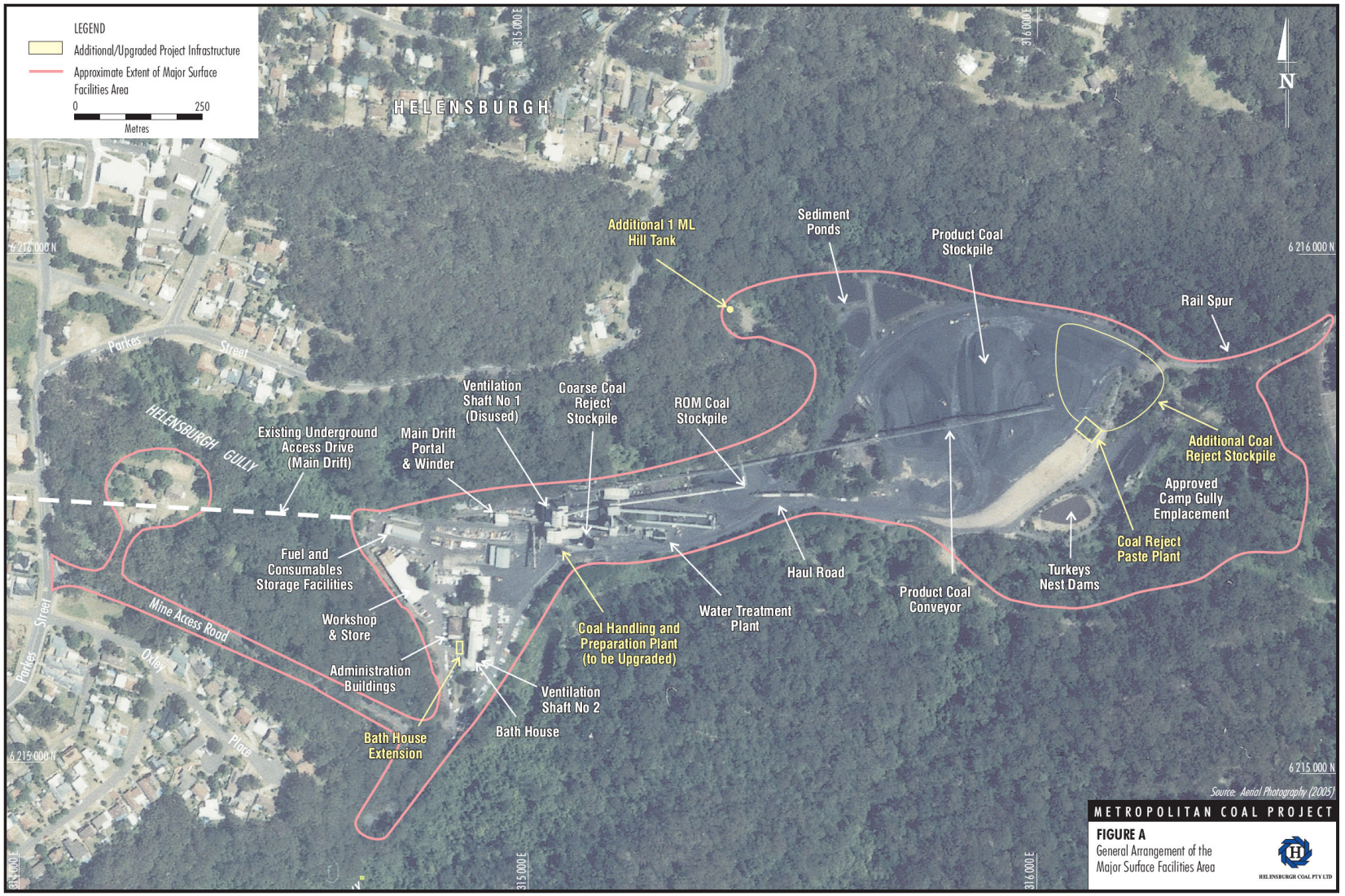
APPENDIX 2
PROJECT AREA



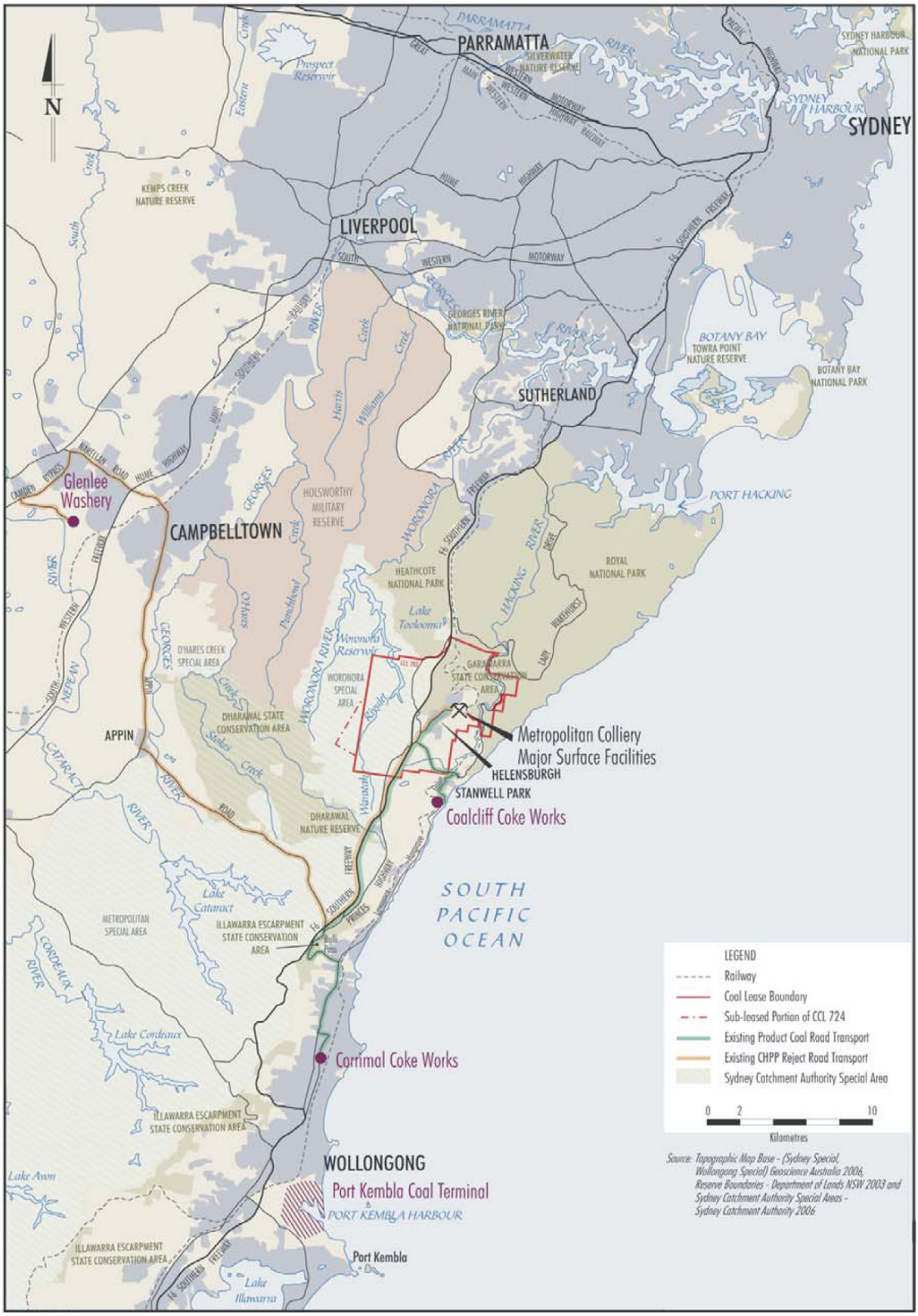
APPENDIX 3
PROJECT LAYOUT



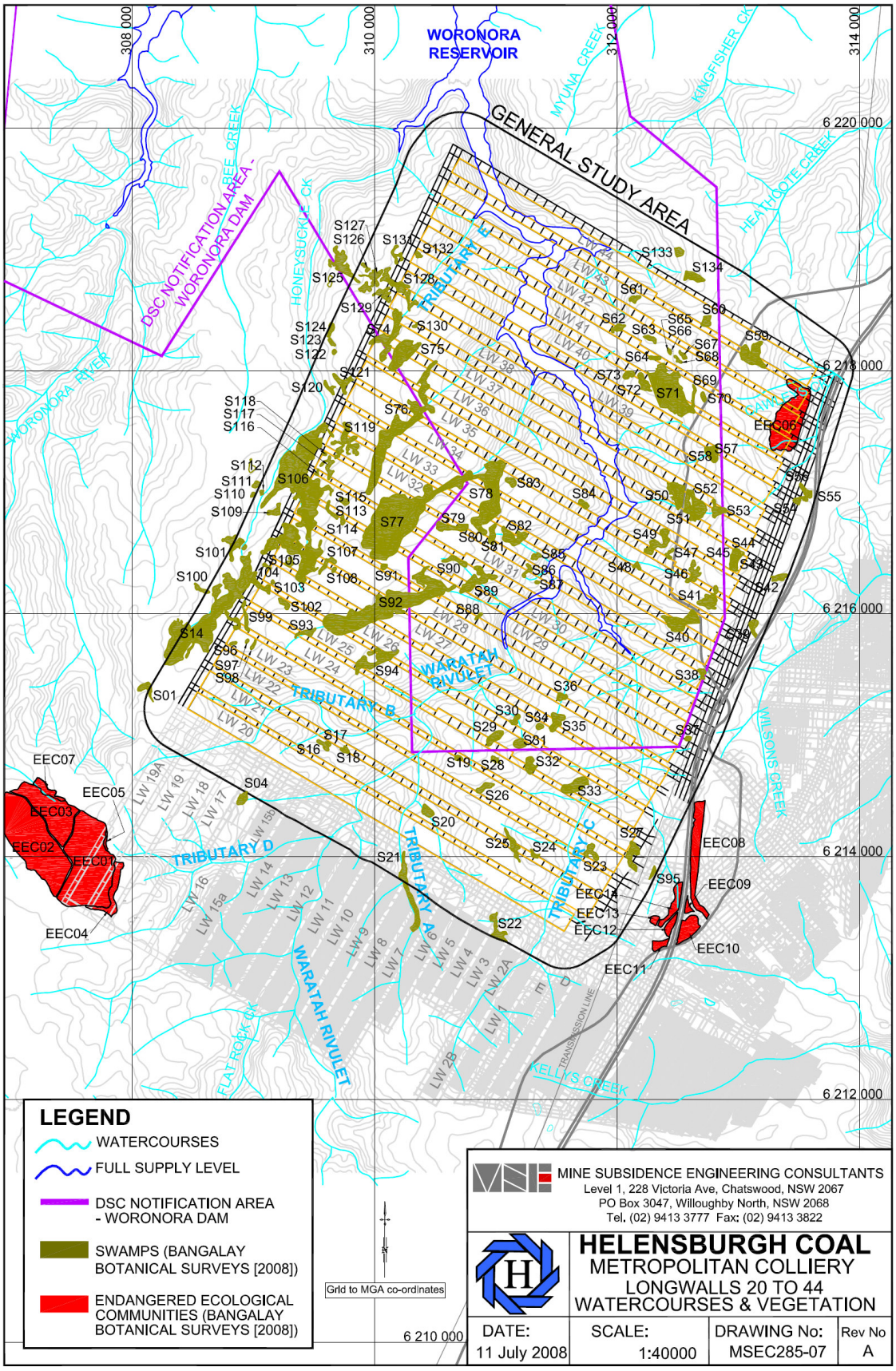
APPENDIX 4
SURFACE FACILITIES AREA



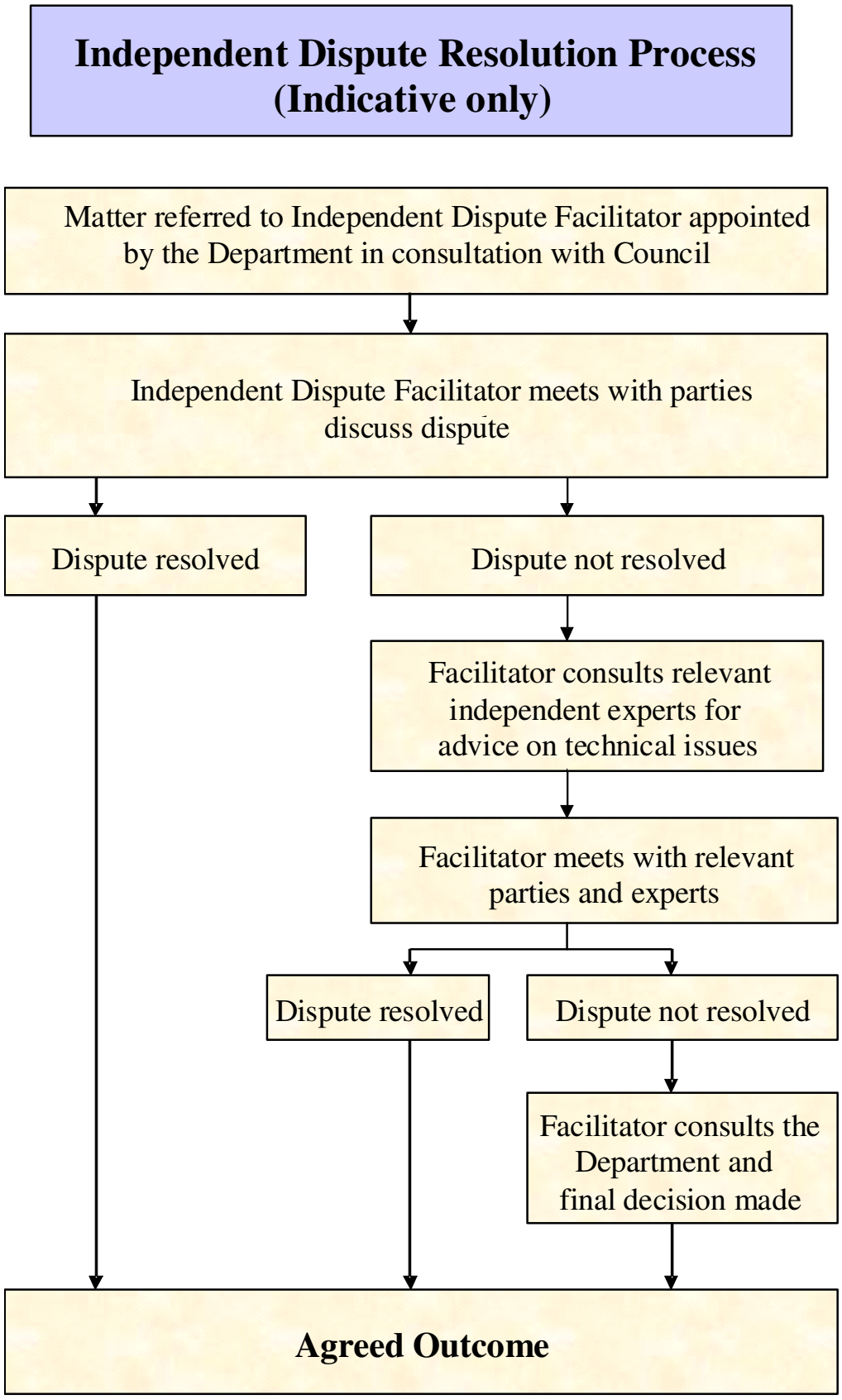
APPENDIX 5
HAULAGE ROUTES



APPENDIX 6
SWAMPS IN THE MINING AREA



APPENDIX 7
INDEPENDENT DISPUTE RESOLUTION PROCESS



METROPOLITAN MINE

REPLACEMENT DRIFT CONSTRUCTION MODIFICATION ENVIRONMENTAL ASSESSMENT




APPENDIX A

NOISE REVIEW

Peabody

METROPOLITAN COAL

HEGGIES

9 June 2010

Drift Construction Noise 20100602-C (RES00344544).doc

Helensburgh Coal Pty Ltd
PO Box 402
HELENSBURGH NSW 2508

Attention: Jon Degotardi

Dear Jon

Metropolitan Colliery - Drift Construction Modification
Review of Construction Noise Impacts

I refer to Resource Strategies email dated 25 May 2010 and associated correspondence. Please find attached our final Review of Construction Noise Impacts.

Should you have any queries with the contents of this report please don't hesitate to contact me or John Sleeman to discuss.

Regards

GLENN THOMAS

HEGGIES PTY LTD
Part of the International SLR Group

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Metropolitan Colliery Replacement Drift Modification
Review of Construction Noise Impacts

1 Replacement Drift Construction Modification Overview

Helensburgh Coal Pty Ltd (HCPL) owns and operates the Metropolitan Coal Mine, located approximately 30 kilometres (km) north of Wollongong in New South Wales (NSW). In June 2009 HCPL was granted Project Approval to expand the colliery employing underground mining methods with surface processing to produce up to 3.2 million tonnes per annum (Mtpa) of ROM coal (the Project).

HCPL have commenced the colliery expansion including a range of general construction and equipment upgrade activities of the existing surface facilities in accordance with the Project Environmental Assessment (EA). The Project anticipated that the existing drift and associated main conveyor system would be upgraded to support the approved coal production. However detailed studies have now identified operational, engineering and safety risks associated with the approved drift and conveyor upgrade that are not acceptable to HCPL.

Hence HCPL proposes to modify the Project with the construction of a new underground access drift with a portal and associated minor alterations to the approved Project major surface facilities (the Modification). Heggies Pty Ltd (Heggies) has been engaged by HCPL to evaluate and assess the potential noise impacts associated with the Modification by comparison with approved construction and operating noise levels anticipated by the Project EA.

This review considered several documents including the following:

- Metropolitan Coal Project Noise Impact Assessment (Heggies Report 10-5055R1 dated 31 July 2008).
- Project information provided by Resource Strategies/HCPL.

HCPL has consent to construct and operate the Project (with respect to noise and vibration emissions) in accordance with NSW Department of Planning (DoP) Project Approval (08-0149) dated 22 June 2009 (relevant sections attached as **Attachment B**). The approval sets Noise Impact Assessment Criteria effective from the end of 2014 as presented in **Table 1**.

Table 1 Noise Impact Assessment Criteria

Daytime $L_{eq(15minute)}$	Evening $L_{eq(15minute)}$	Night-time $L_{eq(15minute)}$	Night-time $L_{A1(1minute)}$
50 dBA	45 dBA	45 dBA	50 dBA

The EA predicted daytime, evening and night-time "existing" Metropolitan Colliery noise levels are summarised in **Attachment C**. The Project EA also presented the predicted Project Year 3 and Project Year 15 colliery noise levels, and these predictions incorporated significant noise reductions associated with the implementation of site upgrades.

In accordance with the Project Approval, surface construction works have commenced and will be undertaken intermittently over a period of up to five years generally during daytime hours up to seven days per week utilising additional mobile construction equipment as required.

The Modification construction and operating noise levels have been compared to the Project EA predicted "existing" noise levels. To minimise noise impacts at the nearest private receivers the Modification surface components can be designed not to appreciably increase the existing operating noise emissions. This outcome can be generally demonstrated by ensuring that total on-site sound power level (SWL) does not appreciably increase as a result of the proposed Modification.

As the staging of activities associated with the development of the drift would alter the potential noise emissions, three main phases of the drift development have been considered these are nominally:

- Phase 1 - daytime initial surface clearing/construction and portal establishment activities.
- Phase 2 - 24 hr initial drift development works (including use of a temporary ventilation fan, initial drift conveyor drive, and temporary generator electricity supply).
- Phase 3 - 24 hr ongoing drift development (larger ventilation fan, larger drift conveyor drive system and permanent electricity substation).

An indicative drift construction layout plan is provided in **Attachment D**.

2 Approved Project Construction and Proposed Drift Modification

A detailed description of the Modification construction works is presented in the main text of the Modification Environmental Assessment, with the key aspects summarised as follows:

