

# Drayton Management System Standard

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## Blasting Management and Monitoring Plan

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# Revisions

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<b>Issue</b>	<b>Issue Date</b>	<b>Originator</b>	<b>Reviewed</b>	<b>Approved</b>
1	February 2003	P Simpson	P Forbes	T Hulme
2	November 2005	P Simpson	P Forbes	H Hayes
3	April 2008	P Simpson	P Forbes	M Heaton

# Distribution List

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NSW Department of Planning

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# Document Information

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## 1 PURPOSE

The purpose of this management plan is to provide a framework for the management and controls to be implemented in relation to blasting activities undertaken as part of continued operations at Drayton.

## 2 SCOPE

This procedure describes:

- The statutory requirements with regard to blasting criteria.
- Responsibilities for blast management.
- Monitoring requirements.
- Blast mitigation measures.
- Remedial action measures.
- Protection measures.
- Integration with other mining operations.
- Public notification process.
- Road Closure protocols.
- Enquiries/complaints handling.
- Blasting protocols.
- Residential inspection procedure.
- Reporting requirements.

## 3 DEFINITIONS

<b>Airblast/Overpressure</b>	An airborne shock wave resulting from the initiation of explosives.
<b>Blast</b>	An initiation of explosives within the confines of the open cut approval area with the purpose of fragmenting rock or coal.
<b>dB(L)</b>	Decibels (Linear) scale
<b>DECC</b>	Department of Environment and Climate Change (EPA)
<b>DST</b>	Daylight saving time
<b>EST</b>	Eastern standard time
<b>Flyrock</b>	Rock material that is propelled through the air or along the ground as a result of a blast.
<b>Non Compliance</b>	A specific instance where the statutory requirement for either noise or vibration maximum levels have not been complied with.
<b>S&amp;SD Manager</b>	Safety and Sustainable Development Manager

## 4 STATUTORY REQUIREMENTS

This plan has been developed in accordance with the requirements of the NSW Department of Planning for the Drayton Mine Extension (MP 06\_0202) issued in 2008.

Conditions regarding blast management are as follows:

Condition	Condition Details	Reference						
S3.9	<p>The Proponent shall ensure that the airblast overpressure level from blasting at the project does not exceed the criteria in Table 4 at any residence on privately owned land</p> <p>Table 4: Airblast overpressure impact assessment criteria</p> <table border="1"> <thead> <tr> <th>Airblast overpressure level (dB(Lin Peak))</th> <th>Allowable exceedance</th> </tr> </thead> <tbody> <tr> <td>115</td> <td>5% of the total number of blasts over a period of 12 months</td> </tr> <tr> <td>120</td> <td>0%</td> </tr> </tbody> </table>	Airblast overpressure level (dB(Lin Peak))	Allowable exceedance	115	5% of the total number of blasts over a period of 12 months	120	0%	5.6.3
Airblast overpressure level (dB(Lin Peak))	Allowable exceedance							
115	5% of the total number of blasts over a period of 12 months							
120	0%							
S3.10	<p>The Proponent shall ensure that the ground vibration overpressure level from blasting at the project does not exceed the criteria in Table 5 at any residence on privately owned land</p> <p>Table 5: Ground vibration impact assessment criteria</p> <table border="1"> <thead> <tr> <th>Peak particle velocity (mm/s)</th> <th>Allowable exceedance</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>5% of the total number of blasts over a period of 12 months</td> </tr> <tr> <td>10</td> <td>0%</td> </tr> </tbody> </table>	Peak particle velocity (mm/s)	Allowable exceedance	5	5% of the total number of blasts over a period of 12 months	10	0%	5.6.3
Peak particle velocity (mm/s)	Allowable exceedance							
5	5% of the total number of blasts over a period of 12 months							
10	0%							
S3.11	<p>The Proponent shall only carry out blasting on the site between 9am and 5pm Monday to Saturday (EST) and 9am to 6pm Monday to Saturday (DST) inclusive. No blasting is allowed on Sundays, public holidays or at any other time without the written approval of the DECC</p>	5.6.3						
S3.12	<p>The Proponent may carry out a maximum of</p> <ol style="list-style-type: none"> <li>2 blasts a day; and</li> <li>8 blasts a week,</li> </ol> <p>Averaged over a 12 month period.</p>	5.6.3						
S3.13	<p>During mining operations, the Proponent shall;</p> <ol style="list-style-type: none"> <li>Implement best blasting practice to: <ul style="list-style-type: none"> <li>Protect the safety of people and livestock in the area surrounding blasting operations</li> <li>Protect public or private infrastructure/property in the area surrounding blasting operations from blasting damage; and</li> <li>Minimise the dust and fume emission from blasting at the project; and</li> </ul> </li> <li>Coordinate blasting on site with the blasting at the adjoining Mt Arthur Coal mine to minimise the potential cumulative blasting impacts of the two mines</li> </ol> <p>To the satisfaction of the Director-General.</p>	5.6.7 5.6.11						
S3.14	<p>The Proponent shall not undertake blasting within 500 metres of:</p> <ol style="list-style-type: none"> <li>Thomas Mitchell Drive without the approval of Council; and</li> <li>Any privately owned land or land not owned by the Proponent, unless suitable arrangements have been made with the landowner and any tenants to minimise the risk of flyrock related impact to the property to the satisfaction of the Director-General.</li> </ol>	5.6.9 5.6.10						
S3.15	<p>Prior to blasting within 500 metres of Thomas Mitchell Drive, the Proponent shall prepare a Road Closure Management Plan for the project to the satisfaction of the Council and following approval, implement the plan to the satisfaction of the Council</p>	5.6.10						
S3.16	<p>During mining operations, the Proponent shall</p> <ol style="list-style-type: none"> <li>Notify the landowner/occupier of any residence within 2km of the site who registers an interest in being notified about the blasting schedule at the mine;</li> <li>Operate a blasting hotline or alternative system agreed to by the Director-General to enable the public to get up-to-date information on the blasting schedule at the mine</li> <li>Advertise the blasting hotline number in a local newspaper at least 4 times per year; and</li> <li>Publicise an updated blasting schedule on it's website</li> </ol> <p>To the satisfaction of the Director-General</p>	5.6.4						
S3.17	<p>Within 6 months of this approval, the Proponent shall advise all landowners of privately owned land within 2 kilometres of the project that they are entitled to a structural property inspection.</p>	5.6.13						
S3.18	<p>If the Proponent receives a written request for a structural property inspection from any of these land owners, the Proponent shall within 3 months of receiving this request,</p> <ol style="list-style-type: none"> <li>Commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to inspect the condition of any building or structure on the land and recommend measures to mitigate any potential blasting impacts; and</li> <li>Give the landowner a copy of the property inspection report.</li> </ol>	5.6.13						
S3.19	<p>If any landowner of privately land within 2 kilometres of the site claims that buildings and/or structures on his/her land have been damaged as a result of blasting at the project, the Proponent shall within 3 months of receiving this claim;</p> <ol style="list-style-type: none"> <li>Commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to inspect the condition of any building or structure on the land and recommend measures to mitigate any potential blasting impacts; and</li> <li>Give the landowner a copy of the property inspection report.</li> </ol> <p>If this independent property investigation confirms the landowners claim, and both parties agree these findings, then the Proponent shall repair the damages to the satisfaction of the Director-General.</p> <p>If the Proponent or landowner disagrees with the findings of the independent property investigation then either party may refer the matter to the Director-General for resolution.</p> <p>If the matter cannot be resolved within 21 days, the Director-General shall refer the matter to an independent dispute resolution process</p>	5.6.13						

S3.20	<i>The Proponent shall prepare and implement a Blast Monitoring Programme for the project to the satisfaction of the Director-General. This programme must:</i> a) <i>Be prepared in consultation with the DECC</i> b) <i>Be submitted to the Director-General for approval within 3 months of this approval</i> c) <i>Include a protocol for demonstrating compliance with the blasting criteria in this approval</i>	This document
S5.3	<i>Within 24 hours of detecting an exceedence of the limits/performance criteria in this approval or the occurrence of an incident that causes (or may cause) harm to the environment, the Proponent shall notify the Department and other relevant agencies of the exceedence/incident</i>	5.6.3
S5.4	<i>Within 6 days of notifying the Department and other relevant agencies of an exceedence/incident, the Proponent shall provide the Department and these agencies with a written report that</i> a) <i>Describes the date, time and nature of the exceedence/incident</i> b) <i>Identifies the cause (or likely cause) of the exceedence/incident</i> c) <i>Describes what action has been taken to date; and</i> d) <i>Describes the proposed measures to address the exceedence/incident</i>	5.6.3

## 5 PROCEDURAL REQUIREMENT

### 5.1 Responsibilities

#### **S&SD Manager**

The S&SD Manager is responsible to:

- Assist in the decision process to fire blasts in adverse weather conditions.
- Discuss cumulative impacts with adjacent mines.
- Organise property inspections where required.

