

NAMOI MINING PTY LTD

(ABN 24 071 158 373)

**ANNUAL ENVIRONMENTAL
MANAGEMENT REPORT**

FOR THE

**SUNNYSIDE COAL MINE
(ML 1624)**

01 December 2009 – 30 November 2010



Namoi Mining Pty Ltd

Annual Environmental Management Report for the Sunnyside Coal Mine (ML 1624)

MOP Commencement Date **15-10-2008** – MOP Completion Date **31-09-2015**
AEMR Commencement Date **01-12-2009** – AEMR Completion Date **30-11-2010**

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Appendix 1	PA 06_0308
Appendix 2	Environment Protection Licence 12957
Appendix 3	Compliance Review <ul style="list-style-type: none">• PA 06_0308 (Table A3-1)• Environment Protection Licence 12957 (Table A3-2)• ML 1624 (Table A3-3)
Appendix 4	Dust Monitoring Results
Appendix 5	Groundwater Monitoring Data
Appendix 6	Blast Monitoring Results
Appendix 7	Noise Monitoring Results
Appendix 8	Meteorological Data

1 INTRODUCTION AND OBJECTIVES

1.1 Scope

1.1.1 Introduction and Period of Reporting

This is the second Annual Environmental Management Report (AEMR) produced for the Sunnyside Coal Mine, and it has been prepared in accordance with Conditions 4 and 5 of Mining Lease (ML 1624) (Mining Act 1992) and Condition 5 (Schedule 5) of PA 06_0308. The AEMR generally follows the format identified in the Department of Primary Industries - Mineral Resources (DPI-MR) document entitled "*Guidelines to the Mining, Rehabilitation and Environmental Management Process*" Version 3, dated January 2006.

Though primarily covering the period from 1 December 2009 to 30 November 2010 (the reporting period), where relevant the AEMR provides information on historical aspects of the operation and longer term trends in environmental monitoring results.

The Sunnyside Coal Mine is located within the Gunnedah Shire, approximately 15 km west of Gunnedah (Figure 1).

1.1.2 The Company

Sunnyside Coal Mine is owned by Namoi Mining Pty Ltd (NMPL) and operated by Whitehaven Coal Mining Pty Ltd. Both companies are wholly owned subsidiaries of Whitehaven Coal Limited (WCL), a publicly listed company which has several coal mining interests in the Gunnedah region of NSW.

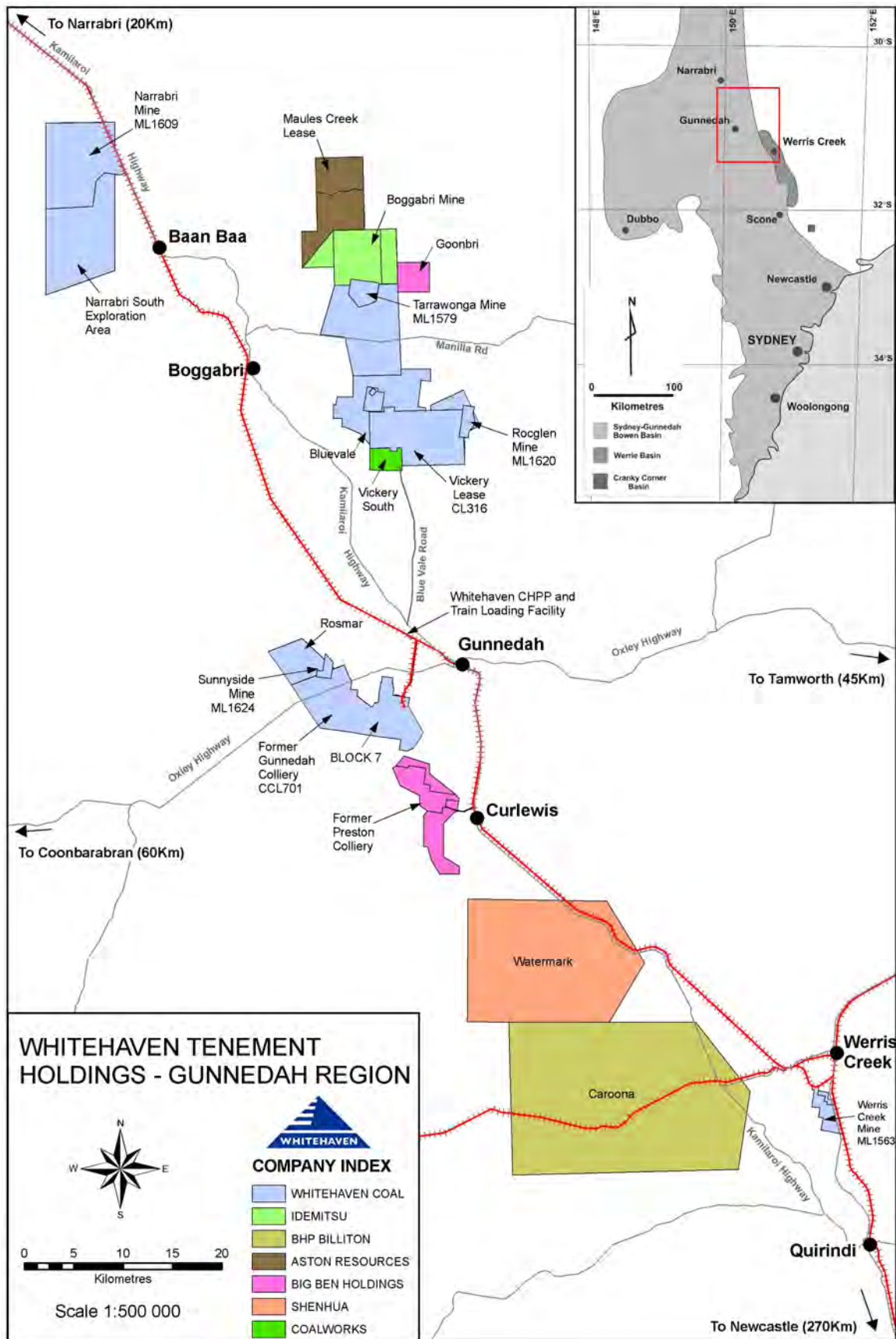


Figure 1 - Locality Plan

WCL's coal mining assets are as follows:

- Tarrawonga Coal Mine, 42km north-west of Gunnedah, owned by Tarrawonga Coal Pty Ltd which is a joint venture between WCL (70%) and Idemitsu Boggabri Coal (30%);
- Canyon Coal Mine (formerly Whitehaven Coal Mine), 10km south of Tarrawonga, 100% owned by WCL, operating since 2000 and ceased production in mid-2009;
- Rocglen Coal Mine, 28km north of Gunnedah, 100% owned by WCL, which commenced July 2008;
- Whitehaven Rail Siding and CHPP, 6km north-west of Gunnedah, 100% owned by WCL;
- Werris Creek Coal Mine, 4km south of Werris Creek, 100% owned by WCL;
- Narrabri Underground Coal Mine, 30km south-southeast of Narrabri, 70% owned by subsidiary company Narrabri Coal Pty Ltd;
- 100% ownership of the Bonshaw exploration project near Ashford;
- 100% ownership of the former Gunnedah Colliery through Namoi Mining Pty Ltd; and
- 100% ownership of the former Vickery Mine Site, located 20km north of Gunnedah.

WCL is also actively pursuing other prospective tenements with a view of maintaining a long-term presence in the Gunnedah Basin.

1.1.3 Background and History of the Sunnyside Coal Mine

The Sunnyside Coal Mine was developed after substantial investigations were undertaken under Exploration Licence 5831, granted in December 1996 and renewed in June 2006 and May 2008. Following completion of relevant assessments and studies, the Department of Planning provided approval to the development via Project Approval (PA) 06_0308 on the 24th September 2008. Environment Protection Licence (EPL) 12957 was granted on the 15th December 2008.

The Project Approval provided for the extraction of approximately 7 million tonnes of ROM coal, at a maximum rate of 1 million tonnes per year. The consent allowed for the crushing and screening of ROM coal at the mine site prior to transport to the Whitehaven Siding Coal Handling and Preparation Plant (CHPP) near Gunnedah.

Over the life of the approved mine, a total area of approximately 116 ha will be disturbed for mining and associated activities within ML 1624.

The external boundary of ML 1624 corresponds to the area referred to in PA 06_0308 and covers an area of approximately 234 ha.

1.1.4 Products and Markets

The Hoskissons Coal Seam within the Sunnyside Mine can be described as a medium volatile bituminous coal. Overall, the coal is 9 metres thick subdivided into two run-of-mine coal plies. These plies are as follows:

- Low Ash (12%) lower section (4 metres); and
- High Ash (25 to 30%) upper section (5 metres).

The lower section of the seam is typically medium to low in ash (~12%) and is crushed and screened into two products (1/ -15mm fine fraction; 2/ +15 to -50mm coarse fraction). The coarse product is typically marketed as a domestic 'coking' coal, whereas the fine product is bypassed at the Gunnedah CHPP and combined with other Whitehaven Group coals for cargos of export thermal shipments.

The upper section of coal is high in ash and is washed at the Gunnedah CHPP to produce a 15% ash coal at good yields (70 to 75%). This coal is also combined with other Whitehaven Group coals for cargos of export thermal shipments.

1.1.5 Operational and Environmental Management

1.1.5.1 *Contacts*

The management personnel responsible for operational and environmental performance at the Sunnyside Coal Mine and their relevant contact details are as follows:

- Mr Des George, Manager Mining Engineering - retains overall responsibility for all activities and performance at the mine. Contact: 0409 600 596.

- Mr Casper Dieben, General Manager, Operations - oversees Open Cut Operations for the Whitehaven Group. Contact: 0407 123 958.
- Mr Danny Young, Environmental Manager – oversees day to day environmental and rehabilitation performance across the site. Contact: (02) 6741 9316, 0427 497 710.

Mining operations are undertaken by Whitehaven Coal Mining Pty Ltd personnel. The day-to-day operational responsibilities are allocated to the Project Manager, Mr Michael Clark. Contact: (02) 6741 9200.

1.1.5.2 *Support Personnel*

In addition to the personnel identified in Section 1.1.5.1, Sunnyside Coal Mine utilises specialist assistance as and when required. Specialist environmentally-based or related companies or consultants involved in activities at the mine during the reporting period included:

- ALS Acirl Pty Ltd;
- Geoff Cunningham Natural Resource Consultants;
- Countrywide Ecological Services;
- Orica Blasting Limited;
- Land and Property Management - Soil Services; and
- Greg Ward Earthmoving.

All mining and environmental management activities are undertaken generally in accordance with the MOP, management plans and procedures prepared in satisfaction of Sunnyside's Mining Lease, Environment Protection Licence (EPL 12957), Project Approval and the relevant legislation.

1.1.6 Corporate Occupational Health, Safety and Environmental Policy

WCL has a documented Health, Safety and Environmental policy which states:

Whitehaven intends to conduct business in a way that maintains a safe and healthy workplace for its employees, contractors, visitors and the surrounding community and will protect the environment in all stages of exploration, mining, processing and train loading.

Whitehaven aims to:

- *Achieve zero injuries and occupational illnesses.*
- *Achieve zero equipment damage.*
- *Achieve zero environmental incidents.*

Whitehaven will strive to achieve these goals by:

- *Ensuring health, safety and environment is considered in all planning and work activities.*
- *Involve employees through regular communication, consultation and training.*
- *Identifying and controlling all potential hazards in the workplace through hazard identification and risk analysis.*
- *Ensuring all incidents are reported, controlled and learning's applied and shared.*
- *Providing effective injury management and rehabilitation for all employees.*
- *Seeking continuous improvement in performance by taking into account employee & community concerns and advances in health, safety and environment.*
- *Complying with legislative and other requirements and providing necessary training and resources.*

Whitehaven will ensure the availability of human, financial and physical resources to maintain and implement the Health and Safety Management System.