- Minor clearing, demolishing part of two existing buildings and short term surface construction works to establish the new drift portal (daytime only up to 7 weeks duration).
- Replacement underground drift development (i.e. 5.5 m x 5.7 m materials and man access tunnel to the underground workings).
- Installation and operation of temporary ventilation fans for maintaining suitable air quality during construction of the replacement drift.
- Beneficial use of drift waste rock material as construction fill material for the approved surface facilities upgrades.
- Disposal of drift waste rock material that cannot be readily utilised for on-site construction material via paste injection into old underground workings and/or transport off-site within approved coal reject trucking limits (e.g. to Glenlee Washery).
- Operation of on-site supplementary electricity generation for a period of up to 12 months adjacent to the portal to supply the electricity demand of the drift construction equipment.
- Upgrade of on-site electricity distribution systems with the establishment of a new substation near the mine manager's cottage, and associated on-site electricity distribution upgrades.

The proposed portal surface establishment activities are short-term in nature (daytime only up to 7 weeks duration) and therefore generally consistent with the approved major surface facilities upgrades. Once the portal and drift construction waste rock handling system are established, drift construction would be undertaken for a period of approximately 30 months, 24 hours per day.

Comparison of the approved Project and the proposed Modification construction fleets indicates that a few additional items would be required for short periods as various establishment works are undertaken as presented in **Table 2**.

Table 2 Comparison of Project Approved and Proposed Modification Surface Construction Fleets

Module Equipment Description	Approved Project	Proposed Modification
30 t Mobile Crane	1	1
50 t Mobile Crane	1	1
30 t Excavator	1	1
Concrete Delivery Truck	2	2
Semi-Trailer Low Loader	2	1
CAT D10 Dozer	-	1
Shotcrete Machine	-	1
Eimco#	-	1*
30 t Truck	-	1*
CAT 988 Front-end Loader	-	1*
Road Header AM105 or Mitsui S200	-	**1*** (underground only)
TOTAL	**7**	**12**

Note *: Not required until the portal is established and drift construction phase 2 is underway.

Note #: Only required until the drift conveyor is established.

Similarly, the proposed Modification would not result in any material change to the approved Project general surface fleet as presented in **Table 3**.

Table 3 Comparison of Project Approved and Proposed Modification Surface Operating Fleets

Module Equipment Description	Approved Project	Proposed Modification
CAT 988 Front-end Loader	4	3
CAT 980 Front-end Loader	1	2
Komatsu WA470-3 Front-end Loader	1	1
Street Sweeper	1	1
CAT D7 Dozer	1	1
CAT D8 Dozer	1	1
Water Cart	2	1
Grader	1	1
Bobcat	1	1
Screen	1	1
Off-road 30 t Truck	3	2
TOTAL	**17**	**15**

As shown above, the number of available surface construction and operating mobile equipment remains largely unchanged (estimated total of 26). However the actual number of items in operation at any one time would be less than 26 and typically only about 20, due to the staging of construction activities and the fact that mine staff operate multiple pieces of equipment on an as required basis.

In addition, a limited number of fixed plant items would be introduced by the Modification as presented in Table 4.

Table 4 Proposed Modification Fixed Plant

Fixed Plant	Surface Establishment Phase 1	Drift Construction Phase 2	Drift Construction Phase 3
Drift Ventilation	n/a	100 kW Axial Fan approx 3 months duration	250 kW Axial Fan approx 27 months duration
Drift Conveyor Assembly	n/a	160 kW Conveyor Drive and 35 m conveyor approx 12 months duration	2*250 kW Conveyor Drive and 50 m conveyor permanent
Electricity Supply	n/a	2*1320 kVA Diesel Gensets approx 12 months duration	33kV/11kV Substation permanent

3 Project Approved and Modification Sound Power Levels (SWLs)

The potential for machinery to emit noise is quantified as the sound power level (SWL) expressed in dBA re 1 ρW. At the receptor, the received noise is quantified as the sound pressure level (SPL) expressed in dBA re 20 μPa. In general terms, any variation in the on-site $L_{eq(15minute)}$ plant and equipment SWLs would produce a similar variation in the off-site $L_{eq(15minute)}$ intrusive SPLs at the surrounding receivers.

It is understood that HCPL has commenced implementing a range of noise improvements at the site (particularly with respect to Coal Handling and Preparation Plant [CHPP] noise improvements) since the EA was completed. These improvements are aimed to reduce the sound power of the CHPP and associated equipment, but the performance of these measures has not been subject to detailed measurement, and therefore any associated sound power reductions have not been included in the following analysis.

The daytime EA existing operation, the existing plus approved construction, the existing plus proposed Modification (Phase 1), the existing plus proposed Modification (Phase 2) and the existing plus proposed Modification (Phase 3) are presented in **Table 5** together with the comparative number of items and L_{Aeq} sound power levels (SWLs).

Similarly, the evening/night-time EA existing operation, the existing plus approved construction, the existing plus proposed Modification (Phase 1), the existing plus proposed Modification (Phase 2) and the existing plus proposed Modification (Phase 3) are presented in **Table 6** together with the comparative number of items and L_{Aeq} sound power levels (SWLs).

