



AUSTAR COAL MINE

**AIR QUALITY MANAGEMENT AND
MONITORING PLAN**

Issue 1: January 2007

Final



Austar Coal Mine

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Austar Coal Mine

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1. INTRODUCTION

Austar Coal Mine Pty Ltd (Austar) engaged Carbon Based Environmental Pty Ltd to prepare an Air Quality Monitoring Program (AQMP). The AQMP was prepared in response to development consent approval granted under section 91 of Environmental Planning and Assessment Act (EP&A) (1979) on 14 February 1996 and the subsequent modifications under section 96(2) of the EP&A Act 1979 approved 27 September 2006. This program has been developed to satisfy the requirements of Condition 24 of the Notice of Modification dated 27 November 2006.

2. OBJECTIVES

The main objective of the AQMP is to establish an air quality monitoring protocol in which to evaluate compliance with relevant criteria. The AQMP aims to ensure that emissions from the approved mining operation do not result in unacceptable impacts on the environment and surrounding community. It focuses on the strategies used to monitor air quality surrounding the mine lease area and in particular, particulate emissions, mitigation of emissions at sources, monitoring and reporting and reviewing the monitoring results in terms of the approved impact criteria specified in the development consent conditions.

Air quality issues can also arise from odours generated from activities such as vehicle or equipment emissions. However, odour issues have not been a historical problem at the site and therefore no definitive monitoring or evaluation of odour is recommended in this AQMP.

In developing a monitoring protocol for particulates, the requirements stated in the Environmental Impact Statement, Statement of Environmental Effects, development consent conditions and DEC Environmental Protection Licence (EPL) have all been considered. The AQMP recognises that there will inevitably be some emissions of particulates from the mine and the plan includes the implementation of management practices to minimise the impact of these emissions on the environment and the community.

3. RELATIONSHIP WITH OTHER PLANS

In accordance with Condition 32 of the Notice of Modification, an Environmental Management Strategy (EMS) and Environmental Monitoring Plan (EMP) are currently being prepared for the site. The AQMP will form part of the EMP for the site and support the overall environmental objectives outlined in the EMS.

4. BACKGROUND

4.1. Project Overview

The mine was originally developed from the old Pelton Colliery, mining coal in the Greta Seam in 1978. Longwall production commenced in 1983 and continued until the mine, known then as Ellalong Colliery, was closed by Oakbridge in May 1998. In July 1998, Southland Coal acquired the assets of Ellalong and Pelton Collieries from Oakbridge and amalgamated with the Bellbird South assets already held by Southland Coal.

Southland Coal developed a longwall operation that mined the substantial Bellbird South coal reserves utilising the existing Ellalong facilities and infrastructure. In December 2003 a fire in the underground workings caused the sealing of the mine to extinguish the fire. As a result of the fire, the mine was recovered and placed on “care and maintenance” and the company was placed in receivership.

Yanzhou Coal Mining Company Limited purchased the mine in December 2004 and changed the name to Austar Coal Mine. The acquisition of Southland Coal Mine was completed early in 2005 and a subsidiary company was formed to hold the assets. This subsidiary company is called Austar Coal Mine Pty. Limited (ABN 67-111-910-822).

Austar recommenced longwall extraction of coal in the Greta seam in late September 2006. This followed modification to the development consent (DA 29/95) to allow the introduction of Longwall Top Coal Caving Method (LTCC). The modification was approved subject to a number of conditions. The principle change allowed for an increase the depth of coal extracted from the Greta seam using LTCC technology in addition to modifications to the underground ventilation system

Further information on Yanzhou Coal Mining Company and Austar Coal may be found at WWW.AUSTARCOALMINE.COM.AU .

4.2. The Approved Development

The Minister for Urban Affairs and Planning granted development approval in 1996 subject to certain conditions. Whilst modifications were recently approved they did not alter the:

- purpose of the development as an underground coal mine;
- rate of coal production;
- areas subject to underground mining;
- method of underground mining (as LTCC is just a more efficient form of longwall mining);
- method or location of coal processing;
- method or location of coal rejects disposal;
- method of transporting coal to markets; or
- destination of product coal transported from the mine.

The recent modifications to the development are not expected to result in any significant increase in environmental impacts including air emissions.

4.3. History of Previous Air Quality Monitoring

An air quality assessment was carried out for the Bellbird South Extension (HLA Envirosciences, 1995) which found the coal stockpiles, as approved in the 1996 consent, are the principal source of particulates affecting air quality.

An air quality monitoring program was followed while the mine was fully operational. The program included three dust deposition gauges collected and analysed monthly and a high volume air sampler which monitored total suspended particulates (TSP) over 24 hours every six days. Air quality monitoring ceased when the mine went into receivership and was placed on a “care and maintenance” program.

The dust deposition gauges were located at Pelton village, the Pyne residence (west of the Pelton Coal Handling and Preparation Plant) and the O’Hearn residence (north-west corner of the Pelton/Ellalong Colliery Holding).

Based on previous particulate monitoring results for the period 1991 to 1994 the long term average depositional dust levels were low, ranging from 0.2 to 2.7 grams per square metre per month ($\text{g}/\text{m}^2\cdot\text{month}$) for all three monitoring sites (ERM 2006). These figures are well within the acceptable maximum total deposited dust level of $4.0 \text{ g}/\text{m}^2\cdot\text{month}$.

The 24-hour TSP concentrations were between 6 $\mu\text{g}/\text{m}^3$ and 31 $\mu\text{g}/\text{m}^3$ which are well below the long term assessment criteria for particulate matter average annual maximum level of 90 $\mu\text{g}/\text{m}^3$.

