

# Muswellbrook Coal Company Limited



Established 1907

## SPONTANEOUS COMBUSTION MANAGEMENT PLAN (SCMP)

**APPROVED BY MSC**

DATE: JUNE 2017

Version	Date	Section Modified	Reason for Modification	Review Team
1	February 2005	All	Original Management Plan	MCC Technical Services Department Carbon Based Environmental
2	December 2010	All	5 Yearly Review	MCC Technical Services Department Carbon Based Environmental
3	December 2015	All	5 Yearly Review	MCC Environmental, Technical Services and Production Departments
3	June 2017	All	Update following modification for Continuation Project	MCC Environmental, Technical Services and Production Departments Peer review by approved Technical Expert

**Approved by Senior Operations Manager:** Signature on File

**Date:** June 2017

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## 1.0 INTRODUCTION

Muswellbrook Coal Company (MCC) is a wholly owned subsidiary of the Idemitsu Kosan Company Ltd. Group. MCC has a long association with coal mining at Muswellbrook, with underground coal mining commencing in 1907 and open cut operations in 1944. The mine is located on Muscle Creek Road, approximately 3 kilometres to the north-east of Muswellbrook.

On September 1, 2003, Development Consent for DA 205/2002 was granted by Muswellbrook Shire Council (MSC) to extend the former MCC No.1 Open Cut. The No.1 Open Cut Extension commenced operations in March 2005 and has a capacity to produce up to 2,000,000 tonnes coal per annum. This approval has subsequently been modified on several occasions with the latest modification granted in 2016 to allow mining in an area known as the “Continuation Project” and to extend the life of the mining operations to 2022. Rehabilitation activities will continue past this date.

### 1.1 SCOPE

The Development Consent requires the preparation, approval and implementation of an Environmental Management Strategy (EMS) and subordinate Environmental Management Plans (EMP). One of these EMPs is the Spontaneous Combustion Management Plan (SCMP). Whilst this plan specifically addresses issues related to the management of spontaneous combustion, it should be read in conjunction with other EMP's.

This SCMP has been endorsed by a suitably qualified expert whose appointment has been approved by Muswellbrook Shire Council (MSC) and has been prepared to the satisfaction of MSC (see **Appendix 1** for copies of correspondence and endorsement letter).

### 1.2 OBJECTIVES

The main objective of the SCMP is to minimise the occurrence and manage the effect from spontaneous combustion in:

- The highwall and existing U/G mine workings in Open Cut 1;
- The overburden/interburden removal and coal removal in Open Cut 1;
- Active and recent emplacement areas within Open Cut 1;
- Open Cut 2;
- Coal emplacement and storage areas; and
- Elsewhere with the disturbance area.

## 2.0 STATUTORY REQUIREMENTS

The relevant approval and licence conditions are shown in **Table 1** along with information on where they are addressed in this plan.

**Table 1: Statutory Requirements**

Approval/ Licence Condition No.	Condition	Section
<b>Development Consent</b>		
31	The applicant must prepare a detailed Spontaneous Combustion Management Plan to the satisfaction of Council, and carry out the development in accordance with this plan. The plan must:	This plan
31(a)	Be endorsed by a suitably qualified expert/s whose appointment/s have been approved by Council;	Appendix 1
31(b)	Describe what measures are to be undertaken to minimise the occurrence of spontaneous combustion. Should spontaneous combustion occur, describe what methods would be employed to extinguish, or reduce the size and duration of the outbreak. This is to include details of the times, areas, locations etc. that will trigger actions, and criteria provided to indicate success or further works being required. The plan must break these activities up to be specific to the following areas: <ul style="list-style-type: none"> <li>i. The highwall and existing U/G mine workings in the No.1 pit;</li> <li>ii. The overburden/interburden removal and coal removal in the No.1 pit;</li> <li>iii. Active and recent emplacement areas within the No.1 pit;</li> <li>iv. The No.2 pit;</li> <li>v. Coal emplacement and storage areas; and</li> <li>vi. Elsewhere with the disturbance area.</li> </ul>	7.0
31(c)	Defines what constitutes a spontaneous combustion incident, and includes a protocol for notifying Council and other relevant stakeholders of spontaneous combustion incidents.	9.0
31(d)	Defines what will trigger a review of the Spontaneous Combustion Management Plan. This is to include a Trigger Action Response Plan resulting from a spontaneous combustion incident that has as one of its outcomes a review of this Management Plan.	11.0
<b>Environmental Protection Licence</b>		

