



**SUNNYSIDE COAL PROJECT  
ENVIRONMENTAL  
MANAGEMENT SYSTEM**

Document Owner:	Operations Supt
Last Revision Date:	10/2017
Date Printed:	10/10/2017

**WHC\_PLN\_SUN\_AIR QUALITY MANAGEMENT PLAN**

# **AIR QUALITY MANAGEMENT PLAN**



**SUNNYSIDE COAL PROJECT  
ENVIRONMENTAL  
MANAGEMENT SYSTEM**

Document Owner: Operations Supt

Last Revision Date: 10/2017

Date Printed: 10/10/2017

**WHC\_PLN\_SUN\_AIR QUALITY MANAGEMENT PLAN**

## Contents

1	INTRODUCTION .....	4
2	AIR QUALITY CRITERIA.....	7
3	AIR QUALITY CONTROLS AND MANAGEMENT MEASURES .....	7
3.1	Air Quality Management and Mitigation .....	7
3.2	Notification and Independent Review.....	9
4	MONITORING AND REPORTING .....	9
4.1	Monitoring Program .....	9
4.2	Monitoring Locations.....	9
4.3	Reporting.....	12
4.3.1	Air Quality Incidents .....	12
4.3.2	General.....	12
5	DOCUMENT REVIEW .....	12

## Tables

Table 1 – Air Quality Criteria .....	7
Table 2 - Operational Controls .....	7
Table 3 – Air Quality Monitoring Locations .....	10

## Figures

Figure 1 – Regional Location .....	5
Figure 2 – Project Layout .....	6
Figure 3 – Air Quality Monitoring Locations.....	11



**SUNNYSIDE COAL PROJECT  
ENVIRONMENTAL  
MANAGEMENT SYSTEM**

Document Owner: Operations Supt

Last Revision Date: 10/2017

Date Printed: 10/10/2017

**WHC\_PLN\_SUN\_AIR QUALITY MANAGEMENT PLAN**

**ACRONYMS USED THROUGHOUT THIS DOCUMENT**

AQMP	-	Air Quality Management Plan
DP&E	-	Department of Planning and Environment
EPA	-	Environment Protection Authority
HVAS	-	High Volume Air Sampler
NMPL	-	Namoi Mining Pty Ltd
PA	-	Project Approval
PM <sub>10</sub>	-	Particulate Matter < 10µm
TSP	-	Total Suspended Particulate Matter



**SUNNYSIDE COAL PROJECT  
ENVIRONMENTAL  
MANAGEMENT SYSTEM**

Document Owner: Operations Supt

Last Revision Date: 10/2017

Date Printed: 10/10/2017

**WHC\_PLN\_SUN\_AIR QUALITY MANAGEMENT PLAN**

**1 INTRODUCTION**

This Air Quality Management Plan (AQMP) has been prepared in accordance with Condition 3(19A) of Project Approval (PA) 06\_0308 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.



# SUNNYSIDE COAL PROJECT ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Operations Supt
Last Revision Date:	10/2017
Date Printed:	10/10/2017