4.4. Potential Particulate Emission Sources

Potential particulate emission sources from the current mining operations are listed below and include:

- Stockpiling of topsoil and gravels;
- Spreading topsoil and ameliorants on rehabilitation areas;
- General road traffic on paved and unpaved roads;
- Loading coal onto conveyors at the underground mine;
- Transporting coal by truck or conveyor;
- Unloading coal to the hoppers or run of mine stockpiles;
- Crushing and cleaning coal;
- Loading product coal to stockpiles or trucks
- Wind erosion from exposed land and stockpiles;
- Combustion engine exhaust;
- Underground ventilation fan exhaust;
- Loading trains;
- Spontaneous combustion;
- Construction activities;
- Maintenance of fire breaks and asset protection zones;
- Clearing of vegetation; and
- Bushfire.

4.5. Underground Ventilation Fan Exhaust

The upcast ventilation fan can emit particulates and odour from underground mining operations. Under normal mining operating conditions emissions from the fan are considered to be minor and specific monitoring requirements are not required by the development consent conditions. As part of the monitoring network, a static dust gauge will be installed to the south west (reflective of prevailing wind direction) of the upcast fan on the boundary of Austar's land.

4.6. Spontaneous Combustion

Spontaneous combustion can result in fine particulate and odorous air emissions. Ventilation is carefully managed and monitored to reduce the potential for spontaneous combustion. A real time gas monitoring system underground allows identification of concerns and a rapid response plan is in place to address any heating or ventilation concerns should they arise. A 2000 m³/hr nitrogen inertisation plant is maintained on site and used to pro-actively manage spontaneous combustion.

Coal stockpiles are also monitored and regularly inspected. Immediate action is taken if heating is detected in the surface stock piles. Should the early stages of spontaneous combustion be detected, close monitoring will be taken to minimise the risk of the outbreak.

The stock pile will be spread and cooled at predetermined trigger points under the supervision of the Coal Handling Preparation Plant Manager.

4.7. Local Weather Conditions

The Statement of Environmental Effects (2006) included meteorological data from the Bureau of Meteorology (BOM) Station 061242 at Nulkaba near Cessnock and is presented in **Table 1**.

Table 1: Cessnock BOM data averages collected at Nulkaba from 1966 to 2004

Month	Temperature (0C)		Relative Humidity (%)		Rainfall (mm)	
	Mean Max.	Mean Min.	9 am	3 pm	Mean	No. of Rain days
Jan	30.3	17.6	70	49	91	11
Feb	29.4	17.6	75	53	101	10
Mar	27.4	15.4	75	55	89	11
Apr	24.5	11.7	75	52	57	9
May	20.9	8.7	80	56	56	9
Jun	17.6	5.9	81	56	49	9
Jul	19.6	4.5	79	51	33	7
Aug	19.6	4.8	71	45	38	8
Sep	22.5	7.7	63	43	40	8
Oct	25.2	10.8	60	45	59	9
Nov	27.2	13.6	65	47	69	11
Dec	29.4	16	64	46	69	9
Annual Average	24.3	11.2	71	50	750.8	109

Source: Cessnock Bureau of Meteorology Station 061242

There is a weather station at the coal handling and preparation plant (CHPP), however, recent data was classed as unreliable and has not been included. A new meteorological station will be installed on site to monitor and record temperature, humidity, rainfall, windspeed and direction. The station will be installed and operated in accordance with the requirements in the Approved Methods for Sampling of Air Pollutants in New South Wales (DEC). If required, the BOM station at Nulkaba will be used for backup data.

Prevailing winds are generally from the south-east (SE) in summer and the north-west (NW) in winter and are generally split from these directions in other seasons (SEE 2006). Average annual rainfall is 750.8 mm but has been significantly lower in recent years due to prevailing drought conditions.

4.8. Impacted Areas

As discussed, air quality impacts surrounding the mine will be primarily from particulates. The degree of impact will be influenced by the source, success of mitigation measures and the weather conditions. Modelling has determined that impacts will be minor and previous air quality monitoring has shown that results are well within acceptable limits. Due to prevailing wind conditions, the impacts will be greatest along the SE – NW wind axis. The predominant wind axis map showing the location of mine facilities is presented in **Figure 1**.

Examining the predominant wind direction axis shows that the most likely places to experience dust impacts are north west and south east of the CHPP including scattered residences to the north west and the village of Pelton to the south east. Other areas are unlikely to be impacted by particulate emissions due to the low emission rates expected.

In all cases, the air quality impacts will be well below the impact assessment criteria provided in the development consent.