Responsibilities of people employed at Whitehaven Coal:

All persons employed by Whitehaven have a personal responsibility to comply with this policy and associated Health, Safety & Environment systems. No work is to be undertaken without a clear understanding of a safe method that minimizes the risk of injury, equipment damage and environmental harm.

Whitehaven employees shall:

- *Work in a healthy, safe and environmentally responsible manner.*

- *Encourage others to work in a healthy, safe and environmentally responsible manner.*
- *Promptly report incidents, unsafe practices or conditions and environmental concerns as they become apparent.*
- *Co-operate with Management in the support of promotion of health and safety responsible environmental management in the work place.*

This policy applies to all mines operated by Whitehaven Coal Limited and its subsidiaries.

1.2 Approval Status

1.2.1 Leases, Licences and Approvals

Table 1 identifies the leases, licences and approvals in place for the Sunnyside Coal Mine at the end of the reporting period, the issuing / responsible Authority, dates of issue, duration (where limited) and relevant comments. The list is presented chronologically according to the date of issue.

Reviews of compliance/performance with the conditions identified in PA 06_0308 (Appendix 1), EPL 12957 (Appendix 2), and ML 1624, are presented in Appendix 3, Tables A3-1, A3-2 and A3-3 respectively.

Table 1 - Tenements, Licences and Approvals

Issuing / Responsible Authority	Type of Lease, Licence, Approval	Date of Issue	Expiry	Comments
Department of Mineral Resources* ¹	Exploration Licence (EL 5183)	23 rd December 1996 (Renewed 8 th June 2005 and 6 th May 2008)	22 nd December 2010	Approval for exploration
Minister for Planning	Project Approval (PA) 06_0308 (Appendix 1)	24 th September 2008	5 th November 2015 (7 years from the grant of the ML)	Approval for the Mine
Department of Environment and Climate Change* ²	Environment Protection Licence No. 12957 (Appendix 2)	15 th December 2008	Nil Anniversary date: 15 th December Next review: 18 th August 2014	Approval for Mining for Coal and Coal Works to 2 Mtpa.
Department of Primary Industries (DPI) * ¹	ML 1624	5 th November 2008	5 th November 2029	Approval of open cut
Department of Water and Energy (DWE)*	Water Licence 90BL254961 90BL253767 90BL253768 90BL253769 90BL254686 90BL254687 90BL254688 90BL254689 90BL254690	27 th April 2009 09 th Feb 2007 09 th Feb 2007 09 th Feb 2007 26 th Mar 2008 26 th Mar 2008 26 th Mar 2008 26 th Mar 2008 26 th Mar 2008	27 th April 2014 Perpetuity Perpetuity Perpetuity Perpetuity Perpetuity Perpetuity Perpetuity Perpetuity	Mining Test Test Test Monitoring Monitoring Monitoring Monitoring Monitoring
* ¹ Now, Industry and Investment NSW (I & I NSW)				
* ² Now, Department of Environment, Climate Change and Water (DECCW)				
* ³ Now, NSW Office of Water (NOW)				

1.2.2 Amendments to Leases, Licences and Approvals

No amendments have been made to any leases, licences or approvals during the reporting period.

1.3 Actions Requested at Previous AEMR Review

The previous year's AEMR review identified the requirements listed in Table 2 for inclusion in future AEMRs.

Table 2 - I&I AEMR Review Issues/Considerations

No.	Issue/Observation	Action to be completed
1	Rehab Plans	Proposed yearly rehab to be outlined in plans.
2	Tyres	Should any tyres be buried in accordance with the EPA approval, please make a statement in the AEMR that the location of the tyres is recorded.

In response to the issues identified above, the rehabilitation plan included in this AEMR clearly identifies the extent of rehabilitation proposed for the following year. Additionally, the AEMR includes a discussion on the management of used tyres in Section 2.6.5.

The DoP in their assessment of last year's AEMR requested additional detail be provided as to how the site continues to manage and mitigate noise from the operation on surrounding residences. This detail is included in discussion on noise monitoring over the reporting period (see Section 3.10.3).

2 SUMMARY OF OPERATIONS

2.1 Exploration, Resources / Reserves and Mine Life

2.1.1 Exploration

Exploration in the current year has focused on the presence of intrusions/faulting in front of the current highwall. Twenty drillholes were undertaken to identify the extent of intruded coal. A ground magnetic survey was undertaken to identify the potential extent of the intrusions.

2.1.2 Resources and Reserves

Regionally, the Sunnyside Coal Mine lies in the Mullaley sub-basin of the central Gunnedah Coalfield. Coal extraction is from the Hoskissons Seam, part of the Late Permian Black Jack Group. Two major coal seams occur at Mining Lease 1624, namely the Hoskissons Seam and the underlying Melville Seam.

The Hoskissons Seam generally ranges in thickness from 6m to 9m and consists of two main plies. An upper high-ash ply (25 to 30% ash) and a lower low-ash ply (~12% ash). The depth of weathering extends approximately 20 to 35 metres below the surface, with the depth to the top of the Hoskissons Seam extending from the base of weathering in the north to approximately 80m below surface in the south. Seam rolls, minor faults, igneous dykes and sills also affect opencut operations.

A resource estimate in August 2009 shows there are 11.38 million tonnes of open cut coal within ML1624. A mineable reserve of approximately 3.0 million tonnes of recoverable coal and 2.8 million tonnes of marketable coal was estimated in August 2009 to exist in the current opencut consent area. A resource and reserve statement will be undertaken in this financial year.

2.1.3 Estimated Mine Life

Based on an average production rate of 0.8Mtpa or below, the mine life is approximately 4 years, as specified in the MOP (approved September 2008).

2.2 Land Preparation

Land preparation activities undertaken at the Sunnyside Coal Mine during the reporting period were conducted in accordance with commitments identified in Section 3 of the MOP and included:

- Mining and waste emplacement in an area formally comprising Community 1 – Cleared Cropland and Pastureland Community.
- Stripping of topsoil, subsoil and friable overburden over an area of approximately 7.1ha. Soil stripped during the reporting period comprised Soil Mapping Unit 1 (SMU 1) as described in the current MOP.
- During the reporting period, a total of 14,200m³ topsoil and subsoil was stripped and stockpiled. Existing stockpile locations are shown on Plan 3.