## WHC\_PLN\_SUN\_AIR QUALITY MANAGEMENT PLAN



**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)



Figure 1 – Regional Location



# SUNNYSIDE COAL PROJECT ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner: Operations Supt

Last Revision Date: 10/2017

Date Printed: 10/10/2017

## WHC\_PLN\_SUN\_AIR QUALITY MANAGEMENT PLAN

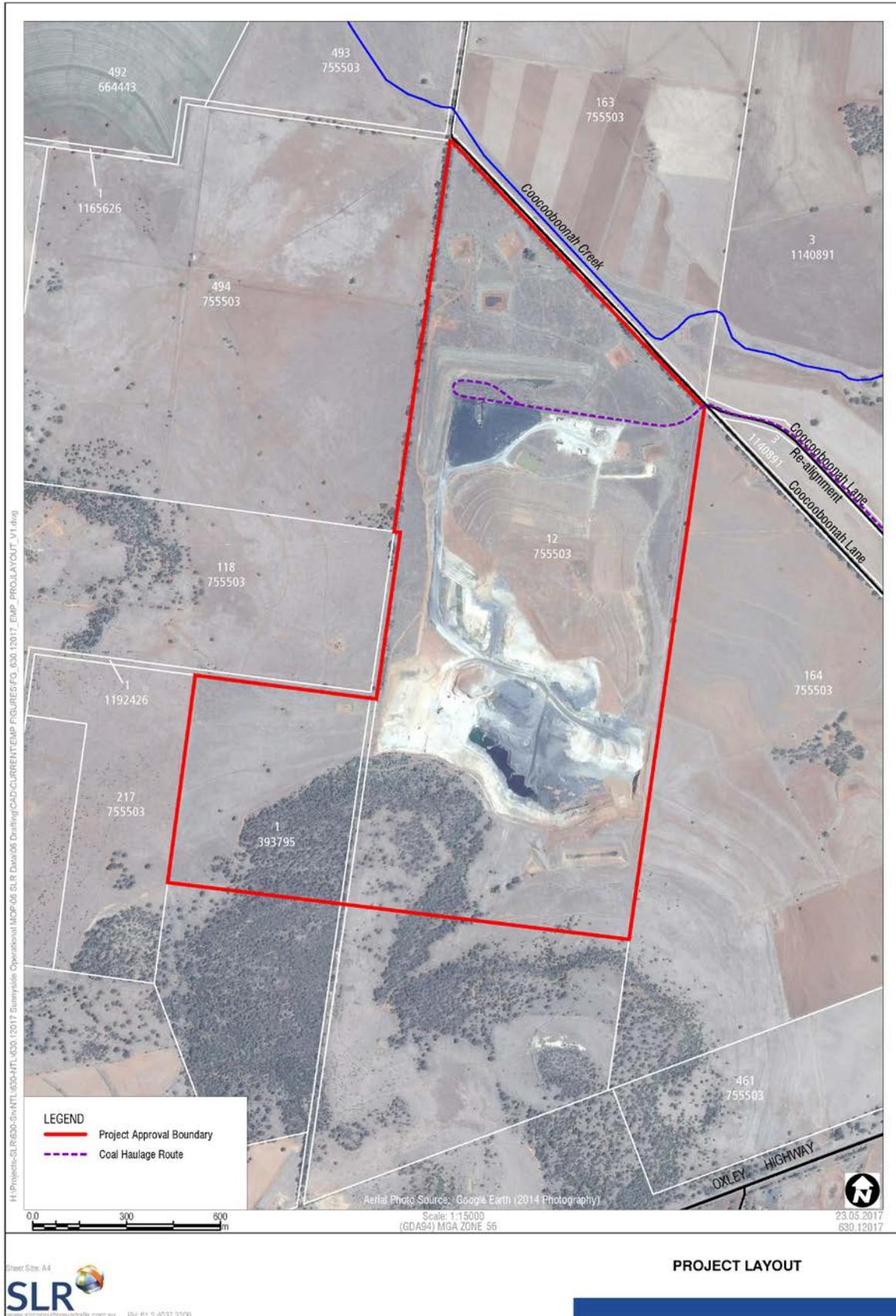


Figure 2 – Project Layout



# SUNNYSIDE COAL PROJECT ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner: Operations Supt

Last Revision Date: 10/2017

Date Printed: 10/10/2017

## WHC\_PLN\_SUN\_AIR QUALITY MANAGEMENT PLAN

### 2 AIR QUALITY CRITERIA

The air quality criteria, as per Condition 3(18) of PA 06\_0308, is detailed in Table 1.

**Table 1 – Air Quality Criteria**

Pollutant	<sup>d</sup> Criterion		Averaging Period
Total suspended particulate matter (TSP)	<sup>a</sup> 90µg/m <sup>3</sup>		Annual
Particulate matter <10µm (PM <sub>10</sub> )	<sup>a</sup> 50µg/m <sup>3</sup>		24 hour
	<sup>a</sup> 30µg/m <sup>3</sup>		Annual
<sup>c</sup> Deposited dust	<b>Maximum increase in deposited dust level</b>	<b>Maximum total deposited dust level</b>	
	<sup>b</sup> 2.0g/m <sup>2</sup> /month	<sup>a</sup> 4.0g/m <sup>2</sup> /month	Annual
<i>Notes:</i> <sup>a</sup> Total impact (ie. incremental increase in concentrations due to the development plus background concentrations due to all other sources); <sup>b</sup> Incremental impact (ie. incremental increase in concentrations due to the development on its own); <sup>c</sup> Deposited dust is to be 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; and <sup>d</sup> Excludes extraordinary events such as bushfires, prescribed burning, dust storms, sea fog, fire incidents or any other activity agreed by the Secretary.			

