



# DONALDSON COAL MINE AND ABEL UNDERGROUND COAL MINE

## AIR QUALITY AND GREENHOUSE GAS MANAGEMENT PLAN

### CARE AND MAINTENANCE

#### Version 3

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| 2                            | 04.08.2014        | All  | Review and update plan to incorporate MOD3 impacts to air quality.                                | Todoroski Air Sciences |
| 3                            | 03.06.2019        | All  | New plan that cover air quality for both Donaldson and Abel Mines for Care and Maintenance phase. | Donaldson Coal         |
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Appendix 1 Consultation Correspondence

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## 1. Introduction

### 1.1 Background

The Abel underground coal mine and Donaldson open cut coal mines are located in close proximity to each other and are currently managed as an amalgamated mining complex. Donaldson has ceased operations and majority of disturbed land has been rehabilitated whilst Abel is in 'care and maintenance' with restricted activities occurring across the mining complex. Activities that currently occur include water management, rehabilitation maintenance, land maintenance (including weed management etc), maintenance of mining infrastructure and environmental monitoring activities.

This Air Quality and Greenhouse Gas Management Plan (AQGGMP) serves to meet the requirements of both the Donaldson Development Consent and the Abel Project Approval. It is applicable whilst Abel is in Care and Maintenance and Donaldson in Mine Closure. A review and update to this AQGGMP will be undertaken prior to mining operations recommencing at Abel.

Due to the reduction in dust generating activities and the rehabilitation of the majority of Donaldson open cut disturbed area, air quality monitoring during care and maintenance is proposed to be reduced to reflect the current state of operation.

## 2. Project Location and Description

Donaldson mine and Abel underground mine are located approximately 23km west of Newcastle. Other nearby towns include Beresfield, located 2km north-east, and Maitland located approximately 5km north east. The mines access, entries and primary surface facilities are located off John Renshaw Drive, Blackhill. Donaldson coal mine has been rehabilitated whilst the Abel coal mine has been in care and maintenance since 2016. The plan below shows the location of the Abel area with respect to surrounding land uses.

Both mines now use the Abel surface facilities to operate administrative and care and maintenance activities.

Whilst in care and maintenance, the operation has minimal employees and is staffed 5 days a week on day shift only. Dust generating activities are minimal and the area of exposed ground has greatly reduced with the rehabilitation of the majority of the Donaldson open cut.

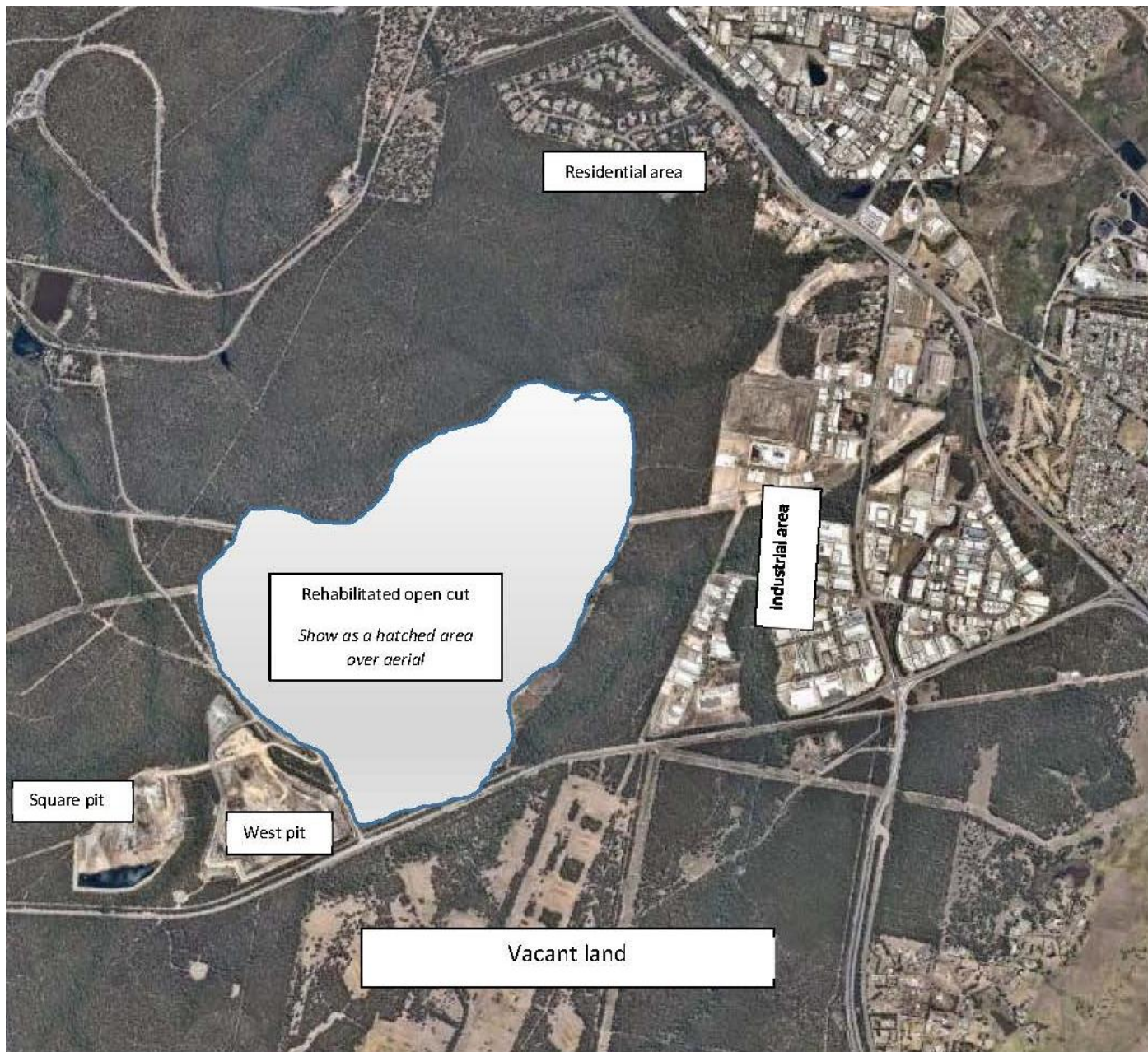


Figure 2.1 Land Uses Surrounding Abel

### 3. Statutory Requirements

This Air Quality and Greenhouse Gas Management Plan (AQGGMP) has been compiled to meet the requirements of both the Abel Coal Project Approval (05\_0136) and the Donaldson Coal Development Approvals (DA 98/01173 and DA 118/698/22). Both coal mines have a requirement to prepare and implement a management plan that describes how air quality will be managed. Both projects also hold separate Environmental Protection Licences that have a requirement to minimise dust coming from the site.

Sections 3.1 and 3.2 below list the conditions within the Abel Project Approval and Donaldson Development Consent that are relevant to this management plan and references the section within the document where the condition is met.