Table 5 Comparative Daytime Fixed Plant and Mobile Equipment Sound Power Levels (SWLs in dBA re 1 pW)

Description	Equipment	Type/ Capacity	EA Existing Operation		EA Existing + Approved Construction		EA Existing + Modification Phase 1		EA Existing + Modification Phase 2		EA Existing + Modification Phase 3	
			No. Items	Total SWL	No. Items	Total SWL	No. Items	Total SWL	No. Items	Total SWL	No. Items	Total SWL
Washery Equipment	Front-end Loader	988F/B	3	118	3	118	3	118	2	116	2	116
	Dozer	D8	1	114	1	114	1	114	1	114	1	114
Other Equipment	Forklift	Omega	1	101	1	101	1	101	1	101	1	101
	Water Cart	15 t	1	111	1	111	1	111	1	111	1	111
Transport Equipment	Locomotive	Idling	2	93	2	93	2	93	2	93	2	93
	Highway Truck	Uphill	1.5	118	1.5	118	1.5	118	1.5	118	1.5	118
	Highway Truck	Downhill	1.5	112	1.5	112	1.5	112	1.5	112	1.5	112
Approved Coal Rejects	Front-end Loader	988B	-	-	1	113	1	113	1	113	1	113
	Haul Truck	30 t	-	-	3	112	3	112	3	112	3	112
Approved Construction	Mobile Crane	30 t	-	-	1	103	1	103	1	103	1	103
	Mobile Crane	50 t	-	-	1	105	1	105	1	105	1	105
	Excavator	30 t	-	-	1	103	1	103	1	103	1	103
	Concrete Truck	15 t	-	-	1	105	1	105	1	105	1	105
	Low Loader	30 t	-	-	1	110	1	110	1	110	1	110
Proposed Modification	Dozer	D10	-	-	-	-	1	112	-	-	-	-
	Shotcrete	-	-	-	-	-	1	103	1	103	-	-
	Highway Truck	30 t	-	-	-	-	1	110	1	110	1	110
	Eimco	-	-	-	-	-	-	-	1	110	-	-
	Front-end Loader	988	-	-	-	-	-	-	1	113	1	113
Total Mobile Equipment				**122.4**		**123.6**		**124.1**		**124.3**		**124.1**
Washery Fixed Plant	Course Washery	-	-	117	-	117	-	117	-	117	-	117
	Pumps and Compressors	-	-	112	-	112	-	112	-	112	-	112
	Fine Washery	-	-	102	-	102	-	102	-	102	-	102
	Crusher	-	-	104	-	104	-	104	-	104	-	104
	Winders	-	-	91	-	91	-	91	-	91	-	91
	Conveyor Drives	-	-	112	-	112	-	112	-	112	-	112
	Transfer Conveyors	-	-	115	-	115	-	115	-	115	-	115
	Vent Shafts	-	-	104	-	104	-	104	-	104	-	104
	Stockpiles	-	-	111	-	111	-	111	-	111	-	111
Proposed Modification	Axial Vent Fan	100 kW	-	-	-	-	-	-	-	103	-	-
	Diesel Gensets	2*1320 kVA	-	-	-	-	-	-	-	104	-	-
	Conveyor Drive	160 kW	-	-	-	-	-	-	-	93	-	-
	35m Conveyor	1000 t/hr	-	-	-	-	-	-	-	95	-	-
	Axial Vent Fan	250 kW	-	-	-	-	-	-	-	-	-	101
	Substation	33kV/11kV	-	-	-	-	-	-	-	-	-	70
	Conveyor Drive	2*250 kW	-	-	-	-	-	-	-	-	-	98
	50 m Conveyor	1000 t/hr	-	-	-	-	-	-	-	-	-	96
Total Fixed Plant				**121.5**		**121.5**		**121.5**		**121.6**		**121.6**
Estimated Total Mine Site				**125.0**		**125.7**		**126.0**		**126.2**		**126.0**

Table 6 Comparative Evening/Night-time Fixed Plant and Mobile Equipment Sound Power Levels (SWLs in dBA re 1 pW)

Description	Equipment	Type/ Capacity	EA Existing Operation		EA Existing + Approved Construction		EA Existing + Modification Phase 1		EA Existing + Modification Phase 2		EA Existing + Modification Phase 3	
			No. Items	Total SWL	No. Items	Total SWL	No. Items	Total SWL	No. Items	Total SWL	No. Items	Total SWL
Washery Equipment	Front-end Loader	988F/B	3	118	3	118	3	118	2	116	2	116
	Dozer	D8	1	114	1	114	1	114	1	114	1	114
Other Equipment	Forklift	Omega	1	101	1	101	1	101	1	101	1	101
	Water Cart	15 t	1	111	1	111	1	111	1	111	1	111
Transport Equipment	Locomotive	Idling	2	93	2	93	2	93	2	93	2	93
	Highway Truck	Uphill	-	-	-	-	-	-	-	-	-	-
	Highway Truck	Downhill	-	-	-	-	-	-	-	-	-	-
Approved Coal Rejects	Front-end Loader	988B	-	-	-	-	-	-	-	-	-	-
	Haul Truck	30 t	-	-	-	-	-	-	-	-	-	-
Approved Construction	Mobile Crane	30 t	-	-	-	-	-	-	-	-	-	-
	Mobile Crane	50 t	-	-	-	-	-	-	-	-	-	-
	Excavator	30 t	-	-	-	-	-	-	-	-	-	-
	Concrete Truck	15 t	-	-	-	-	-	-	-	-	-	-
	Low Loader	30 t	-	-	-	-	-	-	-	-	-	-
Proposed Modification	Dozer	D10	-	-	-	-	-	-	-	-	-	-
	Shotcrete	-	-	-	-	-	-	-	-	-	-	-
	Highway Truck	30 t	-	-	-	-	-	-	-	-	-	-
	Eimco	-	-	-	-	-	-	-	-	-	-	-
	Front-end Loader	988	-	-	-	-	-	-	-	-	-	-
Total Mobile Equipment				**119.0**		**119.0**		**119.0**		**119.0**		**119.0**
Washery Fixed Plant	Course Washery	-	-	117	-	117	-	117	-	117	-	117
	Pumps and Compressors	-	-	112	-	112	-	112	-	112	-	112
	Fine Washery	-	-	102	-	102	-	102	-	102	-	102
	Crusher	-	-	104	-	104	-	104	-	104	-	104
	Winders	-	-	91	-	91	-	91	-	91	-	91
	Conveyor Drives	-	-	112	-	112	-	112	-	112	-	112
	Transfer Conveyors	-	-	115	-	115	-	115	-	115	-	115
	Vent Shafts	-	-	104	-	104	-	104	-	104	-	104
	Stockpiles	-	-	111	-	111	-	111	-	111	-	111
Proposed Modification	Axial Vent Fan	100 kW	-	-	-	-	-	-	-	103	-	-
	Diesel Gensets	2*1.32 kVA	-	-	-	-	-	-	-	104	-	-
	Conveyor Drive	160 kW	-	-	-	-	-	-	-	93	-	-
	35m Conveyor	1000 t/hr	-	-	-	-	-	-	-	95	-	-
	Axial Vent Fan	250 kW	-	-	-	-	-	-	-	-	-	101
	Substation	33kV/11kV	-	-	-	-	-	-	-	-	-	70
	Conveyor Drive	2*250 kW	-	-	-	-	-	-	-	-	-	98
	50 m Conveyor	1000 t/hr	-	-	-	-	-	-	-	-	-	96
Total Fixed Plant				**121.4**		**121.4**		**121.4**		**121.6**		**121.5**
Estimated Total Mine Site				**123.4**		**123.4**		**123.4**		**123.5**		**123.4**

4 Discussion

Daytime Drift Construction

As shown above in **Table 5**, the estimated total mine site L_{eq} sound power level for the EA existing operation is 125 dBA and the EA existing operation plus approved construction works is 126 dBA. The introduction of the Modification would result in only marginal (1 dBA) variation to the daytime SWLs associated with the approved Project. It is reasonable to conclude that the proposed Modification has minimal potential to increase the existing daytime intrusive noise levels as shown in **Attachment C** and any noise impacts are therefore consistent with those described in the Project EA.

All approved Project construction and proposed Modification construction mobile equipment would be used during the daytime only.

In addition, during the initial surface establishment (ie Phase 1) the CAT 10 Dozer would be used intermittently for site clearing works. Any reverse tracking of the dozer would be restricted to low gear only to reduce the potential for track slap.

Furthermore, the underground Road Header will be operated during the daytime only for the first 20 m of the drift construction and then continuously for 30 months duration.

Evening/Night-time Drift Construction

As shown above in **Table 6**, the estimated total evening/night-time mine site L_{eq} sound power level for the EA existing operation is 123 dBA and the EA existing operation plus approved construction is also 123 dBA.

The introduction of the Modification would result in a minimal (<1 dBA) variation and would remain at 123 dBA. It is reasonable to conclude that the proposed Modification has minimal potential to increase the evening/night-time intrusive noise levels as shown in **Attachment C** and any noise impacts are therefore consistent with those described in the Project EA.

Evening/night-time drift construction noise levels would be minimised during phases 2 and 3 by the use of various fixed plant noise controls designed, procured and commissioned to the achieve the noise reductions and SWL's presented in **Table 7**. The actual fixed plant would be subject to further detailed acoustical design and procurement specifications.

Regenerated Noise from Road Header Operations

The potential for regenerated noise in any residential dwelling is considered negligible as the nearest dwelling is located greater than 100 m above the drift alignment.

Table 7 Drift Modification Fixed Plant Operating L_{Aeq} Sound Power Levels (dBA re 10 pW)

Equipment	Construction Phase and Approximate Duration	Capacity or Specification (or Equivalent)	Mitigation (or Equivalent) and estimated reductions - Subject to detailed Acoustical Design and Procurement Specification	Operating L_{Aeq} SWL
Axial Fan	Phase 2 - 3 months	100 kW	High Performance Silencer - 12 dBA reduction Indicatively 2D silencer on the fan inlet and exhaust. Fan supply louver to be directed in the east.	103 dBA
35 m conveyor	Phase 2 - 12 months	1000 t/hr	Install low noise idlers - 10 dBA reduction	95 dBA/100 m
Conveyor Drive	Phase 2 - 12 months	160 kW	Install low noise drive - 7 dBA reduction	93 dBA/unit
Diesel Gensets	Phase 2 - 12 months	2*1320 kVA	High Performance Enclosure - 15 dBA reduction Indicatively double skin construction (typically metal decking//100mm insulation//10mm fibrous cement sheeting) fully internally lined with 50 mm insulation faced with perforated metal. Acoustic louvers to be provided by supply and return air located on the eastern side of the building. High performance exhaust muffler to limit the sound pressure to less than 85 dBA @ 1m from the exhaust.	101 dBA/unit
Axial Fan	Phase 3 - 27 months	250 kW	High Performance Silencer - 18 dBA reduction Indicatively 2D podded silencer on the fan inlet and exhaust. Fan housed within the portal to reduce noise breakout from the fan casing.	101 dBA
50 m conveyor	Phase 3 - permanent	1000 t/hr	Install low noise idlers - 10 dBA reduction	95 dBA/100 m
Conveyor Drive	Phase 3 - permanent	2*250 kW	Install low noise drive - 7 dBA reduction	95 dBA/unit
New Substation	Phase 3 - permanent	33 kV/11 kV	Enclosed and located at Mine Managers Residence	70 dBA

5 Conclusion

This review focuses on the proposed construction of a replacement underground drift and portal at the approved Metropolitan Coal Mine.

Portal establishment works would be short term and the use of mobile construction equipment associated with initial construction would be limited to the daytime only. Review of sound power levels of the approved Project and the approved Project incorporating the Modification indicates that the Modification would not result in any material change to the daytime sound power levels of the surface facilities area.

A range of noise management measures for additional fixed plant items that would operate 24hrs per day during the construction of the new underground drift have been identified and would be employed for the Modification. With the implementation of these measures the sound power of the site during the evening and night-time would also be largely unchanged by the proposed Modification.

Metropolitan Coal Mine has developed a draft Noise Management Plan (NMP) that will be finalised in consultation with the Department of Environment, Climate Change and Water and DoP. The NMP includes a commitment to quarterly attended monitoring and on-going real-time noise monitoring that can be used to track noise performance.

