CENTENNIAL

Air Quality Management Plan

Charbon Colliery

February 2023

Table of Contents

List of Figures

List of Tables

Appendices

DOCUMENT CONTROL

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	1	Final
	2	Update after Independent Audit and Modification 2 of MP 08_0021 and DPE RFI

Abbreviations

Term	Definition
AWS	Automatic Weather Station
AQMP	Air Quality Management Plan
Centennial	Centennial Coal Company Limited
Charbon	Charbon Colliery
Charbon Coal	Charbon Coal Pty. Ltd.
CHPP	Coal Handling and Processing Plant
DECCW	Department of Environment, Climate Change and Water
DAWE	Department of Agriculture, Water and the Environment
DPIE	NSW Department of Planning, Industry and Environment
EA	Environmental Assessment
EPA	Environment Protection Authority
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
EPBC Act	*Environment Protection and Biodiversity Conservation Act* 1999
EPL	Environment Protection Licence
HVAS	High Volume Air Sampler
Mining Act	*Mining Act 1992*
Mt	Million tonnes
PM10	Particulate matter <10µm
POEO Act	*Protection of the Environment Operations Act 1997*
ROM	Run of Mine
TSP	Total suspended particulate

1 Introduction

Charbon Colliery (Charbon) is an underground (bord and pillar) and open cut coal mine, located approximately 87 km north-west of Lithgow and 3 km south of Kandos, as shown in **Figure 1**, in the western coalfields of NSW. The mine is operated by Charbon Coal Pty Limited (Charbon Coal).

Project Approval for the continuation of operations at Charbon was granted by the NSW Planning Assessment Commission on behalf of the Minister for Planning under Part 3A of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) on 7 September 2010. The current project approval has since been declared a State Significant Development (SSD) under Clause 6 of Schedule 2 to the Environmental Planning and Assessment (Savings, Transitional and Other Provisions) Regulation 2017, for the purposes of the EP&A Act. Accordingly, Charbon now operates as an SSD approval (MP 08_0211). MP 08_0211 allows for the extraction and processing of up to 1.5 Million tonnes (Mt) of Run of Mine (ROM) coal per calendar year until 31 August 2025, with no more than 250,000 tonnes of product coal to be transported from the site by public roads in a calendar year.

An approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) also applies to the site as issued on 19 November 2010 by the now Department of Agriculture, Water and the Environment (DAWE) for the continuation of operations at Charbon.

Charbon operates under 15 mining tenements issued under the *NSW Mining Act 1992* (Mining Act) and Environmental Protection Licence (EPL) 528 issued under the NSW *Protection of the Environment Operations Act 1997* (POEO Act).

Charbon currently covers an area of approximately 2,692 hectares and consists of open cut mining areas; underground mining areas and surface infrastructure including a rail loop, coal loading facilities and a coal handling and processing plant (CHPP). Key components of the mine are shown on **Figure 2**.

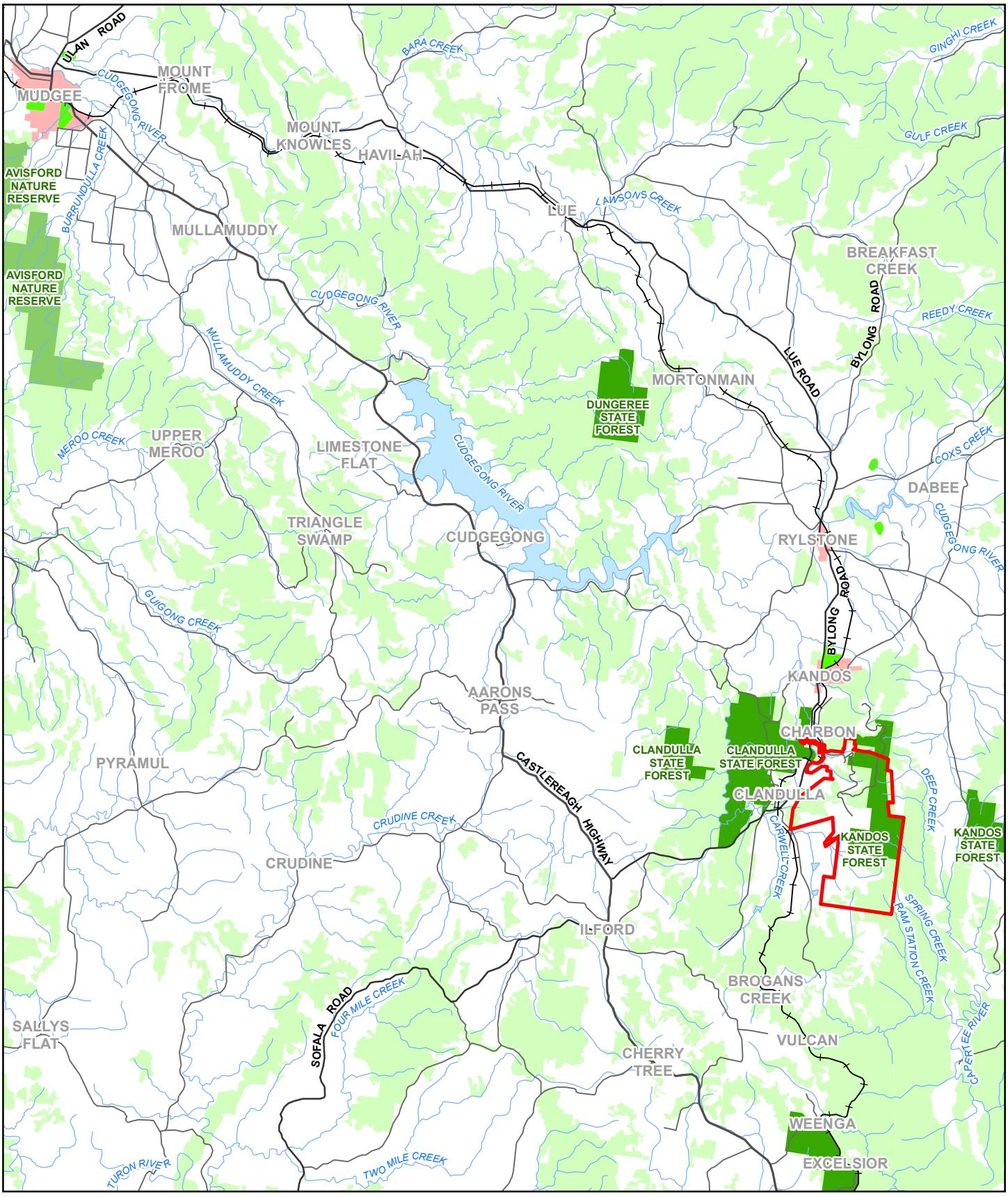
Underground mining operations were completed at Charbon on 7 March 2014 and open cut mining operations ceased on 14 August 2015. Following the cessation of open cut mining operations, the site has entered a closure and rehabilitation phase. Activities at the site since then have been limited to environmental management and monitoring in addition to ongoing rehabilitation of the site.

In accordance with Schedule 5, Condition 4 of MP 08_0211, this management plan has been revised to reflect changes to the approval under Modification 2 of MP 08_0021.

Charbon is currently operating in a closure and rehabilitation phase. The following activities will be undertaken whilst the site is in closure and rehabilitation to which this management plan applies:

- Detailed mine closure planning;
- Progressive rehabilitation of disturbed areas;
- Removal of redundant infrastructure, as required;
- Importation of coarse coal reject from Clarence Colliery;
- Water Transfers via rail to Airly Colliery;

- Maintenance of equipment as required in order to satisfy Mining Act and Work Health Safety requirements (this may involve periodic short-term operation of equipment such as the CHPP); and
- Environmental management and monitoring.