#### 3.1 Abel Coal Mine

The Abel Project Approval 05\_0136 was originally granted by the Minister on the 6<sup>th</sup> June 2007 and subsequently modified on three occasions for the installation of a downcast shaft, upcast shaft and facilities upgrade. This AQGGMP is required under PA 05\_0136 in Schedule 4, Condition 11;

Table 3.1 Abel Project Approval Conditions

| Ref | Requirement   | Section in this Document |
|-----|---|--------------------------|
| 11  | <i>The Proponent shall prepare and implement a detailed Air Quality &amp; Greenhouse Gas Management Plan for the project to the satisfaction of the Director-General. This plan must:</i> | This document            |
|     | <i>(a) be prepared in consultation with EPA, and submitted to the Director-General for approval within 6 months of the date of approval of MOD 3;</i>                                     | 7.2                      |
|     | <i>(b) describe the measures that would be implemented to ensure compliance with the relevant air quality criteria and operating conditions of this approval;</i>                         |                          |
|     | <i>(c) describe the measures that would be implemented to minimise the greenhouse gas emissions from the site;</i>  | 9.3                      |
|     | <i>(d) describe the proposed on-site air quality management system; and</i>   | 8.1                      |
|     | <i>(e) include an air quality monitoring program that:</i>  |                          |
|     | <i>• is capable of evaluating the operating conditions of this approval;</i>  | 10.1                     |
|     | <i>• evaluates and reports on:</i><br><i>- the effectiveness of the air quality management system; and</i><br><i>- compliance against the air quality operating conditions; and</i>       | 13                       |
|     | <i>• defines what constitutes an air quality incident, and includes a protocol for identifying and notifying the Department and relevant stakeholders of any air quality incidents.</i>   | 10                       |

Abel Coal hold Environmental Protection Licence (EPL) 12856. It is a requirement of Condition O3.1 of this licence that;

Table 3.2 Abel EPL Condition

|             |   |      |
|-------------|---|------|
| EPL<br>O3.1 | <i>'All operations and activities occurring at the premises must be carried out in a manner that will minimise dust at the boundary of the premises.'</i> | 7.22 |
|-------------|---|------|

### 3.2 Donaldson Coal Mine

The Donaldson Development Approval DA 98/01173 lodged with Maitland Council and DA 118/698/22 lodged with Cessnock Council was granted by the Minister on the 14th October 1999 and subsequently modified on two occasions for an extension of the pit limits and extension to the mine life. This AQGGMP is required within the Donaldson Development Consent in Schedule 2, Conditions 38 and 39 that state;

Table 3.3 Donaldson Development Consent Conditions

| Ref | Requirement  | Section in this Document |
|-----|--|--------------------------|
| 38. | <i>The Applicant shall prepare and implement an Air Quality Management Plan, containing strategies to manage the mine's contribution to dust deposition, TSP, PM10 and PM2.5 to the satisfaction of the Director-General, prior to the commencement of construction. The Applicant shall make copies of the Air Quality Management Plan available to the independent expert (Condition 48), OEH, Councils and the Community Consultative Committee within 14 days of approval by the Director-General.</i> | This Document            |
| 39. | <i>The Air Quality Management Plan shall:</i>  |                          |
|     | <i>(i) identify potential sources of dust deposition, TSP and fine particulates (PM10 and PM2.5) and specify appropriate monitoring intervals and locations. The purpose of the monitoring is to evaluate, assess and report on these emissions and the ambient impacts with the objective of understanding the mine's contribution to levels of dust deposition, TSP and fine particulates in ambient air around the mine site;</i>   | 7.1<br>8.1               |
|     | <i>(ii) provide the mine's monitoring plan having regard to local meteorology and the relevant Australian Standards, identifying the methodologies to be used, including justification for monitoring intervals, weather conditions, seasonal variations, selecting locations, periods and times of measurements;</i>  | 8                        |
|     | <i>(iii) provide the design of any modelling or other studies, including the means for determining the contribution to dust deposition, TSP and fine particulates from the development;</i>  | 10                       |
|     | <i>(iv) provide details of dust suppression measures for all sources of dust from the development (including the haul road and the rail loading site);</i>   | 7.22                     |

|  |  |      |
|--|--|------|
|  | (v) provide details of actions to ameliorate impacts if they exceed the relevant criteria; and   | 10.3 |
|  | (vi) provide the design of the reactive management system intended to reduce the day-to-day impacts of dust and fine particulates due to the mine's operation. | 8    |

Donaldson Coal also hold Environmental Protection Licence 11080. At the time of compiling this document, an application to surrender EPL 11080 had been made with the NSW Environmental Protection Authority and was yet to be determined. Table 3.4 outlines the relevant air quality requirement of this licence.

Table 3.4 Donaldson EPL Conditions

| Ref   | Requirement   | Section in this Document |
|-------|---|--------------------------|
| O3.1. | The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.  | 7.22                     |
| O3.2  | All trafficable areas, coal storage areas and vehicle manoeuvring areas in or on the premises must be maintained, at all times, in a condition that will minimise the generation, or emission from the premises, of wind-blown or traffic generated dust. | 7.22                     |

## 4. Air Quality Descriptors

The Project Approvals require the compliance of the following dust metrics:

- Total Suspended Particulates (TSP);
- Particulate Matter less than 10µm (PM10); and
- Deposited dust.

All of the criteria refer to the mass of the substance measured over a period of time.

TSP refers to the total dust particles that are suspended in the air. PM10 is a subset of TSP, as is deposited dust. TSP is assessed as defined by Standards Australia AS / NZS 3580.9.3:2015: Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – Total suspended particulate matter (TSP) – High Volume sampler gravimetric method (AS 3580.9.3:2015). This method can be used for regulatory compliance monitoring.

PM10 refers to particulate matter with an aerodynamic diameter less than 10µm. PM10 is assessed as defined by Standards Australia AS / NZS 3580.9.6:2015: Methods for sampling and analysis of ambient air – Determination of suspended particulate matter – PM10 high volume sampler with size selective inlet – Gravimetric method. This method can be used for regulatory compliance monitoring.

Deposited dust relates to the largest dust particles in the air. These particles rarely travel far from the source as they rapidly settle under gravity. Deposited dust is assessed as insoluble solids as defined by Standards Australia AS / NZS 3580.10.1:2016: Methods for sampling and analysis of ambient air – Determination of particulate matter – Deposited matter – Gravimetric Method. This method can be used for regulatory compliance monitoring.



## 5. Air Quality Criteria

### 5.1 Abel Coal Mine

The air quality criteria as presented in the Abel Project Approval are summarised in Table 5-1.

Table 5.1 Summary of applicable air quality criteria

| Pollutant                                | Averaging period | <sup>d</sup> Criterion                 |
|--|------------------|--|
| Total suspended particulate (TSP) matter | Annual           | <sup>a</sup> 90 µg/m <sup>3</sup>      |
| Particulate matter < 10 µm (PM10)        | Annual           | <sup>a</sup> 30 µg/m <sup>3</sup>      |
| Particulate matter < 10 µm (PM10)        | 24 Hour          | <sup>a</sup> 50 µg/m <sup>3</sup>      |
| Deposited dust <sup>c</sup>              | Annual           | <sup>b</sup> 2 g/m <sup>2</sup> /month |
| Deposited dust <sup>c</sup>              | Annual           | <sup>a</sup> 4 g/m <sup>2</sup> /month |

Notes:

- a. Total impact (ie incremental increase in concentrations due to the project plus background concentrations due to other sources);
- b. Increment impact (ie incremental increase in concentrations due to the project on its own);
- c. Deposited dust is to be 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; and
- d. 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.

### 5.2 Donaldson Coal Mine

The air quality criteria as presented in the Donaldson Project Approval are summarised in Table 5-2.

