

MAC-ENC-MTP-040

AIR QUALITY AND GREENHOUSE GAS MANAGEMENT PLAN

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Revision History

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1.2	30/3/2012	Draft provided to DP&I incorporating DP&I comments.
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Final	27/5/2013	Approved by the Department of Planning & Infrastructure on 27/5/2013

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1.0 Introduction

Hunter Valley Energy Coal Pty Ltd operates the Mt Arthur Coal Complex which consists of approved open cut and underground mining operations, a rail loop and associated rail loading facilities. The operations are located in the Upper Hunter Valley, NSW approximately 5 kilometres south west of Muswellbrook.

Appendix 1 provides a guide detailing the relevant Mt Arthur Coal Project Approval and Environmental Protection Licence (EPL) conditions including reference to the section of this Air Quality and Greenhouse Gas Management Plan which addresses the condition.

The proposed Mt Arthur underground operation has not commenced. This management plan will be reviewed and updated prior to the commencement of underground operations.

This Plan has been prepared to detail the relevant air quality impact assessment criteria, best practice management and compliance checking procedures for subsequent reporting in accordance with the Department of Planning and Infrastructure (DP&I) and the NSW Office of Environment and Heritage (OEH) requirements.

1.1. Objectives

The objective of this Plan is to provide the framework for:

- ensuring all relevant statutory requirements and BHP Billiton Policies and Standards are met;
- implementing applicable best practice air quality tools to manage and minimise the impact of dust from mining operations on the environment and nearby residences;
- identifying and implementing reasonable and feasible measures to minimise the release of greenhouse gas (GHG) emissions and prevent the emission of offensive odours;
- maintaining the highest practicable levels of amenity for surrounding residents;
- maintaining an effective response mechanism to deal with issues and complaints; and

1.2. Environmental Management System

Mt Arthur Coal has a firm commitment to minimising the impact of its operations on the local environment and community, and has a comprehensive Environmental Management System (EMS) that is consistent to the International Standard 14001:2004 in place to fulfil this commitment. This Plan is a component of the Mt Arthur Coal EMS.

1.3. Consultation Process

This Plan has been prepared in consultation with OEH, Department of Trade and Investment, Regional Infrastructure and Services (DTIRIS) and Muswellbrook Shire Council (MSC).

Consultation has also been undertaken with neighbouring coal mines, including the Drayton and Bengalla Mines and the Mt Pleasant Project.

2.0 Impact Assessment Criteria

The air quality impact assessment criteria applicable to the Mt Arthur mine complex are listed in *MAC-ENC-PRO-057 Air Quality Monitoring Program*, and apply at privately owned residences and privately owned vacant land. Privately owned land is considered dust-affected when dust levels exceed the criteria at any residence on privately owned or on more than 25 per cent of any privately owned land.

In accordance with the Project Approval 09_0062, Mt Arthur Coal must not cause any additional exceedances of the air quality impact assessment criteria, except where predicted in the Mt Arthur Coal Consolidation Project Environmental Assessment (EA) (Hansen Bailey, 2009).

Mt Arthur Coal is required under the Project Approval to ensure that no offensive odours as defined under the *Protection of the Environment Operations Act 1997* (POEO Act) are emitted from the site and shall implement all reasonable and feasible measures to minimise the release of GHG emissions from the site.

3.0 Control Measures

The Mt Arthur Coal air quality management system includes a comprehensive set of both proactive and reactive control measures (see section 3.1) and monitoring tools (see section 3.3) designed to minimise the generation of wind-blown dust from disturbed surfaces and mining activities, and enable effective control of episodic dust events (see section 3.4).

Mt Arthur Coal maintains an active GHG and energy efficiency management program to effectively measure and minimise GHG emissions whilst providing a platform to meet future legislative requirements (see section 3.5).

The primary potential sources of odour at Mt Arthur Coal are spontaneous combustion and blast fume. The mitigation measures for the control of these emissions are detailed in section 3.6.

3.1 Air Quality Control Measures

Table 1 describes the air quality mitigation measures for sources of wind-blown and activity-generated dust due to mining operations and summarises the responsibilities that have been documented within this plan.

A major management tool in all instances will be daily on-site visual inspections and the real-time short message service (SMS) and email alarm response system. The real-time SMS and email alarm response system provides notifications that enable operational activities to be adjusted to avoid exceedances of regulatory air quality criteria.

Table 1: Active air quality mitigation measures

Source	Air quality mitigation measures	Responsibility	Timing
Wind-Blown Dust Sources			
Areas disturbed by mining operations	Disturb only the minimum area necessary for mining.	Manager Planning and Services	Ongoing
	Remove topsoil from a maximum of one mining strip width ahead of the active pit at any time.	Superintendent Drill and Blast	Ongoing
	Reshape, topsoil and rehabilitate completed overburden emplacement areas as soon as practicable after the completion of overburden placement.	Manager Mining	Ongoing
Overburden emplacement areas	Use of cover crops, increased surface roughness, or other temporary revegetation measures to form temporary seals on the surface of overburden emplacement areas that remain unused and exposed for over six months will be implemented, where practical and safe to do so, and where previous measures demonstrate an acceptable level of success. (e.g. not during drought conditions, or on overburden that has demonstrated poor germination rates).	Mining Engineer	Ongoing
Coal handling facilities	Maintain unsealed coal handling areas in a moist condition using water carts or alternative means to minimise wind-blown and traffic generated dust.	Coal Processing Superintendent	As required
	Prompt clean up of any coal spillage.	Coal Processing Superintendent	As required
Coal stockpiles	Automatic sprays on plant feed and clean coal stockpiles. Automatic sprays are to be activated when wind speeds exceed 6 m/s (averaged over a 15 minute period), except during rain.	Coal Processing Superintendent	As required
Weather conditions	Predictive models to forecast dust impacts will be evaluated through an assessment and trial period as a potential planning and management tool.	Manager Mining and Environment Manager	Three year trial period

Source	Air quality mitigation measures	Responsibility	Timing
Activity-Generated Dust Sources			
Haul roads	All haul roads will have edges clearly defined with marker posts or equivalent to control their locations, especially when crossing large overburden emplacement areas.	Manager Planning and Services	Ongoing
	Obsolete haul roads will be ripped and re-vegetated, as soon as practicable.	Manager Mining	As required
	Apply a road sealant or dust suppressant product on all major active coal and overburden haul roads and / or utilise other such technologies and initiatives as required to ensure that the air quality outcomes described in the EA are achieved.	Manager Excavators	Ongoing
Minor roads	Development of minor roads will be limited where possible and locations clearly defined.	Manager Mining	Ongoing
	Minor roads used regularly for access will be watered using water carts or sprays to minimise the generation of dust and particulate.	Manager Mining	Ongoing
	All roads are speed limited. Speed limits will be enforced to ensure excessive vehicle speeds do not contribute to unacceptable dust generation.	Superintendent Safety and Risk	Monthly
	The use of suitable dust suppressant will be explored, where practical, for minor roads.	Manager Mining	Ongoing
	Obsolete minor roads will be ripped and re-vegetated as soon as practicable.	Manager Mining	As required
Industrial area and other hardstand areas	All areas are speed limited. Speed limits will be enforced to ensure excessive vehicle speeds do not contribute to unacceptable dust generation.	Superintendent Ancillary and Services	Ongoing
	The use of dust suppressant will be explored, where practical, for hardstand and industrial areas	Superintendent Ancillary and Services	Ongoing
Topsoil stripping	Tracks used by topsoil stripping scrapers during their loading and unloading cycle will be watered.	Superintendent Mine Services and Contracts	As required
	Stripping will occur preferably in damp conditions if practical and during favourable wind conditions. Stripping operations will be modified or ceased, if required, to prevent the generation of unacceptable dust.	Superintendent Mine Services and Contracts	As required
Topsoil stockpiling	Long term topsoil stockpiles, that are not planned to be used for over six months, will be sown with cover crops.	Superintendent Mine Services and Contracts	As required
Drilling	Air pollution control equipment will be operated and maintained on all drilling rigs to prevent fines generated during drilling being discharged to the atmosphere.	Manager Shovels and Contract Mining Manager Geology	Ongoing
	Water drill patterns post drilling to minimise dust generation from the fine material collected during drilling.	Manager Shovels and Contract Mining	Ongoing