The NMP includes commitments to review the predicted operational noise performance of finalised engineering designs for the approved Project surface facility upgrades against the post 2014 noise criteria (**Table 1**). Once the engineering designs are finalised this will provide the appropriate mechanism to examine the likely operational noise performance of any new coal conveyors and associated material handling components that would be associated with the replacement drift, and if necessary identify and refine the proposed noise control measures for Phase 3 of drift construction as presented in **Table 7**.

SCHEDULE 4
SPECIFIC ENVIRONMENTAL CONDITIONS – GENERAL

NOISE

Noise Impact Assessment Criteria

1. By the end of 2014, the Proponent shall ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 2 at any residence on privately-owned land, or on more than 25% of any privately-owned land.

Table 2: Noise Impact Assessment Criteria

Day $L_{Aeq(15\ min)}$	Evening $L_{Aeq(15\ min)}$	Night $L_{Aeq(15\ min)}$	Night $L_{A1(1\ min)}$
50 dB(A)	45 dB(A)	45 dB(A)	50 dB(A)

Notes:

- *To determine compliance with the $L_{Aeq(15\ min)}$ noise limits, noise from the project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the project is impractical, alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy) may be accepted. The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*
- *To determine compliance with the $L_{A1(1\ minute)}$ noise limits, noise from the project is to be measured at 1 metre from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the project is impractical, alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy may be accepted.*
- *The noise emission limits identified in the above table apply under meteorological conditions of:*
  - *wind speeds of up to 3 m/s at 10 metres above ground level; or*
  - *temperature inversion conditions of up to 3°C/100m, and wind speeds of up to 2 m/s at 10 metres above ground level;*

  determined in accordance with the NSW Industrial Noise Policy.

Noise Acquisition Criteria

2. If after 2014, the noise generated by the project exceeds the criteria in Table 3 at any residence on privately-owned land, or on more than 25% of any privately-owned land, then the Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 5-7 of schedule 5.

Table 3: Noise Acquisition Criteria

Day $L_{Aeq(15\ min)}$	Evening $L_{Aeq(15\ min)}$	Night $L_{Aeq(15\ min)}$
55 dB(A)	50 dB(A)	50 dB(A)

Note: Noise generated by the project is to be measured in accordance with the notes presented below Table 2. For this condition to apply, the exceedances of the criteria must be systemic.

Additional Noise Mitigation Measures

3. If after 2014, the noise generated by the project exceeds the criteria in Table 4 at any residence on privately-owned land, then the Proponent shall, upon receiving a written request from the landowner, implement reasonable and feasible noise mitigation measures (such as double-glazing, insulation, and/or air conditioning) at the residence in consultation with the landowner. If within 3 months of receiving this request from the landowner, the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution.

Table 4: Additional Noise Mitigation Criteria

Day $L_{Aeq(15\ min)}$	Evening $L_{Aeq(15\ min)}$	Night $L_{Aeq(15\ min)}$
53 dB(A)	48 dB(A)	48 dB(A)

Note: Noise generated by the project is to be measured in accordance with the notes presented below Table 2.

Rail Noise

4. The Proponent shall only use locomotives that are approved to operate on the NSW rail network in accordance with noise limits L6.1 to L6.4 in RailCorp's EPL (No. 12208) and ARTC's EPL (No. 3142) or a Pollution Control Approval issued under the former *Pollution Control Act 1970*.

5. The Proponent shall use its best endeavours to minimise night-time movements of rolling stock on the Metropolitan rail spur.

6. In the event of any rail noise or vibration issues that may arise from the haulage of coal over the life of the Project, the Proponent shall liaise with the CCC and the rail service provider to facilitate resolution of these issues and implement additional noise reduction measures where appropriate.

Blasting

7. The Proponent shall not undertake blasting operations at the surface facilities area without the written approval of the Director-General.

Noise Management Plan

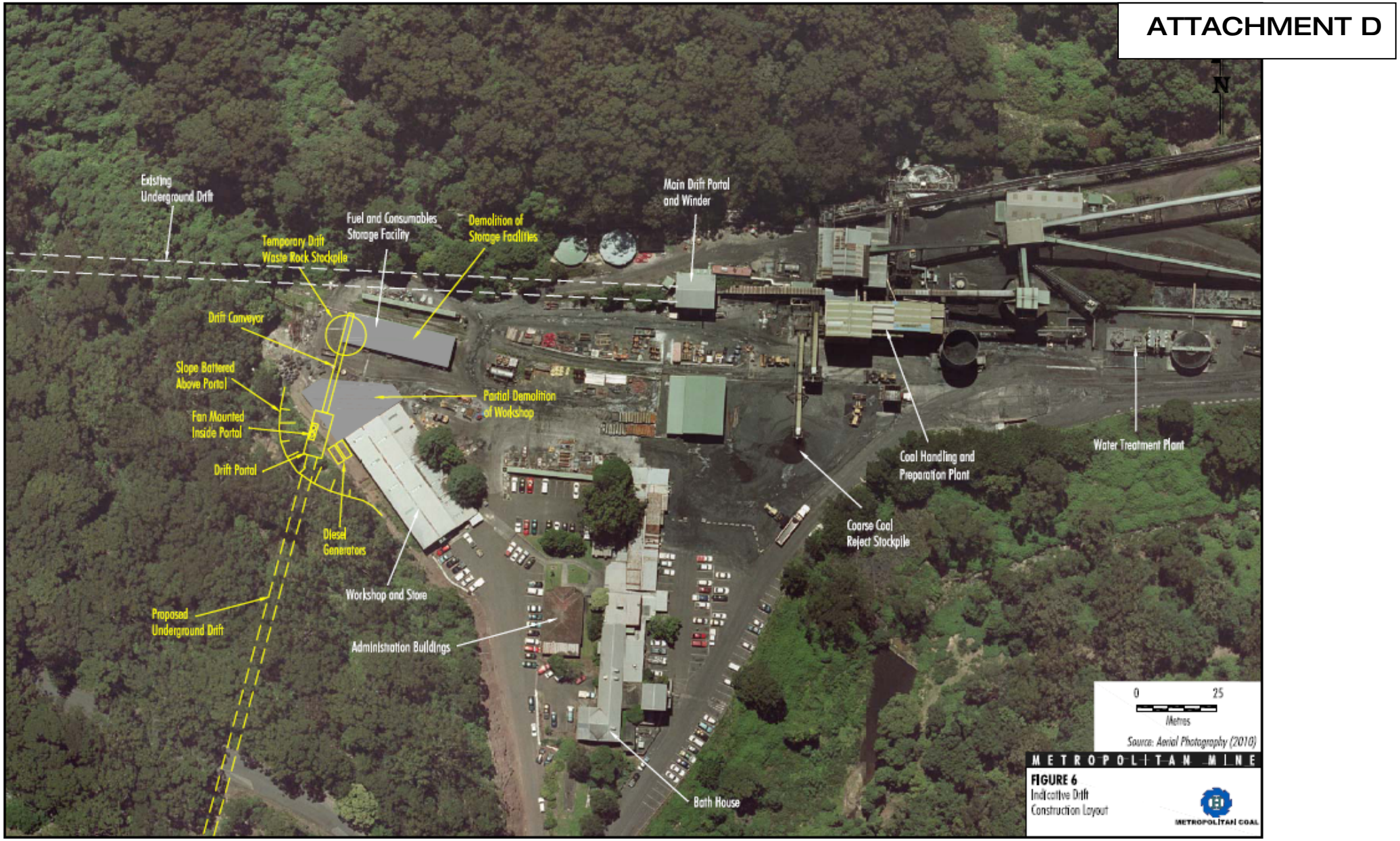
8. The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Director-General. This plan must be prepared in consultation with DECC by a suitably qualified expert whose appointment has been approved by the Director-General, and submitted to the Director-General for approval by the end of June 2010. It must also provide for real-time noise monitoring.

Daytime[1], Evening[1] and Night-time[1] $L_{Aeq(15minute)}$ Levels (dBA re 20 µPa)

Receiver Area	ID	Location	Daytime Existing Colliery - Calm[2]		Evening Existing Colliery		Night-time Existing Colliery	
			With Trucks	Without Trucks	Calm[2]	NNE[2]	Calm[2]	North[2]
Near Project Boundary	O1	1 Oxley Pl	47[3]	47[3]	**47[5]**	**48[5]**	**47[5]**	**48[5]**
	O3	3 Oxley Pl	41	41	41[3]	43[4]	41[3]	43[4]
	O5	5 Oxley Pl	44	43	43[4]	45[4]	43[4]	45[4]
	O7	7 Oxley Pl	46[3]	44	44[4]	**46[5]**	44[4]	45[4]
	O7A	7A Oxley Pl	38	36	36	38	36	38
	O9	9 Oxley Pl	48[4]	45	44[4]	**46[5]**	44[4]	**46[5]**
	W1	1 Wills Pl	45	44	44[4]	**46[5]**	44[4]	**46[5]**
	W3	3 Wills Pl	35	35	35	36	35	36
	W5	5 Wills Pl	35	35	35	36	34	36
	W7	7 Wills Pl	48[4]	47[3]	**47[5]**	**49[5]**	**47[5]**	**48[5]**
	O2	2 Oxley Pl	**56[5]**	**54[5]**	**53[5]**	**54[5]**	**53[5]**	**54[5]**
	O4	4 Oxley Pl	**56[5]**	**54[5]**	**55[5]**	**56[5]**	**55[5]**	**56[5]**
	O6	6 Oxley Pl	**56[5]**	**53[5]**	**53[5]**	**54[5]**	**53[5]**	**54[5]**
	O8	8 Oxley Pl	**56[5]**	**53[5]**	**52[5]**	**53[5]**	**52[5]**	**53[5]**
	O10	10 Oxley Pl	**56[5]**	**53[5]**	**52[5]**	**53[5]**	**52[5]**	**53[5]**
	O12	12 Oxley Pl	**56[5]**	**52[5]**	**51[5]**	**53[5]**	**51[5]**	**53[5]**
	O14	14 Oxley Pl	**57[5]**	**52[5]**	**51[5]**	**52[5]**	**51[5]**	**52[5]**
	O16	16 Oxley Pl	**57[5]**	**52[5]**	**51[5]**	**52[5]**	**51[5]**	**52[5]**
	O18	18 Oxley Pl	**56[5]**	**51[5]**	**50[5]**	**51[5]**	**50[5]**	**51[5]**
	P40	40 Parkes St	32	32	32	29	32	29
	S36	36 Old Station	47[3]	47[3]	**47[5]**	44[4]	**47[5]**	43[4]
	P42	42 Parkes St	47[3]	47[3]	**47[5]**	45[4]	**47[5]**	43[4]
	P44	44 Parkes St	47[3]	47[3]	**47[5]**	45[4]	**47[5]**	43[4]
	P46	46 Parkes St	47[3]	47[3]	**47[5]**	45[4]	**47[5]**	43[4]
	P48	48 Parkes St	48[4]	47[3]	**48[5]**	**49[5]**	**48[5]**	**46[5]**
	P50	50 Parkes St	49[4]	49[4]	**49[5]**	**50[5]**	**49[5]**	**48[5]**
	P52/54	52/54 Parkes	50[4]	50[4]	**50[5]**	**51[5]**	**50[5]**	**50[5]**
	P53	53 Parkes St	**54[5]**	**53[5]**	**53[5]**	**53[5]**	**53[5]**	**53[5]**
	P55	55 Parkes St	**51[5]**	**51[5]**	**46[5]**	**51[5]**	**46[5]**	**50[5]**
	P55A	55A Parkes St	47[3]	46[3]	45[4]	**46[5]**	45[4]	45[4]
	P57	57 Parkes St	47[3]	45	44[4]	45[4]	44[4]	44[4]
	P59	59 Parkes St	46[3]	44	41[3]	44[4]	41[3]	43[4]
	P56/58	56/58 Parkes	41	36	35	35	35	34
	P72/74	72/74 Parkes	39	32	30	30	30	29
	P86	86 Parkes St	**55[5]**	48[4]	45[4]	**47[5]**	45[4]	45[4]
	P88	88 Parkes St	**54[5]**	47[3]	45[4]	**47[5]**	45[4]	45[4]
	R2	2 Robertson	45	37	36	39	36	38
	P65	65 Parkes St	**52[5]**	47[3]	**46[5]**	**48[5]**	**46[5]**	**47[5]**
	P67	67 Parkes St	45	37	34	36	34	35
	P69	69 Parkes St	39	33	32	34	32	33
	H48	48 Hume Dr	41	38	38	41[3]	38	40
	H50	50 Hume Dr	47[3]	44	43[4]	45[4]	43[4]	44[4]
	H52	52 Hume Dr	48[4]	47[3]	**47[5]**	**49[5]**	**47[5]**	**48[5]**
	H54	54 Hume Dr	**53[5]**	49[4]	**48[5]**	**50[5]**	**48[5]**	**49[5]**
North of Project Boundary	F17	17 Old Farm	31	31	31	28	31	27
	F19	19 Old Farm	30	30	30	26	30	26

Note 1: Daytime 0700 hours to 1800 hours, Evening 1800 hours to 2200 hours, Night-time 2200 hours to 0700 hours.
Note 2: Meteorological parameters as described in Table 6 of the Project EA 2008.
Note 3: Intrusive level marginally 1 to 2 dBA above project specific criteria.
Note 4: Noise Management Zone - intrusive level moderately 3 to 5 dBA above project specific criteria.
Note 5: Noise Affectation Zone - intrusive level appreciably >5 dBA above project specific criteria (bold).