Table 5.2 Summary of applicable air quality criteria

| Pollutant                                | Averaging period | Criterion                 |
|--|------------------|---------------------------|
| Total suspended particulate (TSP) matter | Annual           | 90 µg/m <sup>3</sup>      |
| Deposited dust                           | Annual           | 4 g/m <sup>2</sup> /month |

## 6. Air Quality Conditions

### 6.1 Particulate Monitoring

Results of High Volume Air Sampler (HVAS) monitoring by Donaldson Coal from 2000 to 2018 is presented in Figures 6.1, 6.2 and 6.3.

The annual average PM<sub>10</sub> and TSP concentrations at the Black Hill and Beresfield monitoring stations has remained below the relevant criteria since the projects commenced. The 24hour maximum criteria has on occasions exceeded 50 µg/m<sup>3</sup> at both Blackhill and Beresfield Golf Course and these exceedances have been associated with events that have impacted regional air quality such as bushfire smoke and dust sourced from inland NSW during strong westerly winds.

The figures generally indicate that particulate matter concentrations are nominally highest during spring and summer with the warmer weather raising the potential for pollen, bushfires and drier ground which results in higher levels of non site related windblown particulate matter. Rainfall has a large influence on PM<sub>10</sub> levels with wet summers typically recording lower dust levels than dry summers.

There has been no discernible trend in PM<sub>10</sub> or TSP levels since the closure and rehabilitation of the Donaldson Mine or Abel Coal Mine entering Care and Maintenance in 2016 with dust levels reflecting the air quality at regional dust monitors.

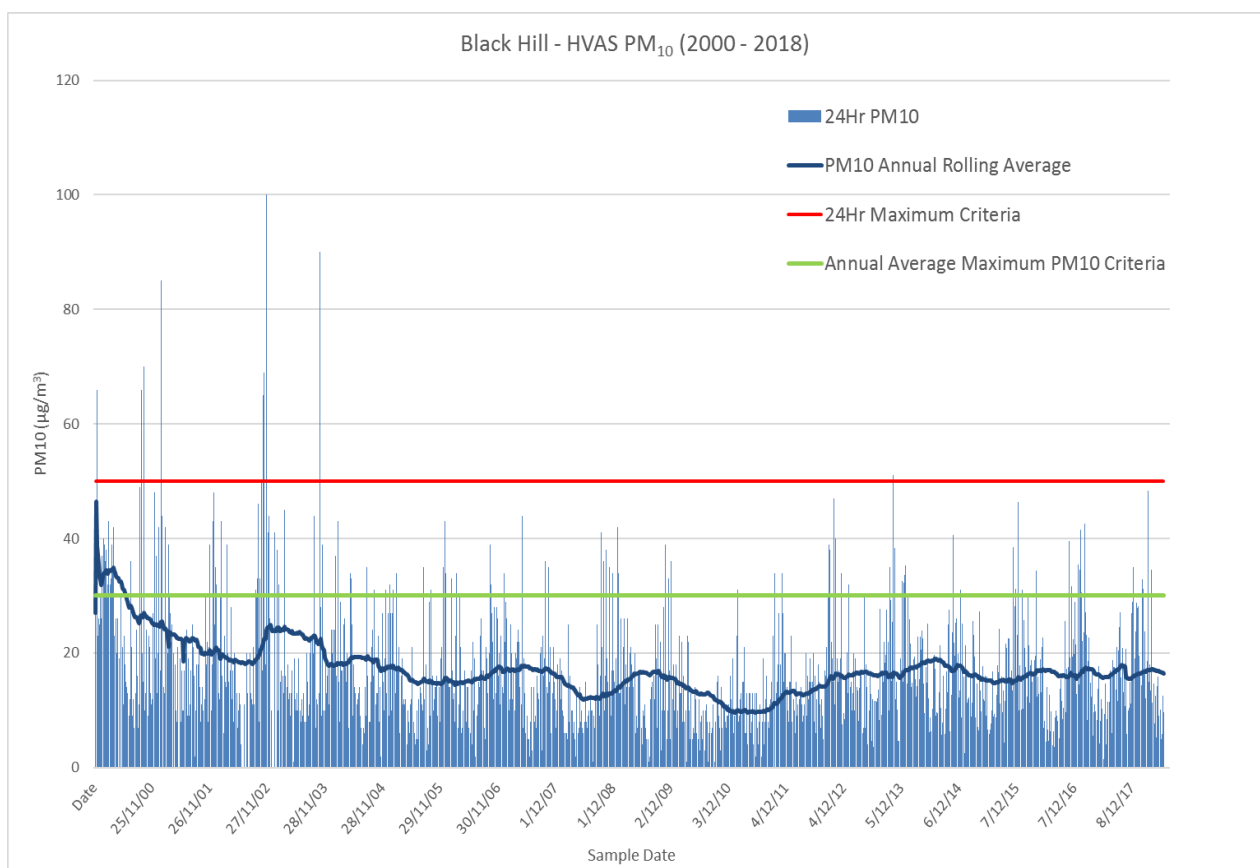


Figure 6.1- Black Hill PM<sub>10</sub> (2000 – 2018)