Source	Air quality mitigation measures	Responsibility	Timing
Blasting	Blasting will only occur following an assessment of weather conditions to ensure that wind speed and direction will not result in excess dust emissions from the site.	Superintendent Drill and Blast	Ongoing
Overburden dumping	When SMS wind alarms are received assess current dumping strategy and utilise alternate, less exposed dumps.	Open Cut Examiner (OCE)	Ongoing
	Mine planning dump strategy considers prevailing wind speed and direction.	Manager Technical Services	Ongoing
ROM coal stockpile area	Apply a road sealant or dust suppressant product on the ROM coal stockpile traffic area as required.	Manager Mining	Ongoing
Raw coal hopper bins	Automatic sprays and/or wind shields are used when tipping raw coal that has the potential to contribute to unacceptable dust generation.	Coal Processing Superintendent	During raw coal tipping operations
Coal handling and preparation plant (CHPP)	Conveyors will be shielded on top and at least one side, and automatic sprays will be fitted at transfer points.	Coal Processing Superintendent	During routine maintenance inspections
	Use of street sweeps on sealed hard stand areas, as required.	Superintendent Maintenance (CHPP)	As required
	Unsealed roads used regularly for access will be watered using water carts or sprays to minimise the generation of dust and particulate.	Coal Processing Superintendent	As required
	All roads are speed limited. Speed limits will be enforced to ensure excessive vehicle speeds do not contribute to unacceptable dust generation.	Coal Processing Superintendent	As required
Rail loading facility	Conveyors will be shielded and automatic sprays fitted at all transfer points.	Manager Coal Processing	Ongoing
Excessive Dust Events			
Haul Roads	Strategic deployment of water carts to control haul road dust to focused locations/activities.	Manager Mining	As required
	Relocation of haul truck routes in response to wind direction and speed.	OCE	As required
Overburden Emplacement Areas	Relocation or modification of exposed operations such as topsoil removal or overburden dumping.	OCE	As required
	Should visibility on Denman Road, Edderton Road or Thomas Mitchell Drive affect the safety of drivers, mining operations will be altered or ceased until such time that visibility improves.	OCE / Manager Mining	As required
Areas disturbed by Mining Operations	Where relocation is not possible temporary halting of activities and resuming when weather conditions have improved will be assessed and implemented where required.	OCE / Mining Manager	As required

Source	Air quality mitigation measures	Responsibility	Timing
Operational Response Processes			
Air Quality and Greenhouse Gas Management Plan and Air Quality Monitoring Program	Operate in accordance with this Air Quality and Greenhouse Gas Management Plan and implement procedures contained within this management plan.	All employees	Ongoing
	Ensure the air quality and meteorological monitoring network is maintained and results are routinely analysed, assessed and reported.	Advisor Environment	In accordance with the Air Quality Monitoring Program
	Receiving, reporting and responding to any complaints in relation to air quality through the 24-hour community response line.	Superintendent Community Relations	Ongoing
	In the event of a high dust alarm report the results to the OCE, investigating the source, and ensuring that relevant operational procedures are undertaken.	OCE / Manager Mining	Ongoing
	Report the results of any air quality monitoring in accordance with the conditions of the Project Approval.	Environment Manager	As required
	Ensure that all employees and contractors are given adequate training in environmental awareness, legal responsibilities, and air quality control methods.	Superintendent Environment	Ongoing
	In the event of a high dust alarm, investigate the source and undertake response procedures to identify and mitigate the source of dust.	OCE	As required
	Any corrective action as an operational response will be recorded and reported to the Advisor Environment who is to keep a record of all significant proactive and reactive actions. The Advisor Community Relations must be informed of any complaint and details must be recorded in the complaints register in addition to response and actions taken.	OCE	Ongoing
	An investigation to determine whether there is any relationship between short-term dust episodes, and the frequency of dust related community complaints will be undertaken annually and reported in the Annual Environmental Management Report (AEMR).	Advisor Environment	Annually

Note: Responsibilities may be delegated as required.

3.2 Assessment of Coal Mine Particulate Matter Control Best Practice Pollution Reduction Program

In June 2011, the OEH published the draft best practice document *NSW Coal Mining Benchmarking Study: International Best Practice Measures to Prevent and/or Minimise*

Emissions of Particulate Matter from Coal Mining. As an outcome of the report, OEH developed a Pollution Reduction Program (PRP) that required Mt Arthur Coal to prepare a report on the practicability of implementing best practice measures to reduce particle emissions.

The Coal Mine Particulate Matter Control Best Practice PRP was attached to the Mt Arthur Coal EPL 11457, as varied on 8 August 2011, and a report was provided to the Environment Protection Authority (EPA) in February 2012. This PRP has since been removed from EPL 11457 due to its satisfactory completion.

On 21 March 2013, EPL 11457 was further modified to include three new conditions (PRPs):

- U1: Particulate Matter Control Best Practice Implementation - Wheel Generated Dust
- U2: Particulate Matter Control Best Practice Implementation - Disturbing and Handling Overburden Under Adverse Weather Conditions
- U3: Particulate Matter Control Best Practice Implementation - Trial of Best Practice Measures for Disturbing and Handling Overburden

3.3 Monitoring Program and Baseline Data

In accordance with the Project Approval, *MAC-ENC-PRO-057 Air Quality Monitoring Program* has been prepared as a separate document to this Plan. Data from the monitoring program will be used to determine the impact of Mt Arthur Coal's operations on the surrounding air environment and community.

Details on baseline air quality studies can be found in the Mount Arthur North Coal Project Environmental Impact Statement (URS Australia Pty Limited, 2000) and the Mt Arthur Coal Consolidation Project Environmental Assessment (Hansen Bailey, 2009).

3.4 Management of Short-Term Dust Episodes and Cumulative Impacts

Management of short-term dust episodes will primarily be undertaken using the real-time monitoring system described in the *MAC-ENC-PRO-057 Air Quality Monitoring Program*, supported by a range of controls described in Section 3.1.

An investigation to determine whether there is any relationship between short-term dust episodes and the frequency of dust related community complaints will be undertaken annually and reported in the Annual Environmental Management Report (AEMR).

To assist in reviewing cumulative dust impacts around the Mt Arthur Coal operation, consultation and data sharing arrangements will be explored with neighbouring mines.