LEGEND

- Project Site Boundary
- Principal Road
- Secondary Road
- Minor Road
- Existing Rail
- Waterbody
- Built Up Area
- Recreation area
- Nature Conservation
- State Forest
- Forest Or Shrub
- Waterway

Paper Size A4

0 0.751.5 3 4.5 6

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

GHD Centennial Coal

Charbon Colliery
Air Quality Management Plan

Locality plan

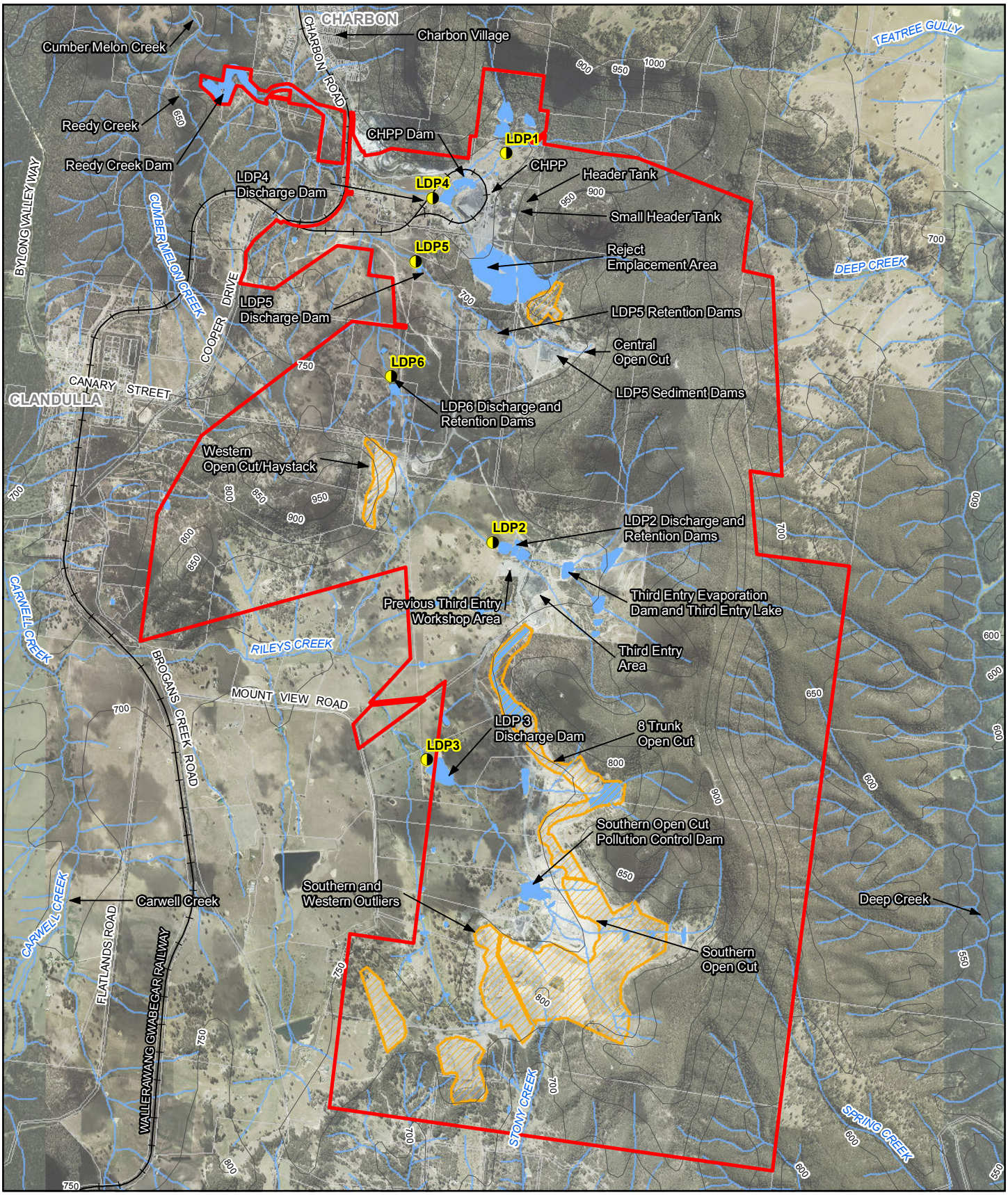
Job Number	22-18612
Revision	A
Date	09 Mar 2017

Figure 1

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 **T** 61 2 4979 9999 **F** 61 2 4979 9988 **E** ntlmail@ghd.com **W** www.ghd.com.au

G:\22\0105001\GIS\Maps\Deliverables\Western\Charbon\2218612\AirQualityManagementPlan\2218612_AQMP001_Locality_A.mxd

Data source: Commonwealth of Australia (Geoscience Australia): 250K Topographic Data Series 3 2006; Centennial: Site locations, 2013. Created by: fmackay



LEGEND

- Project Site Boundary
- Historical Surface Extraction Area
- Licensed Discharge Point
- Railway
- Contour (50m)
- Waterway
- Waterbody
- Cadastre

Paper Size A4

0 0.125 0.25 0.5 0.75 1

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

GHD Centennial Coal

Charbon Colliery
Noise Management Plan

Job Number 22-18612
Revision A
Date 13 Mar 2017

Project Site Layout

Figure 2

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 **T** 61 2 4979 9999 **F** 61 2 4979 9988 **E** ntlmail@ghd.com **W** www.ghd.com.au

G:\22\0105001\GIS\Maps\Deliverables\Western\Charbon\2218612\NoiseManagementPlan\2218612_NMP002_SiteLayout_A.mxd

Data source: Commonwealth of Australia (Geoscience Australia): 250K Topographic Data Series 3 2006; LPI: DCDB/DTDB, 2012 Centennial: Project Boundary, 2012, Aerial Imagery, 2016. Created by: fmackay

1.1 Purpose

This Air Quality Management Plan (AQMP) has been developed in accordance with the requirements of Schedule 3, Condition 22 of MP 08_0211.

1.2 Monitoring program requirement

MP 08_0211, as modified, defines a number of conditions relevant to the preparation and implementation of an Air Quality Management Plan at Charbon. Conditions related specifically to the Air Quality Management Plan are summarised in **Table 1**.

Table 1- Management plan requirements

Condition	Condition Requirement	Section Addressed
Schedule 3 Condition 22	The Proponent must prepare and implement a detailed Air Quality Management Plan for the project to the satisfaction of the Planning Secretary. This plan must:	This plan
Schedule 3 Condition 22(a)	be prepared in consultation with the Environmental Protection Authority (EPA) by a suitably qualified expert whose appointment has been approved by the Planning Secretary;	Section 1.3, 1.4 and Appendix 1 and 2
Schedule 3 Condition 22(b)	be submitted to the Planning Secretary for approval within 6 months of this approval and prior any mining activities in either the Southern or Western Outlier Pits;	Not relevant
Schedule 3 Condition 22(c)	include an Air Quality Monitoring program that includes:	Section 4 Section 7
	a combination of real-time monitors (to monitor the impacts during mining operations for the Western Outlier), high volume samplers and dust deposition gauges to monitor the dust emissions of the project; and	
	an air quality monitoring protocol for evaluating compliance with the relevant air quality impact assessment and land acquisition criteria in this approval;	
Schedule 3 Condition 22(d)	include protocols to ensure that the real-time air quality monitoring and meteorological monitoring data are assessed regularly, and that operations are relocated, modified and/or stopped as required	Sections 4 and 7