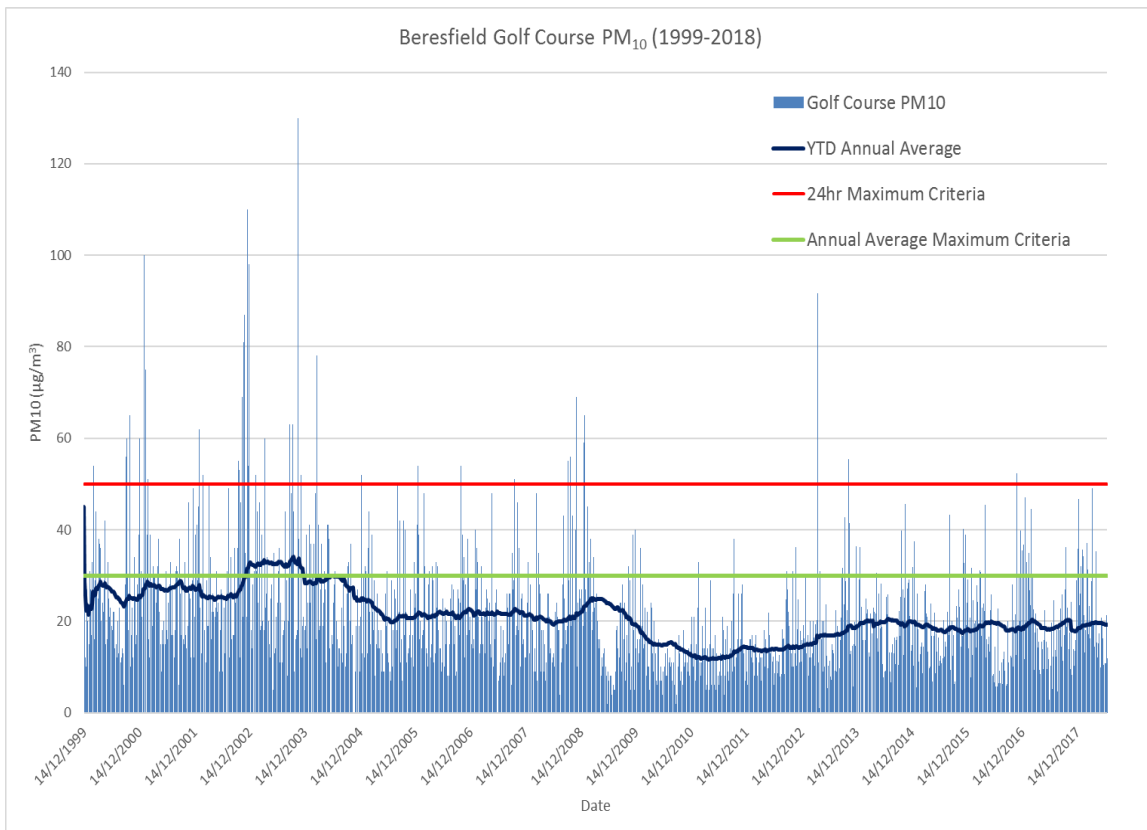


Figure 6.2- Beresfield Golf Course PM10 1999 to 2018

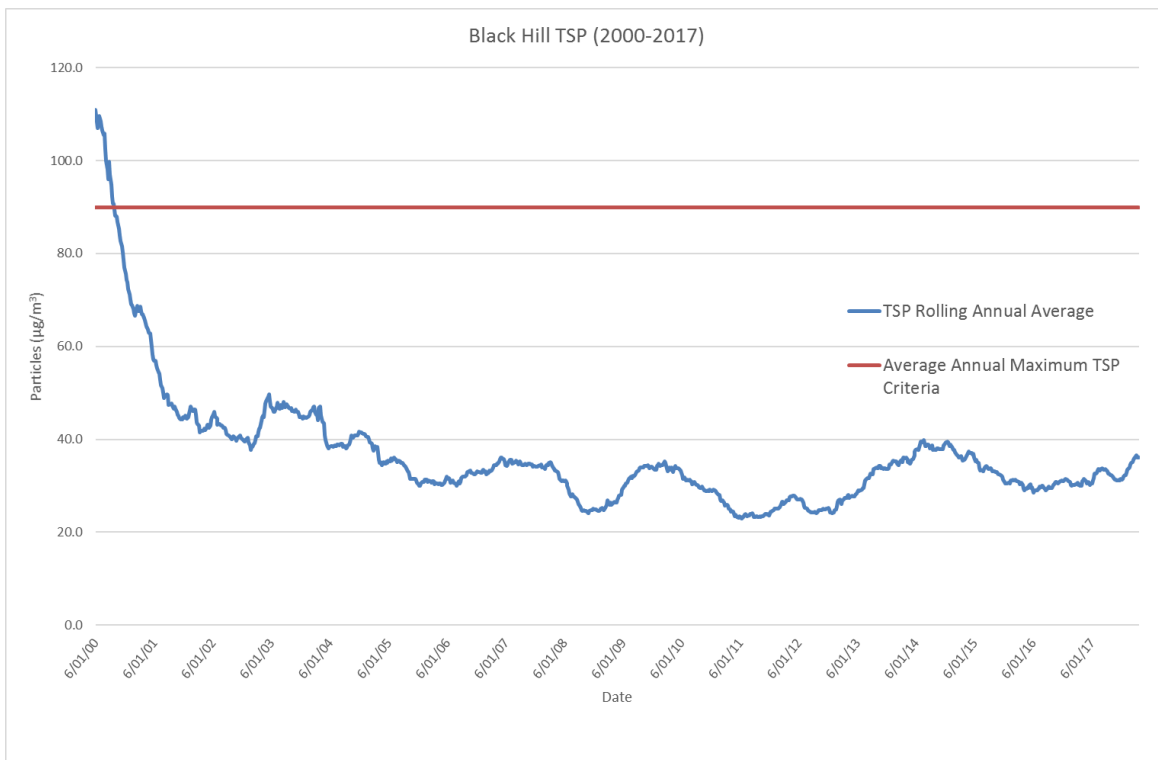


Figure 6.3 – Black Hill TSP 2000 to 2018

## 6.2 Dust Deposition Monitoring

Results of dust deposition monitoring from the deposition gauges operated by Donaldson Coal from 2000 to 2018 are presented in Table 6-1.

Generally, the deposition gauges have recorded levels below criterion of 4g/m<sup>2</sup>/month which indicate that the air quality in terms of deposition can be considered good. Elevated readings above 4g/m<sup>2</sup>/month are typically associated with contaminated samples that elevate the annual average.

As per HVAS monitoring, there has been no discernible trend in dust deposition levels since the closure and rehabilitation of Donaldson Mine or Abel Coal Mine entering Care and Maintenance in 2016.

Table 6.1 Dust Deposition 2000 – 2018 Insoluble Matter Annual Average

|      | D1  | D2  | D3  | D4  | D7  | D8  | D9  | D11 | D12 (D3A) |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----------|
| 2000 | 1.3 | 0.9 | 1.0 | 0.8 | 2.9 | 2.6 | 0.8 | ND  | ND        |
| 2001 | 1.0 | 1.0 | 1.8 | 0.8 | 2.7 | 4.7 | 1.0 | 1.3 | ND        |
| 2002 | 1.3 | 1.0 | 2.4 | 1.0 | 1.7 | 6.0 | 1.1 | 1.5 | ND        |
| 2003 | 0.9 | 0.7 | 1.1 | 1.0 | 1.4 | 2.3 | 1.2 | 1.9 | ND        |
| 2004 | 1.3 | 0.9 | 2.2 | 1.3 | 1.3 | 4.0 | 1.5 | 1.5 | ND        |
| 2005 | 1.1 | 1.8 | 1.5 | 1.3 | 1.4 | 2.8 | 1.4 | 1.7 | ND        |
| 2006 | 1.4 | 1.4 | 1.4 | 1.3 | 1.2 | 2.2 | 1.2 | 1.7 | ND        |
| 2007 | 1.5 | 0.7 | 1.5 | 1.0 | 1.0 | 1.5 | 0.8 | 1.1 | ND        |
| 2008 | 1.1 | 1.4 | 2.9 | 1.0 | 0.7 | 4.2 | 0.9 | 1.6 | ND        |
| 2009 | 1.3 | 4.3 | 2.0 | 2.8 | 1.2 | 2.5 | 1.7 | 1.5 | ND        |
| 2010 | 0.8 | 2.6 | 1.9 | 1.0 | 0.7 | 1.1 | 0.8 | 1.0 | 0.8       |
| 2011 | 0.7 | 1.2 | 1.8 | 0.8 | 0.9 | 1.9 | 0.8 | 0.9 | 1.0       |
| 2012 | 0.9 | 1.4 | 1.1 | 1.2 | 0.8 | 2.3 | 1.2 | 1.2 | 1.1       |
| 2013 | 0.6 | 1.0 | 2.0 | 1.1 | 1.0 | 1.9 | 1.1 | 1.3 | 1.3       |
| 2014 | 0.6 | 1.3 | 2.4 | 0.9 | 0.8 | 1.0 | 1.0 | 1.0 | 1.9       |
| 2015 | 2.0 | 1.2 | 2.3 | 1.0 | 0.8 | 1.0 | 0.9 | 1.0 | 0.9       |
| 2016 | 0.5 | 0.5 | 1.6 | 1.0 | 0.8 | 1.0 | 0.9 | 0.9 | 0.9       |
| 2017 | 0.5 | 2.3 | 1.1 | 1.5 | 1.4 | 1.2 | 1.1 | 1.0 | 1.5       |
| 2018 | 0.6 | 1.0 | 1.5 | 0.8 | 1.0 | 1.3 | 1.5 | 1.4 | 1.1       |

ND = No data

## 6.3 Meteorological Conditions

Figure 6.4 presents average seasonal windroses for the Donaldson/Abel Mine area as recorded at the Abel meteorological station.

On an annual basis, winds from the west-northwest are most frequent. During summer, winds can be quite variable, although typically from the east to the south-southeast. In autumn, the winds are variable with a range of generally lower wind speeds from the northwest to the south-southeast. In winter and spring, west-northwest winds dominate the wind distribution.