Approval/ Licence Condition No.	Condition	Section
R4.4	<p>The licensee must prepare and submit quarterly spontaneous combustion management reports to EPA. A copy of each quarterly report must be forwarded to the regional office of EPA no later than two (2) months after the quarterly period being reported. The quarterly report must include but not be limited to the following:</p> <ul style="list-style-type: none"> <li>a) A monthly summary of actions and procedures undertaken to prevent or control spontaneous combustion at the site</li> <li>b) An assessment of the effectiveness of the actions and procedures undertaken</li> <li>c) Spontaneous combustion areas capped in square meters</li> <li>d) Spontaneous combustion areas mined out in square meters</li> <li>e) Areas under water infusion</li> <li>f) Map of the approximate location of the areas subject to spontaneous combustion, areas capped, areas mined out and areas under water infusion.</li> <li>g) Number of complaints received in relation to spontaneous combustion.</li> </ul>	10.2
<b>Mining Lease 1562</b>		
27(a)	The lease holder shall take all precautions against causing outbreak of spontaneous combustion and fire on the subject area, shall make records of such occurrence and notify an Environmental Officer of such occurrence.	10.2
27(b)	Notwithstanding (a) above, the lease holder shall establish and implement a Spontaneous Combustion Management Plan which is to address risk assessment, management control procedures and reporting protocols to the satisfaction of an Environmental Officer.	This plan

### **3.0 EXISTING ENVIRONMENT**

The coal seams being mined at MCC are those associated with the Greta Coal Measures. These Measures have a history of spontaneous combustion. Spontaneous combustion has been a long-term issue at MCC since the first operation (an underground mine) opened in 1907.

Incidences of spontaneous combustion have taken place over a number of years, particularly in the spoil piles on the western side of the No.1 Open Cut. During the 1980's, this was successfully dealt with by sealing both the burning area and the material liable to spontaneous combustion with approximately 10 metres of inert overburden.

Spontaneous combustion has previously occurred within parts of No.2 Underground roadway, particularly near the old tunnel mouth and in the vicinity workings where broken coal was found.

Mining in a manner which removes spontaneous combustion is one of the main reasons for mining at MCC.

### **4.0 IDENTIFICATION OF CAUSES**

In order to develop effective prevention and control measures for spontaneous combustion, it has been necessary to engage in extensive monitoring and research to better understand the mechanisms which cause spontaneous combustion to commence and spread. MCC has participated in industry sponsored research programs in spontaneous combustion in open cut mines.

#### **4.1 ACARP PROJECT 1609 (1993 – 1994)**

This project utilised resources from ACIRL and CSIRO to investigate the factors likely to contribute to the occurrence and spread of spontaneous combustion in spoil emplacement areas. Findings from the project suggest the primary contributing factors were:

- 1) Coal/carbonaceous shale oxidation – the oxidation of coal and carbonaceous shale within the spoil heaps. A direct relationship was found between the percentage of carbonaceous waste and the propensity for spontaneous combustion to occur and to be sustained;
- 2) Heat and wetting – when water interacts with solid coal, heat is liberated. This phenomenon can generate sufficient heat to cause oxidation in both solid and broken coal and carbonaceous material;
- 3) Heat and water condensation and evaporation – the transfer of heat throughout an overburden spoil emplacement area by condensation and evaporation of water contributes to the spread of spontaneous combustion; and
- 4) Oxidation of pyrite – the oxidation of pyrite, whilst not essential, can further increase the likelihood of spontaneous combustion of spoil material if sufficiently carbonaceous.

Extensive mathematical modelling of spoil heaps of different sizes and configurations and with varying distributions of carbonaceous material was carried out. The characterisation of various materials according to propensity to spontaneous combustion was also determined. Drilling into hot spoil heaps and monitoring the heat and oxygen distribution with the spoil emplacements verified this modelling work.

The recommended management measures from this research included:

- 1) Reducing the overall fuel(carbon) content;
- 2) Selective placement and rapid burial of material high in carbonaceous content;
- 3) Building spoil piles with lower dump layers (5 – 15 metres) to increase the stability and reduce voidage; and
- 4) Covering exposed batters with inert material and compact wherever possible.