#### **Environment Coordinator**

The Environment Coordinator is responsible to:

- Assist in the decision process to fire blasts in adverse weather conditions.
- Monitor all blasts for both airblast and vibration levels.
- Ensure the monitoring system is operational and, if issues arise, deal with them in a prompt and efficient manner.
- Calibrate the monitoring system as per specification requirements.
- Document all necessary reporting in a prompt and efficient manner and within the timeframes required.
- Where relevant, notify private residents of blasting times and any subsequent modifications to blasting times.
- Maintain the register of private residents to be notified of blasting times.
- Coordinate and ensure the blasting hotline is advertised in local newspapers at least four times per year.
- Notify all landowners within 2km of the site that they are entitled to a structural property inspection. If a written request from any of these residents is received, the environmental coordinator shall commission a suitably qualified, experienced and independent person, whose appointment must be approved of by the Director-General.
- If a landholder within 2km of the site requests a structural property inspection, the Environment Coordinator shall commission a suitably qualified, experienced and independent person, whose appointment must be approved of by the Director-General.
- Implement a blast monitoring programme.

#### **Drill and Blast Engineer**

The Drill and Blast Engineer is responsible to:

- Design, initiate and sequence blasts in such a way as to minimise the risk of a blast exceedence and endeavour to minimise annoyance to neighbours.
- Design, initiate and sequence blasts to conform to the requirements of the NSW Dams Safety Committee.
- Issue drill plans to Drayton guidelines.
- Issue all blast designs that follow Drayton guidelines.
- Audit the drill and blast process.

- Participate in investigations resulting from incident as a result from blasting activities. These investigations can be coordinated by the Drill and Blast Engineer in conjunction with other relevant personnel. All incident reporting shall follow the Drayton on site reporting of Incidents procedure.
- Supply the NSW Dams Safety Committee with a monthly plan showing the location of current mining activity in relation to the Ash Dam Levee.
- Consult with independent blasting experts for advice on blast design (delay configuration, tie up and initiation patterns, weather implications etc) where required. Advice given is to be documented for the respective blast.
- Update the blasting hotline daily with up to date information on daily blasting schedule at the mine.
- Update the blasting schedule on the Drayton website daily or as required. If any significant changes to the blasting schedule are to occur, the website is to be updated to reflect these changes.

### **Drill and Blast Crew**

The Drill and Blast Crew are responsible for:

- Following the design criteria for blast preparation work.
- Following all reasonable instructions from the Drill and Blast Engineer.
- Following all reasonable instructions from the Mining Coordinator – Drill and Blast.
- Following all reasonable instructions from other mining Officials.
- Communicating variations or anomalies in loading and tie up to the Mining Coordinator – Drill and Blast.

### **Mining Coordinator - Drill and Blast**

The Mining Coordinator – Drill and Blast is responsible to:

- Inspect and complete a surveillance report on the Ash Dam Levee if the vibration level from any blast exceeds DSC reporting criteria at the nearest monitor to the Ash Dam Levee.
- Document the environmental blasting checklist that is completed for all blasts and is forward to the Environment Coordinator as soon as practical after each blast.
- See that weather conditions are taken into account before blasts are fired and where needed, consult with the Environment Coordinator on current and future adverse weather conditions
- Coordinate the Drill and Blast crew

### **Technical Services Superintendent (Services and Support)**

The Technical Services Superintendent (Services and Support) is responsible to:

- Coordinate an independent inspection of the Liddell Ash Dam Levee if the vibration level from any blast exceeds 20mm/sec recorded at the nearest monitor to the Ash Dam Levee.
- Supervise the Drill and Blast Engineer.

## **5.2 Audit/Review Schedule**

This management plan is to be reviewed at least every three years or as otherwise directed by the Director-General of DoP. The review process is to reflect changes in environmental legislation and guidelines, and changes in technology or operational procedures.

The management plan will be reviewed and, if necessary, revised to the satisfaction of the Director-General where there are changes to the blast monitoring programme as a result in changes in mine development.

In accordance with Project Approval (06\_0202), at the end of year two of the development, and every three years thereafter, Drayton will commission an independent environmental audit to the satisfaction of Director-General of DoP. The audit will include an assessment of the adequacy of all management plans. Where necessary, following the audit this management plan may be updated and action taken to improve blasting management practices at Drayton.

This procedure has been originally prepared and submitted to the following authorities for consultation: NSW Department of Environment and Climate Change and the NSW Department of Planning.

### **5.3 Records Management**

All records of blasting details must be kept on file in the S&SD department for the duration of the life of mine.

### **5.4 Revision Status**

This procedure replaces Issue 2, November 2005.

#### **February 2003**

Procedure reviewed and updated with development consent conditions arising for the expansion of Anglo Coal Drayton Mine.

