



**SUNNYSIDE COAL PROJECT  
ENVIRONMENTAL  
MANAGEMENT SYSTEM**

Document Owner: Operations Supt

Last Revision Date: 10/2017

Date Printed: 25/10/2017

**WHC\_PLN\_SUN\_SPONTANEOUS COMBUSTION MONITORING PLAN**

# **SPONTANEOUS COMBUSTION MONITORING PLAN**



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**ACRONYMS USED THROUGHOUT THIS DOCUMENT**

CHPP	-	Coal Handling and Preparation Plant
NMPL	-	Namoi Mining Pty Ltd
ROM	-	Run of Mine
SCMP	-	Spontaneous Combustion Monitoring Plan
PA	-	Project Approval



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**1 INTRODUCTION**

This Spontaneous Combustion Monitoring Plan (SCMP) has been prepared in accordance with Statement of Commitment 18.7 for the Sunnyside Coal Project (Sunnyside). Sunnyside is operated by Namoi Mining Pty Ltd (NMPL), a subsidiary company of Whitehaven Coal Limited. Mining operations at Sunnyside were suspended in late November 2012 and recommenced in late 2017. This document considers the area of land corresponding to the project site boundary for Sunnyside, referred to as the “mine site”.

As illustrated in Figure 1, Sunnyside is located approximately 15km west of Gunnedah. The project layout is shown in Figure 2.

The SCMP has been developed to provide a management and monitoring framework for the prevention or mitigation of spontaneous combustion occurrences in the open cut and coal processing and stockpile facilities at the mine.



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**LEGEND**

- National Park
- Nature Reserve
- State Conservation Area
- Aboriginal Area
- NSW State Forest
- Local Government Area Boundary
- Mining Lease Boundary
- Mine Site
- Mine Project

Source: Geoscience Australia (2006), NSW Department of Premier and Cabinet, Office of Environment and Heritage (2011) and Minerals NSW (2012)

**WHITEHAVEN COAL**  
**SUNNYSIDE COAL MINE**  
 Regional Location

**Figure 1 - Regional Location**





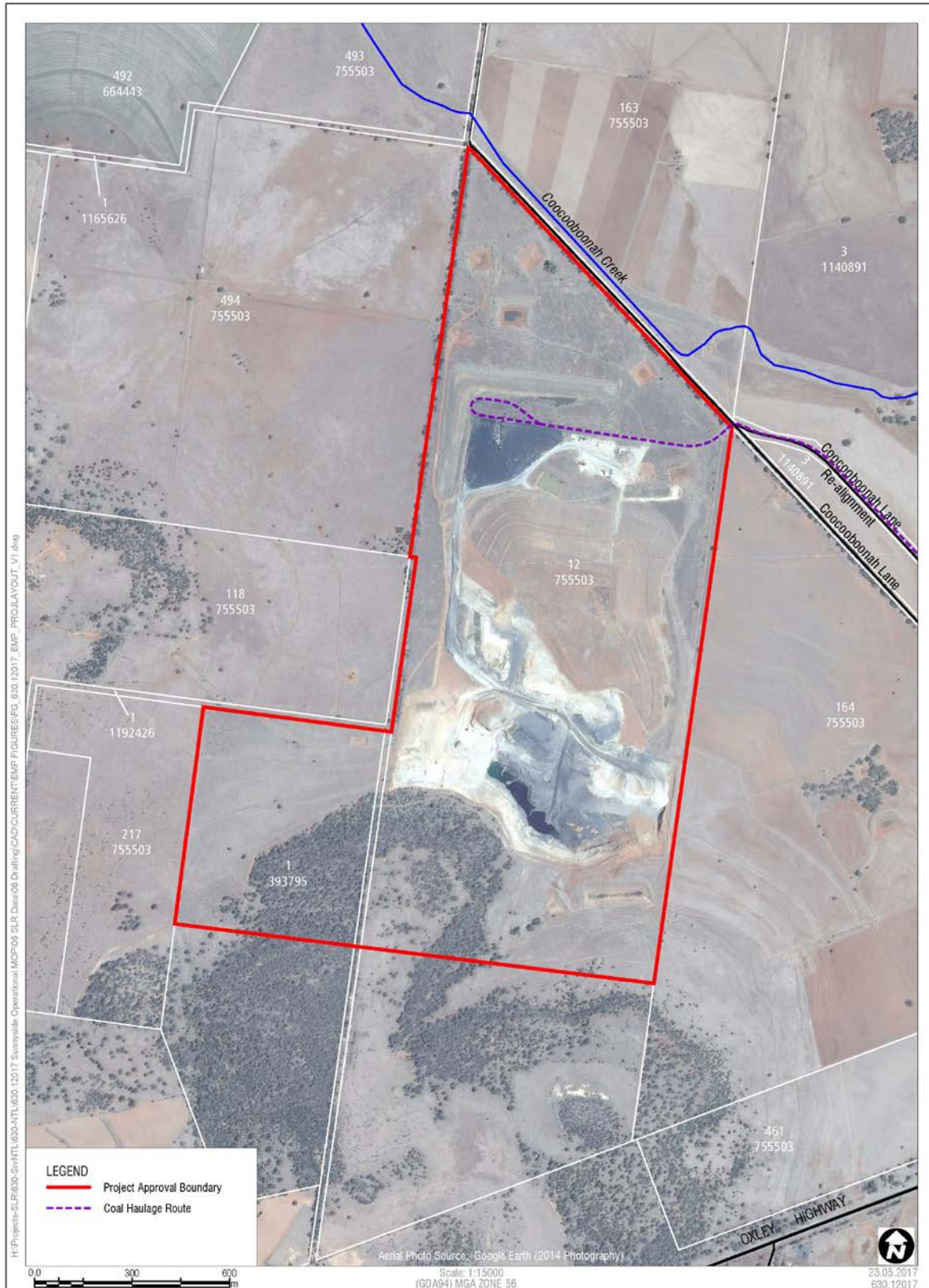
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PROJECT LAYOUT