3.5 Greenhouse Gas Management

Mt Arthur Coal undertakes regular reviews and monitoring of GHG emissions and energy efficiency initiatives to ensure that GHG emissions per tonne of product coal are kept to the minimum practicable level. In accordance with *National Greenhouse and Energy Reporting Act*

2007 (NGER Act), Mt Arthur Coal regularly quantifies GHG emissions attributable to its operations, including emissions from coal seams and emissions caused by fuel and electricity consumption.

Mt Arthur Coal mine operates in seams that contain gases such as methane (CH₄) and carbon dioxide (CO₂). As the mining progresses to the west and south it will become progressively deeper and extraction will move from areas of relatively low CO₂ content to areas of increasing gas content where CH₄ is the dominant component. This will progressively increase Mt Arthur Coal's GHG intensity for each tonne of coal mined.

The expansion of the operation will naturally make the mining process deeper and take it further from the CHPP together with an increase in production output. This will fundamentally increase the amount of energy required to bring each run-of-mine tonne to the point of product dispatch.

Some of the key focus areas for GHG management at Mt Arthur Coal include:

- Establishing an NGER method 3 assessment of fugitive seam gas emissions;
- Generating and maintaining best practice management for synthetic and refrigeration gasses; and
- Exploring the increase of the percentage of biodiesel used across the site.

Mt Arthur Coal's efforts to reduce GHG emissions are complemented by energy efficiency projects identified under the *Energy Efficiency Opportunities Assessment Act 2006*. Energy efficiency initiatives and opportunities are evaluated in the context of:

- their compatibility with the mine's production output and needs;
- energy and carbon costing;
- capital cost; and
- overall operating cost effectiveness including maintenance costs.

Mt Arthur Coal identifies and assesses opportunities to reduce GHG emissions resulting from the mines operations. Following the assessment, reasonable and feasible measures that are deemed effective at reducing GHG emissions are implemented. Regular monitoring enables Mt Arthur Coal to progressively assess and prioritise actions with operational growth and change.

3.6 Odour Management

The primary potential sources of odour at Mt Arthur Coal are spontaneous combustion and blast fume. Details on how Mt Arthur Coal manages spontaneous combustion can be found in *MAC-ENC-PRG-002 Spontaneous Combustion Control Program*. Details on how Mt Arthur Coal manages blast fume can be found in *MAC-ENC-MTP-015 Blast Management Plan*.

Mt Arthur Coal controls the spread of spontaneous combustion by removing and purposely disposing of any carbonaceous material that is prone to self-heating (except where the material is extracted run-of-mine coal). Disposal areas are then capped with inert material to prevent the development of spontaneous combustion and the release of odorous emissions. Coal stockpiles

are managed to reduce the risk of spontaneous combustion outbreaks. As required by EPL11457, monthly summaries are prepared and submitted to OEH in the form of a six-monthly report.

A further potential source of temporary odour emissions is associated with blast fume. Best practice control of blast fume, dust and odour will be achieved by the following:

- Minimising the potential for delayed firing of shots which have been loaded into wet holes within the constraints of prevailing weather conditions; and
- Conducting a pre-blast environmental assessment with consideration given to wind speed, direction and shear and the strength of temperature inversions prior to each blast. Whenever practicable, blasts will be fired in suitable weather conditions that minimise the potential for blast generated dust and/or blast fume to be blown towards neighbouring residential areas.

4.0 Response Procedures

4.1 Operational Response Process

Operational response procedures are detailed in Table 1.

4.2 Exceedance Protocol

Where dust and/or particulate concentrations consistently approach or exceed the relevant impact assessment criteria, active air quality controls for excessive dust events (refer to Table 1) will be implemented and additional dust and particulate control measures investigated. Mining operations will be modified until air quality levels return to an acceptable range and/or the source of the exceedances can be determined and managed. Exceedance reporting will comply with *MAC-ENC-MTP-041 Environmental Management Strategy*.

An exceedance of the 24-hour daily average limit of $50 \mu\text{g}/\text{m}^3$ will be notified to the DP&I as an interim exceedance which will require an investigation by Mt Arthur Coal. Wind speed and wind direction data is compared against the 15-minute real time air quality data. Compliance with air quality criteria is demonstrated by assessing monitoring results against wind direction in 15 minute increments across the day. This may require recalculating the 24-hour average based on shorter time increments to compensate for wind shifts during the period. Assessment for cumulative purposes will utilise the values calculated directly from the monitors, without quantitative correction for non-mining sources.

In relation to high volume air sampler monitoring (PM_{10}), compliance with air quality criteria is demonstrated by assessing monitoring results against wind direction during the day. This may require recalculating the 24-hour average based on shorter time increments to compensate for wind shifts during the period.

In relation to dust deposition monitoring, compliance with air quality criteria is demonstrated by investigating the spatial representation of wind and operational activities for the monitoring period.

Regional dust events are determined from comparative results of the upwind and downwind monitors.

4.3 Community Response Process

All complaints received regarding operational air quality will be responded to in accordance with *MAC-ENC-PRO-042 Community Complaints Handling, Response and Reporting*. This procedure details Mt Arthur Coal's obligations in regards to receiving, handling, responding to, and recording details of all community complaints.

4.4 Landowner Notification, Independent Review and Land Acquisition

Conditions 1 to 8 of Schedule 4 of the Project Approval detail procedures applicable to Mt Arthur Coal including landowner notification, independent review and land acquisition procedures. Mt Arthur Coal will follow the protocols outlined in the Project Approval (see Appendix 2).

5.0 Reporting

Air quality management reporting is designed to comply with the Project Approval and EPL conditions, and provide stakeholder access to relevant air quality and GHG management information and data.

Key stakeholders requiring access to this information include Mt Arthur Coal, state and local government agencies, and the local community. Reporting will be undertaken in accordance with *MAC-ENC-PRO-008 Communication and Reporting*. Annual reporting will be undertaken in accordance with Schedule 5, Condition 3 of the Project Approval and the annual return reporting requirements detailed in the EPL.

Air quality monitoring results will be reported monthly on the Mt Arthur Coal website in accordance with section 66(6) of the *Protection of the Environment Operations Act 1997* (POEO Act).

Mt Arthur Coal will report on the performance of the Air Quality Monitoring Program and management of GHG emissions and energy consumption in the AEMR and provide regular updates to members of the Community Consultative Committee (CCC). The AEMR will be provided to the CCC and made available for public information on Mt Arthur Coal's website.

The AEMR will include:

- Air quality monitoring results and comparison to performance criteria;
- Air quality related complaints and management/mitigation measures undertaken;
- Management/mitigation measures undertaken in the event of any confirmed exceedance of performance criteria;
- Review of the performance of management/mitigation measures and the monitoring program; and
- Management of GHG emissions and energy use.

The Annual Return for EPL 11457 will include an air quality monitoring report covering the following items relating to air quality:

- Any exceedance of air quality performance criteria;
- The cause of the air quality exceedance;
- Mitigation measures implemented to minimise or prevent dust;
- The air quality monitoring results at each air quality monitoring station; and
- An explanation for any missing air quality monitoring results.

In accordance with NGER legislation, Mt Arthur Coal regularly quantifies greenhouse gas emissions attributable to its operations, including emissions from coal seams and emissions caused by fuel consumption, electricity consumption, and the use of explosives. Mt Arthur Coal reports annually against the GHGs shown in Table 2.