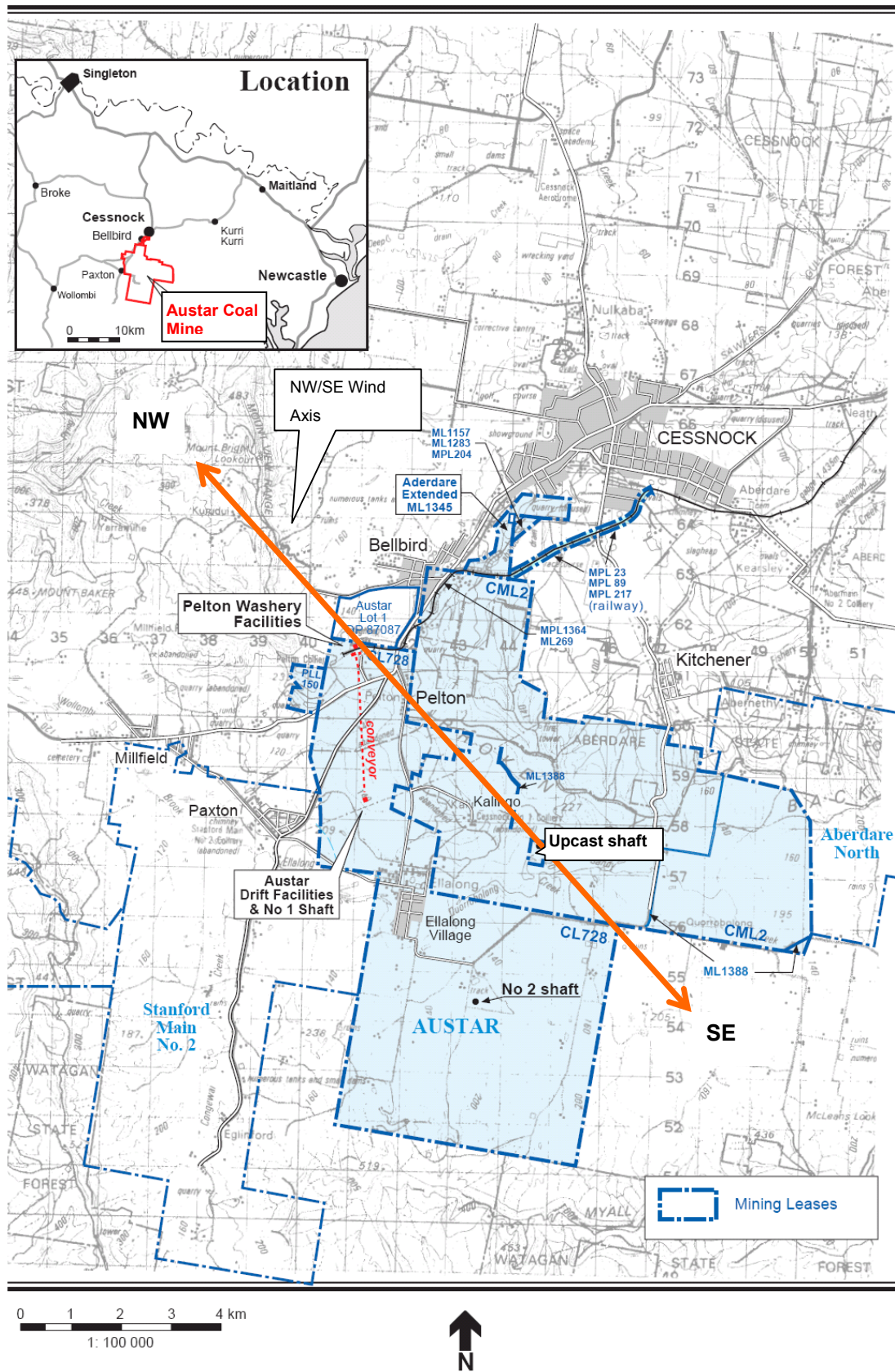


Figure 1: Predominant wind axis (NW in summer, SE in winter) aligned with principal mine infrastructure.

5. ENVIRONMENTAL POLICY

The general environmental goal for the site is to operate the mine in an efficient but environmentally responsible manner, with an aim of minimising the impacts of the operation to a level that is acceptable to all stakeholders.

In order to achieve this aim, a number of specific goals are summarised below:

- to eliminate long-term liability associated with acid mine drainage;
- provide a schedule of rehabilitation works for all identified areas not required for ongoing operations;
- removal of all marketable coal reject material;
- enhancement of pollution control systems to protect water ways and surrounding ecosystems;
- reshaping of identified areas to ensure that the final slopes are stable and can be vegetated;
- investigation and provision of adequate treatment of potentially contaminated waste remaining on site;
- prevention of soil erosion; and
- control of noxious weeds and vermin.

5.1. Responsibilities and Accountabilities

The Senior Site Executive is responsible for the overall environmental performance of the Austar Coal Mine. Senior Operational managers have direct environmental responsibility for their areas of control while the Environmental Coordinator provides direction and advice to ensure site environmental conformance is maintained. The principal Environmental and Operational Managers at Austar Coal are provided in **Table 2**.

All employees and contractors have a responsibility to manage operations in an environmentally responsible manner and report any visible air pollution or take action to reduce air pollution from site operations. All air quality environmental incidents will be reported to the Environmental Coordinator. All employees and contractors are provided with environmental awareness training through a site induction process.

Table 2: Principal Environmental and Operational Managers at Austar Coal

Position Held	Employer
Senior Site Executive	Austar Coal Mine
Underground Mine Manager	Austar Coal Mine
CHPP Manager	Austar Coal Mine
Technical Services Manager	Austar Coal Mine
Project Manager	Austar Coal Mine
Environmental Coordinator	Austar Coal Mine

6. DEVELOPMENT CONSENT CONDITIONS

The AQMP was prepared in accordance with the original consent conditions DA 29/95 Austar Coal Mine granted under section 91 of Environmental Planning and Assessment Act 1979 on 14th February 1996 and the subsequent modifications under section 96(2) of the EP&A Act 1979 granted 27th September 2006. The conditions from the modification that are applicable to this plan are summarised in **Table 3**.