Table 3, the “Production and Waste Summary”, shows that at the end of the reporting period, 12,140m³ of topsoil and subsoil had been replaced for rehabilitation purposes.

Table 3 - Production and Waste Summary

	Cumulative Production			
	Start of Reporting period (up to 01/12/09)	During Reporting period (1/12/09 to 30/11/10)	Cumulative Total at End of Reporting period	Cumulative Total at End of next Reporting period (estimated)
Soil Stripped (m ³)	136,976	14,560	151,536	164,604
Soil Used/spread (m ³)	0	12,140	12,140	37,140
Waste Rock (m ³)	1,564,701	2,420,164	3,984,865	6,484,865
ROM Coal (t)*	111,817	298,492	410,309	807,094
Processing Waste (t)**	11,747	39,479	51,226	151,226
Product (t)	77,629	243,024	320,653	620,653

* ROM Coal is total production at the mine site. The difference between ROM Coal and final Product is related to changes in stockpile volumes both at the mine and the CHPP during the Reporting period.

** Sunnyside waste produced at Whitehaven CHPP.

Soil removal activities are generally undertaken in up to 2 x 50m wide strips in advance of competent overburden and coal extraction activities.

2.3 Construction

Construction activities over the reporting period comprised establishment of the coal bin, which was transferred from the former Canyon Coal Mine ROM pad area. Construction of the permanent coal crushing facility also commenced during the reporting period and will be completed during the next AEMR period.

2.4 Mining

2.4.1 Mining Method

All mining during the reporting period was undertaken by open cut methods using the techniques identified in the MOP, namely:

- Topsoil and subsoil removal by open bowl scraper;
- Friable overburden removal by scraper;
- Drilling and blasting the underlying competent overburden;
- Overburden (and interburden) removal by bulldozers and/or excavator and dump trucks, with the overburden placed in waste emplacements.
- Coal extraction by excavator loading into haul trucks for transport to the ROM stockpile.

All coal was assessed in pit and depending on the quality was classified into “high ash” and “low ash” for stockpiling. The in-pit classification determines the form of subsequent processing undertaken on-site or off-site.

During the reporting period, 2,420,164 bcm of friable and competent overburden was removed to produce 298,492t ROM coal at an average overburden:coal stripping ratio of 8:1 (See Table 3).

Plan 4 presents the status of mine and infrastructure development as of 30th November 2010 and includes the limit of mining at the commencement of the reporting period.

At the end of the reporting period, the open cut, which was developed as a series of approximately 8 x 50 m wide strips, covered an area of approximately 400m x 400m. Mining activities were undertaken in areas formerly identified as Community 1 – Cleared Cropland and Pastureland Community.

2.4.2 Mining Constraints

Day to day mining activities at the Sunnyside Coal Mine are primarily constrained by economic considerations which, in turn, are determined to a large extent by factors beyond the Company's control (i.e. coal price and demand). Economic factors determine the overburden:coal stripping ratio and hence the lateral extent of mining undertaken.

Other constraints to mining operations at the Sunnyside Coal Mine have included or continue to include:

- The presence of a high ash ply (Ply C) within the Hoskissons Coal Seam which has to be selectively mined and placed in the waste emplacement.
- The potential presence of faulting within the seam structure which may influence the sequence and possibly the method of mining;
- The potential for an uneven coal seam floor which could potentially complicate vehicular access to the coal;
- Restricted operating hours, as per PA 06_0308.

2.4.3 Mining Equipment

Table 4 presents a list of mining equipment in use at the Sunnyside Coal Mine at the end of the reporting period, together with its principal function(s).

A crushing plant/loading bin and a 600 kVA diesel generator will be installed as part of the coal loader, and will be completed by mid February 2011.

Table 4 - Mining Equipment

Item (or equivalent)	# on site	Function
Excavator (Hitachi EX1800)	1	Overburden and coal excavation
Volvo IT Front-End Loader	1	Coal excavation and loading
CAT 785 Rear Dump Truck (150t capacity)	3	Overburden and coal haulage
Drilling rig (intermittent)	1	Overburden drilling
Blasting truck (intermittent)	1	Blasting campaigns
CAT 657 Scraper	Up to 3	Soil and overburden removal
CAT D10T and CAT D11R Bulldozer	2	Overburden removal and ancillaries
CAT 14G Grader	1	Ancillaries
16 kL Water Truck	1	Dust suppression
Lighting Plants	4	Lighting
100 kVA Diesel Generator	1	Electricity generation (for site services)

2.4.4 Hours of Operations

Sunnyside is permitted to undertake mining operations between 7:00am to 10:00pm each Monday to Friday and 7:00am to 6:00pm on Saturdays, with the exception of public holidays. In the initial stages of the Sunnyside Mine, one production shift was utilised on weekdays (7:00am to 5:00pm) and generally an 8 hour overtime production shift on Saturdays. During this reporting period production was extended out to the permitted approved hours to 10:00pm during weekdays.

Maintenance crews have generally worked 12 hours shifts (6:00am to 6:00pm) up to 7 days per week.

Coal transportation from the mine site is permitted to be undertaken between the hours of 7:00am to 6:00pm Monday to Friday (or between 7:00am to 8:00pm during Eastern Summer Time) and 7:00am to 4:00pm on Saturdays. Coal transportation is not permitted on Sundays and public holidays.

Blasting activities were carried out between 10:00am and 5:00pm Monday to Friday and 10:00am to 2:00pm on Saturdays (except public holidays).

The above hours of operation are consistent with the permitted hours of operation identified in Project Approval PA 06_0308.