Condition	Condition Requirement	Section Addressed
	to ensure compliance with the relevant air quality criteria; and	
Schedule 3 Condition 22(e)	all reasonable and feasible measures are implemented to minimise off-site dust, odour or fume emissions generated by the project.	Section 6
Schedule 5 Condition 2 Management Plans	The Proponent must ensure that the Management Plans required under this approval are prepared in accordance with any relevant guidelines by a suitably qualified expert/s whose appointment has been endorsed by the Planning Secretary. The Plans must include:	Section 1
	(a) detailed baseline data;	Section 3
	(b) a description of: • the relevant statutory requirements (including any relevant approval, licence or lease conditions); • any relevant limits or performance measures/criteria; and • 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;	Sections 2 and 9.1
	(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;	Section 6
	(d) a program to monitor and report on the: • impacts and environmental performance of the project; and • effectiveness of any management measures (see (c) above);	Sections 7 and 8
	(e) a contingency plan to manage any unpredicted impacts and their consequences;	Section 7.2

Condition	Condition Requirement	Section Addressed
	(f) a program to investigate and implement ways to improve the environmental performance of the project over time;	Section 9
	(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	Sections 7 and 8
	(h) a protocol for periodic review of the plan.	Section 9

1.3 Management plan consultation

In accordance with Condition 9(a) PA 08_0211, this plan has been developed in consultation with the Environment Protection Authority.

Comments received during the consultation process and how these comments have been addressed is provided in Appendix 2.

1.4 Management plan authors

In accordance with Condition 22(a) PA 08_0211, this plan is to be prepared by a suitably qualified expert whose appointment has been approved by the Planning Secretary.

This revised management plan, to reflect closure and rehabilitation activities at Charbon, was prepared by Tristan Robertson of GHD. Correspondence from Department of Planning, Industry and Investment (DPIE), formerly named Department of Planning & Environment (DPE) endorsing Tristan to revise this plan is provided in Appendix 1.

2 Relevant approval conditions

2.1 Project Approval PA 08_0211

The relevant conditions relating to air quality at Charbon as presented in PA 08_0211 are reproduced below.

2.1.1 Impact Assessment Criteria (Schedule 3, Condition 19)

The Proponent must ensure that the dust emissions generated by the project do not cause additional exceedances of the air quality impact assessment criteria listed in Table 2, Table 3 and Table 4 at any residences on privately owned land, or on more than 25 percent of any privately owned land.

Table 2 - Long-term Impact Assessment Criteria for Particulate Matter

Pollutant	Averaging Period	Criterion
Total suspended particulate (TSP) matter	Annual	90 µg/m^3
Particulate matter <10µm (PM_{10})	Annual	25 µg/m^3

Table 3 - Short-term Impact Assessment Criterion for Particulate Matter

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

Table 4 - 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.

2.1.2 Land Acquisition Criteria (Schedule 3, Condition 20)

If the dust emissions generated by the project exceed the criteria in Table 5, Table 6 and Table 7 at any residence on privately owned land, or on more than 25 percent of any privately owned land, the Proponent must, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procures in condition 4-6 of schedule 6.

Table 5 - Long-term Land Acquisition Criteria for Particulate Matter

Pollutant	Averaging Period	Criterion
Total suspended particulate (TSP) matter	Annual	90 µg/m^3
Particulate matter <10µm (PM_{10})	Annual	25 µg/m^3

Table 6 - 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 Planning Secretary in consultation with the EPA.*
3. *Background PM_{10} concentrations due to all other sources plus the incremental increase of PM_{10}due to the mine Incremental increase in PM_{10} concentrations due to the mine alone*
4. *Incremental increase of PM_{10}due to the mine alone*

Table 7 - Long-term Land Acquisition Criteria for Deposited Dust

Pollutant	Averaging Period	Criterion	Percentile (1)
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.

Under Condition 20A of Schedule 3, The air quality criteria in Tables 2 to 7 of this plan do not apply if the Proponent has an agreement with the owner/s of the relevant residence or land to exceed the air quality criteria, and the Proponent has advised the Department in writing of the terms of this agreement.

2.1.3 Air Quality Mitigation Measures (Schedule 3, Condition 21)

Twelve months prior to the commencement of mining activities associated with the Western Outlier, and provided that a written request is received from the landowner of property G (refer Appendix 1), or any other affected residence approved by the Planning Secretary, unless the landowner has requested acquisition under the terms of this approval, the Proponent must implement air quality mitigation measures, such as air conditioning, at any residence on the property, in consultation with the landowner. These additional mitigation measures must be reasonable and feasible.

2.1.4 Meteorological Monitoring (Schedule 3, Condition 23)

During the life of the project, the Proponent must ensure that there is a suitable meteorological station on the site that complies with the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales* guideline.

2.2 EPL 528

The relevant conditions relating to air quality at Charbon as presented in Environmental Protection Licence 528 are reproduced below.

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O3.2 Haulage rucks entering and leaving the premises that are carrying loads must be covered at all times, except during loading and unloading. The tailgates of all haulage trucks leaving the premises must be securely fixed prior to loading or immediately after unloading to prevent loss of material.

2.3 Statement of Commitments

Charbon made a number of commitments in the Environmental Assessment (EA) and those relevant to air quality are shown in **Table 8** below.

Table 8 - Statement of Commitments

Desired Outcome	Action	Timing	Status
Site activities are undertaken, as far as practicable, without exceeding	Complete and implement an Air Quality Management Plan which identifies dust management practices that effectively minimises dust emissions including when water is not available for suppression.	Within 6 months of receipt of Project Approval.	Complete

Desired Outcome	Action	Timing	Status
EPA air quality criteria or goals.	Prepare and implement and Air Quality Monitoring Protocol, including continued monitoring of deposited dust, PM_{10} and TSP.	Within 6 months of receipt of Project Approval.	Complete
	Prepare an updated air quality model.	Within 12 months of receipt of Project Approval.	Complete
	Continue onsite existing meteorological monitoring.	Continuous.	Ongoing
Appropriate arrangement with impacted residents negotiated.	Negotiate an appropriate arrangement with the owner of residence G to ensure that there is no potential for adverse health-related impacts associated with dust emissions.	Prior to commencing mining operations within the Western Outlier.	Complete