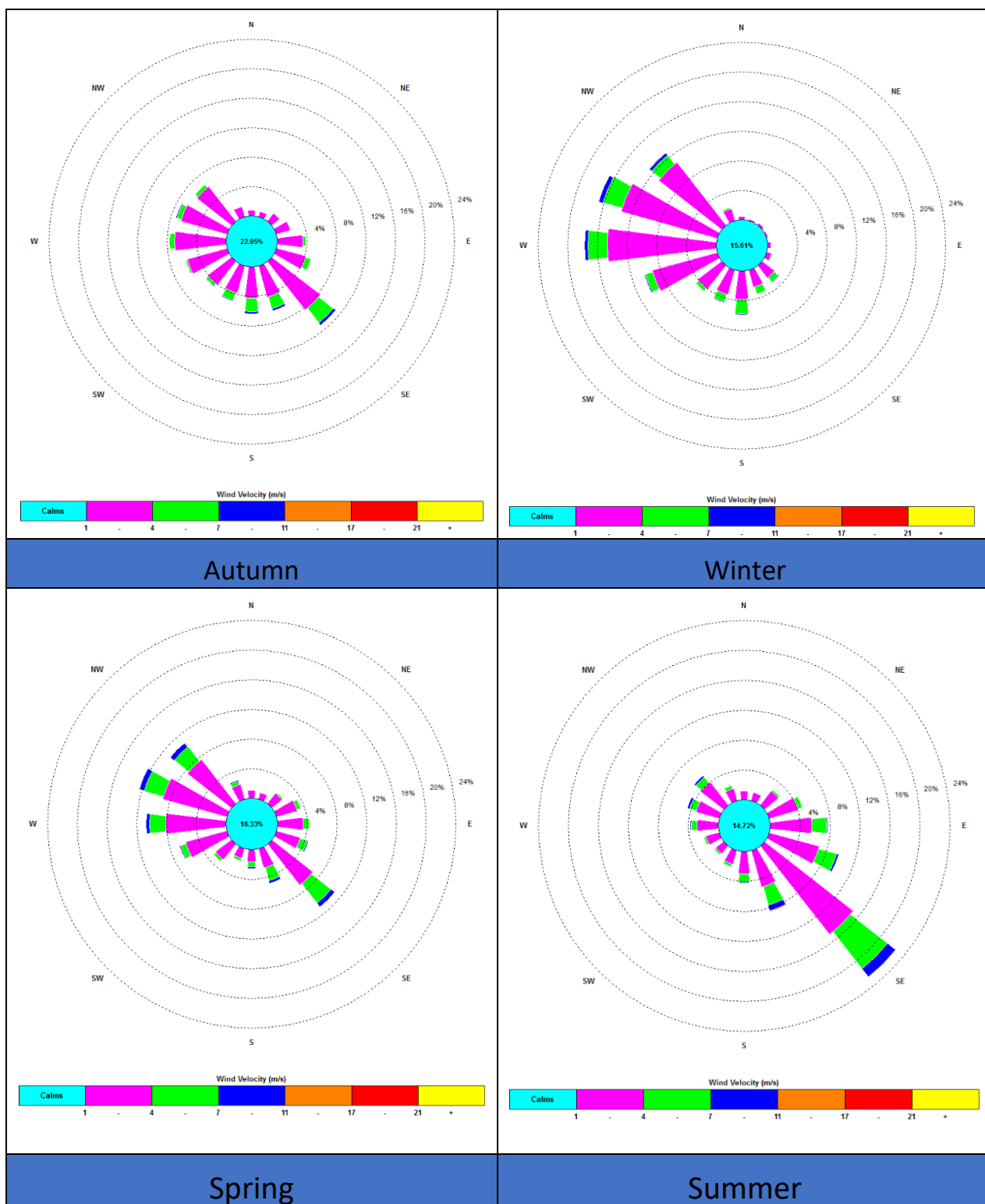


Figure 6.4 – Abel Weather Station Windroses

## 7. Air Emissions and Control

### 7.1 Emission Sources

The main sources of dust generating activities identified for the rehabilitated Donaldson mine and the Abel mine whilst in Care and Maintenance include:

- Minor traffic on access tracks
- Mine ventilation system; and
- Wind erosion of exposed areas.

The generation of dust is now greatly reduced as minimal activities occur onsite. There are no longer any heavy vehicle movements, material handling or land disturbance that are typically associated with the generation of dust within a coal operation.

### 7.2 Air Quality Control Measures

#### 7.21 Odour

Historically, spontaneous combustion has been the primary risk for odour events at mine sites. Whilst all coal stockpiles have been removed from the Abel underground run of mine pad, there has been no history of spontaneous combustion occurring onsite. Whilst in care and maintenance it is not foreseen that this situation will change.

#### 7.22 Dust

Since 2016 when the Abel mine entered care and maintenance, minimal dust generating activities have occurred. The two main sources of dust are light vehicle traffic on unsealed access tracks and exposed areas.

Light vehicles are mainly used to transport employees and contractors onsite to conduct maintenance and environmental works. The primary access roads are sealed and result in negligible dust whilst unsealed roads receive minimal usage.

Controls in place to reduce dust onsite during care and maintenance include;

- Restricting speeds on roads to 40km/h
- Preferential usage of sealed roads
- Site induction include air quality requirements, and implementation of dust minimisation into standard operating procedures.
- Continued PM10 monitoring and measurement of air quality within the Blackhill area.
- Using dust suppression for activities or projects that have been identified to potentially cause dust emissions.
- Revegetate disturbed areas that are not proposed for future use.
- Restrict activities on disturbed areas to promote surface crusting.
- No additional clearing activities.
- Review and investigation of dust exceedances.
- Regular review of air quality data to assess compliance.
- Bloomfield Coal Handling Plant area has a 3-sided enclosure at ROM Pad, enclosed conveyors and chutes, internal and external water sprays.
- Bloomfield coal product is loaded to achieve a streamlined and consistent profiled coal surface within rail wagons.

## 8. Air Quality Monitoring Program

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### 8.1 Care and Maintenance Monitoring

The main objective of the air quality monitoring program is to enable the assessment of compliance against the air quality criteria in Tables 5.1 and 5.2 at the nearby sensitive receptors. The air quality monitoring network has been reviewed and updated since the operation has moved into care and maintenance. The air quality monitoring network will include the following during care and maintenance:

- One meteorological station to record information on wind speed, wind direction, sigma-theta and temperature at 10-minute intervals, equipped and operated in accordance with AS 2922-1987.
- One real-time air quality monitoring unit measuring PM10 located at the Black Hill Public School

The general location of the air quality monitoring network is shown in Figure 8.1.

Data collected from the air quality monitoring network will be reviewed and reported monthly (or more frequently in the event of complaints) by the site Environmental Officer and an annual report will be prepared for the relevant government agencies and placed on the company website. Data in the reports will be provided in tabular and/or diagrammatical form to allow easy comparison with the air quality criteria. Monitoring results will also be posted on the Donaldson Coal website monthly.

During care and maintenance, the reactive monitoring system at Donaldson Coal is limited to a continuous PM10 monitor located at the Black Hill School. This monitor, together with the EPA's Beresfield PM10 monitor, are used to review continuous PM10 levels in the Donaldson Coal area. These monitors are reviewed when personnel are present at Donaldson Coal. In the event PM10 1 hour levels exceed  $100\mu\text{g}/\text{m}^3$  an alert will be sent to the Donaldson Coal Environment and Community Coordinator who will ensure the elevated PM10 levels are not being contributed to from site.