Table 2: Reportable Greenhouse Gases

Greenhouse Gas	Symbol
Carbon Dioxide	CO ₂
Methane	CH ₄
Nitrous Oxide	N ₂ O
Hydrofluorocarbons	CHF ₂ FCF ₃
Perfluorocarbons	CF ₄ and C ₂ F ₆
Sulphur Hexafluoride	SF ₆

Mt Arthur Coal is required to report pollution incidents immediately and without delay in accordance with the requirements of the POEO Act.

6.0 Performance Indicators

The extent to which this Plan complies with Project Approval and EPL requirements will be measured by the following performance indicators:

1. Compliance with relevant air quality standards at monitoring locations, in particular those representative of sensitive receptor locations;
2. Minimisation of air quality complaints as evidenced by trends in the frequency and extent of complaints;
3. Compliance with *MAC-ENC-PRO-057 Air Quality Monitoring Program* and this plan, as indicated by internal and statutory reporting.

7.0 Continual Improvement

Mt Arthur Coal will strive to continually improve on the mine's environmental performance by applying the principles of best practice to mining operations, including where cost-effective and practicable, the adoption of new best practice technologies and improved air quality control measures. Progress will be monitored using the above noted performance indicators.

Mt Arthur Coal will also examine the correlation between weather conditions and air quality levels to allow procedures to be developed for the active management of predicted dust impacts. In particular, the application of predictive models to forecast dust impacts will be evaluated through an assessment and trial over a three year period as a potential planning and management tool.

At the start of each financial year Mt Arthur Coal establishes targets for total GHG emissions and emissions intensity which take into account any corporate emission targets which apply to Mt Arthur Coal and are externally reportable. The site's progress against these targets is communicated through monthly Health, Safety, Environment and Community reports, monthly manager meetings and toolbox talks.

8.0 Periodic Review

This Plan and associated monitoring program will be reviewed, and if necessary revised to the satisfaction of the Director-General (in consultation with relevant government agencies) in accordance with Condition 4 of Schedule 5 of the Project Approval:

- within 3 months of the submission of an:
 - annual review under Condition 3, Schedule 5 of the Project Approval;
 - incident report under Condition 7, Schedule 5 of the Project Approval;
 - Independent Environmental Audit report under Condition 9, Schedule 5 of the Project Approval;
 - Modification to the conditions of the Project Approval.
- following changes to project approval or licence conditions relating to air quality management or monitoring;
- following any significant air quality related incident;

- for necessary or any unforeseen changes to air quality monitoring locations;
- where there is a relevant change in technology or legislation; or
- where a risk assessment identifies the requirement to alter the plan.

9.0 References

9.1 External Documents

Hansen Bailey (2009), Mt Arthur Coal Consolidation Project Environmental Assessment. Prepared for Hunter Valley Energy Coal Pty Ltd.

Department of Environment and Conservation (2007), Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales

Department of Environment, Climate Change and Water (12 November 2009), Environmental Protection Licence 11457

Department of Planning, Minister of Planning's Project Approval document (dated 29 September 2010), Application Number 09-0062, Mt Arthur Coal Mine – Open Cut Consolidation Project.

Standards Australia (2008), AS 3580.9.8-2008: Methods for sampling and analysis of ambient air - Determination of suspended particulate matter - PM10 continuous direct mass method using a tapered element oscillating microbalance analyser

Standards Australia (2007), AS 3580.1.1:2007: Methods for sampling and analysis of ambient air - Guide to siting air monitoring equipment

Standards Australia (1987), AS 2923-1987: Ambient air - Guide for measurement of horizontal wind for air quality applications

Katestone Environmental Pty Ltd (2010), NSW Coal Mining Benchmarking Study: International Best Practice Measures to Prevent and/or Minimise Emissions or Particulate Matter from Coal Mining

URS Australia Pty Limited (2000) The Mount Arthur North Coal Project, Environmental Impact Statement. Prepared for Coal Operations Australia Limited.

9.2 Mt Arthur Coal Internal EMS Documents

Mt Arthur Coal EMS Documents

MAC-ENC-PRO-057 Air Quality Monitoring Program

MAC-ENC-PRO-008 Communication and Reporting

MAC-ENC-PRO-042 Community Complaints Handling, Response and Reporting

MAC-ENC-PRG-002 Spontaneous Combustion Control Program

MAC-ENC-MTP-015 Blast Management Plan

*MAC-ENC-PRG-003 Assessment of Coal Mine Particulate Matter Control Best Practice
Pollution Reduction Program*

Appendix 1: Air Quality Management Plan Requirements Checklist

Table 3: Air quality management plan requirements checklist

Condition	Requirement	Section																												
Mt Arthur Coal Open Cut Consolidation Project Approval (09_0062)																														
3:18	The Proponent shall ensure that no offensive odours are emitted from the site, as defined under the POEO Act.	3.6																												
3:19	The Proponent shall implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site to the satisfaction of the Director-General.	3.5																												
3:20	<p>Impact Assessment Criteria The Proponent shall ensure that the dust emissions generated by the Mt Arthur mine complex do not cause additional exceedances of the air quality impact assessment criteria listed in Tables 9, 10 and 11 at any residence on privately owned land, or on more than 25 percent of any privately owned land, except where such exceedance is predicted in the EA. For these properties, the Proponent shall comply with the air quality predictions in the EA.</p> <p><i>Table 9: Long term impact assessment criteria for particulate matter</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Pollutant</th> <th style="text-align: left;">Averaging period</th> <th style="text-align: left;">Criterion</th> <th style="text-align: left;">Basis</th> </tr> </thead> <tbody> <tr> <td>Total suspended particulate (TSP) matter</td> <td>Annual</td> <td>90 µg/m³</td> <td>Total¹</td> </tr> <tr> <td>Particulate matter < 10 µm (PM10)</td> <td>Annual</td> <td>30 µg/m³</td> <td>Total¹</td> </tr> </tbody> </table> <p><i>Table 10: Short term impact assessment criterion for particulate matter</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Pollutant</th> <th style="text-align: left;">Averaging period</th> <th style="text-align: left;">Criterion</th> <th style="text-align: left;">Basis</th> </tr> </thead> <tbody> <tr> <td>Particulate matter < 10 µm (PM10)</td> <td>24 hour</td> <td>50 µg/m³</td> <td>Total¹</td> </tr> </tbody> </table> <p><i>Table 11: Long term impact assessment criteria for deposited dust</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Pollutant</th> <th style="text-align: left;">Averaging Period</th> <th style="text-align: left;">Maximum increase² in deposited dust level</th> <th style="text-align: left;">Maximum total¹ deposited dust level</th> </tr> </thead> <tbody> <tr> <td>Deposited Dust</td> <td>Annual</td> <td>2 g/m²/month</td> <td>4g/m²/month</td> </tr> </tbody> </table> <p>¹ Background concentrations due to all other sources plus the incremental increase in concentrations due to the mine complex alone.</p>	Pollutant	Averaging period	Criterion	Basis	Total suspended particulate (TSP) matter	Annual	90 µg/m ³	Total ¹	Particulate matter < 10 µm (PM10)	Annual	30 µg/m ³	Total ¹	Pollutant	Averaging period	Criterion	Basis	Particulate matter < 10 µm (PM10)	24 hour	50 µg/m ³	Total ¹	Pollutant	Averaging Period	Maximum increase ² in deposited dust level	Maximum total ¹ deposited dust level	Deposited Dust	Annual	2 g/m ² /month	4g/m ² /month	3.0 4.0 5.0 Appendix 2 AQ Monitoring Program
Pollutant	Averaging period	Criterion	Basis																											
Total suspended particulate (TSP) matter	Annual	90 µg/m ³	Total ¹																											
Particulate matter < 10 µm (PM10)	Annual	30 µg/m ³	Total ¹																											
Pollutant	Averaging period	Criterion	Basis																											
Particulate matter < 10 µm (PM10)	24 hour	50 µg/m ³	Total ¹																											
Pollutant	Averaging Period	Maximum increase ² in deposited dust level	Maximum total ¹ deposited dust level																											
Deposited Dust	Annual	2 g/m ² /month	4g/m ² /month																											