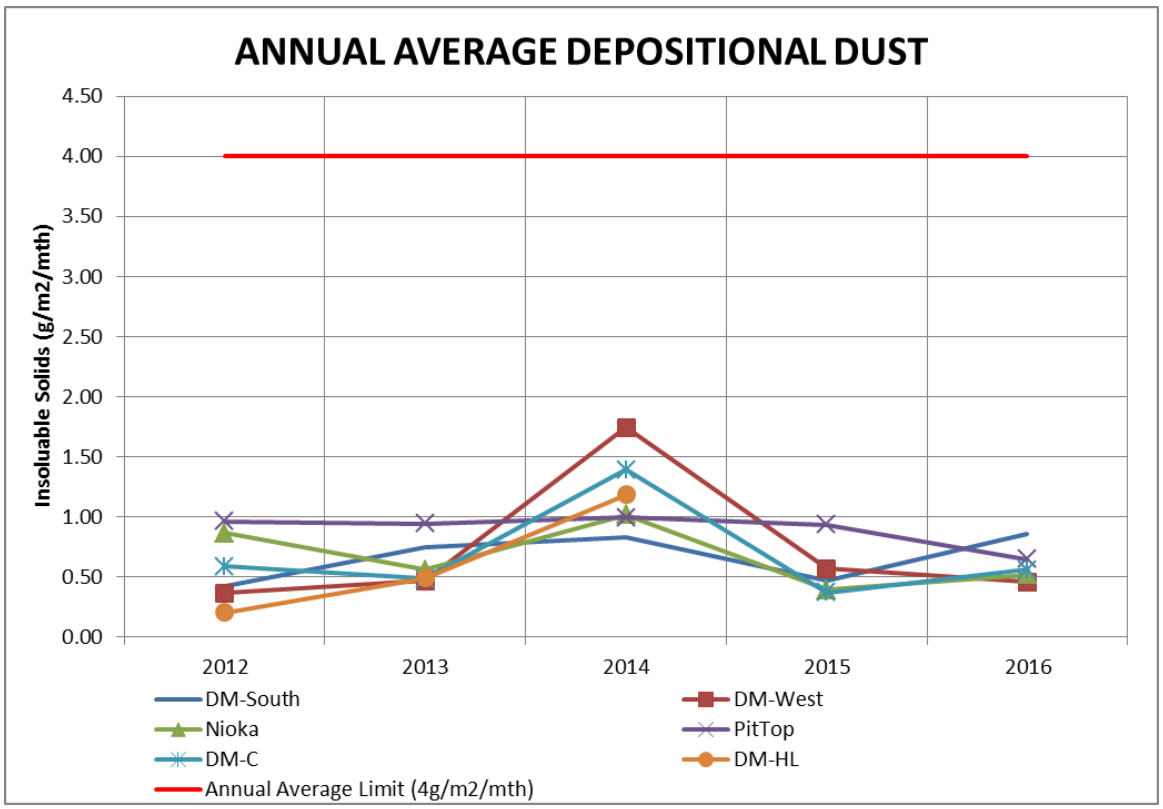
3 Baseline data

Schedule 5, Condition 2 (a) of PA 08_0211 specifies that all management plans required under the approval include relevant baseline data. The following sections present the air quality baseline data for Charbon from 2015, when the site was placed on care and maintenance.

3.1 Depositional Dust

Annual average depositional dust (g/m^2/mth) results for from 2012- 2016 are shown in graphically in Figure 3. All depositional dust results for the reporting periods are in compliance with Charbon's consent conditions.

Figure 3 - Annual Average Depositional Dust 2012-2016



3.2 High Volume Air Sampling (HVAS)

Particulate concentrations PM_{10} and TSP summary of monitoring results for 2012-2016 are provided graphically in Figure 4 and Figure 5. All results for the reporting periods are in compliance with Charbon's consent conditions.

Figure 4 - Monthly Average HVAS TSP Results 2012-2016 (Nioka)

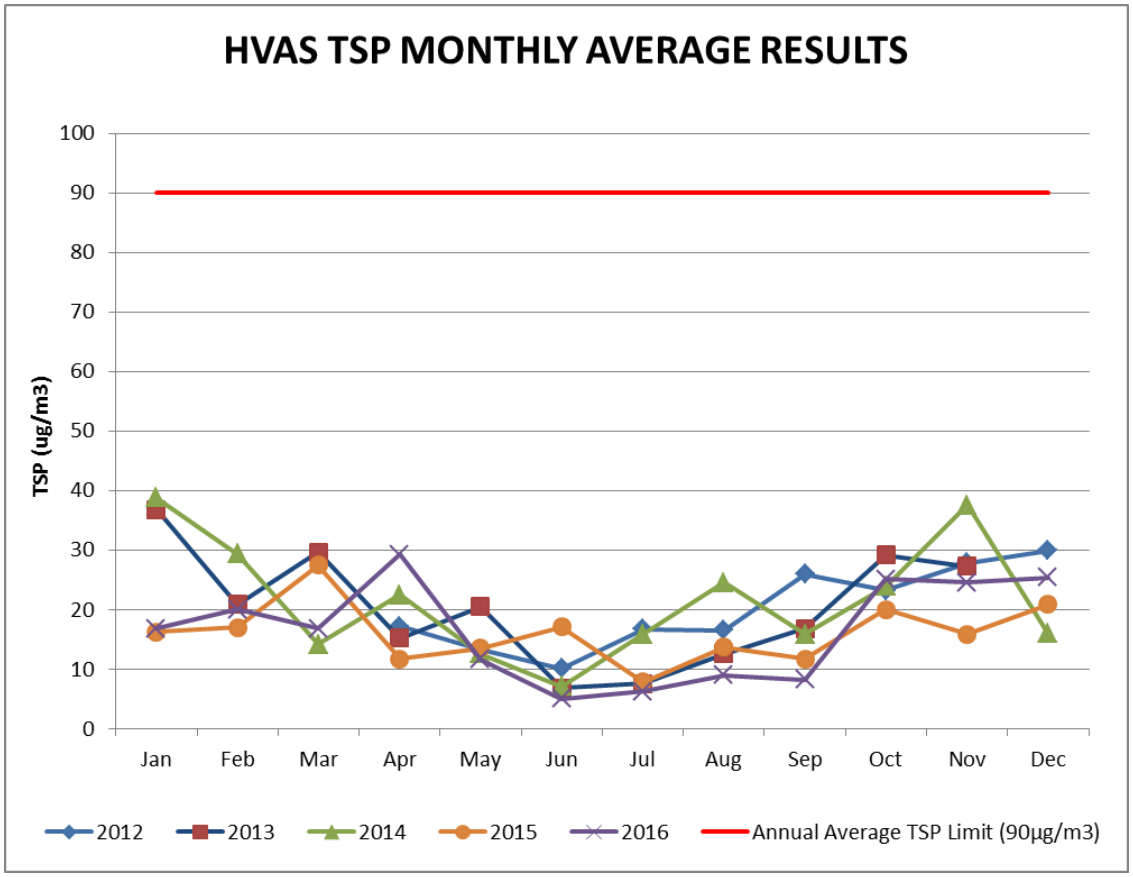
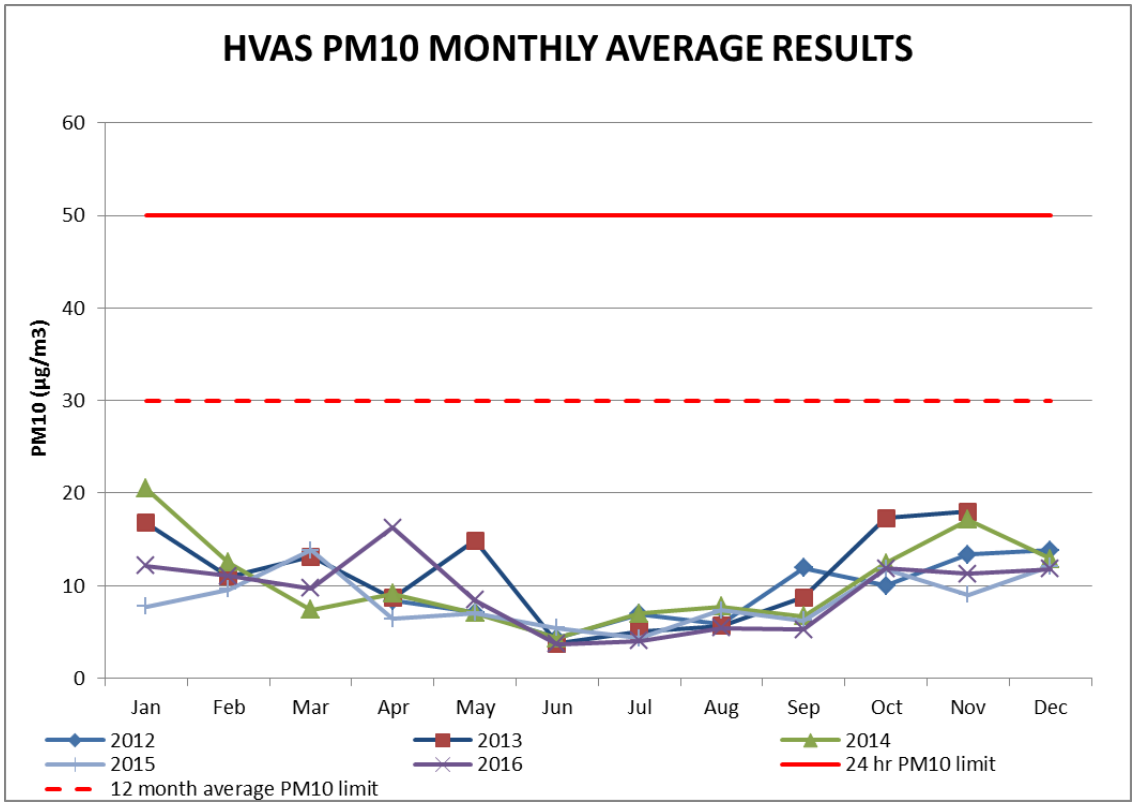