ATTACHMENT D



METROPOLITAN MINE

REPLACEMENT DRIFT CONSTRUCTION MODIFICATION ENVIRONMENTAL ASSESSMENT




APPENDIX B

AIR QUALITY REVIEW

Peabody

METROPOLITAN COAL

10 June 2010

Jon Degotardi
Helensburgh Coal Pty Ltd
PO Box 402
HELENSBURGH NSW 2508

Dear Jon

Re: Metropolitan Coal Replacement Drift Modification

1 INTRODUCTION

It is understood that Metropolitan Coal Mine, owned by Helensburgh Coal Pty Ltd (HCPL), is seeking a minor modification to the current Project Approval. The following report provides a qualitative analysis of potential air quality impacts of the proposed modification, and outlines the approach and findings of our assessment.

Metropolitan Coal has Project Approval to mine 3.2 million tonnes per annum (Mtpa) of Run-of-Mine (ROM) coal using underground coal mining methods. **Figure 1** shows the general arrangement of the approved Metropolitan Coal Mine and **Figure 2** shows the location of the major surface facilities in Helensburgh, along with the nearby residences and air quality monitoring network.

In 2008, Metropolitan Coal commissioned an air quality impact assessment (**Holmes Air Sciences, 2008**) for the Project increase in ROM production rate from 1.8 Mtpa to 3.2 Mtpa as well as the general upgrades to surface facilities. These upgrades include:

- Upgrades of the CHPP to facilitate increased production of washed coal;
- Construction of a coal reject paste plant and associated coal reject stockpile, pumping, pipeline and underground delivery systems;
- Upgrades and/or extension of the existing supporting infrastructure systems (e.g. underground access, water management system, yard area, conveyor transfers and drives, ventilation, gas management and electrical systems) as required; and
- Other associated minor infrastructure, plant, equipment and activities.

In order to meet the approved increase in the ROM production rate to 3.2 Mtpa Metropolitan Coal is seeking to modify the approved Project with the development of a replacement underground access drift (**Figure 1**) and associated minor alterations to the surface facilities, including a new drift portal. The location of the new drift portal and an indicative surface layout for drift development is shown on **Figure 3**.

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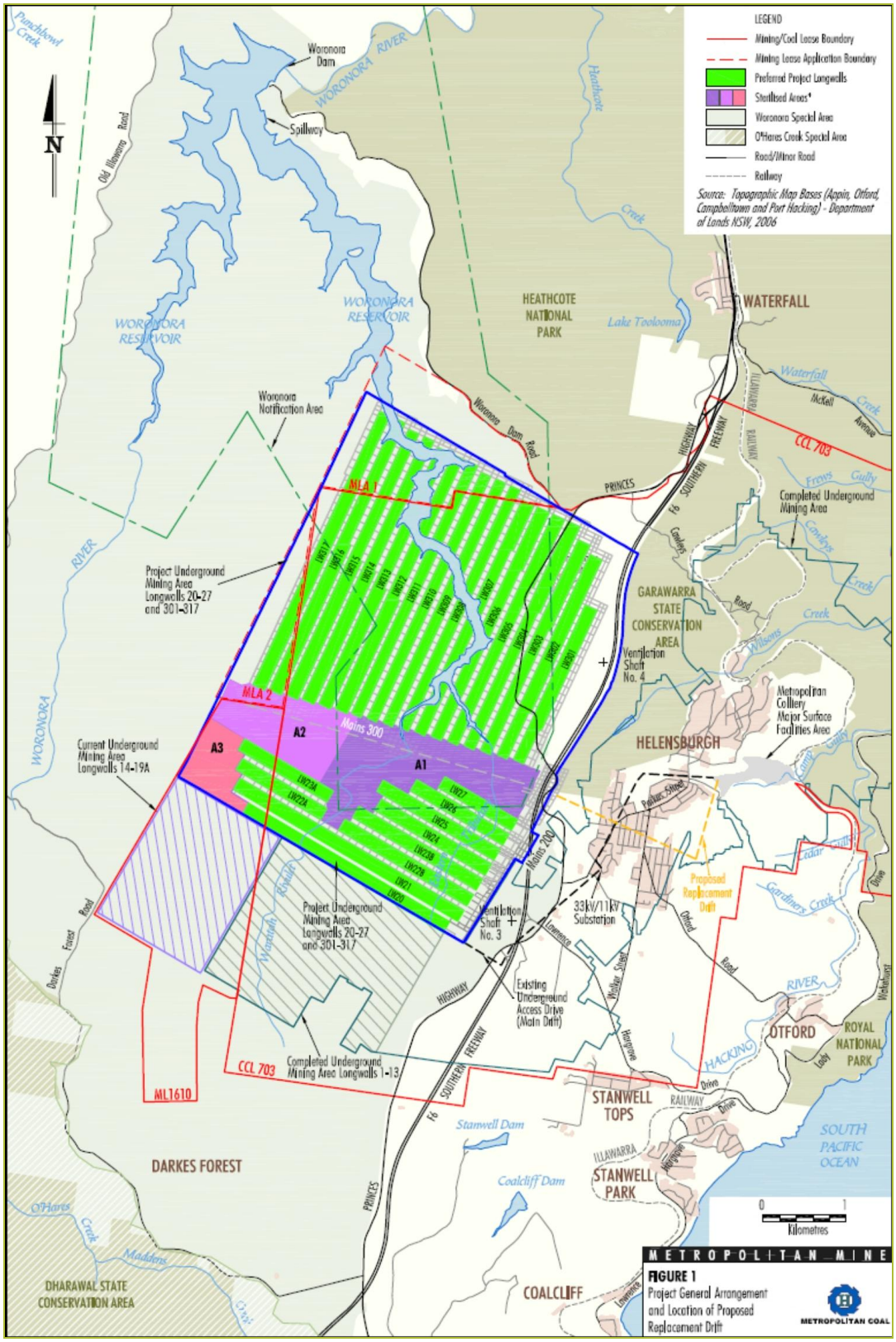