Condition	Requirement	Section																																			
	<p>² Incremental increase in concentrations due to the mine complex alone.</p> <p>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.</p>																																				
3:21	<p>Land Acquisition Criteria</p> <p>If the dust emissions generated by the Mt Arthur mine complex exceed the criteria in Tables 12, 13, and 14 at any residence on privately owned land, or on more than 25 percent of any privately owned land, the Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 7-8 of schedule 4.</p> <p><i>Table 12: Long term land acquisition criteria for particulate matter</i></p> <table border="1" data-bbox="416 786 1606 882"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>Criterion</th> <th>Basis</th> </tr> </thead> <tbody> <tr> <td>Total suspended particulate (TSP) matter</td> <td>Annual</td> <td>90 µg/m³</td> <td>Total¹</td> </tr> <tr> <td>Particulate matter < 10 µm (PM10)</td> <td>Annual</td> <td>30 µg/m³</td> <td>Total¹</td> </tr> </tbody> </table> <p><i>Table 13: Short term land acquisition criteria for particulate matter</i></p> <table border="1" data-bbox="416 975 1588 1099"> <thead> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th>Criterion</th> <th>Percentile³</th> <th>Basis</th> </tr> </thead> <tbody> <tr> <td>Particulate matter < 10 µm (PM10)</td> <td>24 hour</td> <td>150 µg/m³</td> <td>99⁴</td> <td>Total¹</td> </tr> <tr> <td>Particulate matter < 10 µm (PM10)</td> <td>24 hour</td> <td>50 µg/m³</td> <td>98.6</td> <td>Increment²</td> </tr> </tbody> </table> <p><i>Table 14: Long term land acquisition criteria for deposited dust</i></p> <table border="1" data-bbox="416 1161 1606 1286"> <thead> <tr> <th>Pollutant</th> <th>Averaging Period</th> <th>Maximum increase² in deposited dust level</th> <th>Maximum total¹ deposited dust level</th> </tr> </thead> <tbody> <tr> <td>Deposited dust</td> <td>Annual</td> <td>2 g/m²/month</td> <td>4g/m²/month</td> </tr> </tbody> </table> <p>¹ Background concentrations due to all other sources plus the incremental increase in concentrations due to the mine complex alone.</p> <p>² Incremental increase in concentrations due to the mine complex alone.</p> <p>³ Based on the number of block 24 hour averages in an annual period.</p> <p>⁴ Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents, illegal activities or any other activity agreed by the Director-General in consultation with</p>	Pollutant	Averaging period	Criterion	Basis	Total suspended particulate (TSP) matter	Annual	90 µg/m ³	Total ¹	Particulate matter < 10 µm (PM10)	Annual	30 µg/m ³	Total ¹	Pollutant	Averaging Period	Criterion	Percentile ³	Basis	Particulate matter < 10 µm (PM10)	24 hour	150 µg/m ³	99 ⁴	Total ¹	Particulate matter < 10 µm (PM10)	24 hour	50 µg/m ³	98.6	Increment ²	Pollutant	Averaging Period	Maximum increase ² in deposited dust level	Maximum total ¹ deposited dust level	Deposited dust	Annual	2 g/m ² /month	4g/m ² /month	<p>4.4 Appendix 2 AQ Monitoring Program</p>
Pollutant	Averaging period	Criterion	Basis																																		
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Condition	Requirement	Section														
	<p><i>OEH.</i></p> <p><i>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.</i></p>															
<p>3:22</p>	<p>Additional Air Quality Mitigation Measures Upon receiving a written request from the owner of any residences: (a) on the air quality affected land listed in Table 1; (b) on the land listed in Table 15; and (c) on any other privately-owned land where subsequent air quality monitoring shows the dust generated by the Mt Arthur mine complex exceeds the air quality limits in Tables 9, 10 or 11, the Proponent shall implement reasonable dust mitigation measures (such as a first-flush roof system, internal or external air filters and/or air conditioning) at the residence in consultation with the owner.</p> <p>If within 3 months of receiving this request from the owner, the Proponent and the owner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution.</p> <p><i>Table 15: Land subject to additional air quality mitigation upon request</i></p> <table border="1" data-bbox="416 1002 1606 1225"> <thead> <tr> <th><i>Receiver No.1</i></th> <th><i>Receiver</i></th> </tr> </thead> <tbody> <tr> <td>91</td> <td>Doherty</td> </tr> <tr> <td>94</td> <td>Skinner</td> </tr> <tr> <td>187</td> <td>Duncan</td> </tr> <tr> <td>200</td> <td>Walsh</td> </tr> <tr> <td>201</td> <td>Denton</td> </tr> <tr> <td>205</td> <td>Lambkin</td> </tr> </tbody> </table> <p><i>Note: To interpret the locations referred to in Table 15, see the applicable figure in Appendix 5 of the Project Approval (09_0062)</i></p>	<i>Receiver No.1</i>	<i>Receiver</i>	91	Doherty	94	Skinner	187	Duncan	200	Walsh	201	Denton	205	Lambkin	<p>4.4 Appendix 2</p>
<i>Receiver No.1</i>	<i>Receiver</i>															
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94	Skinner															
187	Duncan															
200	Walsh															
201	Denton															
205	Lambkin															
<p>3:23</p>	<p>Operating Conditions The Proponent shall: (a) implement best practice air quality management, including all reasonable and feasible measures</p>	<p>3.0 4.0</p>														

Condition	Requirement	Section
	to minimise offsite odour, fume and dust emissions of the Mt Arthur mine complex;	
3:23	(b) ensure that the real-time air quality monitoring and meteorological forecasting data are assessed regularly, and that mining operations are relocated, modified and/or suspended to ensure compliance with the relevant conditions of this approval;	3.1 4.0 Table 1 AQ Monitoring Program
3:23	(c) ensure any visible air pollution generated by the Mt Arthur mine complex is assessed regularly, and that operations are relocated, modified, and/or suspended to minimise air quality impacts on privately-owned land; and	3.0 4.0 Table 1
3:23	(d) implement all reasonable and feasible measures to minimise off-site odour and fume emissions generated by the Mt Arthur mine complex, including those generated by any spontaneous combustion, to the satisfaction of the Director-General.	3.6 4.0 Table 1
3:24	Air Quality and Greenhouse Gas Management Plan The Proponent shall prepare and implement an Air Quality and Greenhouse Gas Management Plan for the Mt Arthur mine complex to the satisfaction of the Director-General. This plan must: (a) be prepared in consultation with OEH, and be submitted to the Director-General for approval by the end of March 2011;	3.3 Appendix 3
3:24	(b) describe the air quality mitigation measures that would be implemented to ensure compliance with the relevant conditions of this approval, including a real-time air quality management system; and	3.0 Table 1 AQ Monitoring Program
3:24	(c) include an air quality monitoring program, that uses a combination of real-time monitors, high volume samplers and dust deposition gauges to evaluate the performance of the Mt Arthur mine complex, and includes a protocol for determining exceedances of the relevant conditions in this approval.	3.3 AQ Monitoring Program
3:25	METEOROLOGICAL MONITORING During the life of the project, the Proponent shall ensure that there is a suitable meteorological station in the vicinity of the site that: (a) complies with the requirements in the <i>Approved Methods for Sampling of Air Pollutants in New South Wales</i> guideline; and (b) is capable of continuous real-time measurement of temperature lapse rate in accordance with	3.3 AQ Monitoring Program