Table 3: Relevant Conditions from Schedule 2 of Notice of Modification to DA 29/95 dated 27/09/2006

CONSENT CONDITION	AQMP REFERENCE
Air Quality	
<p>22. Impact Assessment Criteria</p> <p>The applicant shall ensure that dust emissions generated by the development do not cause additional exceedances of the air quality impacted assessment criteria lists in tables 2 (table 2 in this report), 3 (table 3 in this report) and 4 (table 4 in this report) at any residence on, or on more than 25 percent of any privately owned land.</p>	Section 6
Operating Conditions	
<p>23.</p> <p>The applicant shall:</p> <p>(a) ensure visible air pollution generated by the development is assessed regularly, and measures taken to minimise air quality impacts on privately owned ;and; and</p> <p>(b) implement all practicable measures to minimise the offsite odour and fume emissions generated by the mines ventilation system or any spontaneous combustion at the development, to the satisfaction of the director general.</p>	Section 3 and 7
Monitoring	
<p>24.</p> <p>Prior to December 31 2006, the applicant shall prepare a detailed air quality monitoring program to the satisfaction of the director general and must include an air quality monitoring protocol for evaluating compliance with the air quality impact assessment criteria in this consent.</p>	This document
Meteorological Monitoring	
<p>25. The applicant shall ensure that there is a suitable meteorological station operating in the vicinity of the development in accordance with the requirements in <i>Approved Methods for Sampling of Air Pollutants in New South Wales</i> and to the satisfaction of the director general.</p>	Section 8
Incident Reporting	
<p>35. Within 7 days of detecting an exceedance of the limits/ performance criteria in this consent, the Applicant shall report the exceedance/ incident to the Department (and or relevant agency). The report must:</p> <p>(a) describe the date, time and nature of the exceedance/ incident;</p> <p>(b) identify the cause (or likely cause) of the exceedance/ incident;</p> <p>(c) describe what action has been taken to date; and</p> <p>(d) describe the proposed measures to address the exceedance/incident.</p>	Section 10

Table 3 continued

Annual Reporting	
<p>36. Each year, the Applicant shall submit an Annual Environmental Management Report (AEMR) to the Director General and the relevant agencies. The report must:</p> <ul style="list-style-type: none"> (e) include a summary of the monitoring results for the development during the past year (f) include an analysis of these monitoring results against the relevant: <ul style="list-style-type: none"> - impact assessment criteria/limits; - monitoring results from previous years; and - predictions in the EIS and/ or SEE (g) identify any trends in the monitoring results over the life of the development. (h) Identify any non compliance during the previous year; and (i) Describe what actions were, and are being, taken to ensure compliance. 	Section 9
Independent Environmental Audit	
<p>37. Prior to December 31 2008, and every 3 years there after, unless the director general directs otherwise, the Applicant shall commission and pay the full cost of an Independent Environmental Audit of the development. The audit must:</p> <ul style="list-style-type: none"> d) review the adequacy of any strategy/ plan/ program required under this consent, and, if necessary; and e) recommend measures or actions to improve the environmental performance of the development, and/or plan/ strategy/ program required under this consent. 	Section 9
Updating Environmental Management Requirements	
<p>39. Within 3 months of the completion of the Independent Environmental Audit the Applicant shall review, and if necessary revise, the Environmental Management Strategy, Environmental Monitoring Plan and/or any other environmental management plans required under the consent condition of this development.</p>	Section 9
Access to Information	
<p>43. From December 31 2006, and during the life of the development thereafter, the Applicant shall place a copy of the following documents and information (and any subsequent revisions) required under it's consent on the website:</p> <ul style="list-style-type: none"> b) all current environmental management plans, programs and strategies e) a summary of the environmental monitoring results (to be updated at least every 6 months) to the satisfaction of the Director General. 	Section 9

7. ENVIRONMENT PROTECTION LICENCE (EPL) CONDITIONS

To consolidate air quality management, the AQMP was also prepared in accordance with the requirements of Austar's current DEC Environment Protection License (No. 416) issued under the Protection of the Environment Operations Act 1997 (PEO Act 1997). The relevant EPL conditions and where they are addressed in this plan are provided in **Table 4**.

Table 4: Relevant Conditions from Environment Protection Licence

	ENVIRONMENT PROTECTION LICENSE CONDITIONS	AQMP REFERENCE
4	Operating Conditions	
O3.1	The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.	Section 7
5	Monitoring and Recording Conditions	
M4.1	The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which the licence applies.	Section 11
M4.2	The record must include details of the following: a) the date and time of the complaint; b) The method by which the complaint was made; c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; d) the nature of the complaint; e) the action taken by the licensee in relation to the complaint, including any follow up contact with the complainant: and f) if no action was taken by the licensee, the reasons why no action was taken.	Section 11
M4.3	The record of a complaint must be kept for at least 4 years after the complaint was made.	Section 11
M4.4	The record must be produced to any authorised officer of the EPA who asks to see them.	Section 11
M5.1	The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the license.	Section 11
M5.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.	Section 11
M7.1	The licensee is required to install and maintain a rainfall depth measuring device	Section 8
M7.2	Rainfall at the premises must be measured and recorded in millimetres per 24 hours, at the same time each day.	Section 8
6	Reporting Conditions	
R1.1	The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: a) a statement of compliance; and b) a monitoring and complaints summary	Section 10

8. AIR QUALITY GOALS

Air quality impact criteria are provided in the development consent. Air Quality criteria for Depositional Dust, Particulates Matter <10µm (PM10) and Total Suspended Particulates are provided in **Table 5**. Austar will ensure that dust emissions generated by the development do not exceed the air quality impact criteria.

Table 5: Air Quality Impact Assessment Criteria for Particulate Matter

	Pollutant	Criterion	Averaging Period
Long Term Impact Assessment Criteria for Particulate Matter	Total Suspended Particulate (TSP) matter	90 µg/m ³	Annual
	Particulate Matter < 10µm (PM10)	30 µg/m ³	Annual
Short Term Impact Assessment Criterion for Particulate Matter	Particulate Matter < 10µm (PM10)	50 µg/m ³	24 hour
Long Term Impact Assessment Criteria for Deposited Dust	Depositional Dust	2 g/m ² .month (maximum increase in deposited dust level)	Annual
		4 g/m ² .month (maximum total deposited dust level)	Annual

Note: Deposited Dust is assessed as insoluble solids as defined by Standards Australia, 2003 AS3580.10.1 - 2003: Methods for Sampling and Analysis of Ambient Air – Determination of Particulates – Deposited Matter – Gravimetric Method.