## 5.0 SPONTANEOUS COMBUSTION PROPENSITY OF MATERIAL

The spontaneous combustion propensity of the material handled at MCC is shown in **Table 2**.

**Table 2: Spontaneous Combustion Propensity of Material**

Material Type	Propensity to Spontaneously Combust
<b>Interburden</b>	
Fleming	Low
Hallet	Medium
Muswellbrook/St Heliers	Medium
Upper Lewis/W01	Medium
Lower Lewis	Medium
Loder	Medium
<b>Coal</b>	
Fleming	High
Hallet	High
Muswellbrook/St Heliers	High
Upper Lewis/W01	Medium
Lower Lewis	Medium
Loder	Low

## 6.0 ANNUAL PLANNING

As part of the annual planning process MCC will develop an internal spontaneous combustion action plan to identify the key management areas for the next year. This action plan will be reviewed and signed off by a technical expert. At the end of each year a review will be undertaken to review the commitments in the annual plan vs actual activities on site. The effectiveness of the management activities will be reviewed as part of the annual review. A summary of the review will be included in the Annual Environmental Management Report, which is available to members of the community via MCC's website. A summary of spontaneous combustion management will also be included in the annual community newsletter that will be distributed to the local community. This newsletter will be a summary of environmental performance at MCC over the previous calendar year.

## 7.0 MANAGEMENT MEASURES

### 7.1 HIGHWALL AND EXISTING UNDERGROUND WORKINGS IN OPEN CUT 1

#### 7.1.1 Preventative Measures

The following preventative measures are used at MCC for managing spontaneous combustion in the highwall and underground working areas in Open Cut 1.

- Digging material back to hard/unblasted material to remove loose material along the highwall edge;
- Mining the highwall in accordance with the mine design;
- Flyash sealing in advance of highwall progression targeting known high risk roadways in the underground workings; and
- Temperature and gas monitoring holes in underground workings in targeted roadways.

### 7.1.2 Control Measures

The following control measures are used at MCC for managing spontaneous combustion in the highwall and underground working areas in Open Cut 1.

- Clay sealing of exposed underground working if there are signs of heating. Start within 7 days of coal being identified as heating and suitable material is available for sealing;
- Cooling with water on highwall areas; and
- Daily inspections and monitoring.

### 7.1.3 Trigger Action Response Plan (TARP)

The TARP for spontaneous combustion outbreaks in the highwall and underground workings in Open Cut 1 are shown in **Table 3**.

**Table 3: Trigger Action Response Plan for Highwall and Underground Workings**

Trigger	Control Action	Response Timeframe	Responsibility
No heating	Inspection and monitoring	Daily	Production Department
Visual signs of heating	Develop a specific management plan for the area of heating. Consider the following if practical: <ul style="list-style-type: none"> <li>• Clay seals</li> <li>• Infusion</li> <li>• Digging down to hot area</li> </ul>	Plan developed and actioned within 7 days of heating being noticed	Technical Services Department

## 7.2 OVERBURDEN/INTERBURDEN AND COAL REMOVAL IN OPEN CUT 1

### 7.2.1 Preventative Measures

The following preventative measures are used at MCC for managing spontaneous combustion during interburden/overburden removal in Open Cut 1.

- Test drilling in advance of mining to identify potential hot areas;
- Mining area to mine design parameters;
- Flyash sealing of roadways in advance of mining;
- Daily inspections and monitoring; and
- Underground workings that are below current operational areas to be charged with water (if possible).

### 7.2.2 Control Measures

The following control measures are used at MCC for managing spontaneous combustion during interburden/overburden removal in Open Cut 1.



- After blasting a known hot area the area will start to be dug out within 10 days. If this is not possible cooling with water will commence within 5 days after blasting has been completed in the area;
- Cooling with water on areas susceptible to heating;
- Clay sealing of exposed underground working if there are signs of heating. Start within 7 days of coal being mined back to hard and suitable material being available; and
- Bench the coal rill material and clean back to hard material along lowwall edge.

### 7.2.3 Trigger Action Response Plan (TARP)

The TARP for spontaneous combustion outbreaks for overburden/interburden removals in Open Cut 1 are shown in **Table 4**.