During Care and Maintenance, there will be limited dust generating activities occurring to warrant a substantial reactive monitoring system with the six operational employees onsite all competent in monitoring and reacting to visual dust levels.

The Donaldson / Abel Mine will communicate and cooperate with the neighbouring operations with regards to the air quality monitoring network. In the case of an exceedance and/or complaint, Donaldson Coal will investigate the cause of such event, and if preventable, take appropriate measures to avoid future events occurring. The Donaldson / Abel Mine will work cooperatively with the Bloomfield mine to ensure compliance with the cumulative air quality assessment criteria, and investigate air quality impacts leading to the exceedance and/or complaint.

This monitoring network will be used together with visual inspections by site personnel to ensure dust levels are managed in accordance with Project Approval and Environmental Protection Licence conditions.

### 8.2 Reduction in Air Quality Monitoring

The air quality monitoring program for Abel and Donaldson has been reviewed to reflect the current situation across the complex. Since mining began in 2000, air quality monitoring has focused on assessing the impacts of active mining on the surrounding environment. With no mining undertaken since 2016, or planned in the near future, air quality monitoring will now focus on monitoring post-mining air quality. This has resulted in a revised monitoring program.

It is proposed that 3 HVAS monitors and all dust deposition gauges be removed from the air quality monitoring program.

The Black Hill School had two HVAS monitoring PM10 and TSP and a PM10 continuous dust monitor during mining operations of both Abel and Donaldson. During Care and Maintenance, the two HVAS are proposed to be removed as the PM10 continuous monitor is retained and will provide representative dust levels at this location. The PM10 HVAS located at Beresfield Golf Course is also proposed to be removed.

TSP will not be directly monitored although the PM10 continuous monitor will provide a representation of average TSP levels. There is 18 years of data providing TSP and PM10 data at the Black Hill location with a close trend between the two parameters. Historical data indicates PM10 is typically 50% (+/- 10%) of the TSP. As a result, TSP compliance will be assessed using the continuous PM10 monitor. In the event PM10 24hr average exceeds  $160\mu\text{g}/\text{m}^3$ , the TSP will be deemed to have exceeded the sites TSP criterion unless an alternative source of particulate matter can be positively identified.

All dust deposition monitoring is proposed to cease upon approval from relevant authorities. For the past 10 years all dust gauges have remained under the long term criteria for deposited dust set within the Project Approval. Historically dust deposition gauges have been subject to high levels of contamination and vandalism. This contamination impacts results and suggest a lack of accuracy in these monitoring devices. PM10 continuous monitors are now preferred to assess dust emissions from a source due to their accuracy and real time provision of data. For this reason, dust deposition gauges have been recommended for decommissioning. This is consistent with the 2019 Independent Environmental Audit recommendations.



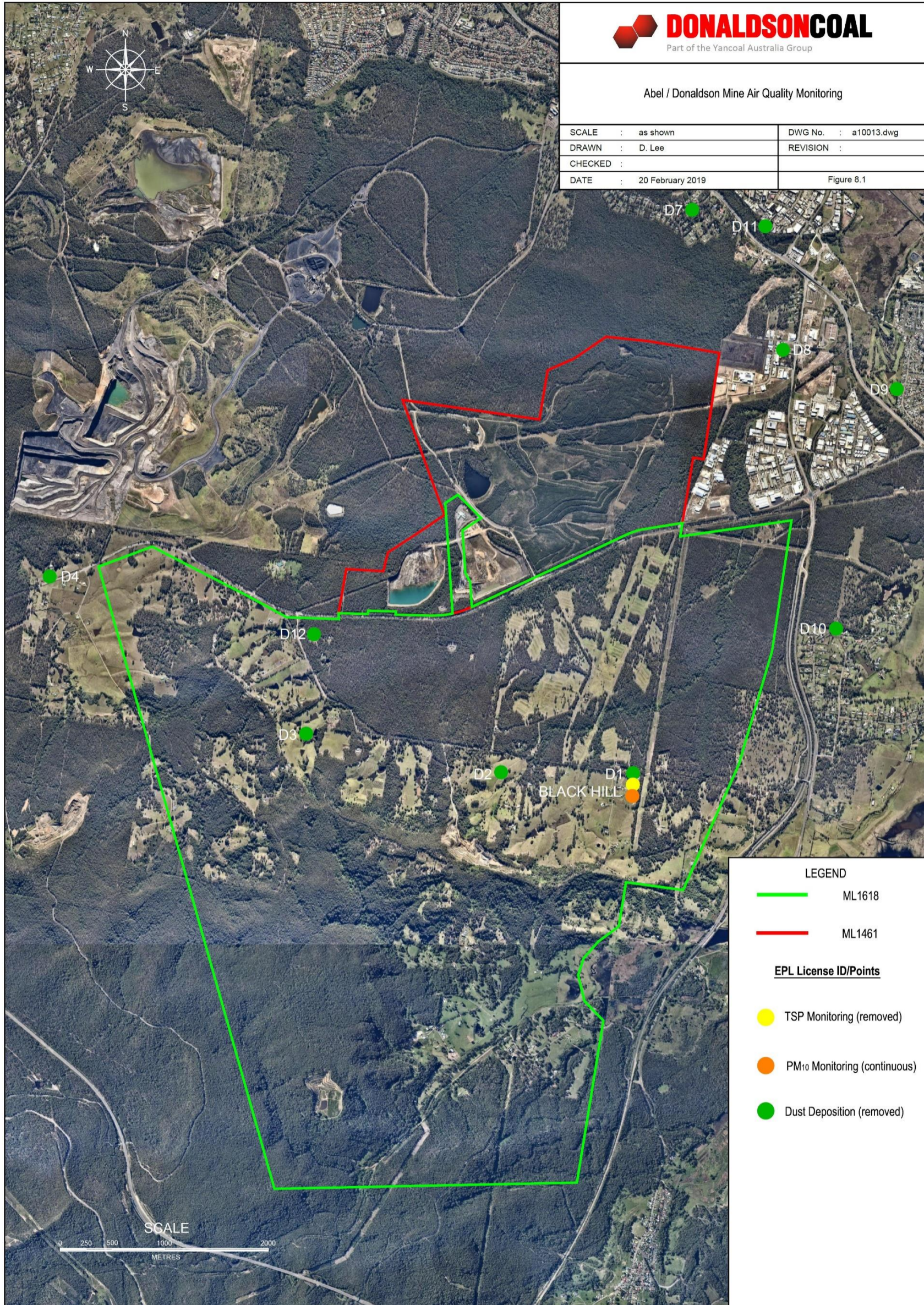


Figure 8.1 Abel / Donaldson Air Quality Monitoring Network

## 9. Greenhouse Gas Management Plan

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### 9.1 Introduction

The generation and emission of greenhouse gases (GHGs) as a result of anthropogenic activities can contribute to impacts on the environment. Donaldson Coal monitor, manage and report on GHG's from Abel mine and this will continue during Care and Maintenance of the operation.

### 9.2 Green House Gas Emissions

GHG emissions attributable to Abel Underground mine may arise from the following sources:

#### Scope 1 Emissions:

- Fugitive emissions of carbon dioxide and methane released from coal seams when the coal is mined;
- Combustion of diesel fuel in the mine fleet, light vehicles and stationary diesel powered equipment and in explosives; and
- Combustion of petrol and other hydrocarbons in internal combustion engines.