This procedure has been forwarded to the Department of Mineral Resources, Department of Land and Water Conservation and the Muswellbrook Shire Council for comment.

#### **November 2005**

Scheduled review of this procedure.

Changes made include: Updating position titles, updating with current operational practices, responsibilities and references to Anglo Coal Australia Pty Ltd.

This procedure has also been updated throughout to bring in line with Anglo Coal's requirements as set out in their Document and Data Control Standard.

This management plan was sent to Muswellbrook Shire Council (MSC), Department of Primary Industries (Minerals), Department of Environment and Conservation (EPA), Energy Australia, Dams Safety Committee and Australian Rail Track Corporation (formerly RIC) for review on the 19 September 2005.

#### **March 2008**

Complete review to include requirements of Drayton Extension Project Approval Conditions as issued by the Department of Planning. Specific changes made regarding blasting times, website access, road closure planning for Thomas Mitchell Drive, blasting frequency public notifications on blasting activities and incident reporting.

This management plan was sent to Department of Environment and Climate Change, and the Department of Planning for review in March 2008.

### **5.5 References**

Blasting at Drayton is conducted in accordance with the following approvals/Acts or regulatory conditions:

- Coal Mines Regulation Act, 1982 administered by the DPI-MR.
- Explosives Act, 2003 administered by WorkCover and the DPI-MR.
- The Protection of the Environment Operations Act, 1997 (PoEO Act) administered by the Department of Environment and Conservation (DEC) and associated environmental licence (Ref 1323).
- Environmental Planning and Assessment Act, 1979 (EP&A Act) administered by the Department of Planning (DoP) and associated project approval conditions (Ref MP 06\_0202).

- Anglo Coal Drayton Mine Environmental Assessment 2007.
- Mining Operations Plan (DPI).
- Blasting and Shotfiring Procedure – Drayton.
- Dams Safety Act 1978.

## **5.6 Documents**

### **5.6.1 Policy**

It is Drayton's policy that all licence and approval conditions relating to the environment shall be complied with and, wherever practical, strive to perform to a higher standard than legal compliance.

### **5.6.2 Statutory Requirements**

Drayton has specific requirements relating to blasting activity. These have been issued by the Department of Environment and Climate Change (Environment Protection Authority), NSW Department of Planning and the NSW Dams Safety Committee. These requirements relate to monitoring locations, airblast levels, vibration levels, reporting of non-compliances, blasting times and frequency.

The Department of Primary Industries (Mineral Resources) also has requirements relating to the reporting of environmental exceedences and that Drayton must have processes and procedures in place to manage blasting and shotfiring. This includes roles and personnel, training, storage of explosives, charging operations and firing of blasts.

Workcover NSW has requirements relating to licensing, storage, security and handling of Explosives and explosive pre cursors that are complied with.

Drayton also holds a current Dangerous Goods Licence, issued by Workcover NSW which contains details of site storages and products.

### **5.6.3 Compliance Criteria**

The following blasting criteria are applicable to Drayton blasting activities as per Drayton's current Conditions of Consent as issued by the Department of Planning.

- Blast times must occur between the hours of 9:00am – 5:00pm Mondays to Saturdays (EST) and 9:00am – 6:00pm Mondays to Saturdays (DST).
- No blasting to occur on Sundays or Public Holidays (without prior written approval of the DECC).
- Blasts must not exceed 115 dB(L) or 5mm/sec for more than 5% of the total number of blasts within the annual reporting period and shall not exceed 120 dB(L) or 10mm/sec at any time at the nearest non mine owned residence.
- A maximum of two blasts per day and eight blasts per week averaged over a 12 month period.
- If an exceedence of limits specified in the project approval conditions is detected, Drayton shall notify the Department of Planning and the Department of Environment And Climate Change within 24 hours of the incident. In addition, within six days of notifying these departments, Drayton shall provide each with a written report describing the details of the blast (date, time, nature) and shall describe in detail the cause of the exceedence, actions taken to date and measure to be implemented to address the exceedence and to prevent future occurrences.

In addition to the consent conditions, the NSW Dams Safety Committee has also placed conditions on the requirements for the management of the Ash Dam Levee where blasting is concerned.

These conditions are as follows:

- Vibration levels at the ash dam levee shall not exceed the NSW DSC criteria.
- All blasts must be monitored at the ash dam levee.
- If a vibration level from a blast exceeds set criteria as monitored at the Ash Dam Levee, the level must be inspected for cracking or other damage.
- If a vibration level from a blast exceeds set criteria as measured at the Ash Dam Levee, an independent geotechnical assessment of the Ash Dam Levee must be undertaken.
- The NSW Dams Safety Committee must be notified if a vibration level exceeds set criteria levels as soon as possible after the blast.
- The Drill and Blast Engineer must supply the NSW Dams Safety Committee with a monthly plan showing the location of current mining activity in relation to the dam.
- A quarterly report is to be supplied detailing a blasting summary for all blasts within the vicinity of the Liddell Ash Dam Levee.