It should be noted that all air quality monitors detailed in the AQMP record the total levels from all sources not solely from Austar's operations.

9. AIR QUALITY IMPACT MITIGATION MEASURES

The current surface operation has established particulate matter control systems including water sprays on both sides of the raw coal conveyor and coal stockpiles. The stockpile sprays have the capacity to dampen the stockpile for a distance of 30 m radius from the spray locations. The existing spray system on the washed coal system has been upgraded to meet the same specifications.

The dust suppression sprays on the stockpiles deliver water at a rate equivalent to 1.2 mm/m²/hr over the area. This application rate is appropriate as the coal has a high moisture content that also acts as a dust inhibitor. The dust suppressions sprays are activated when moisture content falls or when higher wind speeds are experienced and dust generation is excessive.

Dust generated from traffic around the CHPP, workshops and access roads is controlled by a water cart during active use of these areas. Rehabilitation of exposed areas from previous open cut mining on the site is progressing and will reduce the potential for wind blown dust. The majority of the site is stable and does not generate excessive dust. Coal is transported from site by rail after processing and is of sufficient moisture content to minimise dust emissions. Vehicles on site are speed regulated to minimise traffic generated dust emissions.

Visual inspections to detect air pollution generated by the development will be regularly conducted by the Environmental Coordinator and CHPP personnel who are responsible for managing coal stockpiles.

10. AIR QUALITY MONITORING PROGRAM AND PROTOCOL

The previous historical air quality monitoring program consisted of three (3) dust deposition gauges and one (1) total suspended particles (TSP) high volume air sampler (HVAS). As discussed in **Section 2.3**, air quality monitoring stopped when the mine was placed on “care and maintenance”.

The operations at the mine are substantially the same as that approved in 1995. It is therefore proposed to implement a similar air quality monitoring program. However, it will be supplemented with additional dust deposition monitoring near the upcast fan and in the Ellalong area. The total suspended particle monitoring will be replaced with fine particulate PM10 monitoring. It is considered that the measurement of PM10 would give a better indicator in which to assess health related impacts. Holmes (2003) stated in the Air Quality Impact Assessment report for the Wambo Development project that “Monitoring data from areas in the Hunter Valley where co-located TSP and PM10 monitors have been operated for reasonably long periods of time indicate that long term PM10 concentrations are approximately 40% of the corresponding long term TSP concentration.” Total suspended particulates will be determined by calculation based on this accepted long term PM10 to TSP ratio.

The formula for this calculation is provided in **Figure 2**.

Figure 2: Formula used to calculate TSP levels from PM10 monitoring data.

$$\text{Calculated TSP Concentration } (\mu\text{g}/\text{m}^3) = \text{Measured PM10 Concentration } (\mu\text{g}/\text{m}^3) \times 2.5$$

The new air quality monitoring program will consist of five (5) dust depositional gauges, two (2) high volume air samplers (HVAS) measuring PM10, and an onsite meteorological station. The reinstallation of a meteorological station will ensure accurate climatic data at the site to better predict and analyse particulate impacts. Rainfall at the premises will be measured and recorded in millimetres per 24 hours, at the same time each day. The location of the dust deposition gauges and high volume air samplers is described in **Table 6** and depicted in **Figure 3**.

Table 6: Location of Air Quality Monitoring Equipment

Site	Code	Location Description
Dust Gauge 1	DG1	Bimbadeen Road Bellbird (previously known as Mr R.Pyne's residence)
Dust Gauge 2	DG2	Ellalong Road Pelton Village
Dust Gauge 3	DG3	Austar Coal property boundary Doyle St Bellbird
Dust Gauge 4	DG4	Ellalong Village
Dust Gauge 5	DG5	Austar Coal property south west of upcast ventilation shaft
HVAS 1 (PM10)	HVAS1	Bimbadeen Road Bellbird (previously known as Mr R.Pynes residence)
HVAS 2 (PM10)	HVAS2	Ellalong Rd Pelton Village
Meteorological Station	MET	On site at the Coal Handling and Preparation Plant

A description of the air quality monitoring methods and protocols follows.