#### Scope 2 Emissions:

- Emissions at the power station from the generation of electricity purchased for use onsite.

#### Scope 3 Emissions:

- The transport of consumables to site, e.g. diesel and electricity;
- The transport of the product coal to the Port of Newcastle and the transport of the product coal overseas; and
- The final use of the product coal, e.g. the combustion of the product coal in power generating facilities.

### 9.3 Energy Efficiencies and Greenhouse Gas Management

The Abel/ Mine will continue to implement all reasonable and feasible measures during care and maintenance to minimise the release of GHG emissions from the site. A summary of various mitigation and energy management measures to help reduce GHG emissions include:

- monitoring the fuel usage and regularly maintaining the diesel equipment;
- optimising conditions for fleet operations;
- use of high efficiency electric motors;
- where possible, maximising energy usage during off-peak hours and reducing during peak hours;
- efficient lighting systems with photo-sensors and timers;
- a review of alternative renewable energy sources;
- Usage of one ventilation fan instead of both;
- Efficient usage of air compressors for pumping by using float switches; and
- Turn non security lights off of a night time.

## 9.4 Greenhouse Gas Reporting

Abel / Mine report greenhouse gas emission under the National Greenhouse and Energy Reporting Scheme (NGERS). This reporting is required on an annual basis and uses data collected between the 1<sup>st</sup> of July and 30<sup>th</sup> of June each year. This reporting will continue throughout the care and maintenance phase whilst ever Abel/ trigger the requirement for reporting under NGERS.

# 10. Compliance Protocol

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## 10.1 Compliance Evaluation

Compliance with the air quality criteria in Tables 5.1 and 5.2 requires a direct or indirect assessment of measured results.

The sites air quality monitors in conjunction with the regional air quality monitors operated by the NSW EPA are distributed around the complex so that when measured levels are below the air quality criteria, compliance is demonstrated.

However, measured levels above the criteria do not necessarily mean non-compliance. Dust-generating sources not from the mine and resulting in exceedances in air quality criteria can usually be identified through further assessment of the data in consideration of the meteorological conditions and the path of the wind from the source to the monitor.

In the case of measured levels above the criteria it may be that indirect methods are needed to ascertain whether compliance is achieved.

For 24-hour average PM10, compliance can be inferred if measured dust levels at a site between a receptor and the mine are below the criteria.

It is permissible to exclude extraordinary events, such as “bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed by the Director-General”.

To do this, generally requires that the mine-only incremental 24-hour average PM10 dust level to be established and for this level to be below the criteria to demonstrate compliance. This level will be inferred as the difference between the upwind and downwind measured 24-hour average PM10 levels at the mines and the EPA’s monitors, however, consideration of the following is required:

- The assessment requires steady prevailing winds which represent a constant direction;
- The path taken by the airborne particle matter when examining the origin of the dust arriving at a receptor. Be sure to consider the path over time and not just an average wind direction for an hour or day;
- Dust generating activities occurring at Abel/ at the time;
- A parcel of air can take significant time to travel across the site, pick up dust particles and arrive at a receptor. The time lag (between upwind events and when the upwind air arrives at a downwind receptor) will usually need to be considered in approximating mine-only incremental dust levels; and
- Dust levels downwind of a major dust source can have a narrow path under certain conditions, and measured levels at a location somewhat to the side of the downwind axis of the prevailing wind can be substantially lower than directly along the axis.

Additional assessment of air quality monitoring results will be undertaken by qualified air quality specialists if the following occurs:

- An exceedance against the impact assessment is identified using the methods described above; and
- A request for acquisition is received from a privately owned residence.

## 10.2 Reporting for Compliance

An air quality incident as required under PA 05\_0136 is defined as ‘any non-compliance with, or exceedance of the Abel project approval or Donaldson development consent air quality criteria, that is caused by activities at the Abel or Donaldson Mines’.

When a non-compliance of the air quality assessment criteria occurs, and is attributed to Abel Mine, the relevant regulatory authority will be notified. For non-compliances of the Project Approval criteria the Department of Planning and Environment will be notified within as soon as the non-compliance has been identified with a report provided within 7 days of notification. A report will be provided detailing:

- Date, time and nature of exceedance / incident;
- Cause (or likely cause) of the exceedance / incident;
- Descriptions of immediate actions taken; and
- Description of proposed measures to further address the exceedance / incident, if required.

The Abel Environment and Community Relations Superintendent will be responsible for notifying the relevant authority of any non-conformances.

## 10.3 Contingency Plan

Where the compliance evaluation indicates non-compliance with the assessment criteria, the following actions will be undertaken:

- Identify site activities occurring during non-compliance;
- Determine the most likely source of the emissions;
- Review the process and current dust controls on site; and
- Implement an alternative to reduce emissions where feasible / practicable;

If a non-compliance is identified and attributable to Donaldson operations, the corrective action will involve supplementary monitoring to identify the source of the noncompliance, and will involve modification of activities to avoid any recurrence or minimise its adverse effects.

## 10.4 Compliance Management

All complaints are investigated. Any incident or complaint regarding air quality will be recorded and investigated to identify wherever possible the specific cause then corrective action will be implemented where necessary and feasible to do so. The following would be conducted:

- Review of management practices to systematically identify and implement options to modify site practices, to ensure effective control of dust-generating activities to achieve compliance with the air quality criteria.
- All complaints will be documented by appropriate personnel on the complaints register with correction action taken.

The complaints register will document the following information of each complaint:

- Date and time of complaint was lodged;
- Details of complainant (if provided);

- Nature of complaint;
- Action taken and reasoning behind action; and
- Follow up with the complainant.

The complainant will be advised of any actions implemented.

## 11. Accountabilities and Training

### 11.1 Roles and Responsibilities

Air quality management roles and responsibilities are listed in Table 11-1.

Table 11.1 – Roles and Responsibilities

| Role   | Responsibility   |
|--|--|
| Operations Manager                                 | <ul style="list-style-type: none"> <li>• Provide sufficient resources to manage air quality related risks and progress opportunities for improvement.</li> <li>• Identify and allocate sufficient resources to manage air quality related risks by supporting AQGGMP implementation.</li> </ul>  |
| Environment and Community Relations Superintendent | <ul style="list-style-type: none"> <li>• Oversee the implementation, monitoring and review of the AQGGMP in accordance with applicable requirements.</li> <li>• Record, investigate and respond to air quality related incidents and complaints in accordance with complaint and incident management procedures.</li> <li>• Periodically assess dust management performance.</li> <li>• Provide for the training to employees and contractors for the implementation of dust management related controls, systems and procedures.</li> <li>• Implement, monitor and review programs, systems and procedures linked to the AQGGMP.</li> <li>• Monitor and review data collected as part of air quality monitoring network and assess compliance.</li> </ul> |
| Employees  | <ul style="list-style-type: none"> <li>• Conduct work activities in a manner that minimises dust emissions.</li> <li>• Report excessive dust emissions to appropriate supervisor.</li> </ul>   |

### 11.2 Awareness and Training

Donaldson Coal provides training commensurate with the roles and responsibilities of personnel outlined in Table 11-1.

Training implemented at Abel/Donaldson Mine with respect to air quality management includes the following:

- Site familiarisation inductions provided to all new employees and contractors;
- Eastern Region Generic Yancoal Induction provided to all employees and contractors;
- Issue specific training sessions provided to employees and contractors as required.