Figure 5 - Monthly Average HVAS PM10 Results 2012- 2016 (Nioka)



3.3 Meteorological

A summary of temperature and rainfall data recorded at the on-site meteorological monitoring station for 2016 and 2015 are shown graphically in Figure 6 and Figure 7.

Figure 6 - Meteorological Data for Charbon Colliery 2016

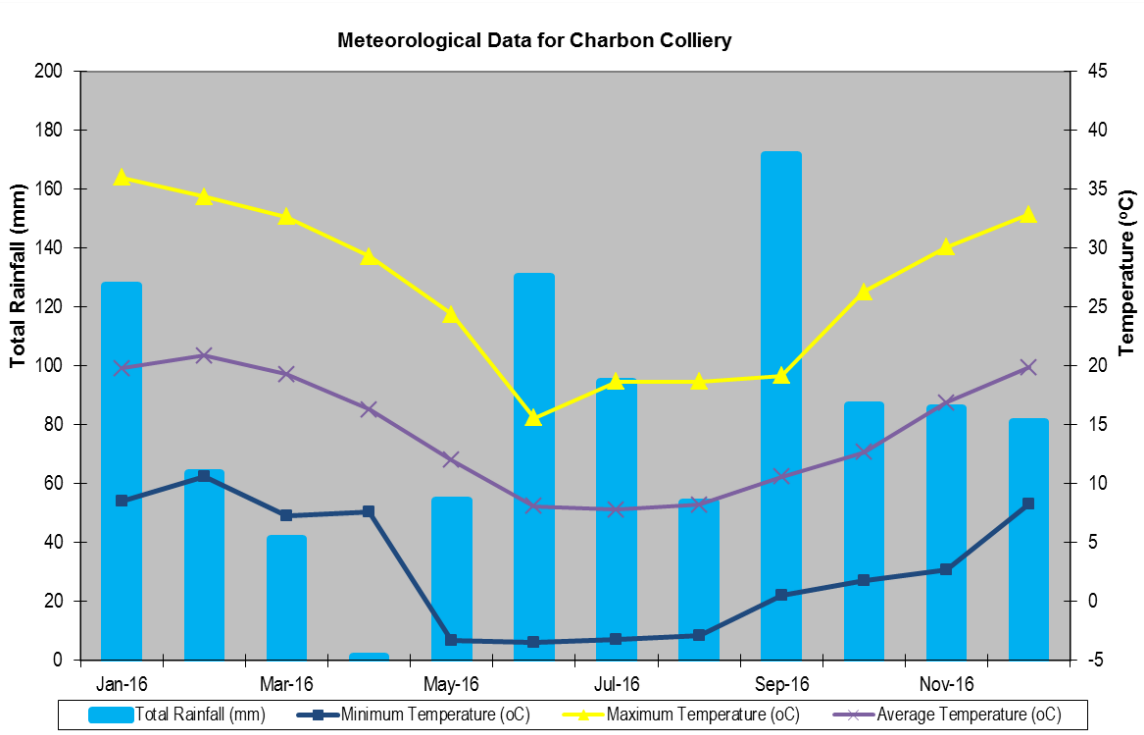
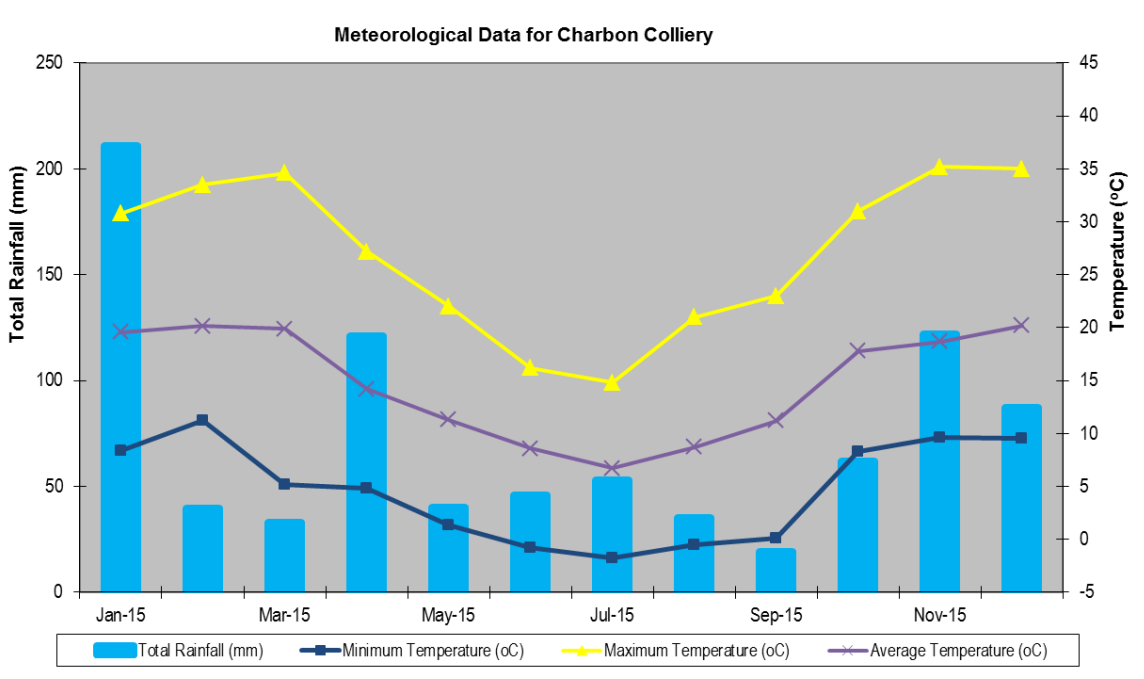


Figure 7 - Meteorological Data for Charbon Colliery 2015



4 Air quality monitoring program

The Air Quality Monitoring Program is designed to ensure that air quality is measured at representative locations in the vicinity of Charbon. Data from the monitoring program will be used to determine the impact of Charbon Colliery's operations on the surrounding air environment, and the compliance status of the mining operations in relation to the Project Approval conditions.

The Air Quality Monitoring Program consists of the following:

- Four (4) dust deposition gauges;
- One (1) High Volume Air Sampler (HVAS); and
- One (1) Onsite Automatic Weather Station (AWS).