Condition	Requirement	Section
	the <i>NSW Industrial Noise Policy</i> .	
4:1	<p>NOTIFICATION OF LANDOWNERS</p> <p>By the end of November 2010, the Proponent shall notify in writing the owners of the land listed in:</p> <ul style="list-style-type: none"> (a) Table 1 of schedule 3 that they have the right to require the Proponent to acquire their land at any stage during the project; (b) Table 1 (noise affected land) and Table 7 of schedule 3 that they are entitled to ask the Proponent to install additional noise mitigation measures at their residence at any stage during the project; and (c) Table 1 (air quality affected land) and Table 15 of schedule 3 that they are entitled to ask the Proponent to install additional air quality mitigation measures at their residence at any stage during the project. 	4.4 Appendix 2
4:2	<p>If the results of the monitoring required in schedule 3 identify that impacts generated by the project are greater than the relevant impact assessment criteria, except where a negotiated agreement has been entered into in relation to that impact, then the Proponent shall, within 2 weeks of obtaining the monitoring results notify the Director-General, the affected landowners and tenants (including tenants of mine-owned properties) accordingly, and provide regular monitoring results to each of these parties until the results show that the project is complying with the criteria in schedule 3.</p> <p>If the monitoring results exceed the relevant 'additional noise mitigation measures' criteria in condition 7 of schedule 3 or 'additional air quality mitigation measures' criteria in condition 22 of schedule 3 at a residence on privately-owned land, then the Proponent shall also notify the landowner that they are entitled to ask the Proponent to install additional noise or air quality mitigation measures at their residence.</p>	4.4 Appendix 2
4:3	<p>The Proponent shall send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to all landowners and/or existing or future tenants (including tenants of mine owned properties) of properties where:</p> <ul style="list-style-type: none"> (a) the predictions in the EA identify that the dust emissions generated by the project are likely to be greater than the air quality land acquisition criteria in schedule 3, with such notice to be provided by the end of November 2010; and (b) monitoring results identify that the mine is exceeding the air quality land acquisition criteria in schedule 3, with such notice to be provided within 2 weeks of identifying the exceedance. 	4.4



Condition	Requirement	Section
4:4	<p>INDEPENDENT REVIEW</p> <p>If a landowner of privately-owned land considers the project to be exceeding the impact assessment criteria in schedule 3, then he/she may ask the Director-General in writing for an independent review of the impacts of the project on his/her land.</p> <p>If the Director-General is satisfied that an independent review is warranted, the Proponent shall within 2 months of the Director-General's decision:</p> <p>(a) commission a suitably qualified, experienced and independent expert, whose appointment has been approved by the Director-General, to:</p> <ul style="list-style-type: none"> • consult with the landowner to determine his/her concerns; • conduct monitoring to determine whether the project is complying with the relevant impact assessment criteria in schedule 3; and • if the project is not complying with these criteria then: <ul style="list-style-type: none"> ○ determine if the more than one mine is responsible for the exceedance, and if so the relative share of each mine regarding the impact on the land; ○ identify the measures that could be implemented to ensure compliance with the relevant criteria; and <p>(b) give the Director-General and landowner a copy of the independent review.</p>	4.4 Appendix 2
4:5	<p>If the independent review determines that the project is complying with the relevant impact assessment criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the Director-General.</p> <p>If the independent review determines that the project is not complying with the relevant impact assessment criteria in schedule 3, and that the project is primarily responsible for this non-compliance, then the Proponent shall:</p> <p>(a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent expert, and conduct further monitoring until the project complies with the relevant criteria; or</p> <p>(b) secure a written agreement with the landowner to allow exceedances of the relevant impact assessment criteria, to the satisfaction of the Director-General.</p> <p>If the measures referred to in (a) do not achieve compliance with the air quality and/or noise land acquisition criteria in schedule 3, and the Proponent cannot secure a written agreement with the landowner to allow these exceedances within 3 months, then upon receiving a written request from the landowner, the Proponent shall acquire all or part of the landowner's land in accordance with the procedures in conditions 7-8 below.</p>	4.4 Appendix 2

Condition	Requirement	Section
4:6	<p>If the independent review determines that the relevant impact assessment criteria in schedule 3 are being exceeded, but that more than one mine is responsible for this non-compliance, then the Proponent shall, together with the relevant mine/s:</p> <p>(a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent expert, and conduct further monitoring until there is compliance with the relevant criteria; or</p> <p>(b) secure a written agreement with the landowner and other relevant mines to allow exceedances of the relevant impact assessment criteria in schedule 3, to the satisfaction of the Director-General.</p> <p>If the measures referred to in (a) do not achieve compliance with the air quality and/or noise land acquisition criteria in schedule 3, and the Proponent together with the relevant mine/s cannot secure a written agreement with the landowner to allow these exceedances within 3 months, then upon receiving a written request from the landowner, the Proponent shall acquire all or part of the landowner’s land on as equitable a basis as possible with the relevant mine/s, in accordance with the procedures in conditions 7-8 below.</p>	4.4 Appendix 2
4:7	<p>LAND ACQUISITION</p> <p>Within 3 months of receiving a written request from a landowner with acquisition rights, the Proponent shall make a binding written offer to the landowner based on:</p> <p>(a) the current market value of the landowner’s interest in the property at the date of this written request, as if the property was unaffected by the project, having regard to the:</p> <ul style="list-style-type: none"> • existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and • presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner’s written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of the ‘additional noise mitigation measures’ in condition 7 of schedule 3, ‘additional air quality mitigation measures’ in condition 22 of schedule 3, or ‘compensatory water supplies’ in condition 34 of schedule 3; <p>(b) the reasonable costs associated with:</p> <ul style="list-style-type: none"> • relocating within the Muswellbrook, Singleton or Scone local government area, or to any other local government area determined by the Director-General; and • obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is to be acquired; and 	4.4 Appendix 2

Condition	Requirement	Section
	<p>(c) reasonable compensation for any disturbance caused by the land acquisition process.</p> <p>However, if at the end of this period, the Proponent and landowner cannot agree on the acquisition price of the land and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Director-General for resolution.</p> <p>Upon receiving such a request, the Director-General shall request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer to:</p> <ul style="list-style-type: none"> • consider submissions from both parties; • determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in paragraphs (a)-(c) above; • prepare a detailed report setting out the reasons for any determination; and • provide a copy of the report to both parties. <p>Within 14 days of receiving the independent valuer’s report, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer’s determination.</p> <p>However, if either party disputes the independent valuer’s determination, then within 14 days of receiving the independent valuer’s report, they may refer the matter to the Director-General for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer’s determination. Following consultation with the independent valuer and both parties, the Director-General shall determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above, the independent valuer’s report, and the detailed report of the party that disputes the independent valuer’s determination. Within 14 days of this determination, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the Director-General’s determination.</p> <p>If the landowner refuses to accept the Proponent’s binding written offer under this condition within 6 months of the offer being made, then the Proponent’s obligations to acquire the land shall cease, unless the Director-General determines otherwise.</p>	
4:8	The Proponent shall pay all reasonable costs associated with the land acquisition process described in condition 7 above, including the costs associated with obtaining Council approval for any plan of	4.4