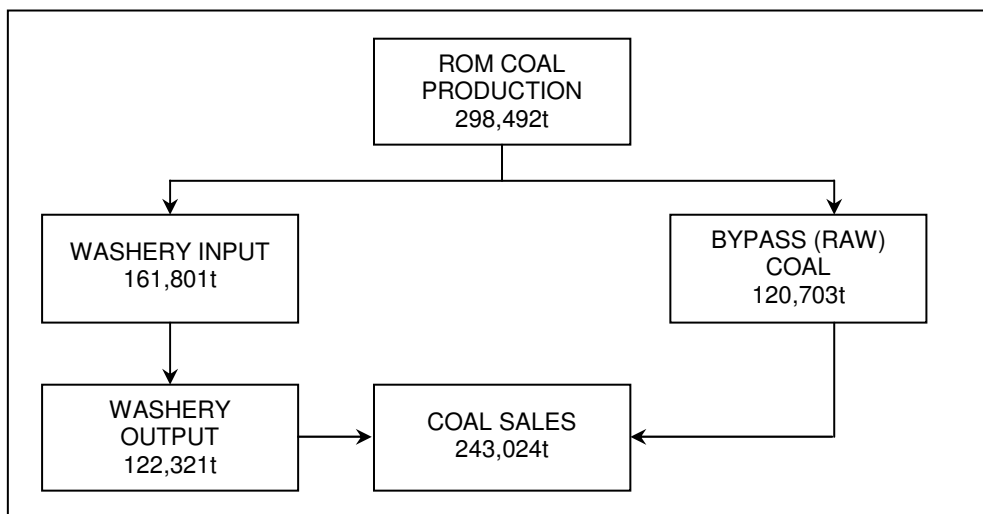
2.5 Processing

2.5.1 Outline of Processing Activities

With the exception of coal crushing to <150 mm, no coal processing was undertaken within the DA Area.

During the reporting period, Sunnyside coal was transported to the Whitehaven Siding CHPP (Figure 2) where 57% was washed and 43% was by-passed (unwashed) for despatch to domestic and export markets.

Figure 2 presents a schematic of coal movements and washery inputs, outputs and yields for the reporting period. The figure shows that during the reporting period, a total of 298,492 tonnes of ROM coal was produced at the Sunnyside site, producing 120,703 tonnes by-pass coal (i.e. crushed product coal not requiring washing), and 122,321 tonnes of washed product (at an average yield of 75% from the plant).



**Figure 2 - Coal Movement and Production Summary
(2009/2010 Reporting Period)**

2.5.2 Changes or Additions to the Process or Facilities

No significant changes to process or facilities occurred over the reporting period. The only addition was the establishment of the coal bin for loading purposes, which removed the requirement for loading of trucks with Front End Loader.

2.6 Waste Management

2.6.1 Introduction

Wastes produced from the Sunnyside Coal Mine during the reporting period remain unchanged from those identified in the original EIS and are comprised of:

- General domestic-type wastes from on-site buildings and routine maintenance consumables;
- Oils and grease;
- Sewage;
- Overburden and interburden;
- Mine equipment tyres; and
- Coarse and fine coal rejects from any coal preparation undertaken (at the Whitehaven CHPP).

The following sub-sections identify the management procedures adopted for each of these wastes throughout the reporting period.

2.6.2 Domestic Type Wastes

All general wastes were collected on-site and placed into large storage receptacles on a daily basis. An industrial waste collector collected this waste on a fortnightly basis. Sunnyside maintains a recycling program for office and general recyclables (paper, cardboard, bottles, cans etc) at the site office and crib room, as well as scrap steel, timber and waste oils from the workshop.

2.6.3 Oil Containment and Disposal

Waste oils from maintenance activities were pumped from equipment to bulk storage tanks contained within a bunded area (also see Section 2.9.2). When breakdown maintenance was undertaken away from this location, oil was pumped from the equipment to a tank on the service truck from which it was subsequently transferred to the bulk storage tank.

Waste oil stored at the maintenance workshop was collected and disposed of by a licensed contractor on an intermittent basis, approximately once every three months.

Runoff from the concrete vehicle and equipment wash pad was directed to an oil separator and containment system for subsequent pump out and disposal.

2.6.4 Sewage Treatment and Disposal

Effluent from the sewage and ablutions facilities at the Sunnyside Coal Mine was managed through the Council-approved septic system, with pump outs undertaken by a licensed waste disposal contractor on an as-needs-basis.

2.6.5 Mine Equipment Tyres

No tyres were disposed of at the mine during the reporting period. When tyre disposal in pit is undertaken, records will be maintained as to how many tyres are disposed of and the disposal area will be recorded via GPS.

2.6.6 Overburden and Interburden

Overburden materials at the Sunnyside Coal Mine comprise weathered conglomerates and siltstone with some fracturing. The overburden is cast into the mined-out areas by blasting or removed from above the coal seam by a combination of dozer pushing and excavator loading and hauling using dump trucks. Interburden removal to enable lower coal ply excavation is undertaken by excavator and dump truck.

During the reporting period, all overburden and interburden was blasted / pushed / dumped within areas nominated in the MOP.

2.6.7 Processing Plant Residues

2.6.7.1 *Physical and Chemical Characteristics*

The coarse and fine rejects produced from washing Sunnyside coal comprise a mixture of coal and non-coal materials, e.g. sedimentary rocks such as shale, mudstone or claystone, and sand, silts and clays which either occur naturally within the coal seam or represent overburden or interburden materials which dilute the coal during its extraction.

2.6.7.2 *Reject Handling and Disposal Procedures*

Coarse Reject – No coarse reject produced at the Whitehaven CHPP was disposed of at the Sunnyside Mine during the reporting period. Reject is currently being disposed of at Tarrawonga Mine, which is owned by Whitehaven.

Fine Reject – Pumped to a series of five fine reject ponds within the Whitehaven CHPP balloon loop and a further 2 ponds on the eastern side of the CHPP for consolidation. The ponds are encircled by bunding and drains to contain fine reject in the event of a pond failure. Following consolidation, the fine reject is excavated and transported to the former Gunnedah Colliery for use in final landform development and emplacement in the former Melville Pit Void.