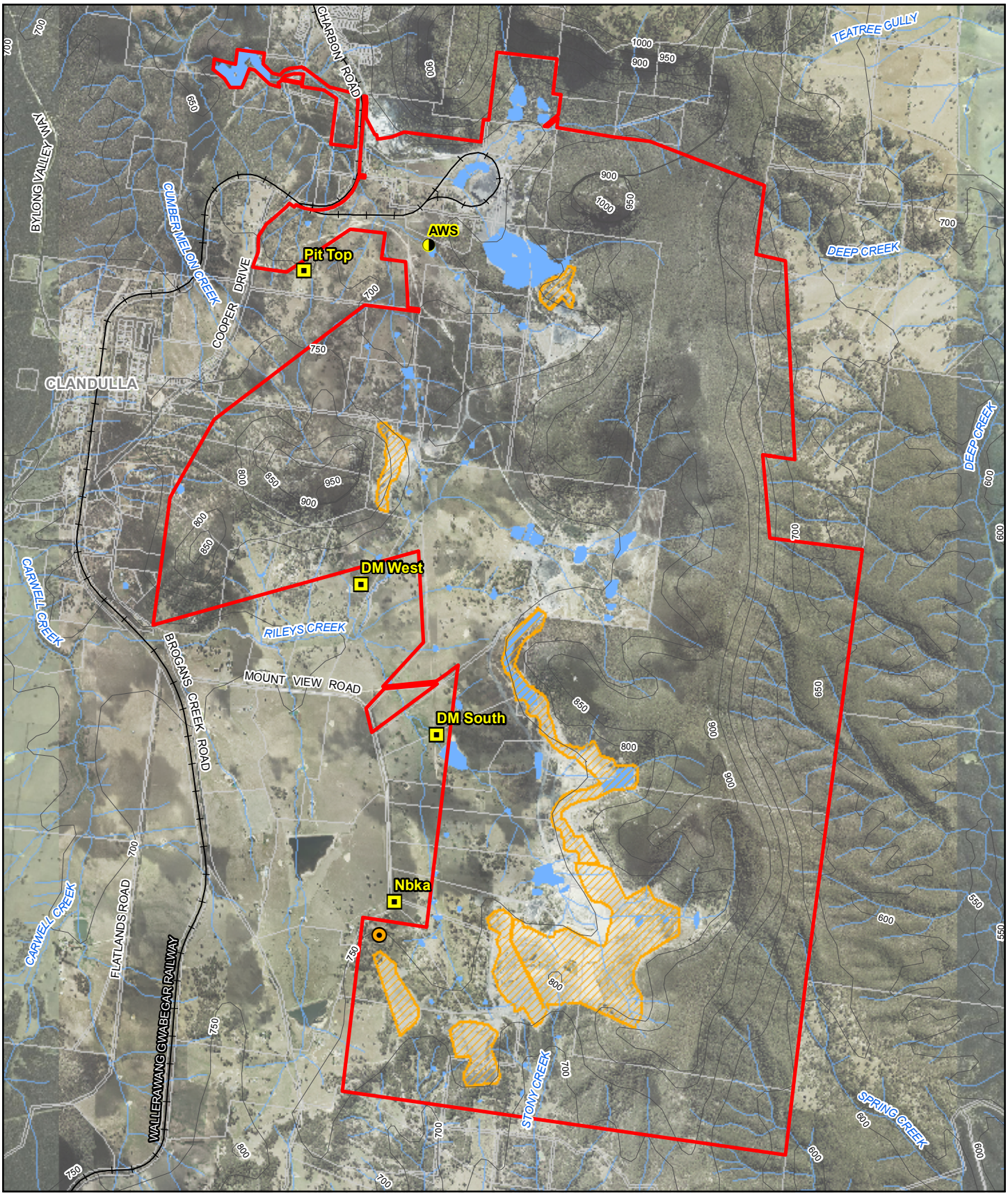
All monitoring locations conform to the requirements of AS/NZS 3580.1.1:2016 *Methods for sampling and analysis of ambient air - Guide to siting air monitoring equipment, subject to local site constraints*. Air quality monitoring locations are illustrated in Figure 8 and

Table 9 below.

Table 9 - Charbon Colliery Air Quality Monitoring Network

Site No.	Location	Instrument	Frequency
DM South	West of the internal access road	Dust Gauge	30 days (+/- 2 days)
DM West	West of the internal access road, between the southern open cut and Tanhausen property	Dust Gauge	30 days (+/- 2 days)
Pit Top	Near the Cooke residence and south-west of the lime plant	Dust Gauge	30 days (+/- 2 days)
Nioka	West of the southern open cut	Dust Gauge	30 days (+/- 2 days)
Nioka	West of southern open cut, adjacent to the Nioka residence	HVAS – PM_{10}	24 hours every 6th day
DM	Former third entry site adjacent to Workshop office and toilet block	On-site AWS	Continuous

To meet the Project Approval conditions, all monitoring must be conducted in accordance with the EPA (formerly DECCW) document *"Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (2005)"* and Australian Methods AM-1, AM-18 and AM-19 (which refer to AS/NZS 3580.1.1:2016, AS/NZS 3580.9.6:2015, AS/NZS 3580.10.1:2016 respectively).



LEGEND

- Project Site Boundary
- Historical Surface Extraction Area
- Licensed Discharge Point
- Railway
- Contour (50m)
- Waterway
- Waterbody
- Cadastre

Air quality monitoring

- Deposited dust monitoring location
- High volume PM_{10} dust monitoring location

Paper Size A4

0 0.25 0.5 0.75 1

Kilometres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

N

GHD Centennial Coal

Charbon Colliery
Air Quality Management Plan

Job Number 22-18612
Revision A
Date 09 Mar 2017

Air Quality Monitoring Locations Figure 8

Level 3, GHD Tower, 24 Honeysuckle Drive, Newcastle NSW 2300 **T** 61 2 4979 9999 **F** 61 2 4979 9988 **E** ntlmail@ghd.com **W** www.ghd.com.au

G:\22\0105001\GIS\Maps\Deliverables\Western\Charbon\2218612\AirQualityManagementPlan\2218612_AQMP003_MonitoringLocations_A.mxd

Data source: Commonwealth of Australia (Geoscience Australia): 250K Topographic Data Series 3 2006; LPI: DCDB/DTDB, 2012 Centennial: Project Boundary, 2012, Aerial Imagery, Monitoring Locations 2016. Created by: fmackay

4.1 Particulate Monitoring (PM_{10} and TSP)

Particulate monitoring will be conducted using a HVAS installed adjacent to the Nioka residence. The HVAS will be used to gather additional data on the effectiveness of dust suppression controls. TSP and PM_{10} sampling will be conducted for 12 months per year (viz. on a 6-day cycle throughout all weeks and seasons of the annual cycle).

Monitoring of PM_{10} will be undertaken in accordance with 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 involves the implementation of a one-day-in-six cycle using a HVAS fitted with size selective inlet for PM_{10}.

4.2 Dust Deposition Monitoring

Dust Deposition Gauges record dust fallout, which can be derived from mining or non-mining activities and are a useful measure of changing air quality. A network of four (4) dust gauges is installed around the Project Site boundary and in residential locations.

Monitoring locations are representative of all privately owned property in the vicinity of the site and have been determined in consultation with the EPA. Data from these gauges enable determination of the compliance status of the site activities at private properties in the vicinity of the site.

Dust deposition gauges are exposed for 30 days (+/- 2 days) and will be analysed for insoluble solids and ash residue.

Monitoring for depositional dust must comply with, AS/NZS 3580.10.1:2003 *Methods for sampling and analysis of ambient air - Determination of particulate matter - Deposited matter - Gravimetric method.*

4.3 Meteorological Monitoring

An onsite AWS is currently former third entry site adjacent to Workshop office and toilet block. This AWS provides representative weather data for the Project Site including rainfall, wind speed and direction, temperature (including sigma theta) and humidity.