Figure 2 - Project Layout



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### 2 SPONTANEOUS COMBUSTION POTENTIAL

The mine is located within the Hoskissons Coal Seam. This seam has been mined for the past 120 years with a number of reported outbreaks of spontaneous combustion.

In order to determine the susceptibility of Sunnyside coal to spontaneous combustion, three representative core samples were supplied for testing at the University of Queensland's Spontaneous Combustion Laboratory.

Previous spontaneous combustion studies using an adiabatic oven have measured the self-heating rate index ( $R_{70}$ ) of Australian and Gunnedah coals. These previous studies enabled comparisons to derive a relative indication of the propensity of the coal to combust spontaneously. The  $R_{70}$  values of the Sunnyside samples range from 2.10 to 3.82°C/h for an ash content range of 8.2 to 33.9% on a dry basis. The coal reactivity to oxygen and the intrinsic spontaneous combustion propensity is classified as high (Class IV).

These results indicate that there is potential for Sunnyside coal to spontaneously combust.

### 3 MANAGEMENT AND MONITORING MEASURES

#### 3.1 Mining Operations

Mining will be conducted in a manner that minimises coal exposure times in order to reduce the potential for spontaneous combustion to occur in the pit.

Due to the low risk of spontaneous combustion in the pit a formal monitoring program will not be implemented.

If spontaneous combustion does occur in the pit, specific management actions will be considered and implemented as required.

#### 3.2 Stockpiles

##### 3.2.1 Stockpile Design and Management

Upon commencement of stockpiling, coal stockpile time will be minimised by scheduling to maintain a suitable stockpile volume to meet the feed requirements of the Whitehaven CHPP. Minimising stockpile time reduces the potential for spontaneous combustion.

Dozer operations will provide for regular trimming and shaping of stockpiles to maximise stockpile and coal loading efficiency.

##### 3.2.2 Monitoring and Response Measures

Visual inspections of the ROM stockpile area will be undertaken during routine shift inspections.

All coal affected by self heating or actually showing signs of combustion will be separated and extracted from the remaining coal by front end loader, spread out and water saturated



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using a water cart. This will reduce the temperature of the coal, while compaction will reduce the level of oxidisation.

Once treated, this coal will be monitored for any resumption of heating before being loaded onto trucks for transport.

The water cart shall be available at all times to assist in extinguishing any fire ignited.

**3.3 Training**

All operators and mine personnel will be made aware of the spontaneous combustion risks at Sunnyside. Training will be provided via the initial site induction in relation to monitoring requirements, identification of spontaneous combustion risks and indicators and applicable mitigation and response measures. Further training will only be provided as required.

**4 DOCUMENT REVIEW**

This document will be reviewed in accordance with the requirements of Condition 5(5A) of PA 06\_0308.