2.6.7.3 *Monitoring and Management of Containment Facilities*

Routine management and monitoring of reject material at the Whitehaven Siding is undertaken by Whitehaven Coal personnel under the direction of the Plant Manager. Inspections of the reject ponds at the Whitehaven CHPP are undertaken by officers of Industry and Investment NSW (I & I NSW), the statutorily responsible Authority.

2.8 Stockpile Capacity

All ROM coal produced at the Sunnyside Coal Mine is delivered to high ash or low ash ROM stockpiles. ROM stockpile capacity at the Sunnyside Coal Mine totals

100,000t. Average stockpile volume during the reporting period was 35,000 m³ with volumes ranging from 10,745 m³ (at commencement) to 59,220 m³.

2.9 Water Management

2.9.1 Objectives

The Sunnyside Coal Mine lies within the catchment of the Namoi River. The majority of the surface water runoff flows northwards across the mine site. It then flows into Coochooboonah Creek which flows north-west within a constructed waterway paralleling Coochooboonah Lane. From there, it flows into Rock Well Creek then into Native Cat Creek which continues to flow north-west for 6km. Runoff then flows northwards within Collygra Creek where it flows across a floodplain area before flowing into the Namoi River some 25km north of the Mine Site. The remainder of the mine's surface water flows south into Coochooboonah Creek ultimately flowing into the Namoi River to the north. The design of sediment detention basins within the disturbed area of the mine limits the opportunity for discharge of runoff from mine-disturbed area, i.e. after appropriate detention time to satisfy licensed discharge criteria.

Two wet weather discharge points are nominated in the current EPL 12957. These are Storage Dam 3 (EPL ID No. 9) and Storage Dam 4 (EPL ID No. 10). Two ambient monitoring points are also nominated on the EPL for water quality monitoring during discharge events. These are Coochooboonah Creek Upstream (CCUS – EPL ID No. 11) and Coochooboonah Creek Downstream (CCDS – EPL ID No. 12).

The management of water at the Sunnyside Coal Mine is undertaken with the following objectives.

- i. To ensure sufficient quantities of water can be obtained through the capture of “dirty” water, harvesting of “clean” water, and extraction/harvesting of groundwater to meet the requirements of dust suppression on the mine site.
- ii. To ensure the segregation of “dirty” water from “clean” water, with “dirty” water directed to and detained in sediment basins which, on discharge, flow to storage dams. “Clean” water, comprising clarified water originating from the sediment basins and run-on water collected in accordance with the

Company's harvestable right, will be directed to and/or collected in storage dams.

- iii. To ensure the treatment and separation of "contaminated" water from the workshop and wash bay area by diversion to an oil separating unit, with clarified water reporting to sediment basins.
- iv. To ensure segregation of "pit" water from surface flows by collection in isolated pit dewatering dams.
- v. To maximise the use of "dirty" and "pit" water for dust suppression purposes and minimise the necessity to harvest "clean" run-on water.
- vi. To minimise the volume of water discharged from the mine site, but, should the discharge of water prove necessary, ensure sufficient settlement time is provided prior to discharge such that suspended sediment within the water meets the water quality criteria as specified in the EPL 12957.
- vii. To minimise erosion and sedimentation from all active and rehabilitated areas of the mine site.
- viii. To monitor the effectiveness of surface water controls and ensure all relevant surface and groundwater quality criteria are met.
- ix. To monitor the impact on groundwater level, quality and availability.
- x. To minimise any impacts on the availability of surface water or groundwater to surrounding residents and landholders.
- xi. To establish a method of assessing the level of impact on groundwater supply attributable to the mine.

2.9.2 Surface Water Management

Water within the Project Approval area is nominally classified either as "clean", "dirty", "contaminated" or "pit water" depending on the source of the flow and its potential for physical or chemical contamination.

All sediment basins, storage dams and associated banks and drains have been designed and constructed by Department of Lands – Soil Services personnel.

"Clean water" comprises surface runoff from catchments undisturbed or relatively undisturbed by mining or related activities and rehabilitated catchments. Within the Project Approval area, clean surface water flows either flow to natural drainage lines and hence off-site or are collected by diversion banks and directed to the storage

dams for use on-site. All water flowing from sediment basins ultimately flows to storage dams to provide a final “polishing” storage prior to potential off-site discharge.

“Dirty water” comprises surface runoff from disturbed catchments such as the active mine area and overburden emplacement, ROM and product coal stockpiles, soil and subsoil stockpiles and rehabilitated areas (until stabilised), all of which could contain sediments.

Dirty water originating from surface runoff is collected by catch banks located down slope of the potential sources of pollution and directed to the sediment basins. Water collecting within the sediment basins is used for dust suppression in addition to waters in the storage dams to avoid potential for off-site water discharge.

Sediment basins have been designed to meet the requirements of the 90% 5 day event of the Urban Stormwater Guide. The Site Water Management Plan provides further details regarding storage capacity. Sediment levels in all sediment basins remain very low due to the limited run-off which occurred during the reporting period. Sediment basins are either cleaned out once their capacity is reduced by 25% or supplementary structures are installed to provide the required storage volume. In the event of structure replacement, the contents of the former structure will be allowed to dry prior to being capped and rehabilitated.

The principal components of the “clean” and “dirty” water management systems in place at the end of the reporting period are shown on Plan 4.

“Contaminated Water Management” comprises runoff water which could potentially contain hydrocarbons. One 68,000 L self bunded diesel fuel tank is maintained adjacent to the Sunnyside workshop area. This ensures that in the event of a leak from the tanks, there is sufficient capacity to adequately store the full complement of diesel from those tanks. An additional concrete bund has been installed adjacent to the workshop to house other oils and lubricants in a safe and efficient manner. Any associated spills within the bund then report to an oil separating unit for disposal by an appropriately licensed contractor. Waters potentially contaminated with hydrocarbons from the workshop area are also diverted to the oil separator, with

clean water used for dust suppression purposes. Spill kits are also maintained on the mine site.