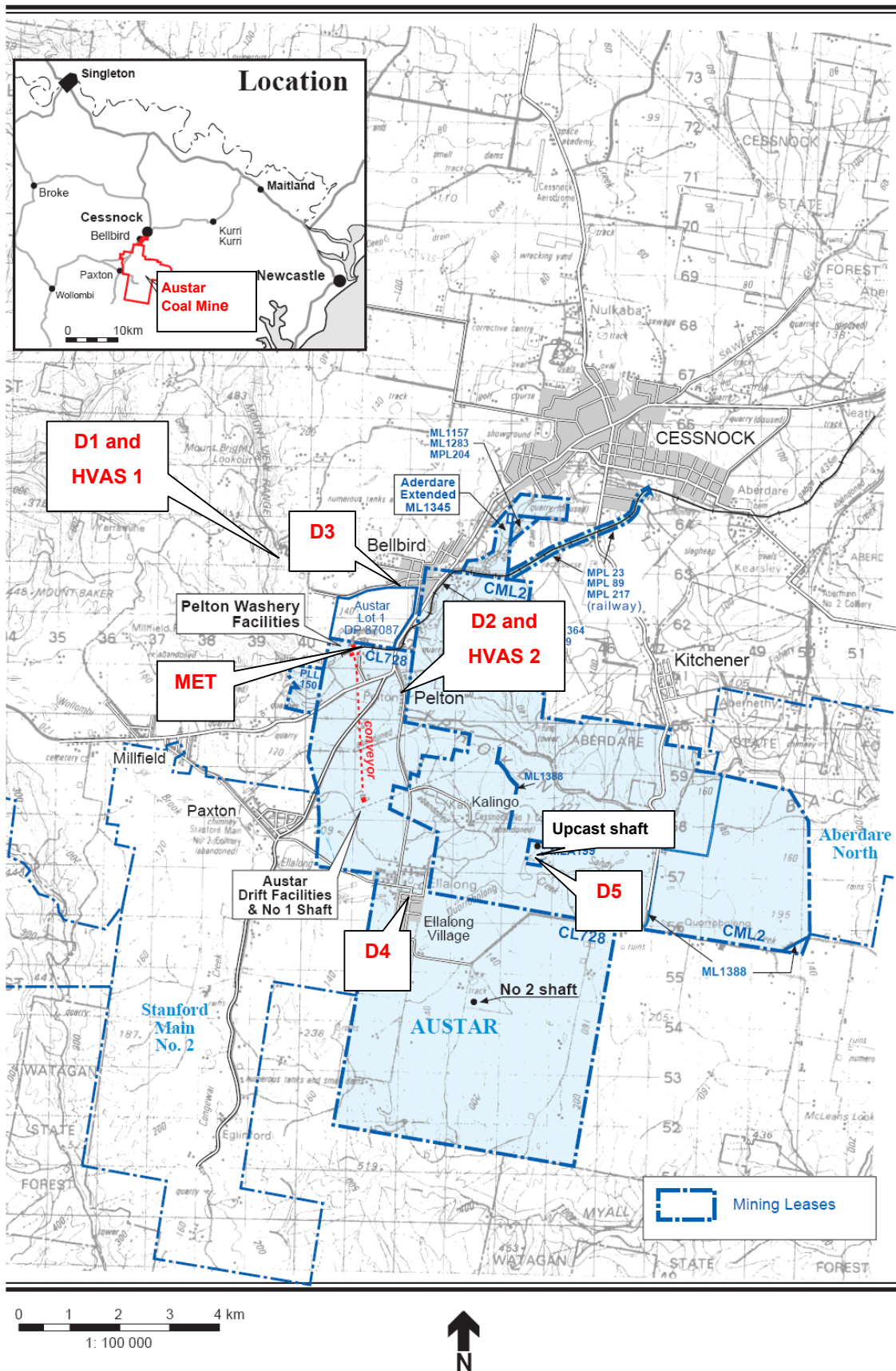


Figure 3: Locations of Dust Depositional Gauges (DDG), HVAS and Meteorological Station.

10.1. Dust Gauges - Depositional Dust

The dust deposition gauges (DG) will be operated to monitor insoluble solids as defined by Standards Australia, 2003, AS 3580.10.1:2003 Methods for Sampling and Analysis of Ambient Air, Determination of Particulates—Deposited Matter—Gravimetric method. Samples will be collected every 30 +/- 2 days. Samples are additionally analysed for ash residue and combustible matter to the Australian Standard to assist in determining possible contamination and dust source. The monitoring will also meet the requirements of the DEC (EPA) approved methods.

The dust deposition gauges will provide deposited dust (insoluble solids) in $\text{g/m}^2 \cdot \text{month}$. The analysis will be performed at an accredited National Association Testing Authority (NATA) laboratory. Samples will be tracked from field sampling to final analysis by completion of a field sheet and Chain of Custody documentation. The general sampling process for the dust deposition gauges is displayed as a flow chart in **Figure 4**.

Austar will ensure that dust deposition levels generated by the development do not exceed the air quality impact criteria provided in **Table 5**.