### 3 AIR QUALITY CONTROLS AND MANAGEMENT MEASURES

#### 3.1 Air Quality Management and Mitigation

Table 2 includes the management actions listed in the Statement of Commitments in relation to air quality. These actions, in addition to monitoring and reporting (Section 4), constitute the air quality management system for the site.

**Table 2 - Operational Controls**

Statement of Commitments	Current Status
Fence off all land which is not to be disturbed to encourage natural regeneration.	Implement upon recommencement of mining.
Establish ground cover on disturbed areas and emplacement areas as soon as possible.	Implement upon recommencement of mining.
Undertake soil stripping at a time when there is sufficient soil moisture to prevent significant lift-off of dust.	Implement upon recommencement of mining.
Avoid stripping soil in periods of high wind.	Implement upon recommencement of mining.
Use water application for dust suppression to increase soil moisture should stripping occur during periods of high wind or low soil moisture.	Implement upon recommencement of mining.
Utilise water injection on the drill rigs or alternatively fit them with dust collectors.	Implement upon recommencement of mining.
Use aggregates for blast hole stemming to prevent venting of explosion gases.	Implement upon recommencement of mining.
Conduct blasting both before the establishment, and after the break up of low-level atmospheric temperature inversions.	Implement upon recommencement of mining.
Avoid ripping of softer overburden material during periods of high wind.	Implement upon recommencement of mining.



# SUNNYSIDE COAL PROJECT ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner: Operations Supt

Last Revision Date: 10/2017

Date Printed: 10/10/2017

## WHC\_PLN\_SUN\_AIR QUALITY MANAGEMENT PLAN

Spray low moisture coal with water prior to excavation to raise moisture content to >6%.	Implement upon recommencement of mining, where inherent moisture is <6%.
Minimise clearing ahead of construction activities.	Not applicable.
Water cleared areas regularly during construction activities.	Not applicable.
Minimise clearing ahead of road construction.	Not applicable.
Water active construction areas regularly.	Not applicable.
Restrict truck speeds on roads under construction to <50kph.	Not applicable.
Apply water to the coal at the feed hopper, crusher and all conveyor transfer and discharge points at the rate of approximately 2.0L/t coal processed.	Implement upon recommencement of mining, or at alternate rate appropriate to control moisture.
Temporarily cease operation in the event of protracted dry periods, high winds and significant dust generation and dispersal towards the surrounding residences.	Implement upon recommencement of mining.
Minimise the extent of clearing/site preparation in advance of mining.	Implement upon recommencement of mining.
Clearly define any access or haul roads and restrict vehicles and equipment to those roads.	Implement upon recommencement of mining.
Routinely apply water with or without chemical dust suppressants.	Implement upon recommencement of mining.
Progressively rehabilitate areas of disturbance including topsoil and subsoil stockpiles.	Implement upon recommencement of mining.
Install bund walls and wind breaks as required.	Implement upon recommencement of mining.
Regularly water haul roads.	Implement upon recommencement of mining.
Avoid coal being loaded above the truck body sides.	Implement upon recommencement of mining.
Cover all trucks carrying product coal from the mine with approved covers and securely fix the tailgates to prevent windblown dust emissions or spillages.	Implement upon recommencement of mining.
Fit all earthmoving equipment on-site with exhaust controls which satisfy NSW EPA emission requirements.	Implement upon recommencement of mining.
Ensure all equipment is properly maintained to ensure no unacceptable exhaust emissions occur and commit to the removal of any vehicle or item of mobile equipment from on-site activities which is observed not to comply with NSW EPA guidelines.	Implement upon recommencement of mining.
Direct the exhausts of all equipment upwards or to the side so as not to impinge on the ground and cause dust lift-off.	Implement upon recommencement of mining.
Undertake an air quality monitoring program to demonstrate compliance with the nominated goals specified in the Environment Protection Licence. <ol style="list-style-type: none"> <li>1. Deposited dust at selected residences and strategic locations surround the Project Site.</li> <li>2. Continuous wind speed and direction at the Project Site weather station.</li> <li>3. PM<sub>10</sub> dust at a residence nearby six day cycle.</li> </ol>	Implement upon recommencement of mining.
Avoid burning vegetation.	Implement upon recommencement of mining.
Use water injection or dust collectors during drilling.	Implement upon recommencement of mining.
Avoid ripping softer overburden material during periods of high wind.	Implement upon recommencement of mining.
Establish and maintain a dust monitoring program in line with recommended locations.	Implement upon recommencement of mining.
Install and maintain an automatic weather station within the Project Site.	Implement upon recommencement of mining.
Adopt strategies to reduce GHG environs as nominated in EA Section 4B.5.5.4.	Implement upon recommencement of mining.