The likelihood of localised spills of fuel or oil external to bunded areas is kept to a minimum by the adoption of the above practice. In the event that localised spills do occur, immediate action would be undertaken to ensure appropriate clean-up and minimisation of harm.

“**Pit Water**” comprises water contained within the open cut sump or pumped to the void water dam for containment and use for dust suppression across the site.

2.9.3 Discharges

No discharge events occurred during the reporting period.

2.9.4 Water Sources, Demand and Use

Within the Project Approval Area and immediate vicinity of Sunnyside Coal Mine, surface water resources are limited to a number of ephemeral drainage lines which flow for a short period after substantial rainfall, farm dams, water storage dams and a series of interlinked sediment basins as shown on Plans 3 and 4.

Water is required on the mine site primarily for dust suppression purposes, with minor quantities required for potable, toilet and ablutions purposes. Where practicable, water collected on-site is retained or reused, with water for dust suppression sourced from a combination of on-site water harvesting, inflows from the exposed coal seam, overburden and interburden, and groundwater extraction. Water for potable, toilet and ablutions purposes is trucked to the site from Gunnedah.

During the reporting period, a total of approximately 31.17ML was used on the mine site and at the processing facility, generally for dust suppression purposes. The approximate volumes obtained from the various sources are as follows:

- 25 ML from groundwater sourced under licence from the production bore located on the “Werona” property; and

- 6.17 ML from surface water storages.

During the reporting period:

- (i) 25 ML of water was pumped from the licensed bore;
- (ii) There was negligible groundwater seepage into the pit; and
- (iii) All surface water utilised was from onsite sediment basins and storage dams.

The above water use is approximately half of the use predicted in the EA for the mine which indicated a water requirement of approximately 75-100ML per year for dust suppression and processing requirements, and generally consistent with water use from the previous AEMR period. This is attributable to lower production levels than initially modelled (1/3 of maximum production) as well as above average rainfall over the reporting period.

2.9.5 Stored Water

Table 5 presents an estimate of the volume of stored water at the beginning and end of the reporting period.

Table 5 - Stored Water

	Volumes Held (m ³)		Storage Capacity at the end of the Reporting period (m ³)
	Start of Reporting period	At end of Reporting period	
Clean Water (in Storage Dams)	7,600	6,300	30,400
Dirty Water (in Sediment Basins)	7,800	10,700	31,200
Controlled Discharge Water (salinity trading schemes)	N/A*	N/A*	N/A*
Pit Water	1,000	0	29,200

* N/A = Not applicable for the Sunnyside Coal Mine

2.9.6 Groundwater Management

Inflows into the open cut result from a combination of:

- Direct rainfall runoff and infiltration through the emplaced overburden which flows down-dip to the open cut sump(s); and

- Inflows from the exposed coal seam.

As noted in Section 2.9.4, during the reporting period, a negligible amount of water was produced in the pit from rainfall and groundwater seepage. Any water produced was used for dust suppression purposes.

Contamination of groundwater is controlled by the management of chemical, oil and grease spills and storage, with:

- Vehicle maintenance carried out in designated areas;
- Any spills being cleaned up; and
- Fuels, oil and greases being stored within a bunded area, constructed in accordance with AS 1240-2004 (also see Section 2.9.2) and/or DECCW requirements.

Groundwater from surrounding bores, as well as the mine production bore, is monitored on a regular basis to detect and assess any changes in groundwater quality or level that may be attributable to the mine (see Section 3.4.2).

2.10 Hazardous and Explosive Material Management

No explosive materials are retained within the Sunnyside Mine Site. Orica Mining Services has a storage facility located between the Tarrawonga and Canyon sites which removes the requirement for on-site storage.

Mixing of nitropril with distillate to produce an explosive is undertaken on the day of each blast using a purpose built explosives mixer and in a quantity adequate only for that particular blast.

Materials Safety Data Sheets (MSDS) are retained on-site for all hazardous materials, independent of the quantity. Additionally, all contractors are required to supply MSDS sheets for any hazardous goods they may bring onto the site.

2.11 Infrastructure Management

Management of infrastructure (e.g. buildings, roads, generators and pumps) and other facilities not specified elsewhere within this AEMR is undertaken on an as-needs basis or in accordance with Statutory requirements in order to maintain them in an operationally efficient, safe, neat and tidy condition, and one which does not result in the direct or indirect generation of unacceptable environmental impacts.

2.12 Product Transport

Approximately 279,720 tonnes of coal was transported from the mine over the reporting period. This equated to an average of 19 truck loads per day in coal transport. Product coal from the CHPP is transported by train to the Port of Newcastle.

3 ENVIRONMENTAL MANAGEMENT AND PERFORMANCE

The following sub-sections document the implementation and effectiveness of the various control strategies adopted at the Sunnyside Coal Mine, together with monitoring data for the reporting period. Existing monitoring sites are shown in Figure 3. Life of mine monitoring data will be included in future AEMRs, where relevant, to allow for discussion on longer-term trends. A risk identification matrix and the relevant Environmental Management procedures are identified in the Sunnyside Coal Mine MOP.

3.1 Air Pollution

3.1.1 Criteria

The air quality criteria applicable to the Sunnyside Coal Mine are specified in PA 06_0308 Schedule 3, Tables 7, 8 & 9 (Appendix 1), which is summarised below.

- Acceptable mean annual increase in deposited dust – 2 g/m²/month.
- Mean annual dust deposition (all sources) – 4 g/m²/month.
- Mean annual Total Suspended Particulate (TSP) matter (all sources) concentration – 90 µg/m³.
- Mean annual PM₁₀ particulate level – 30 µg/m³.
- 24 hour average PM₁₀ particulate level – 50 µg/m³.

Notwithstanding the diversity of the criteria identified above, routine air quality monitoring at the Sunnyside Coal Mine is required for deposited dust and PM₁₀ particulates. Monitoring of deposited dust is undertaken on a monthly basis whilst PM₁₀ levels are monitored every 6 days.