#### **5.6.4 Public Notifications**

Any private landholder within 2km of the project that registers an interest in being informed of the blasting schedule at Drayton shall be notified via telephone, e-mail or as otherwise agreed between the parties.

Drayton shall also implement a blasting hotline that will operate to provide information on the daily and proposed weekly blasting schedule. The hotline will be updated as soon as any change to the programme becomes known.

The blasting hotline will operate for the life of the project and the contact number will be advertised in local newspapers at least quarterly, and on the Drayton website.

Road closure notification boards will be maintained on Thomas Mitchell Drive for any blast that is to occur within 500m of Thomas Mitchell Drive.

#### **5.6.5 Monitoring Requirements**

Drayton utilise the Datamaster monitoring system. The Environment Coordinator shall ensure this system is calibrated and maintained as per specification of the system at all times.

All blasts must be monitored for airblast and vibration.

Additional data must also be recorded following each blast. This is responsibility of the Mining Coordinator - Drill and Blast to complete the blasting checklist and forward to the Environment Coordinator immediately after the blast. Details to be collected include the following: date, wind speed and direction, weather conditions, atmospheric conditions, cloud cover, location of the blast and quantity of explosives used. These details shall be entered into the site blast database. This shall also be the responsibility of the Environment Coordinator.

#### **5.6.6 Mitigation Measures**

Weather conditions must be assessed prior to blasting.

Consideration must be given to fog, temperature inversions, rainfall or misty conditions under calm or slight southerly winds. If any of these occur, and dependent upon safety issues at the time, blasts may be delayed until conditions improve. This decision shall be carried out by the Drill and Blast Engineer in consultation with the Environment Coordinator, S&SD Manager and the Mine Manager.

If it becomes necessary to blast in adverse weather conditions and it is considered that the blast may concern neighbours and/or risk licence breach then the Mine Manager, S&SD Manager and the General Manager must give approval. In some instances the blast may be delayed.

Drayton also has ongoing management of spontaneous combustion on site. When blasting is to occur in areas affected by spontaneous combustion, the Blasting and Shotfiring Procedure is to be followed.

### **5.6.7 Measures To Attain Best Practice Blast Management**

Drayton has been in operation since 1983 and has a long history of successful blasting operations. Historically, exceedences in airblast have been rare and there have been no exceedences in vibration levels. Drayton operates an internal limit upon which an investigation is held should the internal levels be exceeded. By proactively managing blasting, Drayton has a demonstrated record of continued best practice blast management.

### **5.6.8 Remedial Action Measures**

If safety, operational, environmental issues or dam safety concerns result from blasting activities, an investigation is to be undertaken. This shall be coordinated by the Drill and Blast Engineer in conjunction with other relevant personnel. All incident reporting shall follow Drayton's on site Reporting of Incidents Procedure.

The Drill and Blast Engineer shall ensure any amendments to the drilling and blasting guidelines following investigations are completed, implemented and documented.

### **5.6.9 Protection Measures**

Several protection measures will be implemented in compliance with our consent conditions and to demonstrate best practice measures. These include:

- All measures will be implemented to ensure the safety of people and livestock in areas surrounding blasting operations.
- Blast designs and initiation will be planned to minimise the risk of dust and fume emissions from blasting activities.
- Blasts will be designed to minimise the impact on any public or private infrastructure or property in areas surrounding blast operations from any damage caused by blasting.
- Blasting operations will be coordinated with Mt Arthur Coal operations to minimise the potential for simultaneous or cumulative blasting impacts to occur.
- Drayton shall not blast within 500 metres of any land that is privately owned or land that is not owned by Drayton unless suitable agreement has been reached with the owner or occupier.
- Separate operating conditions shall exist for the management of blasting in the vicinity of Thomas Mitchell Drive. Refer to section 5.6.10 for more details.
- All blasts in relation the Liddell Ash Dam Levee must be designed to minimise ground vibration to remain below 10mm/sec.

### **5.6.10 Thomas Mitchell Drive Road Closure**

Drayton's consent conditions stipulate that prior to blasting within 500 metres of Thomas Mitchell Drive, a road closure management plan shall be documented and implemented to the satisfaction of the Muswellbrook Shire Council. The road closure management plan will be submitted to the Muswellbrook Shire Council for their approval prior to the commencement of blasting activities within 500m of Thomas Mitchell Drive.