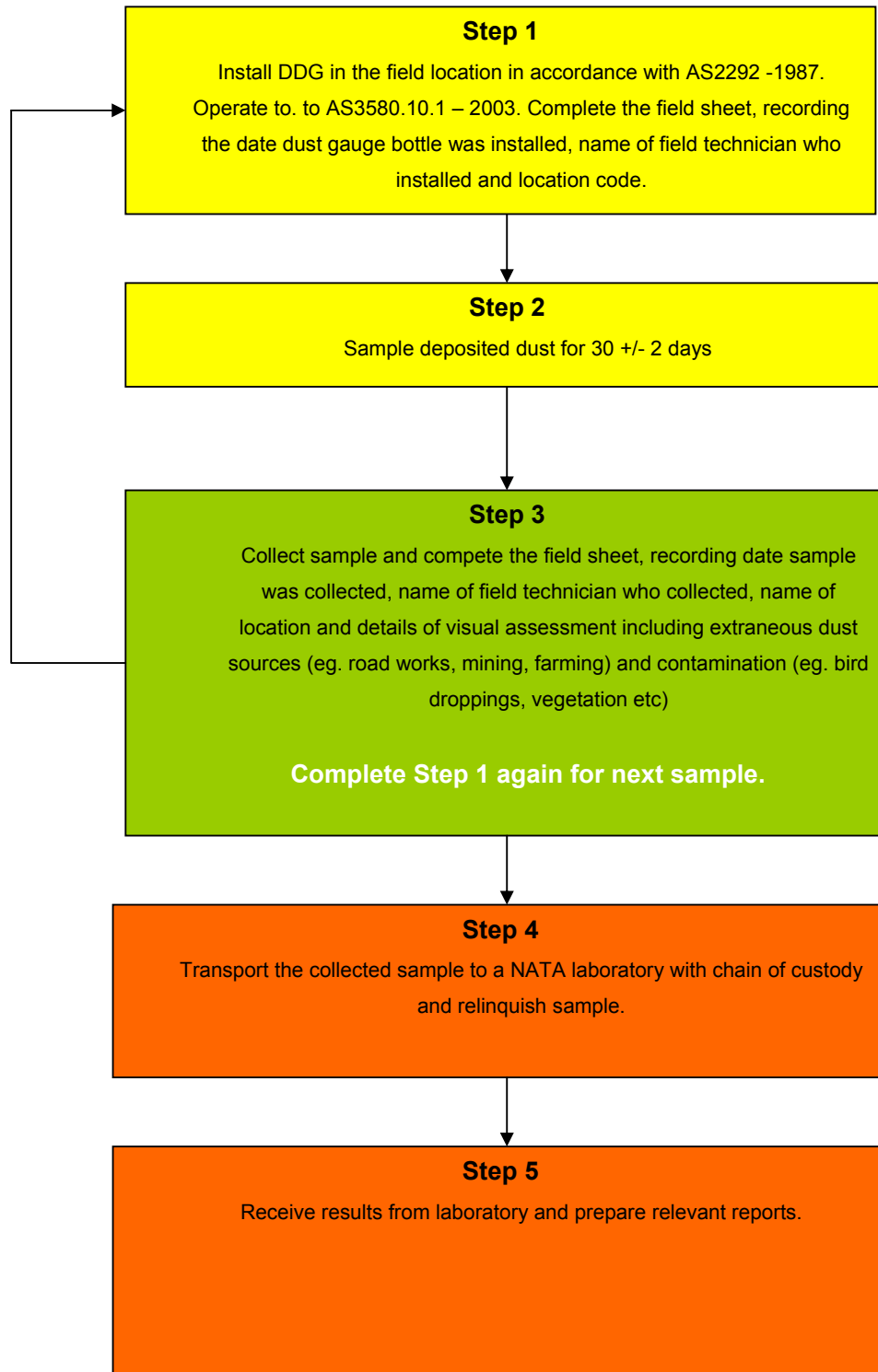


Figure 4: Flow chart for dust deposition gauge field sampling and reporting

10.2. HVAS – PM10 and TSP

Austar will utilise two (2) PM10 High Volume Air Samplers (HVAS), which sample PM10 in air for a period of 24 hours every six days in accordance with AS 3580.9.6 – 2003 Method 9.6: Determination of suspended particulate matter – PM10 high volume air sampler with size selective inlet – Gravimetric method and the DEC sampling schedule. The monitoring will also meet the requirements of the DEC (EPA) approved methods.

The analysis will be performed at an accredited National Association Testing Authority (NATA) laboratory. Samples will be tracked from field sampling to final analysis by completion of a field sheet and Chain of Custody documentation. The general sampling procedure is shown in **Figure 5**. The PM10 HVAS will provide PM10 particulate concentrations in ($\mu\text{g}/\text{m}^3$). Total suspended particulates will not be directly measured by instrumental techniques but will be calculated on the basis that long term PM10 concentrations are approximately 40% of the corresponding long term TSP concentration (Holmes 2003).

Austar will ensure that PM10 and TSP emissions generated by the development do not exceed the air quality impact criteria provided in **Table 5**.