**Table 4: Trigger Action Response Plan for Overburden/Interburden Removal**

Trigger	Control Action	Response Timeframe	Responsibility
No heating in blasted area	Inspection and monitoring	Daily	Production Department
Visual signs of heating in blasted area	1. Excavate material 2. If material cannot start to be excavated within 10 days, start to cool with water within 5 days	Start excavation within 10 days or water cooling within 5 days unless circumstances beyond MCC's control (e.g. rain) prevent access	Production Department
No heating in lowwall area	Inspection and monitoring	Daily	Production Department
Visual signs of heating in lowwall area	1. Dig loose material back to hard 2. Install clay seal 3. Install water infusion	Within 5 days unless circumstances beyond MCC's control (e.g. rain) prevent access	Production Department

## 7.3 ACTIVE AND RECENT EMPLACEMENT AREAS WITHIN OPEN CUT 1

### 7.3.1 Preventative Measures

The following preventative measures are used at MCC for managing spontaneous combustion in emplacement areas in Open Cut 1.

- High and medium risk interburden material to be limited to a maximum lift of 10m and will be placed in lower areas of the dump;
- High and medium risk material will not be placed within 15m of the final surface level;
- Overburden material will be placed as per the mine design;
- Daily inspections and monitoring; and
- Maintain dozer access on each high and medium risk dump lift to access dump lifts in case of heating.

### 7.3.2 Control Measures

The following control measures are used at MCC for managing spontaneous combustion in emplacement areas in Open Cut 1.

- Covering the outside edge of high and medium risk interburden with low risk material;

- Utilising water cart to target hot areas; and
- Track roll and compact hot material with a dozer. Use a water cart to wet and cool material.

### 7.3.3 Trigger Action Response Plan (TARP)

The TARP for spontaneous combustion outbreaks for emplacement areas in Open Cut 1 are shown in **Table 5**.

**Table 5: Trigger Action Response Plan for Emplacement Areas**

Trigger	Control Action	Response Timeframe	Responsibility
No heating in emplacement areas	Inspection and monitoring	Daily	Production Department
Visual signs of heating in accessible dumps	<ol style="list-style-type: none"> <li>1. Cover with low risk material</li> <li>2. Dozer/bench push hot material</li> <li>3. Target with the water cart to wet and compact the area</li> </ol>	Complete within 2 days unless circumstances beyond MCC's control (e.g. rain) prevent access	Production Department
Visual signs of heating in non-accessible dumps	Develop a specific plan to manage the issue	Within 7 days	Technical Services Department

## 7.4 OPEN CUT 2

The preventative and control measures for Open Cut 2 are the same for the emplacement areas in Open Cut 1 shown in **Section 7.3**.

## 7.5 COAL EMPLACEMENT AND STORAGE AREAS

### 7.5.1 Preventative Measures

The following preventative measures are used at MCC for managing spontaneous combustion in coal emplacement and storage areas.

- No coaling of high risk material to the ROM during planned CHPP shutdowns.

The maximum storage times for ROM Coal and Product Coal are shown in **Table 6**.

**Table 6: Trigger Action Response Plan for Coal Emplacement and Storage Areas**

Propensity for Spontaneous Combustion	Maximum Storage Time	Responsibility
<b>ROM Coal</b>		
Low	> 30 days	Logistics Coordinator
Medium	30 days	Logistics Coordinator
High	5 days	Logistics Coordinator
<b>Product Coal</b>		
Low	> 90 days	Logistics Coordinator
Medium	90 days	Logistics Coordinator
High	30 days	Logistics Coordinator

Product coal has a longer residence time due to the water used in the crushing and washing process cooling down the coal, and therefore the incubation period is restarted.

### 7.5.2 Control Measures

The following control measures are used at MCC for managing spontaneous combustion in coal emplacement and storage areas.

- Track roll and compact hot material with a dozer. Use a water cart to wet and cool material.

### 7.5.3 Trigger Action Response Plan (TARP)

The TARP for spontaneous combustion outbreaks for coal emplacement and storage areas in Open Cut 1 are shown in **Table 7**.