Real-time data from the station is made available to environmental personnel and the Site Manager to assist in operational monitoring and real time response.

The station is operated in accordance with the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales* guideline.

5 Air quality model

The Statement of Commitments (see Section 2.3) require Charbon to update and maintain the air quality model. As mining operations have ceased and the site is in rehabilitation and closure phase, updating and maintaining the air quality model is no longer required as emission sources have reduced substantially after mining.

6 Air quality control measures

Table 10 outlines the air quality control measures to be implemented at Charbon to minimise air quality impacts.

Table 10 - Active Dust Control Measures

Source	Control Measures
Weather conditions	• Regular assessment of meteorological conditions should be made to identify conditions which would be unfavourable in terms of dust levels. • Suspension or modification of high-risk dust generating activities under adverse weather conditions.
Wind erosion of exposed areas	• Complete progressive rehabilitation as soon as practicable. • Undertake regular monitoring and maintenance of rehabilitated areas to reduce potential for wind erosion.
Haul road dust	• Water all roads and trafficked areas (when in use) using water cart to minimise the generation of dust. • Enforce speed limits on all on-site vehicles to minimise wheel-generated dust. • Reduce speed on surface roads during high winds.
Topsoil stockpiles	• Minimise stockpile requirements by favouring direct placement where practicable. • Water stockpiles to minimise lift-off with increased application based on meteorological conditions, where practicable. • Minimise stockpile heights to reduce wind erosion area.
Blasting	• All blast holes would be adequately stemmed with aggregates. • Blasting will only occur following an assessment of weather conditions by the Environment & Community Coordinator to ensure that wind speed and direction will not result in excess dust emissions from the site.
Plant and equipment	• All plant and equipment at the mine will be maintained and operated in a proper and efficient condition.
Bulldozers	• Minimising travel speed and travel distance. • Stabilise bulldozer travel routes and use of water or suppressants on travel routes. • Manage moisture to ensure working areas is sufficiently moist when working.

Source	Control Measures
Haulage trucks	• Haulage trucks entering and leaving the premises that are carrying loads must be covered at all times, except during loading and unloading. The tailgates of all haulage trucks leaving the premises must be securely fixed prior to loading or immediately after unloading to prevent loss of material.
Excessive Dust Events[1]	
Haul roads	• Deployment of additional water cart movements to control surface road dust; and • Temporary halting of activities and resuming when weather conditions have improved will be assessed.
Rehabilitation operations	• Temporary halting of activities and resuming when weather conditions have improved will be assessed.

Note 1: An excessive dust event includes prolonged visual dust in a particular area or following receipt of dust monitoring results in exceedance of the project criteria.

7 Response procedures

7.1 Non-compliance response procedure

In the event where dust or particulate emissions are identified as exceeding the relevant air quality criteria, the following actions should be undertaken:

- The situation should be investigated to determine possible emission sources;
- Where the source is identified at Charbon, additional controls should be implemented or operational activities altered until a favourable outcome can be achieved;
- The Environmental & Community Coordinator should be informed of any corrective action taken or complaint received;
- An accident and incident form will be completed, actions and sign-off by an authorised person should be recorded in a log book;
- The Environmental & Community Coordinator shall notify the Director-General and any other relevant agencies as soon as practicable, after becoming aware of the incident in accordance with schedule 5 Condition 6 of PA 08_08_0211; and
- Within seven days of the incident, Charbon shall provide the Director-General and any relevant agencies with a detailed report of the incident.

7.2 Contingency Plan

Where dust or particulate levels consistently exceed the relevant air quality criteria, air quality mitigation measures for excessive dust events should be implemented including:

- Deployment of additional water carts; and
- Relocation of dust-generating sources where possible.

In addition, further air quality control measures should be investigated, and operations moderated until air quality levels return to an acceptable level and/or the source of the exceedances can be determined and managed appropriately.

7.3 Complaints Handling

All complaints received regarding operational air quality will be responded to in accordance with Charbon Colliery's *Procedure for Recording and Reporting Community Complaints*. The procedure is detailed in Charbon Colliery's Environmental Management Strategy and details Centennial's obligations in regard to receiving, handling, responding to, and recording details of all community complaints.

7.4 Landowner Notification and independent Review

In accordance with Condition 19 and 20, Schedule 3 of the Project Approval, if air monitoring results exceed the relevant assessment criteria specified within this AQMP, Charbon will, within 7 days of obtaining monitoring results, notify the Director-General and the affected landowners. The Colliery will then provide quarterly monitoring results to the Director-General and landowners until results show compliance with the relevant criteria.

Condition 20**,** Schedule 3 of the Project Approval defines a procedure where the owners of privately-owned land consider that the Project impacts are exceeding the relevant impact assessment criteria (Section 2.1.3).

7.5 Land Acquisition

Within 3 months of receiving written request from a landowner with acquisition rights, Charbon shall make an offer based on Condition 4, Schedule 6 of the Project Approval.

8 Data analysis and Reporting

8.1 Data Analysis for Compliance (PM_{10})

Compliance with air quality criteria is demonstrated by subtracting the results recorded from the upwind monitors from the results recorded at the relevant downwind monitors. This may require, on rare occasions, recalculating the 24 hour average based on shorter time increments than 24 hours to compensate for wind shifts during the period. This recalculation will only be necessary where daily averages greater than 50 µg/m^3 are recorded or the calculated annual average is greater than 30 µg/m^3.

Assessment of compliance against PM_{10} criteria includes consideration of relevant meteorological parameters and real-time data. Assessment for cumulative purposes will utilise the 24 hour average values calculated directly from the monitors, without quantitative correction for non-mining sources. Regional dust events are determined from comparative results of the upwind and downwind real-time monitors. This is consistent with the latest National Environment Protection (Ambient Air Quality) Measure that considers the influence of natural events and fire management on events above the standard.

8.2 Reporting

Measured pollutant concentrations should be plotted with comparison to relevant project specific air quality goals. Bar graphs may be utilised for visual representation of the daily average PM_{10} concentrations, as well as for monthly dust deposition and annual average dust deposition rates. Wind charts (a plot of wind speed versus wind direction) may also be prepared to assist investigations into measured exceedances of the relevant air quality criteria goals.

Monitoring results from locations required for statutory compliance will reported in the monthly EPL report and published on the Centennial website.

Monitoring results will also be reported within the Environmental Protection Licence (EPL) Annual Return and the Annual Review in accordance with relevant Project Approval and EPL conditions.

8.3 Incident Reporting

Condition 6, Schedule 5 of the Project Approval requires that Centennial notify DPIE and any other relevant agencies after Centennial becomes aware of an incident. The notification must be in writing via the DPIE major Project's website and identify the development (including the development application number and name) and set out the location and nature of the incident.

Condition 6A, Schedule 5 requires Centennial within seven days of becoming aware of a non-compliance, to the notify the Department of the non-compliance. The notification must be in writing via the Department's Major Projects Website and identify the development (including the development application number and name), set out the condition of this consent that the development is non-compliant with, why it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

Note: A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

9 Review and improvement

9.1 Performance indicators

Compliance of this AQMP with the Project Approval conditions and any other relevant agency requirements will be measured according to the following performance indicators:

- Compliance with relevant air quality criteria at monitoring locations;
- The frequency and nature of complaints reported in relation to air quality;
- Contractor and employee awareness of the site Environmental Policy and this AQMP; and
- Compliance with this AQMP, as indicated by statutory reporting.