Drayton shall not undertake any blasting within 500m of Thomas Mitchell Drive without the approval of the Muswellbrook Shire Council.

### **5.6.11 Integration with Other Mining Operations**

Drayton mine shall coordinate blasting activities with Mt Arthur Coal to minimise the potential for cumulative impacts from both mines.

### **5.6.12 Enquiries/Complaints Handling**

All environmental enquiries/complaints are handled following the Environmental Enquiries Procedure.

Drayton also operates a 24 hour environmental hotline. Details of this are contained in the Environmental Enquiries Procedure.

All enquiries/complaints are investigated and findings are fed back to the calling party.

Cumulative issues are regularly discussed with other mining operations such as Mt Arthur Coal. This is undertaken by the S&SD Manager and the Environment Coordinator.

### **5.6.13 Residential Property Inspections and Investigations**

All private residents within 2km of the project will be notified in writing within three months of the project approval date that they are entitled to a structural property inspection.

Upon request, the inspection will be performed by a qualified and experienced independent expert that has been approved by the Director-General. The inspection will include an assessment of the condition of the building or structure and recommended measures to mitigate any potential blasting impacts. A copy of the report will be provided to the resident.

Should any private landholder reasonably claim that buildings and/or structures on their land have been damaged as a result of blasting activities at Drayton, Drayton will commission a property investigation. The investigation will be performed by a qualified and experienced independent expert that has been approved by the Director-General who will investigate the claim. A copy of the report will be provided to the resident following receipt of the report by Drayton.

If this investigation confirms the landholder's claim, and both parties agree with these findings, Drayton shall repair the damages to the satisfaction of the Director-General. However, if the landholder or Drayton disagrees with the findings of the report, the matter can be referred to the Director-General. If the matter is not resolved within 21 days, it will be referred, by the Director-General, to an Independent Dispute Resolution Process to be resolved in accordance with Drayton's of Project Approval.

### **5.6.14 Blasting Protocol**

The following blasting protocols have been implemented at Drayton in accordance with legislative requirements:

- Pre-blast inspections are undertaken to ensure that no persons, property or livestock are at risk from blasting.
- Sentries are posted on all access points to ensure that there is no possible access to the blasting exclusion zone.
- No blasting will occur within 500m of privately owned property without consultation with relevant landholders.
- Prior to carrying out any blasting within 500m of a public road or railway, Drayton will obtain approval from Muswellbrook Shire Council.
- Notification of blasting times will be advertised on Drayton's website and on the blasting hotline.
- Blast design is undertaken for each blast in order to maximise the blast efficiency, minimise the dust, fumes, vibration and airblast, and ensure compliance with site specific blasting conditions.
- Use of adequate stemming, a delay detonation system, and careful drilling and hole loading to ensure that the required blast design is implemented.
- Monitoring of blasts to determine whether airblast and ground vibration limits are met
- Review of monitoring results and modification of the blast design, if necessary.

- Periodic review of blast management practices to evaluate performance and identify responsive action, if required.

### **5.6.15 Reporting Requirements**

Reporting of all environmental performances relating to blasting activities are undertaken by the Environment Coordinator. This forms a component of annual reporting as per Annual Environmental Management Reports (AEMR).

This report is submitted annually to the Department of Environment and Climate Change, Department Primary Industries (Mineral Resources), Department of Planning, Department of Lands, NSW Dams Safety Committee and the Muswellbrook Shire Council. The AEMR will also be placed on the Drayton website annually.

A full summary of blast monitoring results will be placed on the Drayton website on a quarterly basis.

## **6 APPENDICES**

Appendix 1 - Environmental Signoff

Appendix 2 - Environmental Blasting Checklist

Appendix 3 - Notification Area (as per Dams Safety Committee) related to the Liddell Ash Dam

Appendix 4 - Regulatory Correspondence - Copy of letter to Department of Environment and Climate Change (EPA), requesting review of management plans (letter dated 20 March 2008) and return comment (letter dated 18 April 2008)

**Environmental Signoff**

To Be Used By All Persons Carrying Responsibilities With Respect To Anglo Coal (Drayton Management) Pty Limited Environmental Management System

**PROCEDURE TITLE:** Blast Management and Monitoring Plan

**PERSONS RESPONSIBLE (AS LISTED)**

NAME: Peter Forbes  
POSITION: S&SD Manager  
SIGNATURE FOR SIGN OFF: \_\_\_\_\_  
DATE:

NAME: Pam Simpson  
POSITION: Environment Coordinator  
SIGNATURE FOR SIGN OFF: \_\_\_\_\_  
DATE:

NAME: Dallas Core  
POSITION: Mine Manager  
SIGNATURE FOR SIGN OFF: \_\_\_\_\_  
DATE:

NAME: Hal Morris  
POSITION: Technical Services Manager  
SIGNATURE FOR SIGN OFF: \_\_\_\_\_  
DATE:

NAME: Tony Derksen  
POSITION: Drill & Blast Engineer  
SIGNATURE FOR SIGN OFF: \_\_\_\_\_  
DATE:

NAME: Simon Ponder  
POSITION: Mining Coordinator - Drill & Blast  
SIGNATURE FOR SIGN OFF: \_\_\_\_\_  
DATE:

NAME: Stuart Argent  
POSITION: Mining Coordinator - Drill & Blast  
SIGNATURE FOR SIGN OFF: \_\_\_\_\_  
DATE:

## Environmental Blasting Checklist

(To be completed at the time of the blast)

Day	Mon / Tues / Wed / Thur / Fri / Sat / Sun
Date	/ /
Time	a.m. p.m.
Shot Reference	

### Pre Blast Checks

Are any holes overloaded?	Yes / No
Are stemming levels correct?	Yes / No
Are there any physical attributes that could lead to fly rock, overpressure or vibration issues?	Yes / No
Is there a temperature inversion?	Yes / No
What is the % cloud coverage? Height?	
What is the wind direction?	
Are there any other environmental attributes that could lead to environmental issues (eg fog, rain, wind) ?	Yes / No
Has the blast been discussed with the Environmental Coordinator	Yes / No
Has the pre notification email been issued?	Yes / No
Has the Drayton website been updated for the blast?	Yes / No
Has the hotline been updated?	Yes / No
Is there a risk of an environmental incident?	Yes / No
If yes, what other factors impact the decision to blast?	
When will the blast be fired?	Today / Later
If later, when? (Another sheet required, website update and hotline must be updated)	

### Post Blast Review

Are there any misfires?	Yes / No
When was the blast fired?	
Have any issues occurred? If so detail in comments below.	Yes / No
Is Airblast at Antiene or Deboer's >112 dB(L)	Yes / No
Is Vibration at Antiene or Deboer's > 4mm/sec	Yes / No
Number of Complaints	
Incident Form Required	Yes / No
Further Follow Up Required	Yes / No

### Liddell Ash Dam Levee

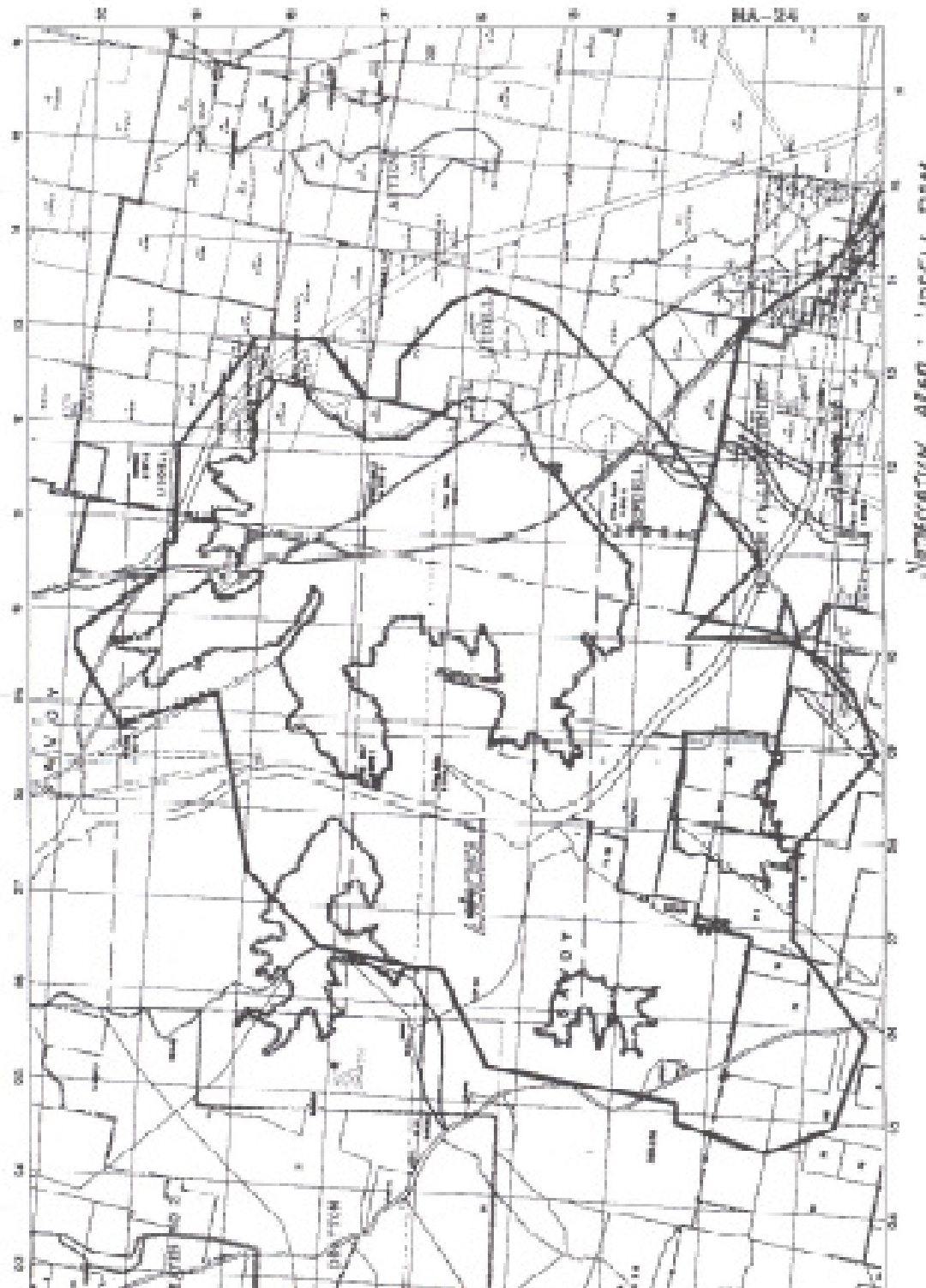
Is level at DC2 >10mm/sec	Yes / No
If Yes – attach dam inspection checklist	
Is level at DC2 >20mm/sec	Yes / No
If yes – Incident Form Required	