Figure 1: Project general arrangement and location of proposed replacement drift

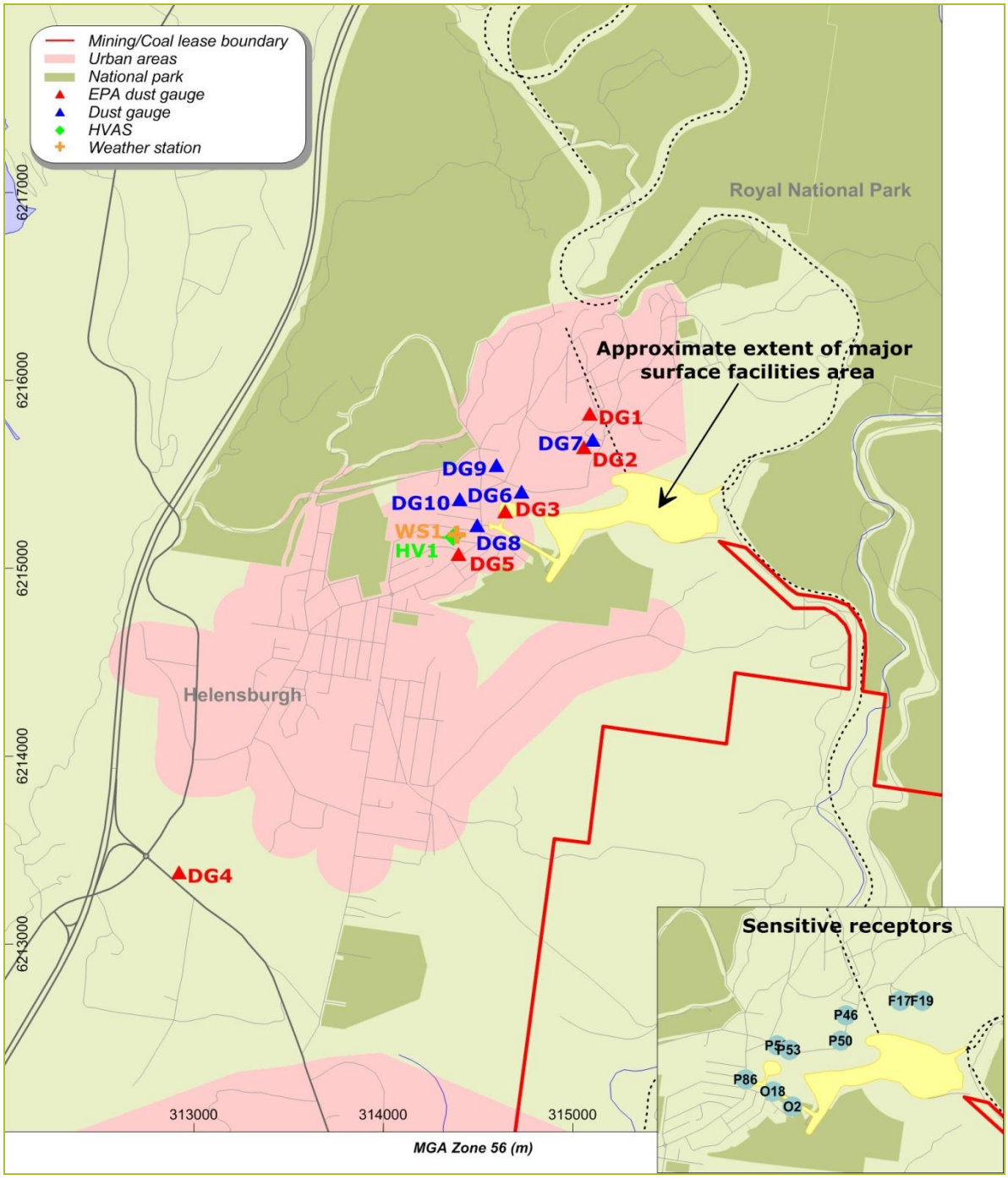

Figure 2: Location of major surface facilities and monitoring stations

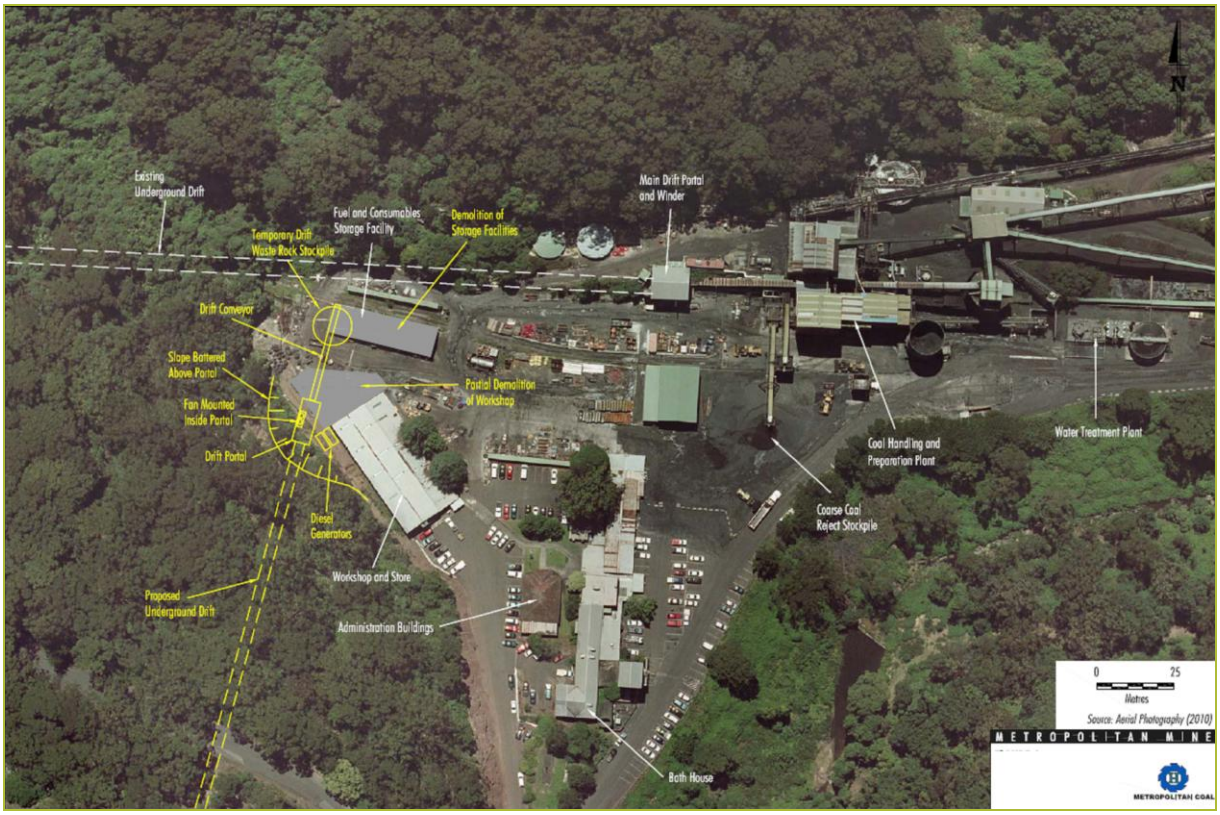

Figure 3: Construction plan for the proposed replacement drift

1.1 Overview of proposal

Detailed engineering studies conducted on behalf of HCPL identified a number of operational risks in upgrading the capacity of the current drift and associated conveyor systems. The proposed new portal and drift would reduce these risks. Following the development of the new portal and drift construction waste rock handling system, underground drift development works would be undertaken for a period of approximately 30 months, 24 hours per day.

The proposed modifications include:

- Minor site clearing (**Figure 4**), demolishing part of two existing buildings and short term surface construction works to establish the new drift portal;
- Development of a replacement underground drift (i.e. 5.5 m x 5.7 m materials and man access tunnel to the underground workings);
- Operation of on-site supplementary electricity generation for a period of up to 12 months adjacent to the portal to supply the electricity demand of the drift construction equipment;
- Upgrade of on-site electricity distribution systems with the establishment of a new substation near the mine manager's cottage, and associated on-site electricity distribution upgrades;
- Beneficial use of drift waste rock material as construction fill material for the approved surface facilities upgrades;
- Disposal of drift waste rock material that cannot be readily utilised for on-site construction material via paste injection into old underground workings and/or transport off-site within approved coal reject trucking limits (e.g. to Glenlee Washery); and
- Installation and operation of temporary ventilation fans for maintaining suitable air quality during construction of the replacement drift

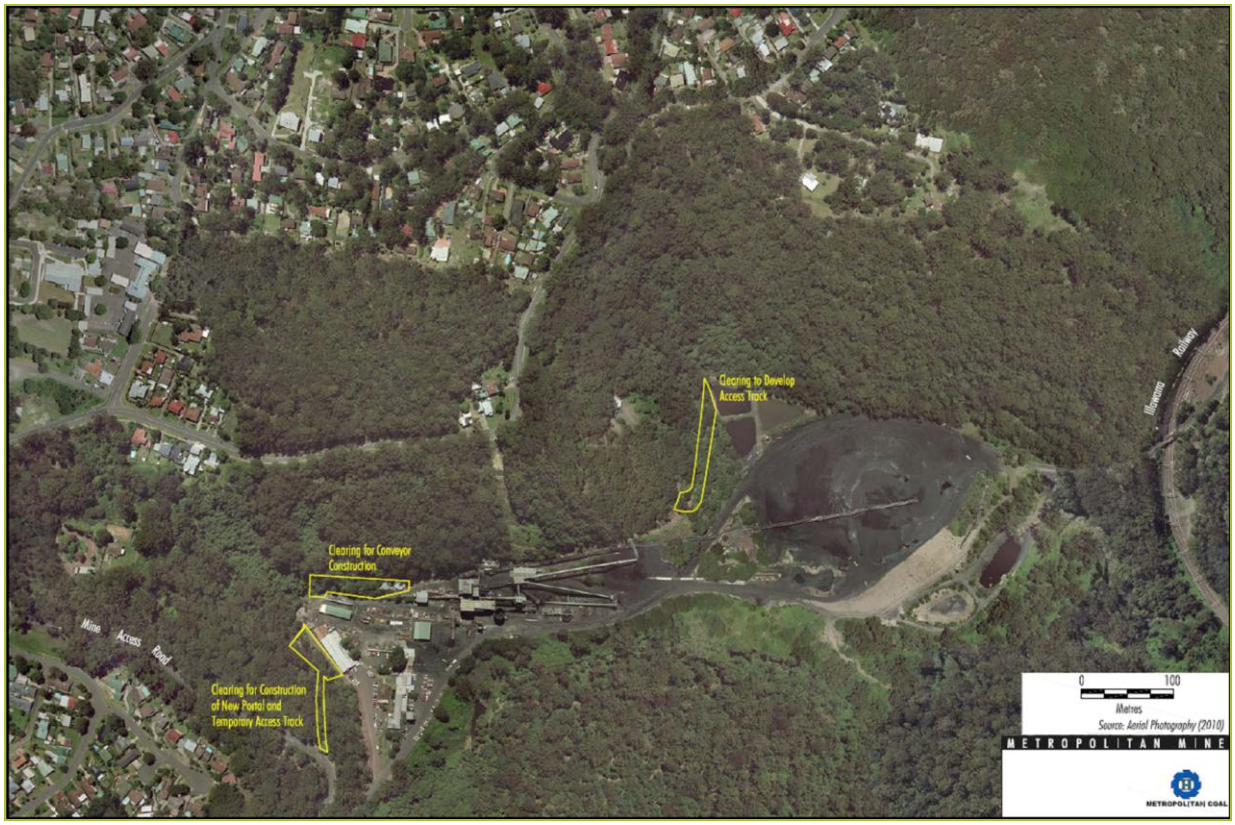

Figure 4: Proposed disturbance areas associated with remnant vegetation clearing

2 EXISTING AMBIENT ENVIRONMENT

2.1 Local Meteorology

Metropolitan Colliery owns and operates a weather station located at Helensburgh (see **Figure 2**) just to the west of the major surface facilities. However this weather station was installed in 2010 and consequently a full year of data are not yet available.

2.2 Ambient Air Quality

2.2.1 PM_{10} Concentration

Measurements of particulate matter less than 10 micrometres in diameter (PM_{10}) concentration are collected using a High Volume Air Sampler (HVAS) on every sixth day, located within the residential area of Helensburgh (see **Figure 2**). The monitoring results for the HVAS are presented in **Table 1**. It is noted that since the start of 2010 the HVAS has been operating every seventh day, and as such all samples have been taken on Thursday. The HVAS is located on a large grassed double block and a maintenance contractor uses a small tractor to mow the lawn and a weed eater to trim back along fence lines. It is suspected this activity takes place bi-monthly on a Thursday as **Appendix A** shows high PM_{10} concentrations on both Thursday 28 January 2010, and Thursday 25 March 2010, whereas all the other data are significantly below the criteria.

Table 1: Results for 24-hour average PM_{10} concentration measurements

Year	Maximum 24 Hour Average PM_{10} ($\mu g/m^3$) (DECCW Criterion 50 $\mu g/m^3$)	Annual Average PM_{10} ($\mu g/m^3$) (DECCW Criterion 30 $\mu g/m^3$)
2007 (May to December)	36	15
2008	30	15
2009 (January to May)	35	18
2010 (January to March)	66	32
2010 (January to March excluding elevated values)	38	23

$\mu g/m^3$ = micrograms per cubic metre

The PM_{10} monitoring shows that 24-hour average concentrations have generally been well below the DECCW's 24-hour assessment criterion of 50 $\mu g/m^3$. With the exception of the two elevated values measured in 2010, the highest 24-hour PM_{10} concentration recorded to date was 38 $\mu g/m^3$, measured on 11 February 2010.

The average PM_{10} concentrations are also below the Department of Environment, Climate Change and Water's (DECCW) annual average criterion of 30 $\mu g/m^3$.

Annual average total suspended particulate (TSP) concentrations can be estimated from the PM_{10} measurements by assuming that 40% of the TSP is PM_{10}. This relationship was obtained from data collected by co-located TSP and PM_{10} monitors operated for reasonably long periods of time in the Hunter Valley (**NSW Minerals Council, 2000**). Use of this relationship indicates that the annual average TSP concentration is approximately 37 $\mu g/m^3$ which is below the DECCW assessment criterion of 90 $\mu g/m^3$.

2.2.2 Dust Deposition

Dust deposition is measured at ten locations on a monthly basis. Measurements made by the dust gauges are available from 2003 to 2010. These data are presented in **Table 2**.

Table 2: Results for Dust Deposition

Year	2003	2004	2005	2006	2007	2008	2009	2010 [b]
DG1 [a]	-	-	-	-	-	1.4	1.7	2.1
DG2	1.4	1.1	1.6	1.7	1.3	1.0	1.2	1.0
DG3	2.1	2.2	2.1	2.2	1.2	2.7	**5.0**	2.9
DG4	2.1	2.5	2.4	2.0	2.6	2.5	3.9	1.7
DG5	-	-	-	-	1.3	1.2	2.8	1.0
DG6	-	-	-	-	1.4	1.3	**4.4**	0.6
DG7	-	-	-	-	-	1.1	1.3	0.6
DG8	-	-	-	-	-	2.8	2.4	1.7
DG9	-	-	-	-	-	-	3.3	1.1
DG10	-	-	-	-	-	-	1.4	1.1
H4	-	-	-	-	-	1.6	1.7	- [d]
EPA ID No. 1	2.4	2.6	1.9	2.9	2.8	1.5	- [c]	- [d]
Average	*2.0*	*2.1*	*2.0*	*2.2*	*1.8*	*1.7*	*2.6*	*1.4*

a Replaced with EPA ID No. 1
b Only two samples available for 2010
c Sampling discontinued
d Replaced with EPA ID No. 1/H5

In general, the annual average dust deposition levels were below the DECCW criterion of 4 grams per square metre per month (g/m^2/month) and ranged between 0.6 g/m^2/month to 3.6 g/m^2/month. There were two exceptions in 2009 at DG3 and DG6, recording 5.0 and 4.4 g/m^2/month, respectively.

The annual average for all sites during 2009 (the most recent complete year of monitoring) was 2.6 g/m^2/month.

3 ESTIMATED EMISSIONS DUE TO MODIFICATION CONSTRUCTION WORKS

During the initial construction of the drift portal, the use of a dozer, excavator and 30 tonne (t) truck would be employed for the clearing of vegetation and earthworks. It is anticipated that it would take no more than seven weeks in total over the second half of 2010 (operating up to 10 hours per day, five days per week) for the dozer and associated supporting equipment to establish the portal area, clear the conveyor construction area and construct the access track. Shown on **Figure 4** are the three clearing areas (total area approximately 0.6 hectares).

Once the drift is established, approximately 220,000 t of waste rock from the drift is to be transported around the site for use as construction fill or for disposal via the paste plant. This would take place over the 30 months of the drift portal construction and would coincide with general approved site upgrades. A small axial fan located at the portal would also to be used during this construction period, for ventilation.

The emissions during the first year of construction of the new drift portal and associated surface activities have been estimated at 5,414 kilograms of TSP, which is less than 10% of annual the TSP emission that was estimated for Year 3 (construction) of the approved Project as presented in **Holmes Air Sciences, 2008**.

4 IMPACT ASSESSMENT FOR MODIFICATION

It is useful to compare this approximate increase in emissions with the predicted impacts for each pollutant and averaging period presented in **Holmes Air Sciences, 2008.** In that assessment, receptor P50 (see **Figure 2**) was predicted to experience the greatest impacts due to mining operations at Metropolitan Colliery. The model predictions for P50 in Year 3 (construction) are shown in **Table 3**.

Table 3: Model predictions for sensitive receptor P50 [a]

	24-hour average PM_{10} concentration (µg/m^3)	Annual average PM_{10} concentration (µg/m^3)	Annual average TSP concentration (µg/m^3)	Annual average dust deposition (g/m^2/month)
Isolation	33	3	5	0.6
Cumulative	n/a	17	40	2.4
DECCW criterion	*50*	*30*	*90*	*2*

[a] *Holmes Air Sciences 2008*

It can be seen from **Table 3** that if the modification construction activities were to increase dust emissions by 10% the impacts on the surrounding residences for all pollutant and averaging periods would still be well below the DECCW criterion.