Condition	Requirement	Section
	subdivision (where permissible), and registration of this plan at the Office of the Registrar-General.	Appendix 2
5:2	<p>Management Plan Requirements The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:</p> <p>(a) detailed baseline data;</p> <p>(b) a description of:</p> <ul style="list-style-type: none"> • the relevant statutory requirements (including any relevant approval, licence or lease conditions); • any relevant limits or performance measures/criteria; • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures; <p>(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;</p> <p>(d) a program to monitor and report on the:</p> <ul style="list-style-type: none"> • impacts and environmental performance of the project; • effectiveness of any management measures (see c above); <p>(e) a contingency plan to manage any unpredicted impacts and their consequences;</p> <p>(f) a program to investigate and implement ways to improve the environmental performance of the project over time;</p> <p>(g) a protocol for managing and reporting any:</p> <ul style="list-style-type: none"> • incidents; • complaints; • non-compliances with statutory requirements; and • exceedances of the impact assessment criteria and/or performance criteria; and <p>(h) a protocol for periodic review of the plan.</p>	<p>3.3</p> <p>2.0</p> <p>AQ Monitoring Program</p> <p>6.0</p> <p>3.0</p> <p>AQ Monitoring Program & 5.0</p> <p>4.2</p> <p>7.0</p> <p>4.0, 5.0</p> <p>8.0</p>
5:3	<p>Annual Review By the end of 2010, and annually thereafter, the Proponent shall review the environmental performance of the project to the satisfaction of the Director-General. This review must:</p> <p>(a) describe the works that were carried out in the past year, and the works that are proposed to be carried out over the next year;</p> <p>(b) include a comprehensive review of the monitoring results and complaints records of the project over the past year, which includes a comparison of these results against the</p>	5.0

Condition	Requirement	Section
	<ul style="list-style-type: none"> • the relevant statutory requirements, limits or performance measures/criteria; • the monitoring results of previous years; and • the relevant predictions in the EA; <p>(c) identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;</p> <p>(d) identify any trends in the monitoring data over the life of the project;</p> <p>(e) identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and</p> <p>(f) describe what measures will be implemented over the next year to improve the environmental performance of the project.</p>	
5:4	<p>Revision of Strategies, Plans and Programs Within 3 months of the submission of an:</p> <p>(a) annual review under condition 3 above;</p> <p>(b) incident report under condition 7 below;</p> <p>(c) audit under condition 9 below; and</p> <p>(d) any modification to the conditions of this approval, the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Director-General.</p> <p><i>Note: This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the project.</i></p>	8.0
5:7	<p>REPORTING Incident Reporting The Proponent shall notify the Director-General and any other relevant agencies of any incident associated with the project as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of becoming aware of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident.</p>	5.0
5:8	<p>Regular Reporting The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval, and to the satisfaction of the Director-General.</p>	5.0
5:11	ACCESS TO INFORMATION	Refer to Mt



Condition	Requirement	Section
	<p>From the end of December 2010, the Proponent shall:</p> <p>(a) make the following information publicly available on its website:</p> <ul style="list-style-type: none"> • a copy of all current statutory approvals for the project; • a copy of the current environmental management strategy and associated plans and programs; • a summary of the monitoring results of the project, which have been reported in accordance with the various plans and programs approved under the conditions of this approval; • a complaints register, which is to be updated on a monthly basis; • a copy of the minutes of CCC meetings; • a copy of any Annual Reviews (over the last 5 years); • a copy of any Independent Environmental Audit, and the Proponent's response to the recommendations in any audit; • any other matter required by the Director-General; and <p>(b) keep this information up to date, to the satisfaction of the Director-General.</p>	<p>Arthur Coal Website</p>
Mt Arthur Coal Open Cut Consolidation Project Statement of Commitments		
1.	Mt Arthur Coal's Environmental Monitoring Programs for air quality, water quality, noise and blasting will be reviewed and updated as required, in consultation with relevant regulators for approval by the Department.	3.3 8.0
3.	In addition to the best practice management measures currently in place, Mt Arthur Coal will apply a road sealant or dust suppressant product on all active coal and overburden haul roads and / or utilise other such technologies and initiatives as required to ensure that the air quality outcomes described in the EA are achieved.	3.0
4.	Mt Arthur Coal will undertake regular reviews and monitoring of greenhouse gas emissions and energy efficiency initiatives to ensure that greenhouse gas emissions per tonne of product coal are kept to the minimum practicable level.	3.5
5.	Mt Arthur Coal will establish a new real-time Tapered Element Oscillating Microbalances (TEOM) monitoring station or stations on the Mt Arthur site positioned so that it (they) provide data that are representative of air quality conditions on the site itself and on nearby properties where air quality data may be needed for mine management purposes. Data collected is to be published in the Project's Annual Reviews.	3.3 AQ Monitoring Program

Condition	Requirement	Section
Mt Arthur Underground Project Approval		
6.8.3	The Proponent will maintain their existing dust monitoring network (or as otherwise agreed with OEH), that includes high volume air samplers measuring PM ₁₀ on a 6 day cycle, real-time samplers measuring PM ₁₀ and dust deposition gauges. Dust monitoring findings relating to the project will be reported annually in the AEMR (refer to commitment 6.14.1).	3.3, 5.0, 6.0, AQ Monitoring Program
Environmental Protection Licence 11457		
R6.1	R6 Spontaneous combustion control program reporting The monthly summaries, monthly assessments and monthly maps prepared under the spontaneous combustion control program must be submitted to the EPA in the form of a 6 monthly report. The licensee must forward a copy of each 6 monthly report to the regional office of the EPA no later than two (2) months after the 6 monthly period being reported.	3.6
R6.2	The monthly summaries, assessments and maps must be retained by the licensee for not less than four (4) years following the month under review. The records must be kept in a legible form and must be made available to any authorised officer of the EPA on request.	3.6
O4.1	The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.	3.0 & 4.0
M2.1	For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:	3.3 AQ Monitoring Program
M3.1	Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with: (a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or (b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or (c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.	3.2 AQ Monitoring Program