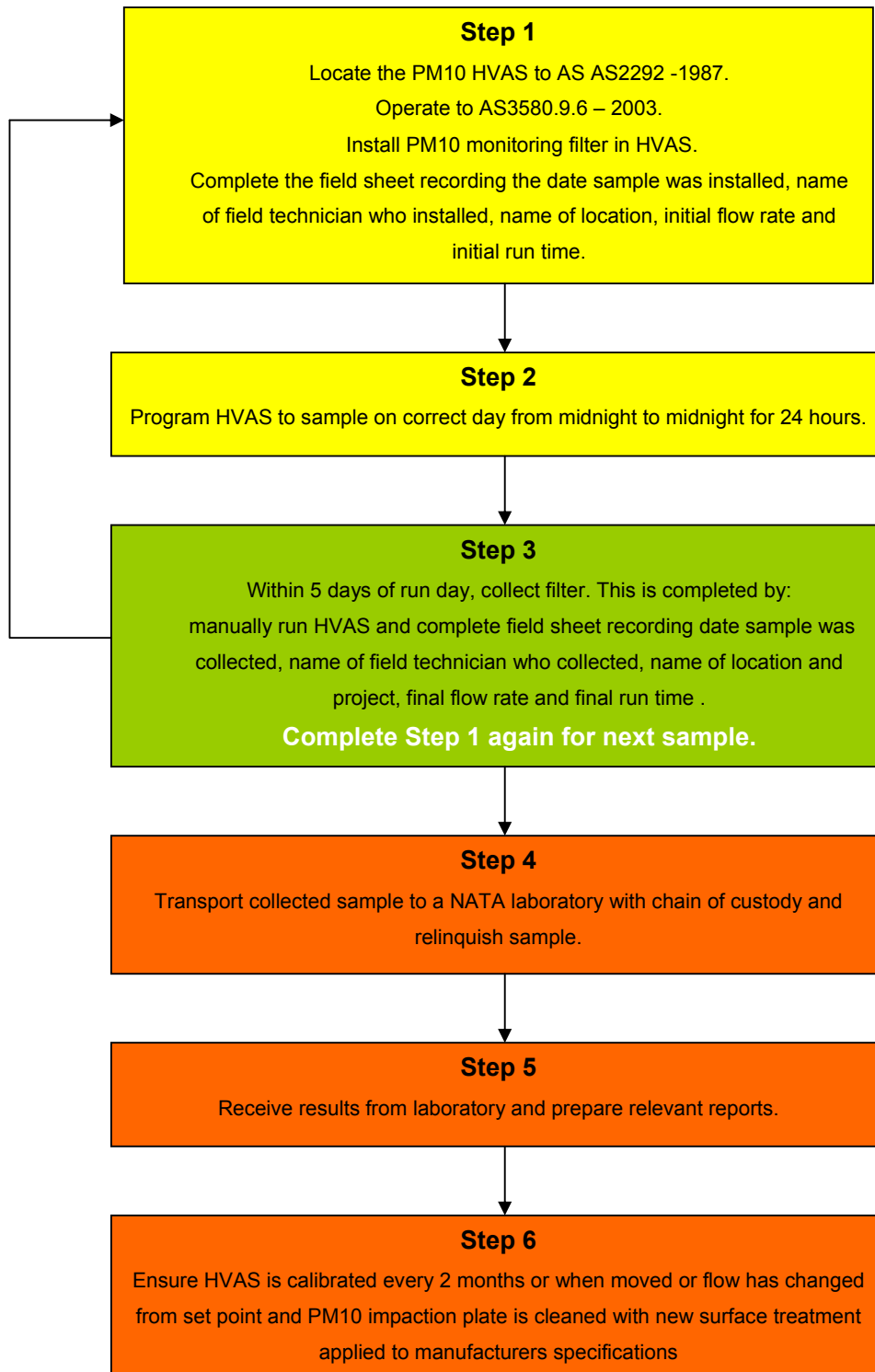


Figure 5: Flow chart for HVAS field sampling and reporting.

11. REPORTING AND REVIEW OF AIR QUALITY MONITORING DATA

The Environmental Coordinator will review all air quality monitoring results on a monthly basis and ensure corrective action is taken where results or trends indicate non compliance or risk of future non compliance to the development consent criteria. The results will also be included in the Annual Environmental Management Report (AEMR). The AEMR will include a summary of monitoring results during the past year, comparison against the air quality impact criteria, summary of previous years monitoring results and comparison against predictions in the EIS and SEE. The AEMR will also identify any trends in air quality impacts and identify any non conformance over the year as well as describing any actions currently implemented or planned to ensure compliance with the Air quality impact criteria. The AEMR will be available to the relevant authorities including the Department of Planning and the Department of Primary Industries (DMR) and community. It will also be placed on the company's website along with a summary of environmental monitoring results in accordance with consent condition 43. The website address is WWW.AUSTARCOALMINE.COM.AU.

The DEC (EPA) will be provided with an annual return, statement of compliance and a monitoring and complaints summary.

Austar is also required to conduct an independent environmental audit prior to December 31, 2008 in accordance with consent condition 37. This will involve the review of all plans, including the AQMP.

12. EXCEEDANCE OF AIR QUALITY CRITERIA AND NOTIFICATION PROCEDURE

If air quality monitoring reveals that as a direct result of Austar's operation, the particulate levels have exceeded the criteria outlined in **Section 6 "Air Quality Goals"** the company will conduct an investigation into the source. The investigation will consider any plant operation or other factors that may have generated excessive levels of particulates. The report will be provided to the Department of Planning or other relevant agency (such as DEC) within 7 days of detecting an exceedence of the air quality impact criteria in the development consent.

The report will:

- (a) describe the date, time and nature of the exceedence/ incident;
- (b) identify the cause (or likely cause) of the exceedence/ incident;
- (c) describe what action has been taken to date; and
- (d) describe the proposed measures to address the exceedence/incident.

Austar will follow recommendations of the investigation in order to abate particulate emissions from the mine.

In the unlikely event that particulates or odours from the mine operations are excessive or a threat to health of surrounding property owners and occupiers, Austar will notify those likely to be affected. A list containing surrounding property owners and occupiers' contact details is held by Austar.

The notification procedure is to be initiated by the Environmental Coordinator for Austar Coal. In the absence of the Environmental Coordinator the notification procedure is to be initiated by the person designated as fulfilling the responsibilities of the Environmental Coordinator. Notification shall be within 24 hours of it becoming known to mine personnel that surrounding property owners and occupiers are likely to be affected by excessive emissions from the mine. A record will be kept of all property owners and occupiers contacted and this will be retained by the Environmental Coordinator.

13. COMMUNITY COMPLAINT PROTOCOL

Austar records all complaints made by the community. For each the following information is recorded:

- Date and time of complaint;
- Method by which the complaint was made;
- Personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- Nature of the complaint;
- The action(s) taken by Austar in relation to the complaint, including any follow-up contact with the complainant; and
- If no action was taken by Austar, the reason why no action was taken.

Complaint records are kept for at least four years after the complaint was made and will be available to any authorised officer of the DEC who may require details. A summary of each complaint is provided in the AEMR.

14. COMMUNITY CONSULTATION

Austar will conduct community consultation via a Community Consultative Committee (CCC) with meetings held on a quarterly basis.

In accordance with the consent requirements, the results of air quality monitoring will be available on the company's website WWW.AUSTARCOALMINE.COM.AU.

15. REFERENCES

ERM, 2006, Austar Coal Mine Section 96 Modification, Statement of Environmental Effects

HLA Envirosciences, 1995, Environmental Impact Statement, Ellalong Colliery Extension into Bellbird South

Holmes Air Sciences, 2003, Air Quality Impact Assessment – Wambo Development Project

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NSW Department of Planning, 2006, Modified Consent of DA 29/95

NSW Department of Planning, 2006, Assessment Report of Austar Coal Mine Modification

NSW Department of Urban Affairs and Planning, 1996, DA 29/95