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4.3 Surface Gas Drainage Boreholes

Figure 2 identifies a total of 12 gas drainage boreholes and the Forest Road ventilation shaft area, which represent the extent of existing surface facilities overlying the Glennies Creek Mine underground workings.

The gas drainage boreholes are used to remove excess gas from the underground workings. Of the 12 gas drainage boreholes installed to date, eight have been decommissioned and sealed, and four gas drainage boreholes remain active. Three further gas drainage boreholes are currently in the development stage. Each gas drainage borehole has been the subject of an Assessment of Environmental Factors and approval from the Department of Primary Industries (Minerals) – Environmental Branch.

Each gas drainage borehole comprises a 337mm diameter borehole with a 260mm grouted casing to approximately 100m below the surface and a 250mm diameter borehole from a depth of 100m to the roof of the coal seam. Each borehole is allowed to free-vent to the atmosphere initially and, if required, is subsequently fitted with a methane powered extraction plant.

Once each borehole is no longer effective, the surface infrastructure is removed, the borehole sealed with concrete below the natural ground level and the area rehabilitated.

4.4 Forest Road Ventilation Shaft (MPL 343 Sub-lease) Area

Figure 4 shows the existing mining-related features within the 3.99 ha Forest Road Ventilation Shaft (MPL 343 Sub-lease) Area located approximately 2.9 km west-north-west of the Glennies Creek Colliery Pit Top while **Table 2** identifies and describes the principal features. The Area is accessed via Forest Road, an unsealed local road which meets Glennies Creek Road immediately north of the Glennies Creek Road / Main Northern Railway Line crossing.

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TABLE 2

Glennies Creek – Existing Forest Road Ventilation Shaft Area Features and Functions

IDENTIFIER (See Figure 4)	FEATURE	DESCRIPTION
A	Ventilation Shaft	A 4.5m diameter enclosed concrete lined shaft which provides a conduit for air exhausting from the underground workings.
B	Low Profile Eschenberg Bend	Ducting which directs air from the shaft to the ventilation fans.
C	Ventilation Fans	Twin centrifugal fans which suck air from the underground workings.
D	Evassees	9.2m high structures which exhaust air to the atmosphere.
E	Tube Bundle Room	Transportable building used for the collection and analysis of air collected in the underground workings.
F	Switch / Control Room	Controls and monitors fan operations and performance.
G	11 kV Powerline	Overland powerline which transfers power from the 66 / 11 kV sub-station at the Pit Top.
H	Transformer	Converts incoming 11 kV power to 415 V.
I	Mine Dewatering Borehole and Pipeline	406 mm borehole with 200 mm galvanized pipeline used to transfer water to the Ashton Coal Mine.
J	Secondary Shaft	A 1.2 m diameter shaft used during the construction of the ventilation shaft. Identified for possible future delivery of services underground or as an emergency egress.
K	Acoustic / Visual Bund	Shaped and vegetated spoil produced from the construction of the ventilation shaft which provides visual and acoustic screening to the east and south-east of the site.
L	Sedimentation Dam and Catch Drain	1.5 ML excavated structure for the collection of "dirty" water.
M	Access Road	An unsealed road providing access within the shaft site.

4.4 Planned Infrastructure / Facilities

4.4.1 Introduction

A review of the existing surface support infrastructure and operations at the Glennies Creek Colliery has identified a likely short to medium term requirement for additional infrastructure or changes in activities at the Pit Top Area or Forest Road Ventilation Shaft site to improve the overall efficiency of the mine.

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The following sub-sections identify the infrastructure / activities for which approval is sought and hence constitute a part of the Project to which this Part 3A application relates.

4.4.2 Pit Top Area

Figure 5 identifies nine envelopes (A to I) within which additional infrastructure will be required within the Pit Top Area, while **Table 3** describes each envelope and the planned infrastructure and purpose.

Activity envelope B is located within the “clean” water management system with all other envelopes being located in the “dirty” water management system.