**Table 7: Trigger Action Response Plan for Coal Emplacement and Storage Areas**

Trigger	Control Action	Response Timeframe	Responsibility
No heating in coal emplacement and storage areas	Inspection and monitoring	Daily	Production Department
Visual signs of heating in coal emplacement and storage areas	<ol style="list-style-type: none"> <li>1. Track roll hot material</li> <li>2. Target with the water cart to wet and compact the area</li> <li>3. Turnover and rotate coal in area</li> </ol>	Completed within 2 days unless circumstances beyond MCC's control (e.g. rain) prevent access	Production Department

## 7.6 ELSEWHERE WITHIN THE MINE DISTURBANCE AREA

If an unexpected outbreak of spontaneous combustion occurs in any other area within the mine disturbance area a specific action plan will be developed to manage the outbreak. This plan will be developed within 7 days of the outbreak being detected.

## **8.0 COMPLAINT MANAGEMENT**

Spontaneous combustion related complaints by the community can be directed to the 24 hour toll free telephone Environmental Contact Line 1800 600 205. Complaints shall be recorded and responded to in accordance with the Environmental Management Strategy.

## **9.0 INCIDENT MANAGEMENT**

A spontaneous combustion incident at MCC is defined as an uncontrolled event that is not managed by the TARP process.

In the event that an initial investigation concludes that a spontaneous combustion related incident has occurred the incident will be reported to MSC and the EPA within 24 hours of confirming the incident.

Within seven days of confirming the incident, MCC will submit a written report to MSC and the EPA that:

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

## **10.0 EXTERNAL REPORTING**

Within 2 weeks of approval of this SCMP, a copy will be made available for public viewing via the MCC website.

The performance of MCC's SCMP will be reported through a number of external reporting requirements, which include;

- Annual Environmental Management Report (AEMR);
- Annual Community Newsletter; and
- Quarterly Spontaneous Combustion Reports.

### **10.1 ANNUAL ENVIRONMENTAL MANAGEMENT REPORT**

The AEMR will include a summary of:

- Summary of spontaneous combustion related complaints;
- Measures undertaken during the period to manage spontaneous combustion; and
- Review of the performance of management measures.

### **10.2 QUARTERLY SPONTANEOUS COMBUSTION REPORTS**

Quarterly reporting will be provided to DRE in accordance with AEMR inspection requirements (2003/2004) and to the EPA as required by the Muswellbrook Coal Environment Protection Licence (No. 656).

## **11.0 REVIEW OF MANAGEMENT PLAN**

The SCMP will be reviewed;

- Within 3 months of changes to Development Consent or licence conditions relating to

- spontaneous combustion management;
- Following reportable incidents at MCC relating to spontaneous combustion management;
  - Following an independent environmental audit which recommends changes to the SCMP;
  - At the completion of mining; and
  - Every three years, or as directed by MSC, in accordance with Condition 14(e) of the Development Consent Conditions.

## 12.0 RESPONSIBILITIES

**Table 8** outlines the responsibilities relating to the SCMP.

**Table 8: Management Plan Responsibilities**

<b>Position</b>	<b>Task</b>	<b>Timing</b>
Senior Operations Manager	Provide adequate resources to implement the requirements of the SCMP	Annual review
	Oversee the implementation of the SCMP	Ongoing
Technical Services Department	Coordinate annual planning process	Annually during budget planning
	Coordinate annual review process	Following each AEMR reporting period
	Develop specific action plans	As required
Production Department	Undertake inspections of the operational areas for signs of spontaneous combustion	Daily
	Implement spontaneous combustion control measures as outlined in SCMP	As outlined in SCMP
Logistics Coordinator	Manage storage residence times at coal emplacement areas	As outlined in SCMP
Environmental Superintendent	Coordinate response to all spontaneous combustion related complaints	Following a spontaneous combustion related complaint
	Coordinate reviews of the SCMP	As outlined in SCMP
	Coordinate reporting as required in SCMP	As required (minimum quarterly)

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## **Appendix 1: Correspondence Regarding Spontaneous Combustion Management Plan**

**MUSWELLBROOK COAL COMPANY LIMITED**

ABN 32 000 009 521

ANC 000 009 521

23 December 2016

Steve McDonald  
General Manager  
Muswellbrook Shire Council  
PO Box 122  
Muswellbrook NSW 2333

**REGISTERED OFFICE**

Level 1, 60AM  
60 Albert Street  
Brisbane QLD 4000  
(GPO Box 15136 City East  
QLD 4002)

**POSTAL ADDRESS**

P.O. Box 123  
Muswellbrook NSW 2333

Telephone: (02) 6542 2300

Facsimile: (02) 6542 5010

Dear Steve

**Approval of Spontaneous Combustion Expert**

Muswellbrook Coal Company (MCC) received a modification to our Development Consent (DA205/2002) on 26 October 2016. The modification allows MCC to continue mining in an area known as the "Continuation Project".