Appendix 2: Landholder Consultation and Investigation Process

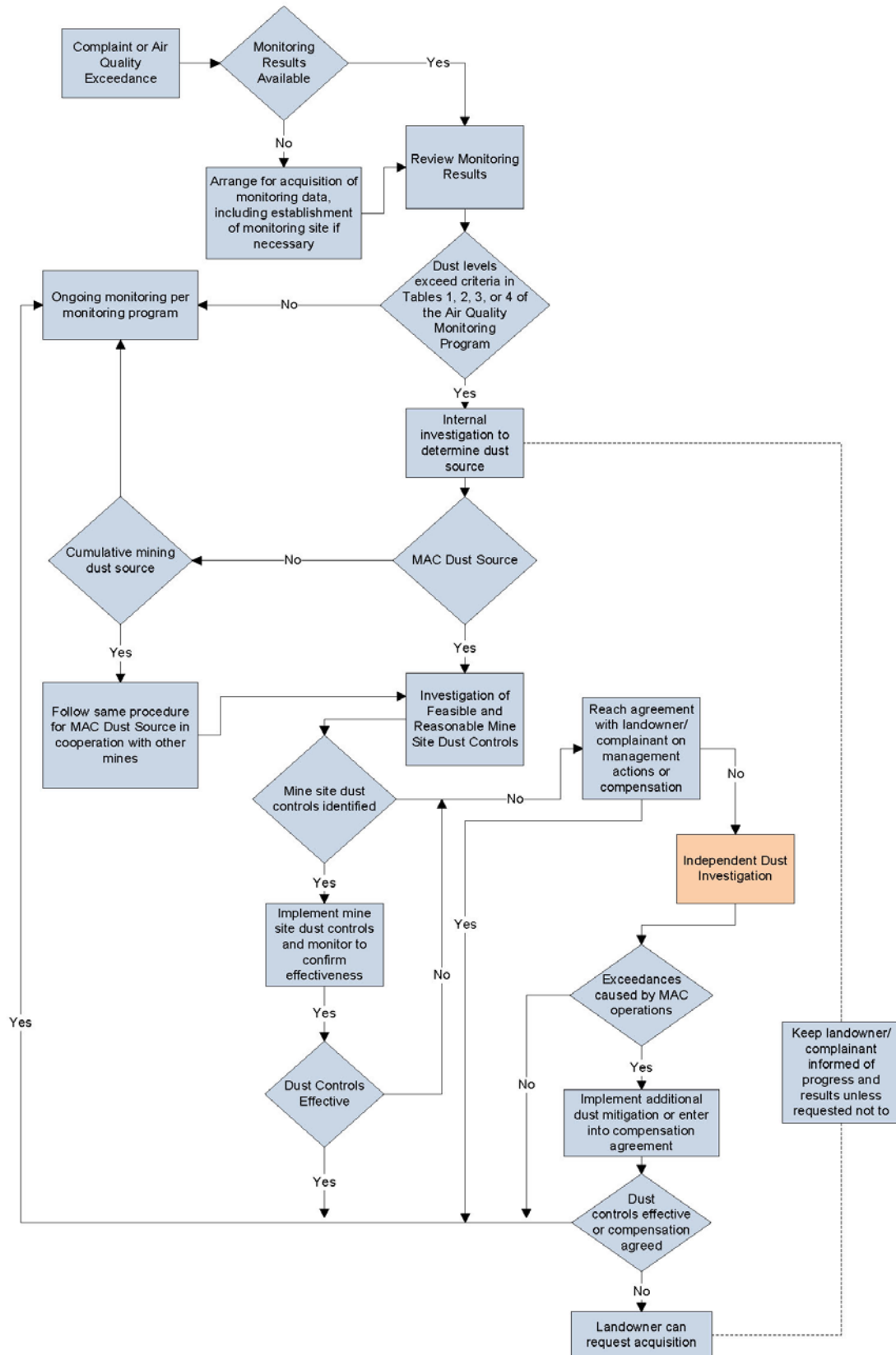


Figure 1: Landholder consultation and investigation process

Appendix 3: Correspondence Records

Telephone correspondence on 16 March 2011, 3.38pm

Steve Perkins from Mt Arthur Coal contacted Steve Clair from the Department of Environment, Climate Change and Water (now Office of Environment and Heritage) on 16 March 2011 and asked if Mt Arthur Coal could meet with him to review Management Plans. Steve Clair advised that the Department of Environment, Climate Change and Water does not provide comment on Management Plans. Steve Clair informed Steve Perkins that he could send the Management Plans to him for review, but that he would not submit any comments on the Management Plans.

Email correspondence on 31 March 2011, 4.07pm

From: Perkins, Steven R (NSWEC)
Sent: Thursday, 31 March 2011 4:07 PM
To: 'steve.clair@environment.nsw.gov.au'
Subject: Air Quality Management Plan
Attachments: MAC-ENC-MTP-040 Air Quality Mgt Plan 110331.doc; MAC-ENC-PRO-057 AQ MonitoringProgram 110331.doc

Good afternoon Steve,

Please find attached the Mt Arthur Coal Air Quality Management Plan and Air Quality Monitoring Program for your review.

Regards,
Steve



Steven Perkins
Environmental Superintendent
Mt Arthur Coal
NSW Energy Coal

BHP Billiton
Thomas Mitchell Drive, Muswellbrook, 2333, NSW, Australia
Mail To Steven.R.Perkins@bhpbilliton.com
Internet <http://www.bhpbilliton.com>
Phone +61 2 6542 4874
Mobile +61 408 220 765
Please consider the environment before printing this email



Michael White
General Manager Operations
Mt Arthur Coal
PMB 8
MUSWELLBROOK NSW 2333

Contact: Ben Harrison
Phone: 02 6575 3402
Fax: 02 6575 3515
Email: benjamin.harrison@planning.nsw.gov.au
Our ref: 10/20755

Dear Mr White,

**Mt Arthur Coal Mine – PA 09_0062
Environmental Monitoring and Management Plans**

Thank you for forwarding the following management plans required under project approval 09_0062 for the Department's consideration:

- Noise Management Plan (Condition 9 of Schedule 3);
- Noise Monitoring Program (Condition 9(c) of Schedule 3);
- Road Closure Management Plan (Condition 17(d) of Schedule 3)
- Air Quality Management Plan (Condition 24 of Schedule 3);
- Air Quality Monitoring Program (Condition 24(c) of Schedule 3);
- Visual Impact Report (Condition 49 of Schedule 3)

The Department has reviewed these plans (as amended following previous correspondence) and is satisfied that they generally address the requirements set out in the relevant conditions of the project approval. Consequently, I would like to advise you that the Director-General has approved the plans.

Could you please forward finalised copies of the above plans for the Department's records at your earliest convenience.

Should you have any enquiries on this matter please contact Ben Harrison on (02) 65753402.

Yours sincerely



David Kitto 6/6/12

David Kitto
Director
Mining and Industry Projects
As delegate for the Director-General



Contact: Ben Harrison
Phone: 02 6575 3402
Fax: 02 6575 3515
Email: benjamin.harrison@planning.nsw.gov.au
Our ref: 10/20755

Michael White
General Manager Operations
Mt Arthur Coal
PMB 8
MUSWELLBROOK NSW 2333

Dear Mr White,

**Mt Arthur Coal Mine – PA 09_0062
Environmental Monitoring and Management Plans**

Thank you for forwarding the following modified management plans required under project approval 09_0062 for the Department's consideration:

- Blast Management Plan, inclusive of monitoring program (Condition 17, Schedule 3);
- Air Quality Management Plan inclusive of monitoring program (Condition 24, Schedule 3)
- Noise Management Plan, inclusive of monitoring program (Condition 9, Schedule 3)
- Environmental Management Strategy (Condition 1, Schedule 5)

The Department has reviewed these plans and is satisfied that they generally address the requirements set out in the relevant conditions of the project approval. Consequently, I would like to advise you that the Director-General has approved the plans.

Could you please forward finalised copies of the above plans for the Department's records at your earliest convenience.

Should you have any enquiries on this matter please contact Ben Harrison on (02) 6575 3402.



Scott Brooks
Team Leader Compliance

As Nominee for the Director-General

27-5-2013