TABLE 3
Additional Infrastructure – Pit Top Area

Activity Envelope (see Figure 5)	Description of Proposed Infrastructure	Location
A	Demountable bathhouse building to replace existing smaller bathhouse adjacent to the muster area.	Predominantly cleared area of approximately 20m x 30m immediately east of the existing bathhouse buildings.
B	Sealed carpark extension to improve Pit Top organisation and appearance and eliminate employee and visitor parking congestion during day-shift.	Cleared area of approximately 30m x 50m east of the existing carpark.
C	Reclaim tunnel with hoppers and associated conveyors / transfer points to automatically feed ROM coal from the RL 100 stockpile area to the approved overland conveyor.	RL 100 area. Formed from emplaced spoil and devoid of vegetation.
D	Compound with containers, sheds etc to provide additional open and covered storage capacity.	An area approximately 50m x 60m east of the existing longwall emulsion tanks. Cleared area with exotic grass cover.
E	Additional underground water supply tanks and pumps.	An irregular area approximating 100m x 50m north of the existing underground tanks. Area partly cleared, partly with primarily exotic grass cover.
F	Fenced Power Factor Correction Unit required for underground power supplies.	An area of 40m x 40m to the east of the existing 66KV / 11 kV yard and substation. Area bare or with exotic grass cover.

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Activity Envelope (see Figure 5)	Description of Proposed Infrastructure	Location
G	Demountable office and crib room buildings, water tank, chemical toilet etc to provide worksite facilities for RL 100 workforce.	An area of approximately 15m x 25m adjacent to the SC002 gantry on the RL 100 stockpile area: area formed from emplaced spoil and devoid of vegetation.
H	Extension of the RL 100 coal stockpile area to provide an additional 100,000t stockpiling capacity for use during periods of high underground production and/or CHPP downtime.	An area of approximately 1.2 ha south of the existing RL 100 stockpile area: area formed from emplaced spoil and devoid of vegetation.
I	Lateral stockpile expansion to increase emergency coal stockpiling capacity by a nominal 100,000 t.	A maximum 50 m wide westerly expansion of the RL 75 emergency coal stockpile area onto areas of emplaced spoil.

4.4.3 Forest Road Ventilation Shaft Area

Future infrastructure and/or activities to be undertaken at the Forest Road Ventilation Shaft site would be essentially confined to a single 50m diameter envelope (Envelope K), as shown on **Figure 6** and comprise:

- installation of a steel cased borehole and hopper for ballast delivery to the underground workings;
- long-term use of the secondary shaft for ballast delivery and use of the 300mm borehole (item (a) above) for supply of services underground;
- stockpiling up to 400t ballast for delivery underground. Approximately 10 25t loads ballast would be delivered to the stockpile weekly between 8.00am and 5.00pm Monday to Friday using Forest Road and the internal access road.

4.4.4 Proposed Gas Drainage Boreholes Overlying the Underground Workings

Figure 7 identifies the approximate location "envelopes" within which it is proposed to install additional gas drainage boreholes. The boreholes would be constructed and operated as set out in Section 4.3.

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**5.0 DESCRIPTION OF EXISTING ENVIRONMENT AND PRELIMINARY
ENVIRONMENTAL ASSESSMENT**

5.1 Introduction

The areas of existing and planned future infrastructure at Glennies Creek Colliery which comprise the Project as described in this application lie within an area which is dominated visually, acoustically and from an air quality perspective by the open cut coal mining developments such as Camberwell, Rix's Creek, Ashton, Mt Owen and Ravensworth East, and, with the exception of the proposed gas drainage boreholes, are located in areas which have been totally or substantially disturbed by prior mining or mining-related activities. This application predominantly covers the use of existing mining facilities for which there would be no additional environmental effects as a result of granting approval.

A Preliminary Environmental Assessment has been undertaken in accordance with the Department's draft *Preliminary Assessment Guideline*, for the proposed additional facilities, including:

- (a) identification of key issues;
- (b) analysis of the extent of adverse impacts;
- (c) evaluation of likely environmental significance of impacts.

The Preliminary Environmental Assessment has involved a walk over of the site and desk top analysis. The key issues and preliminary evaluation of likely environmental impacts are set out below.

5.2 Residential Proximity

Figure 2 shows the residences in the vicinity of the identified existing and planned facilities and activities at the Pit Top and Forest Road Ventilation Shaft Areas. The nearest residence "Dulwich", which is located 1.0 km from the Pit Top and adjacent to the Camberwell South Pit, lies within the defined Camberwell Zone Affectation. Of the other residences, the nearest not owned by mining companies, are located at a distances of 1.7 km or more.