Further comments:

Signed :

Date :

Notification Area (as per NSW Dams Safety Committee) related to the Liddell Ash Dam







Mitchell Bennett  
Head Regional Operations Unit - Hunter Region  
Department of Environment and Climate Change NSW  
PO Box 488G  
NEWCASTLE NSW 2300

Anglo Coal (Drayton Management) Pty Ltd

Direct Fax +61 (0)2 6542 0369  
Direct Line +61 (0)2 6542 0298

20 March 2008

Dear Sir

It is a requirement of Drayton's Project Approval Conditions as issued by the Department of Planning for the Drayton Mine Extension (Ref 05\_D202) to prepare a Blast Monitoring Plan in consultation with the Department of Environment and Climate Change (DECC).

Drayton request that the DECC review the attached Blasting Management and Monitoring Plan and respond accordingly with any comments.

Comments would greatly be appreciated by 21<sup>st</sup> April 2008, to enable finalisation and submission of the plan for approval by the Department of Planning's requirement of 1<sup>st</sup> May 2008.

If you wish to discuss the attached document please feel free to contact me on 6542 0298 or by email to [pam.simpson@anglocoal.com.au](mailto:pam.simpson@anglocoal.com.au)

Yours sincerely

Pam Simpson  
Environment Coordinator

Anglo Coal (Drayton Management) Pty Ltd  
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Private Mail Bag No 9 Maxwellbrook 2333 Australia  
Tel +61 (0)2 6542 0200 Fax +61 (0)2 6542 5009 [www.anglocoal.com.au](http://www.anglocoal.com.au)  
686 67 022 028 087



For further approval, please refer to doc: 05\_D202B.doc

A member of the Anglo American plc group

Our reference : DCC08/13511 LIC08/570  
Contact : Karen Gallagher (02) 4906622

18 APR 2008

Pam Simpson  
Environment Coordinator  
Anglo Coal (Drayton Management) Pty Limited  
Private Mail Bag No 9  
MUSWELLBROOK NSW 2333

Dear Ms Simpson

**BLASTING MANAGEMENT AND MONITORING PLAN – LICENCE 1323**

I refer to your letter dated 20 March 2008 to the Department of Environment and Climate Change (DECC), and the attached copy of the "Blasting Management and Monitoring Plan" for Anglo Coal (Drayton Management) Pty Limited.

DECC encourages the preparation of strategies, programs and plans as useful tools for industry to ensure that it meets its statutory obligations. However, as a regulatory authority, DECC does not review or comment on these plans.

If you require further information please contact Karen Gallagher on (02) 49506822.

Yours sincerely



**ROSS BRYLYNSKY**  
A/Head Regional Operations Unit  
North East Branch  
Environment Protection and Regulation

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Department of Environment and Conservation NSW