# SUNNYSIDE COAL PROJECT ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner: Operations Supt

Last Revision Date: 10/2017

Date Printed: 10/10/2017

## WHC\_PLN\_SUN\_AIR QUALITY MANAGEMENT PLAN

Install first flush devices on the domestic water tanks at "Werona", "Ivanhoe", "Mulwalla", "Mulwalla (2)", "Innisvale", "Sugarloaf", "Lilydale", "Woodlawn", "Plain View", "Illili", "Glendower", "Ferndale" and "Eulalie".

Confirm installation of first flush devices at nominated residences prior to commencement of operations.

Where not currently installed, install first flush devices if residence is occupied.

In addition to the measures detailed in Table 2, predictive meteorological forecasting, through reference to weekly Bureau of Meteorology (BOM) forecasts, will be utilised to adapt operational planning as required.

PAE Holmes undertook an assessment of operations in 2012 against the *NSW Coal Mining Benchmarking Study: International Best Practice Measures to Prevent and/or Minimise Emissions of Particulate Matter from Coal Mining* (Donnelly et al., 2011). The report noted that a number of best practice measures (BMP) were already being implemented at the site and due to the limited life remaining at the mine the installation of additional BPM would have minimal benefit in reducing PM emissions and therefore no additional BPM were recommended for implementation. As the site will be operated in the same manner, no further measures are proposed.

### **3.2 Notification and Independent Review**

Schedule 4 of PA 06\_0308 details notification and independent review requirements.

## **4 MONITORING AND REPORTING**

### **4.1 Monitoring Program**

Air quality will be monitored by deposited dust gauges (for deposited dust) and a High Volume Air Sampler (HVAS) (for PM<sub>10</sub>).

No direct monitoring of TSP will be undertaken. Instead TSP air quality monitoring values will be determined by multiplying measured PM<sub>10</sub> values by a factor of 2. This approach was accepted by DP&E for all Whitehaven sites in a letter dated 5<sup>th</sup> August 2011.

Based on previous experience at the site when operational, the monitoring program is considered to adequately support the air quality management system.

### **4.2 Monitoring Locations**

Monitoring is to be conducted at the residences listed in Table 3 and shown in Figure 3. For monitoring purposes, SA1 as presented in Table 3 is used to determine compliance as a representative location of receiver impact and irrespective of land ownership.



**SUNNYSIDE COAL PROJECT  
ENVIRONMENTAL  
MANAGEMENT SYSTEM**

Document Owner: Operations Supt

Last Revision Date: 10/2017

Date Printed: 10/10/2017

**WHC\_PLN\_SUN\_AIR QUALITY MANAGEMENT PLAN**

**Table 3 – Air Quality Monitoring Locations**

<b>Property</b>	<b>Deposited Dust</b>	<b>PM<sup>10</sup></b>
SD1 - Ferndale	✓	
SD3 - Plainview	✓	
SD5 - Ivanhoe	✓	
SD6 - Illili	✓	
SA1 - Illili		✓
SD7 - Innisvale	✓	