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Gas drainage boreholes have previously been constructed and operated to within 325 metres of privately owned residences without incident. The nearest non-mine-owned residence to the proposed gas drainage borehole envelopes identified on **Figure 7** is located at a distance of 500m, with all other privately-owned residences at distances in excess of 1.3km.

The Glennies Creek Community Consultation Committee meets on a regular basis to discuss mine issues relevant to neighbouring residents.

Based on the nature of the Project to which this application relates, distances to the nearest residences and experience from mining operations to date, it is considered that the impacts from the surface mine operations will not change, and there will continue to be no significant impacts on nearby residences from the Project.

5.3 Air Quality and Noise

The local air quality and noise climate in the vicinity of the Glennies Creek Colliery are determined primarily by the large scale open cut mining developments with minimal contributions or potential for contributions from the limited surface based activities at the Glennies Creek Colliery.

Air quality and noise monitoring has been undertaken in accordance with the existing Glennies Creek (and Camberwell) development consents. Continuous air quality monitoring (in conjunction with Camberwell) and noise monitoring of the ventilation shaft (both during its construction and operation) and existing Pit Top activities have shown that existing air quality and noise levels in the vicinity of Glennies Creek activities satisfy the relevant criteria.

The preliminary environmental assessment of noise and air quality impacts from construction of additional surface facilities indicates that there will be no or minimal additional noise impacts on surrounding residences from construction activities proposed as part of the Project.

The preliminary environmental assessment of noise and air quality impacts from ongoing operations of surface facilities indicates that the activities / infrastructure identified within

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this application would not result in any measurable change to the existing air quality and noise climates.

5.4 Water Management

The Glennies Creek Colliery Pit Top Area and Forest Road Ventilation Shaft sites lie within the catchment of Glennies Creek. The Colliery does not have a licence to discharge mine water and consequently retains all water on site or transfers the water to other coal mines for their use. Erosion and/or sedimentation as a consequence of the limited disturbance associated with installation of gas drainage boreholes is managed through site selection, disturbance minimisation (area of disturbance generally less than 100 - 150m²), isolation of run-on water and collection of sediment-containing water (where required).

The Project as described would not alter this situation, nor would it warrant any notable changes to the existing surface water management system or procedures to ensure this situation continued.

5.5 Cultural Heritage

As noted in Section 5.1, all Project activities and/or infrastructure other than the proposed gas drainage boreholes are located in areas which have been totally or substantially disturbed by prior mining or mining-related activities.

The area incorporating the proposed boreholes was assessed by ERM during the preparation of the Subsidence Management Plan for Longwalls 7 to 9 and no sites of cultural heritage significance were identified in proximity to the proposed gas drainage envelopes identified on **Figure 7**.

The activities / infrastructure identified in this application would therefore not compromise cultural heritage.

5.6 Flora/Fauna

All Project activities and/or infrastructure other than the proposed gas drainage boreholes are located in areas which have been totally or substantially disturbed by prior mining or mining related activities.

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Flora and fauna assessments undertaken as part of the Subsidence Management Plan application for Longwall panels 7 to 9 identified no threatened species in the Project Area.

The activities / infrastructure identified in this application would not compromise flora and fauna.

5.7 Transport

Traffic on the public road network associated with the mine is limited to employee vehicle movements and delivery of equipment and supplies.

Use of the existing facilities and the construction of limited additional facilities on and in the vicinity of the Pit Top area will not result in any measurable change to existing traffic types or levels. Similarly, the construction of additional gas drainage boreholes will not result in any noticeable change in the nature or level or traffic of local roads.

Truck movements required for ballast deliveries along Forest Road will be restricted to two truck loads per day between 8.00am and 5.00pm, and limited to 40kph.

5.7 Visual

All proposed Project infrastructure will be small in scale, indistinguishable from existing facilities and located in areas which have been totally or substantially disturbed by prior mining or mining related activities.

Any floodlighting installed would be positioned so that it does not emit light directly into the line of sight of nearby dwellings. GCCM will develop a lighting management protocol for use of its facilities.

6.0 APPROVALS REQUIRED

No additional approvals would be required in association with this application.

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