## 12. Review Procedure

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The performance of the AQGGMP will be reviewed at least every 3 years, after an air quality incident or as requested by the Secretary. The review will include:

- A review of the monitoring results of the development over the preceding year/s;
- Identification of any failure to meet performance measures/criteria over the preceding year, and a description of what actions were (or are being) taken to ensure these are met; and,
- A description of what measures will be implemented over the coming year to improve the performance of the air quality management system.

The AQGGMP will be reviewed within three months of the submission of a 3 year independent review and updated to the satisfaction of the Secretary where necessary. The AQGGMP will also be reviewed and updated in consultation with the secretary prior to the status of the project changing from care and maintenance to operational at Abel or within three months of any exceedance of the Project Approval criteria.

Any major amendments to the AQGGMP that affect its application will be undertaken in consultation with the appropriate regulatory authorities and stakeholders. Minor changes such as formatting edits will be made with version control.

The AQGGMP will also be reviewed due to:

- Deficiencies being identified;
- Introduction of additional mitigation measures or controls;
- Results from the monitoring and review program, including exceedances of criteria;
- Recommendations resulting from the monitoring and review program;
- Changing environmental requirements;
- Improvements in knowledge or technology becoming available;
- Changes in legislation;
- Identification of a requirement to alter the AQGGMP following a risk assessment; or
- Updating of the mine operating plan.

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## 13. Evaluating and Reporting

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The Donaldson Operations will adhere to the additional procedures and environmental management, reporting and auditing requirements in accordance with each Project Approval.

Following monitoring results which indicate an exceedance of the relevant air quality criteria outlined in Sections 5.1 and 5.2, Abel/Donaldson Mine shall notify the affected landowner and provide a copy of the NSW Health fact sheet entitled "Mine Dust and You".

If an affected landowner considers the Abel Mine is exceeding the relevant criteria in Sections 5.1 and 5.2, they may request from the Secretary for an independent review of impacts that would include monitoring and identifying measures to be implemented to ensure compliance.

An annual review will be prepared each year to review the environmental performance of the operation and include a comprehensive review of air quality monitoring results, complaint records, identification of air quality trends, identification of discrepancies between the predicted and actual air quality impacts of the project and describe measures taken to improve environmental performance.

Air quality related reporting including monitoring results, plans and programs are to be provided on the Donaldson Coal website in accordance with the requirements of the Project Approvals.

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## 14. References

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### 14.1 Legislation

*Protection of the Environment Legislation Amendment Act 2011*

*Protection of the Environment Operations Act 1997 (POEO)*

*Protection of the Environment Operations (General) Regulation 2009*

*Coal Mine Health and Safety Act 2002*

*Coal Mine Health and Safety Regulation 2006*

### 14.2 Licences

Abel Coal Project Approval (05\_0136)

Donaldson Coal Development Approval for DA 98/01173 and DA118/698/22

Donaldson Coal Mine EPL No 11080

Abel Underground Coal Mine EPL No 12856

## Appendix 1 Consultation Correspondence



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 PHONE: +61 2 4015 1100  
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 ABN 87 073 088 945

30<sup>th</sup> April 2019

Mr. Jack Murphy  
 Environmental Assessment Officer  
 Resource Assessments, Planning Services  
 Department of Planning & Environment  
 GPO Box 39  
 SYDNEY NSW 2001

Dear Jack,

### Re: Submission of Donaldson / Abel Draft Management Plans

Further to the Department's correspondence dated 6<sup>th</sup> December 2018 regarding the above, we advise that the Abel Coal Mine submitted the Independent Environmental Audit (IEA) Report on 11<sup>th</sup> February 2019 to the Department's Singleton Compliance Unit.

The 2018 Abel IEA triggered the revision of several management plans that are attached with this correspondence in draft format for the Department's review. Donaldson Coal has also sought comment from relevant Agencies and interested parties. Several of the Management Plans required under both PA 05\_0136 (Abel Underground Mine) and DAs 118/698/22 and 98/01173 (Donaldson Open Cut) have been integrated as the relevant management actions and mitigation measures are consistent across both projects. All Management Plans have been reviewed and those listed below have been updated to reflect the current status of the operations during care and maintenance.

Below is a list of submitted management plans, together with the relevant agency that has been asked to comment.

| Management Plan                                | Relevant Agency                        |
|--|--|
| Air Quality and Greenhouse Gas Management Plan | EPA                                    |
| Noise Management Plan                          | EPA, OEH                               |
| Flora and Fauna Management Plan                | NRAR, OEH, Councils                    |
| Waste Management Plan                          | OEH, DoP-RR                            |
| Tetratheca juncea Management Plan              | OEH                                    |
| Water Management Plan                          | EPA, NRAR                              |
| Rehabilitation Management Plan                 | DoP-RR, OEH, NRAR and Councils         |
| Aboriginal Management Plan                     | Aboriginal Community, Councils and OEH |

Please note that Management Plans required under Schedule 3 of PA 05\_0136 relevant to the Extraction Plan are current and have not been revised.

The Blast Management Plan required under the Donaldson Open Cut Consent (DAs 118/698/22 and 98/01173) has not been revised as there is no longer a requirement to conduct any future blasting at the rehabilitated Donaldson Open Cut Mine.

The submitted Management Plans cover the current period of Care and Maintenance and may be updated where required prior to the recommencement of operations at the Abel Mine.



Upon receiving feedback from DP&E and relevant agencies, Donaldson Coal will review comments received and resubmit these management plans for approval.

We would appreciate if you would provide feedback on these Management Plans by the 31<sup>st</sup> of May 2019.

If you have any questions or would like to discuss these management plans, please don't hesitate to contact the undersigned on 0439 909 952.

Yours sincerely



Phillip Brown  
**Environment & Community Relations Superintendent**  
Donaldson Coal Pty Ltd



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30<sup>th</sup> April 2019

Mr. Mitch Bennett  
Environment Protection Authority  
PO Box 488G,  
**NEWCASTLE NSW 2300**

Via email: [hunter.region@epa.nsw.gov.au](mailto:hunter.region@epa.nsw.gov.au)

Dear Mitch,

**Re: Submission of Donaldson / Abel Draft Management Plans**

Donaldson Coal Pty Limited have recently reviewed a number of environmental management plans for the Donaldson Open Cut Mine and Abel Underground coal mines. Donaldson coal mine ceased mining operations in 2013 and Abel coal mine has been in care and maintenance since 2016, with limited activities now occurring across either site.

Several Management Plans required under both PA 05\_0136 (Abel Underground Mine) and DAs 118/698/22 and 98/01173 (Donaldson Open Cut) have been integrated as relevant management actions and mitigation measures are consistent across both projects.

As the risk associated with operational mining has now been minimised, management plans have been updated to reflect the current non-operational status of the sites.

Donaldson Coal is seeking comments from the EPA for the following attached Management Plans:

- Air Quality and Greenhouse Gas Management Plan
- Noise Management Plan
- Water Management Plan

Please note that Management Plans required under Schedule 3 of PA 05\_0136 relevant to the Abel Extraction Plan are current and have not been revised.

We would appreciate the provision of comments and feedback on these management plans by the 31<sup>st</sup> May 2019 to meet statutory reporting requirements under project approvals.

If you have any questions or would like to discuss these management plans, please don't hesitate to contact the undersigned on 0439 909 952.

Yours sincerely,



Phillip Brown  
**Environment & Community Relations Superintendent**  
Donaldson Coal Pty Ltd

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