Condition 31 of the modified consent requires the preparation of a Spontaneous Combustion Management Plan that has been endorsed by a suitably qualified expert whose appointment has been approved by Muswellbrook Shire Council (MSC).

MCC propose the use of Ian Pankhurst as the suitability qualified expert. Ian has been providing guidance to MCC on the management of spontaneous combustion for >15 years. A copy of Ian's profile is attached to this letter.

MCC look forward to receiving approval from MSC to use Ian Pankhurst as the suitability qualified expert to endorse the Spontaneous Combustion Management Plan.

If you require any further information, please do not hesitate to contact me on 02 6542 2312 or 0427 228 412.

Yours sincerely

Julie Thomas  
Environmental Coordinator



### IAN PANKHURST PROFILE

- Qualifications:
- Bachelor of Engineering (Mining) 1st Class Honours, UNSW
  - Graduate Diploma in Accounting and Financial Management, UNE
  - Graduate Diploma in Risk Management, University of Technology
  - NSW Mine Manager's Certificate of Competency
  - Undermanager and Deputies Certificates of Competency
  - Member of AusIMM
  - Member of Engineers Australia
- 

Ian Pankhurst progressed into full time mining consultancy during 1999 with his own organisation, Mining Operations Services Pty Limited. During the preceding ten years, employed by Liddell Coal, he held concurrent positions of Open Cut, Washery and Environmental Manager. In those roles, following his development of the concept of open cut mining of remnant underground reserves for the area, he was responsible for all aspects of the planning process, the start up of Liddell Open Cut through to a +3,000,000 tonne per annum operation.

During the two years prior to leaving Liddell Coal, his achievements included bringing Liddell Open Cut to the number one position for productivity ranking in the NSW Open Cut Coal Mining Industry, winning the 1998 NSW Premier's Award for Environmental Excellence for rehabilitation of old open cut workings, including old tailings dams, and reducing the lost time injury rates to near zero.

Ian previously worked as:

- Open Cut Manager at Wambo from 1980 – 1982; and
- Inspector of Coal Mines with the Department of Mineral Resources from 1982 – 1989.

Over that period he was, at one time or another, responsible for every mining area or exploration title area in the Upper Hunter and Gunnedah areas. He also acted as Senior Inspector and in other senior statutory roles. One of his particular areas of expertise was spontaneous combustion related issues.

Prior to that, he held management position at both Wambo Mining as Open Cut Manager (1980 - 1982) and at Lemington mines as relieving manager at the open cut, washeries and underground mines (1976 – 1980).

He has a comprehensive knowledge of legislative and management requirements over a broad spectrum of coal mining operations and new developments. He was a member of the NSW Open cut Coal Examination panel between 1985 and 2003.

Ian's particular knowledge and skills, especially in the areas of highwall and remnant mining, rehabilitation and management of spontaneous combustion, have been recognised by a number of internationally based clients including Xstrata, BHP Billiton (South Africa), Exxon, Mitsui Matsushima, Idemitsu Dosan and Solid Energy New Zealand. Current clients and senior management of Ian's previous employers have also recognised the personal attributes of problem solving, lateral thinking and the development of contingency planning that Ian can provide when faced with problems in

*I Pankhurst  
Profile*

diverse areas including those of management, operations, technical innovation and legislative requirement including environmental compliance.

He is currently operating his own consulting business as well as being part owner of Australian Auger Mining.

In the capacities he undertakes for these companies, Ian is in a unique position of working with a wide range of company personnel, ranging from Board members to field operators. These contacts include not only mining companies, but major contractors such as Downer and also government departments. Current and recent clients, in addition to those already detailed, include Whitehaven, Bloomfield, Sumiseki, Yancoal and Metromix Quarries.