9.2 Periodic review

In accordance with Schedule 5 Condition 4 of PA 09_0211, Charbon Coal will review and if necessary revise, to the satisfaction of the Planning Secretary this Air Quality Management Plan within 3 months of any modification to the conditions of this approval (unless the conditions require otherwise), or within 3 months of the submission of an:

(a) audit report under condition 8 of schedule 5;

(b) incident report under condition 6 or 6A of schedule 5; or

c) annual review under condition 3 of schedule 5.

Any modifications to the monitoring locations or frequency contained within this plan will be undertaken in consultation with the EPA.

9.3 Continual improvement

Through the effective application of best practice principles to mining operations including, where cost-effective and practicable, the adoption of best practice technologies and air quality control measures, Centennial will continue to improve on the mine's environmental performance with progress to be monitored against performance indicators noted in **Section 9.1**.

APPENDICES

Appendix 1 – Agency Consultation

Planning Services
Resource Assessments
Contact: Anthony Ko
Tel: 8217 2022
Email: anthony.ko@planning.nsw.gov.au

Mr James Wearne
Group Manager Approvals
Centennial Coal
100 Miller Road
FASSIFERN NSW 2283

Dear Mr Wearne

Charbon Colliery (08_0211)
Management Plans

I refer to your letter dated 7 February 2017, requesting endorsement of experts to prepare revised management plans to reflect the current mine closure and rehabilitation phase for Charbon Colliery in accordance with condition 2 of Schedule 5 of Project Approval (08_0211).

The Department has reviewed the information you provided, and is satisfied that the nominated experts are suitably qualified to prepare the relevant management plans.

Accordingly, the Secretary has endorsed the following experts to undertake the work:

- Mr Lachlan Hammersley;
- Mr Tristan Roberts;
- Mr Barry Cook;
- Ms Michelle Collins-Roe;
- Mr Elliot Holland;
- Mr Nathan Archer;
- Ms Abby Neubauer.

The Department is satisfied with Centennial's proposal to integrate the Landscape Management Plan, Rehabilitation Offsets Management Plan and the Mine Closure Plan into the Mining Operations Plan, required under the mining lease.

In order to allow you to produce one document which satisfies both the conditions of approval and the mining lease, the Department requests that the management plans and Mine Closure Plan are submitted to the Department for approval.

If you have any further enquiries about this matter, please contact Anthony Ko on the above contact details.

Yours sincerely

20/2/17

Clay Preshaw
A/Director
Resource Assessments
as nominee of the Secretary

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Fassifern

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14 March 2017

Mr Darryl Clift
Head Regional Operations Unit
NSW Environment Protection Authority
South - Bathurst
PO Box 1388
Bathurst NSW 2795

Dear Mr Clift

Charbon Colliery – Revised Management Plans for Review

Charbon Colliery (Charbon) is an underground (bord and pillar) and open cut coal mine, located approximately 87km north-west of Lithgow and 3km south of Kandos. Project Approval for the operations was granted by the NSW Planning and Assessment Commission on behalf of the Minister for Planning under Part 3A of the NSW Environmental Planning and Assessment Act 1979 (EP&A) on 7 September 2010 (PA 08_0211).

Underground mining operations were completed at Charbon on 7 March 2014 and Open Cut mining operations ceased on 14 August 2015. Following cessation of Open Cut mining operations, the site has entered a Closure and Rehabilitation phase.

To reflect the current closure and rehabilitation phase of operations at Charbon, Charbon Coal Pty Limited (Charbon Coal) has recently completed a review of all the sites environmental management plans. In accordance with the conditions of approval, a copy of the draft revised Noise Management Plan, Air Quality Management Plan and Blast Monitoring Program is attached for your review.

Charbon Coal requests any comments on the draft revised management plans be provided no later than 5pm on Wednesday 29 March 2017 to:

James Wearne
Group Approvals Manager
Centennial Coal
PO Box 1000 Toronto NSW 2283
Email: james.wearne@centennialcoal.com.au

The revised management plans are required to be finalised and submitted to the Department of Planning and Environment for approval by no later than 30 March 2017.

Yours sincerely

James Wearne
Group Approvals Manager

Enclosed –

- Charbon Colliery - Draft revised Noise Management Plan
- Charbon Colliery - Draft revised Air Quality Management Plan
- Charbon Colliery - Draft revised Blast Monitoring Program

Your reference :
Our reference : SF17/10746; DOC17/193384
Contact : Ms Sheridan Ledger; (02) 6332 7608

Mr James Wearne
Group Approvals Manager
Centennial Coal
PO Box 1000
TORONTO NSW 2283

29 March 2017

Dear Mr Wearne

CHARBON COLLIERY – REVISED MANAGEMENT PLANS

I refer to the revised air quality and noise management plans (the Plans) and the blast monitoring program (the Program) for the Charbon Coal Mine (the Mine) received by the Environment Protection Authority (EPA) on 14 March 2017.

Thank you for forwarding a copy of the Plans and the Program to the EPA. The EPA notes the Mine has entered a closure and rehabilitation phase and that the Plans and the Program have been developed having regard to this. The EPA encourages the development of Environmental Management Plans/Programs to ensure that proponents have determined how they will meet their statutory obligations and environmental objectives as specified by any Project/Development Approval and/or the conditions of an environment protection licence. Please note the EPA does not review these plans/programs (unless in circumstances deemed necessary) as the role of the EPA is to set conditions/criteria for environmental protection and management, not to be directly involved in the development of strategies to comply with such conditions/criteria. As such the EPA will not be reviewing or endorsing the Plans.

As a management tool, such plans should assist the Mine in meeting their commitment to statutory compliance and wider environmental management and where appropriate should be integrated with other operational or management plans. The EPA recommends that such plans be audited to an industry standard or certified to the ISO 14001 standard (if applicable) as part of any overall environmental management system.

Should you have any queries regarding this matter, please contact Ms Sheridan Ledger at the Central West (Bathurst) Office of the EPA by telephoning (02) 6332 7608 or email central.west@epa.nsw.gov.au.

Yours sincerely

DARRYL CLIFT
Head Regional Operations Unit
Environment Protection Authority

PO Box 1388 Bathurst NSW 2795
Level 2, 203 – 209 Russell Street Bathurst NSW 2795
Tel: (02) 6332 7600 Fax: (02) 6332 7630
ABN 30 841 387 271
www.epa.nsw.gov.au

Appendix 2 – Consultation Feedback and Response

Comment	From	Response
It is recommended that actions and control measures to meet performance criteria, commitments and to minimise dust are updated to reflect the 'closure and rehabilitation' phase of the mine. For example, the timing of actions in the Table 8 should be updated to reflect actions that are complete or no longer relevant. Table 10 which refers to minimizing disturbance, temporary cover crops, and watering haul roads with water carts should be updated to reflect current activities, equipment, infrastructure and roles and responsibilities of personnel.	Department of Planning and Environment (now DPIE)	Table 1 of this Air Quality Management Plan has been updated to identify those commitments that have been completed and those that are ongoing. Table 8 of this Air Quality Management Plan has been updated to identify those management actions that are relevant to the current rehabilitation and mine closure phase of the operation.
It is recommended that reference to Condition in 3 Section 3 be amended to Condition 2.	Department of Planning and Environment (now DPIE)	Reference to Condition 3 in Section 3 has been corrected to reference Condition 2
It is recommended that references to 'this NMP' in Section 9.2 be amended.	Department of Planning and Environment (now DPIE)	The reference to NMP in Section 9.2 has been amended to referent 'this Air Quality Management Plan'.