The model predictions are supported by monitoring data collected to date. For example, monitored annual average PM_{10} concentrations of between 15 µg/m^3 and 23 µg/m^3 to date with mine operations and associated initial upgrade construction activities compare well with the model predictions of 17 µg/m^3 for the Project in Year 3.

For annual average dust deposition there were two high measurements made in 2009 at DG3 and DG6. However, these measurements were not significantly higher than the background dust depositions levels measured by DG4 at the golf course located approximately 2 kilometres southwest of Metropolitan Colliery (**Figure 2**) (**Table 2**).

5 DUST MANAGEMENT AND CONTROL

While it is anticipated that the increase in emissions due to the construction of the drift portal would not significantly impact nearby residences, there are a number of measures that can be undertaken to control construction dust emissions including, but not necessarily be limited to, the following.

5.1 Haulage and Heavy Plant and Equipment

Vehicles travelling over paved or unpaved surfaces tend to produce wheel generated dust and can result in dirt track-out on paved surfaces surrounding the work areas.

- All vehicles on site should be confined to a designated route with a speed limit enforced;
- Trips and trip distances should be controlled and reduced where possible;
- Delivery and movement of materials should be planned and coordinated to avoid unnecessary trips;
- Dirt that has been tracked onto sealed roads should be cleaned as soon as practicable; and
- When conditions are excessively dusty and windy, and dust can be seen leaving the works site the use of a water truck (for water spraying of travel routes) should be used.

5.2 Clearing / Excavation

Emissions from stripping, clearing and excavation can be significant, particularly during dry and windy conditions. Emissions can be effectively controlled by increasing the moisture content of the soil / surface (e.g. use of a water truck). Other controls that should be considered are:

- Modify working practices by limiting excavation during periods of high winds; and
- Limiting the area of stripping to the designated footprint required for construction.

5.3 Wind Erosion

Wind erosion from exposed surfaces should be controlled as part of the best practice environmental management of the site. Wind erosion from exposed ground should be limited by avoiding unnecessary vegetation clearing and ensure rehabilitation occurs following completion of work. Wind erosion from temporary stockpiles can be limited by minimising the number of stockpiles on site and minimising the number of work faces on stockpiles.

6 CONCLUSIONS

The estimated dust emissions from construction of the new drift portal and associated works are small relative to the total emissions from the approved mine itself.

The existing air quality monitoring indicates that Metropolitan Colliery is currently compliant with the DECCW criterion and generally below the applicable air quality goals.

The modification works if managed in accordance with general construction dust minimisation techniques would generally be consistent with the emissions from approved surface facilities upgrades as detailed in the 2008 Environmental Assessment. Subsequently, emissions from the Metropolitan Coal Mine would not be significantly altered and would not likely result in any detectable change at sensitive receptors.

Once the construction of the drift is complete, providing the new operational conveyors and associated upgraded material handling systems incorporate the dust management controls that were described in **Holmes Air Sciences, 2008,** the operation of the replacement drift would not increase the total dust burden of the surface facilities, as it is a replacement rather than an additional facility.

It is concluded, therefore, that the construction of the new drift portal would not have a detectable impact on dust levels in the Helensburgh area.

Please contact us if you require any further information.

Yours faithfully,

PAEHolmes

Justine Beaney

Atmospheric Scientist

REFERENCES

Holmes Air Sciences (2008)
"Air Quality impact Assessment: Metropolitan Coal Project" Suite 2b, 14 Glen Street, Eastwood, 2112, June 2008.

NSW Minerals Council (2000)
"Technical Paper – Particulate Matter and Mining Interim Report".

Appendix A: HVAS1 PM_{10} monitoring data

Day	Date	24-hour average PM_{10} concentration ($\mu g/m^3$)
Saturday	5/05/2007	28
Friday	11/05/2007	15
Thursday	17/05/2007	20
Wednesday	23/05/2007	10
Tuesday	29/05/2007	19
Monday	4/06/2007	12
Sunday	10/06/2007	13
Saturday	16/06/2007	8
Friday	22/06/2007	12
Thursday	28/06/2007	11
Wednesday	4/07/2007	12
Tuesday	10/07/2007	7
Monday	16/07/2007	9
Sunday	22/07/2007	14
Saturday	28/07/2007	5
Friday	3/08/2007	12
Thursday	9/08/2007	16
Wednesday	15/08/2007	10
Tuesday	21/08/2007	14
Monday	27/08/2007	10
Sunday	2/09/2007	20
Saturday	8/09/2007	8
Friday	14/09/2007	16
Thursday	20/09/2007	16
Wednesday	26/09/2007	16
Tuesday	2/10/2007	20
Monday	8/10/2007	13
Sunday	14/10/2007	15
Saturday	20/10/2007	36
Friday	26/10/2007	10
Thursday	1/11/2007	21
Wednesday	7/11/2007	7
Tuesday	13/11/2007	14
Monday	19/11/2007	19
Sunday	25/11/2007	11
Saturday	15/12/2007	23
Tuesday	18/12/2007	14
Thursday	20/12/2007	17
Tuesday	25/12/2007	14
Thursday	27/12/2007	18
Sunday	30/12/2007	16
Sunday	6/01/2008	13
Saturday	12/01/2008	24
Friday	18/01/2008	15
Thursday	24/01/2008	14
Wednesday	30/01/2008	16
Tuesday	5/02/2008	4
Monday	11/02/2008	7
Sunday	17/02/2008	7
Saturday	23/02/2008	24
Friday	29/02/2008	12
Thursday	6/03/2008	20
Wednesday	12/03/2008	12

Day	Date	24-hour average PM_{10} concentration ($\mu g/m^3$)
Tuesday	18/03/2008	23
Monday	24/03/2008	9
Sunday	30/03/2008	11
Saturday	5/04/2008	8
Friday	11/04/2008	10
Thursday	17/04/2008	17
Wednesday	23/04/2008	11
Tuesday	29/04/2008	16
Monday	5/05/2008	21
Sunday	11/05/2008	16
Saturday	17/05/2008	16
Friday	23/05/2008	22
Thursday	29/05/2008	17
Wednesday	4/06/2008	10
Tuesday	10/06/2008	26
Monday	16/06/2008	14
Sunday	22/06/2008	11
Saturday	28/06/2008	16
Friday	4/07/2008	12
Thursday	10/07/2008	10
Wednesday	16/07/2008	15
Tuesday	22/07/2008	18
Monday	28/07/2008	5
Sunday	3/08/2008	10
Saturday	9/08/2008	10
Friday	15/08/2008	6
Thursday	21/08/2008	21
Wednesday	27/08/2008	14
Tuesday	2/09/2008	13
Monday	8/09/2008	12
Sunday	14/09/2008	13
Saturday	20/09/2008	30
Friday	26/09/2008	19
Thursday	2/10/2008	24
Wednesday	8/10/2008	10
Tuesday	14/10/2008	10
Monday	20/10/2008	16
Sunday	26/10/2008	29
Saturday	1/11/2008	14
Friday	7/11/2008	12
Thursday	13/11/2008	18
Thursday	20/11/2008	10
Tuesday	25/11/2008	20
Monday	1/12/2008	19
Sunday	7/12/2008	18
Saturday	13/12/2008	11
Friday	19/12/2008	17
Thursday	25/12/2008	15
Wednesday	31/12/2008	26
Tuesday	6/01/2009	35
Monday	12/01/2009	14
Sunday	18/01/2009	15
Saturday	24/01/2009	26

Day	Date	24-hour average PM_{10} concentration ($\mu g/m^3$)
Friday	30/01/2009	20
Thursday	5/02/2009	22
Wednesday	11/02/2009	18
Tuesday	17/02/2009	11
Monday	6/04/2009	16
Sunday	12/04/2009	14
Saturday	18/04/2009	19
Friday	24/04/2009	14
Thursday	30/04/2009	4
Wednesday	6/05/2009	15
Tuesday	12/05/2009	17
Monday	18/05/2009	27
Sunday	24/05/2009	22
Thursday	28/01/2010	53
Thursday	4/02/2010	37
Thursday	11/02/2010	38
Thursday	18/02/2010	NR
Thursday	25/02/2010	14
Thursday	4/03/2010	12
Thursday	11/03/2010	2
Thursday	18/03/2010	34
Thursday	25/03/2010	66

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APPENDIX C

GROUNDWATER REVIEW

Peabody

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H E R I T A G E
C O M P U T I N G
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Date: 21 April 2010

To: Dr Greg Tarrant
Technical Services Manager
Metropolitan Colliery
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Tel: 02 4294 7292
Fax: 02 4294 2064
mob: 0427 947 292
E-Mail: gtarrant@peabodyenergy.com.au

From: Dr Noel Merrick

Re: **Surface Facilities – Metropolitan Mine**

I understand that a Modification Application is being prepared for the Metropolitan Mine. This will involve the construction of a new underground access drift and portal (Figure 1).

I have examined the proposed course of the new drift in terms of the groundwater pressures that are likely to be encountered. This has been done by extracting the simulated groundwater heads from the steady-state model prepared for the Environmental Assessment, which approximates current conditions.

The same procedure has been followed for the existing drift.

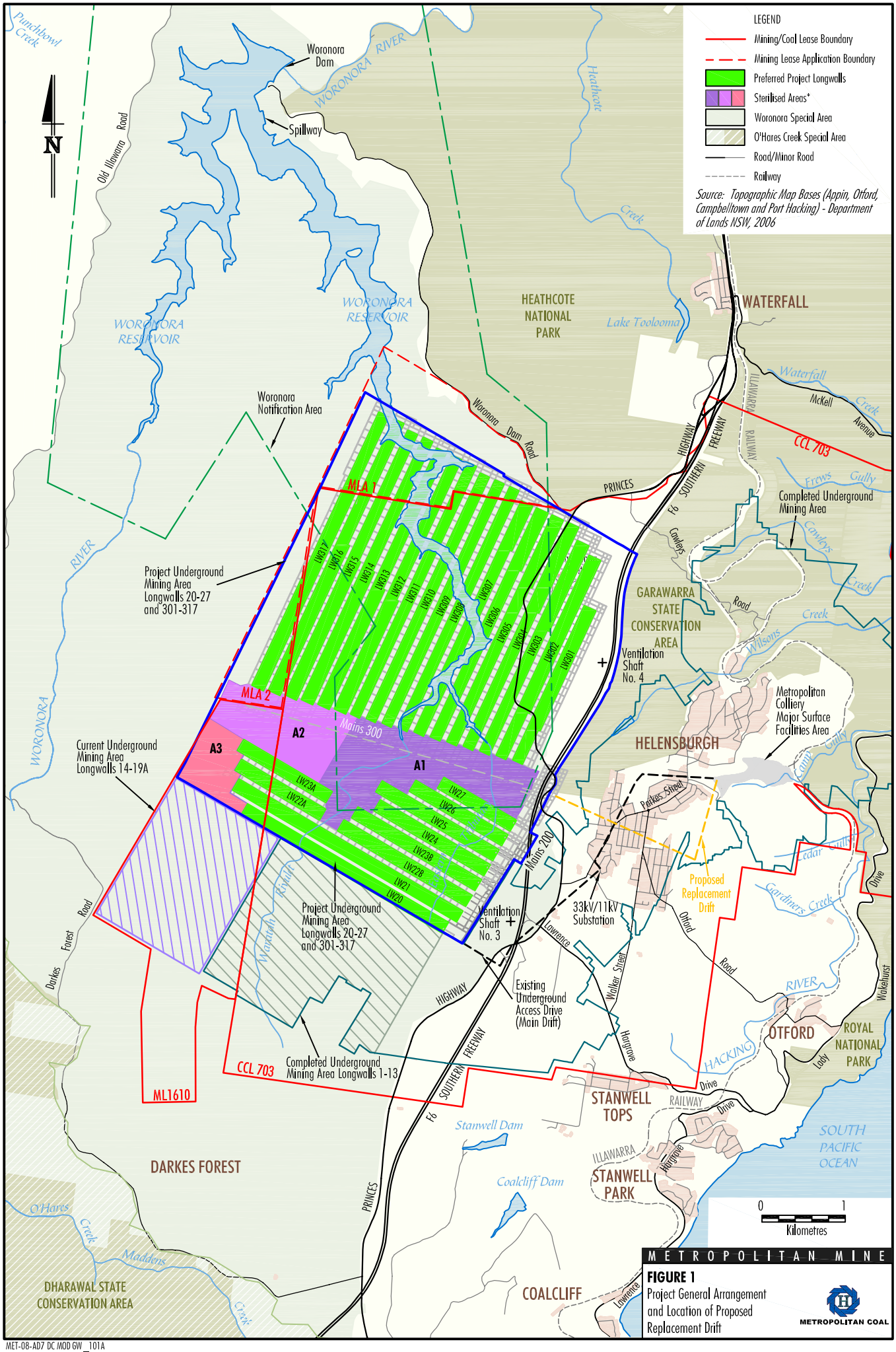
The groundwater pressure heads (in metres) likely to be encountered at depth along the course of the two drifts are illustrated in Figure 2. Similarly, the expected potentiometric head (mAHD) profiles are shown in Figure 3.