Ian currently provides advice on fire related and spontaneous combustion issues to Solid Energy for South Island operations and project sites. He provides both day-to-day and long term advice on spontaneous combustion and open cut mining of old underground workings for other clients with operational sites, including Werris Creek, and Muswellbrook Coal Company where up to six mining horizons in five seams were originally mined by underground methods.

He also undertakes a similar role at Metromix's Teralba Quarry, where he has been approved by the NSW Department of Planning & Environment as their Technical Expert.



Enquiries  
Please ask for Scott Brooks  
Direct 02 6549 3862  
Our reference DA 205/2002  
Your reference

4<sup>th</sup> January 2017

**Grant Clouten**  
**Senior Operations Manager**  
**Muswellbrook Coal Company**  
**PO Box 123**  
**MUSWELLBROOK 2333**

Dear Grant

**Muswellbrook Coal, Approval of Spontaneous Combustion Expert**

Condition 31 of your recently modified consent requires the preparation of a Spontaneous Combustion Management Plan that has been endorsed by a suitably qualified expert whose appointment has been approved by Muswellbrook Shire Council. The purpose of this letter is to provide this approval.

We recently received your request to use the services of Ian Pankhurst to review and endorse the Spontaneous Combustion Management Plan.

We have reviewed your request and can advise that the use of Ian Pankhurst for the requirements of Condition 31 of your consent has been approved.

Should you require further information regarding this letter please contact Scott Brooks on 6549 3862.

Yours faithfully

A handwritten signature in black ink, appearing to read "O. Harris".

Olivia Harris  
**Manager, Planning & Regulatory Services.**

**Muswellbrook Shire Council** ABN 86 864 180 944

Address all communications to The General Manager Mail PO Box 122 Muswellbrook NSW 2333 Phone 02 6549 3700  
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19 January 2017

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PO Box 123  
MUSWELLBROOK 2333

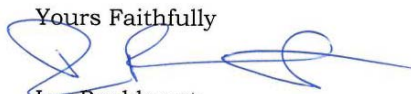
Dear Grant

**RE: REVIEW OF MUSWELLBROOK COAL COMPANY SPONTANEOUS  
COMBUSTION MANAGEMENT PLAN**

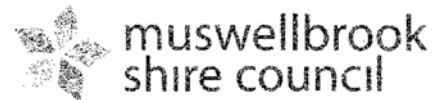
I have reviewed the final draft version of the Muswellbrook Coal Company Spontaneous Combustion Management Plan received on Tuesday 17 January 2017.

I endorse the Spontaneous Combustion Management Plan as being adequate for its purpose, including use as a basis for internal spontaneous combustion action plans.

Yours Faithfully



Ian Pankhurst  
Director  
Mining Operation Services



Enquiries  
Please ask for Scott Brooks  
Direct 02 6549 3700  
Our reference DA 205/2002  
Your reference

22 June 2017

Grant Clouten  
Senior Operations Manager  
Muswellbrook Coal Company  
PO Box 123  
MUSWELLBROOK 2333

Dear Grant

#### Approval of Management Plans

Council recently received copies of the following Management Plans required by your mining Consent modified in October 2016. The Management Plans are as follows:

- Spontaneous Combustion Management Plan (Condition 31)
- Air Quality Management Plan (Condition 29)
- Visual Amenity Lighting and Landscape Management Plan (Condition 22)
- Environment Management Strategy (Condition 14)

This Consent requires these plans to be updated within 6 months of approval and submitted to Council.

Council can advise that the 4 above listed plans have been reviewed and Council are satisfied that they meet the requirements of the Consent. They are now approved and can be implemented.

Council ask that these plans are implemented by 30 June 2017 and that they remain in force until replaced by any future approved plan.

Please provide a clean copy of the Approved Management Plans to Council for our records.

Should you require further information regarding this letter please contact Scott Brooks on 6549 3862.

Yours faithfully

A handwritten signature in black ink that reads "Donna Watson".

Donna Watson  
Development Planner

Muswellbrook Shire Council ABN 86 864 180 944

Address all communications to The General Manager Mail PO Box 122 Muswellbrook NSW 2333 Phone 02 6549 3700  
Fax 02 6549 3701 Email council@muswellbrook.nsw.gov.au Web www.muswellbrook.nsw.gov.au