# SUNNYSIDE COAL PROJECT ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner: Operations Supt

Last Revision Date: 10/2017

Date Printed: 10/10/2017

## WHC\_PLN\_SUN\_AIR QUALITY MANAGEMENT PLAN

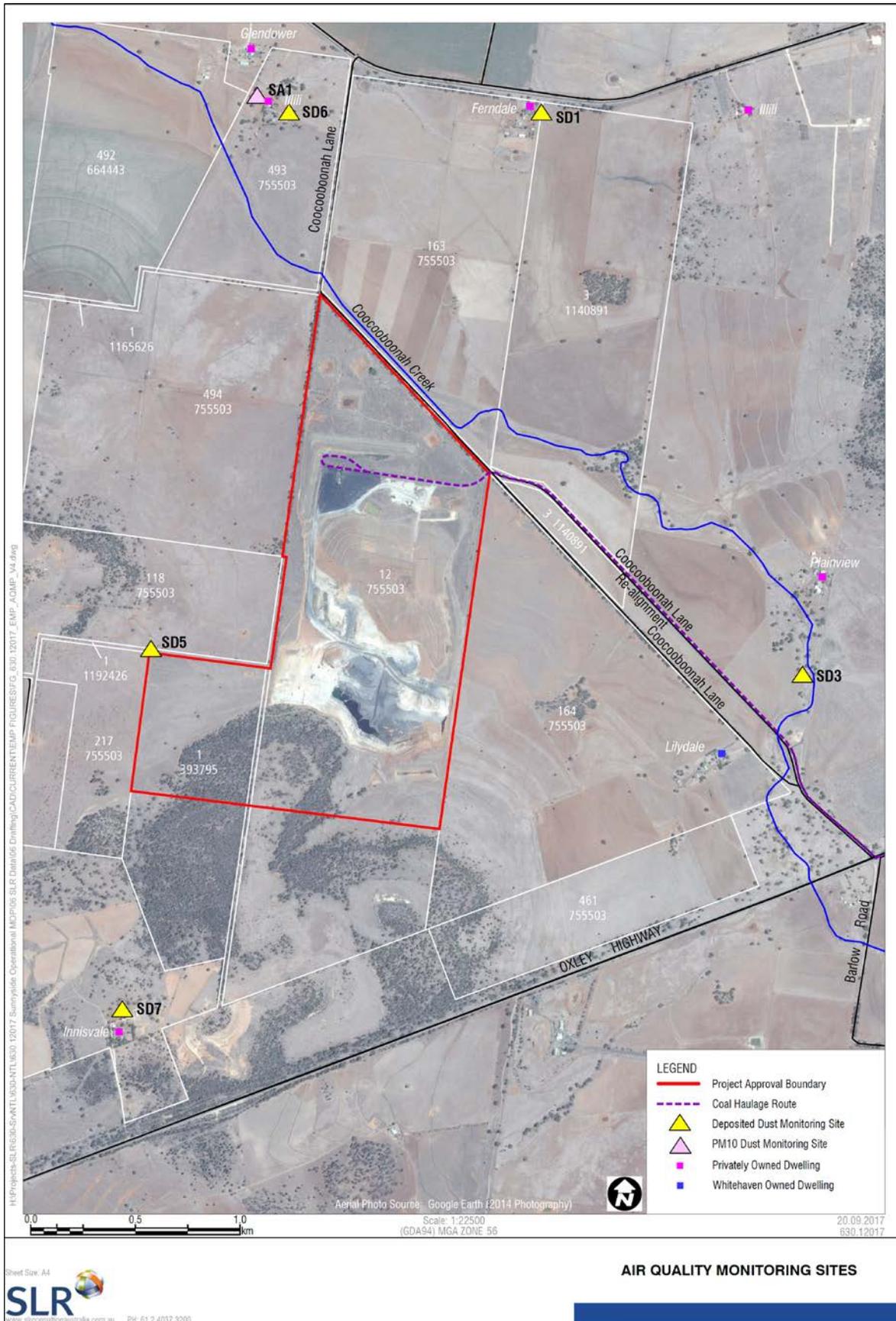


Figure 3 – Air Quality Monitoring Locations



**SUNNYSIDE COAL PROJECT  
ENVIRONMENTAL  
MANAGEMENT SYSTEM**

Document Owner:	Operations Supt
Last Revision Date:	10/2017
Date Printed:	10/10/2017

**WHC\_PLN\_SUN\_AIR QUALITY MANAGEMENT PLAN**

**4.3 Reporting**

4.3.1 Air Quality Incidents

An air quality incident is considered to be an exceedance of the criteria listed in Table 1, where the exceedance is determined to be caused by activities at Sunnyside.

Incident reporting will be undertaken in accordance with Conditions 5(3) and 5(4) of PA 06\_0308.

4.3.2 General

A review of air quality management and monitoring will be included in the Annual Review, in accordance with the requirements of Condition 5(5) of PA 06\_0308.

**5 DOCUMENT REVIEW**

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