Both figures show very similar groundwater conditions for the two drifts. The new drift will have generally lower pressures (and lower groundwater heads) across the Bulgo Sandstone, the most transmissive formation between the portal and the coal seam. At greater depths, the new drift will be subject to higher pressures in the lower Scarborough Sandstone, and similar pressures in the Wombarra Claystone. At the level of the Coal Cliff Sandstone, immediately above the Bulli Seam, the pressure will be close to zero (that is, atmospheric pressure) due to the presence of the mining activities.

Across the entire stratigraphic section, the average groundwater pressure will be about 10% higher for the new drift, but the existing drift is about 40% longer. Given the difference in exposure area, and lower pressures across the Bulgo Sandstone for the new drift, it is expected that groundwater inflow to the new drift will be less than what occurs currently in the existing drift.

It is my opinion that the construction of the new drift will not compromise in any material way the findings of the groundwater assessment component of the Environmental Assessment (i.e. there will be negligible difference in potential groundwater effects as a result of the construction and operation of the proposed replacement drift).

Dr Noel Merrick



MET-08-AD7 DC MOD GW _101A

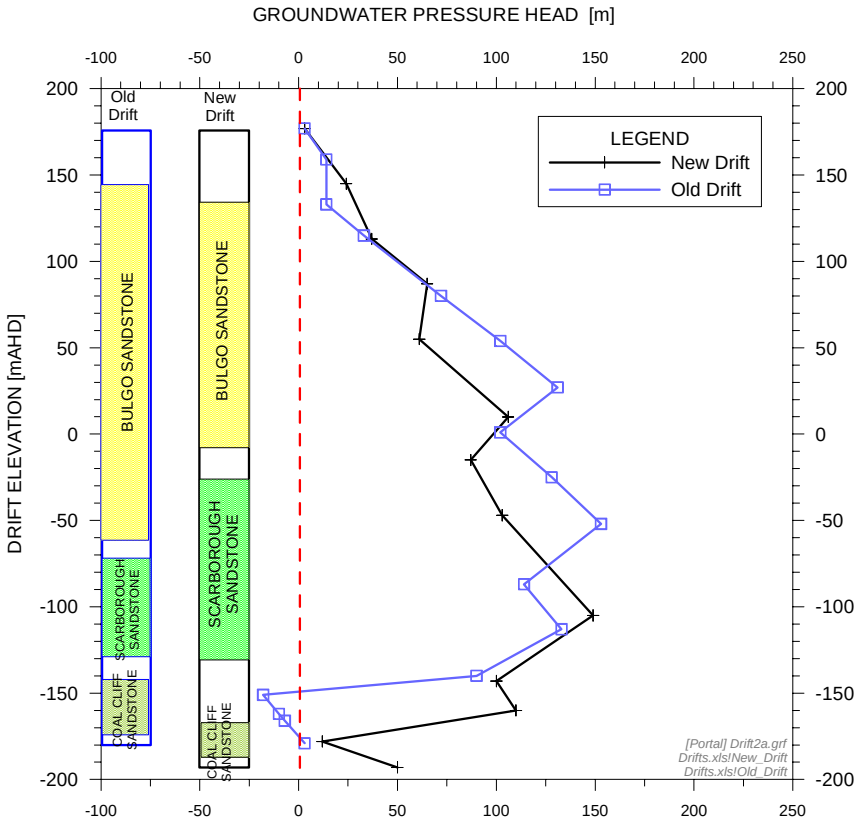


Figure 2. Expected pressure head profiles along the existing drift and the proposed new drift [m]

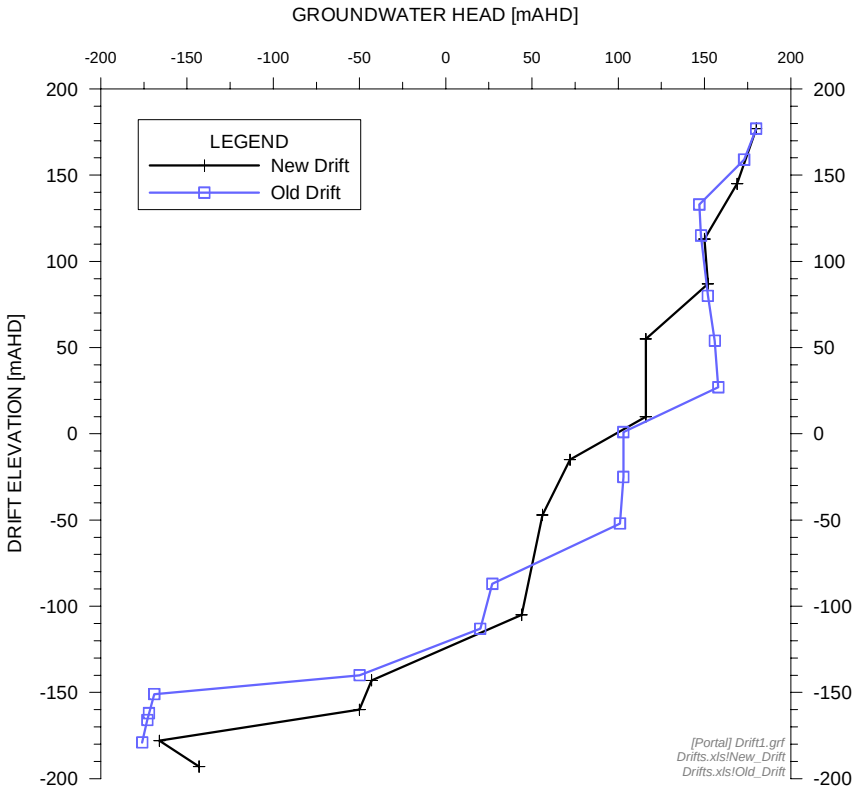


Figure 3. Expected groundwater head profiles along the existing drift and the proposed new drift [m AHD]

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REPLACEMENT DRIFT CONSTRUCTION MODIFICATION ENVIRONMENTAL ASSESSMENT




APPENDIX D

FLORA REVIEW

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Metropolitan Mine
Flora Inspections – Potential Surface Facilities Disturbance Areas
12 May 2010

CC Bower, FloraSearch

Introduction

Metropolitan Colliery proposes to clear trees from three small areas associated with the establishment of new infrastructure for the next phase of long wall mining. The three study sites are (Figure 1):

1. A proposed temporary access track to the hillslope above the proposed new underground portal including tree removal from above the portal entrance (referred to herein as the 'portal site').

2. A hillslope area for construction of conveyors (referred to as 'conveyor site').

3. Access track for proposed lay down area west of settling ponds north-west of stockpiles (referred to herein as 'access track').

Objectives

The aims of the inspection were to:

1. Determine whether any species, populations or communities listed as threatened under the NSW *Threatened Species Conservation Act 1995* (TSC Act) or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), occur on the study sites.

2. Assess the condition of the vegetation on each site.

3. Assess the potential impact of the proposed clearance on any threatened species, populations and communities.

Methods

Targeted species, populations and communities

Targeted searches of all three study sites were conducted for the threatened species and communities listed by Bangalay Botanical Surveys (2008) as having potential to occur on a proposed Metropolitan Colliery Coal Reject Emplacement area close to the three study sites considered here.

Each site was inspected for approximately one hour ensuring that all parts of the site were covered. The dominant tree, shrub and ground cover species were identified and recorded on each site.

Community determination

The plant communities present on each site were determined by comparing the dominant species present with those documented in the literature for communities recognised to occur in the region (Bangalay Botanical Surveys 2008 and references therein).

Results

Threatened species and populations

Twenty three threatened populations are listed in Schedule 2 of the TSC Act, none of which occur on the study area.

No threatened species listed in Schedule 1 of the TSC Act or under the EPBC Act were found on any of the study sites by the inspection.

Vegetation communities

One natural vegetation community was identified in the three study areas:

1. Moist Blue Gum – Blackbutt Forest.

Vegetation condition

All study sites are located close to existing mine infrastructure and all have been highly disturbed in the past by activities associated with historical mining at Helensburgh Colliery. The disturbance areas in all cases have been recolonised by native pioneer plant species and a range of introduced colonising plants. From a distance these areas may appear to be natural bushland, but on closer inspection it is clear that all sites have been highly modified by past disturbance, which is manifested by old earthworks for water diversion drains, and old pipelines, power lines, vehicle tracks and buildings.

The past soil disturbance has provided a favourable environment for introduced environmental weeds, particularly Lantana (*Lantana camara*), Mist Flower (*Ageratina riparia*) and Crofton Weed (*Ageratina adenophora*). In addition, a wide range of other exotic species are present. Much of the area bordering the mine site has a continuous canopy of eucalypt trees with a scattered second story of low trees comprising acacias or mesophyll species such as Blueberry Ash (*Elaeaocarpus reticulatus*) and Sweet Pittosporum (*Pittosporum undulatum*). However, the understorey in all cases is dominated by exotics, mainly Lantana and Mist Flower.

As a consequence of the past disturbance and invasion by exotic weeds, most native species comprising the original shrub and ground cover layers have disappeared. The vegetation on all three sites is in poor condition relative to the original undisturbed communities, owing to a considerable loss of groundcover and shrub diversity and dominance by aggressive weeds.

Conclusions

- The inspections found no threatened species listed under the TSC or EPBC Acts on any of the proposed disturbance areas.
- No threatened populations occur on or near the study area.
- No Endangered Ecological Communities occur on the three study areas.

Signed:

Colin C Bower
Principal Consultant Botanist
FloraSearch

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FIGURE 1
Remnant Vegetation Clearing Areas

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MET-08-AD7 DC MOD Flora_101A

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APPENDIX E

ABORIGINAL HERITAGE REVIEW

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Mr Greg Tarrant
Technical Services Manager
Metropolitan Mine

Wednesday 12 May 2010

Archaeological Inspection of Potential Disturbance Areas – Surface Facilities Area

Dear Greg,

On Tuesday 11 May 2010 Kayandel Archaeological Services undertook an archaeological inspection of three discrete locations around the Metropolitan Mine surface facilities area at Helensburgh that were identified as potential areas for land disturbance works (Figure 1).

Location 1 is an access track and area for stabilisation of the hill slope above the proposed entrance portal. This area was inspected and no Aboriginal artefacts or mature trees exhibiting culturally modified scars were present within the proposed impact area. Based on the high degree of surface slope there is no potential for archaeological deposit. Historic photos show the location being heavily impacted and cleared.

View of Location 1 looking south

Veiw of Location 1 (hill in background) looking south west. Note Heavy clearing of vegetation

View of Proposed Access Track for Location 1

Location 2 is on the opposite side of the gully from Location 1 and is proposed to be the location for a conveyor belt out of the portal. The location is heavily sloped and there were no Aboriginal artefacts or mature trees identified in the impact area.

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View of Location 2 looking north

View of southern portion of Location 3 looking north

Location 3 is a proposed alternate access road to the northern portions of the surface facilities at the mine. The area has been subject to previous disturbance with graded but unsealed access tracks. The general location is heavily sloped, no artefacts or mature tree were noted.

It can generally be said that each location had extremely minimal potential to contain Aboriginal archaeological material. All of the locations have been subject to extensive alteration throughout the life of the mine operations, predominately associated with early mining activities.

There are no Aboriginal archaeological heritage constraints at any of the three locations inspected. Kayandel Archaeological Services does not consider that monitoring of ground disturbance is warranted at any of the three locations.

Yours sincerely,

Lance Syme
Principal
B Arts (Arch/Paleo), M. ICOMOS, MAACAI

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FIGURE 1
Remnant Vegetation Clearing Areas

METROPOLITAN COAL

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