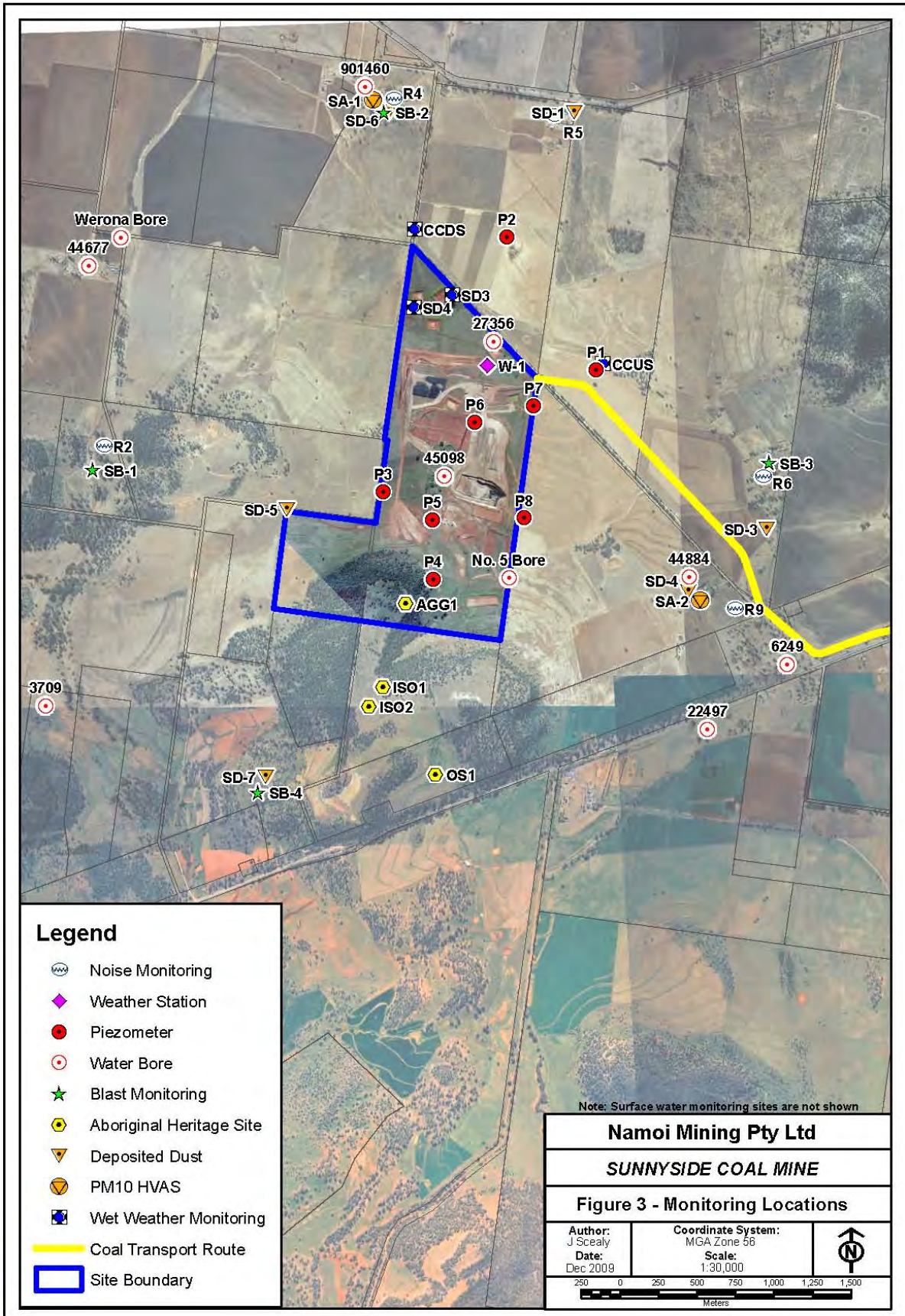


Figure 3 - Monitoring Locations

3.1.2 Control Procedures

In order to satisfy the criteria identified above, Sunnyside Coal Mine employs a range of air pollution control measures including:

- Use of trunks, branches and litter from clearing for mine site rehabilitation. No materials are burnt;
- Limiting groundcover removal in advance of mining consistent with operational requirements. Under normal operational circumstances, a maximum of 100 m is prepared in advance of mining;
- Groundcover removal as part of the topsoil removal activities, rather than prior to topsoil removal;
- Where practicable, limiting soil stripping activities to periods when there is sufficient soil moisture to prevent significant dust lift-off and avoiding periods of high winds;
- Soil stripping using open bowl scrapers, thereby eliminating the dust generated from elevated scrapers;
- Application of water to exposed surfaces, with emphasis on those areas subject to frequent vehicle / equipment movements which may cause dust generation and dispersal;
- Use of water injection on the drilling rig;
- Use of imported aggregates for blast hole stemming;
- Water application at the crusher;
- Cessation of coal processing activities during periods of concurrent high winds and temperatures which cause coal dust dispersal, independent of water applications. This situation did not arise during the reporting period;
- ROM coal pad watering;
- Progressive shaping and rehabilitation of areas once they are no longer required for mining purposes;
- Speed limit restrictions on all vehicles and equipment on the mine site;
- Equipment exhaust positioning to avoid exhausts impinging on the ground and causing dust lift-off; and
- Use of covers on all product coal trucks. Toll is the principal contractor engaged in the haulage of coal from the Sunnyside Mine to the CHPP. All Toll

vehicles and those operated by its contractors are fitted with roll-over tarpaulins.

3.1.3 Dust Monitoring

Table 6 presents a summary of the deposited dust monitoring data presented in Appendix 4. A graphical representation of the total insoluble solids and ash content data for each of the sites monitored during the reporting period is also included in Appendix 4. Figure 3 identifies the locations of the various deposited dust gauges maintained during the reporting period.

**Table 6 - Deposited Dust Monitoring Data
(December 2009 to November 2010)**

Site (see Figure 3)	Property Name	Mean Total Insoluble Solids (g/m ² /month)	Mean Ash (g/m ² /month)
SD-1	FERNDALE	3.1	1.0
SD-3	PLAINVIEW	1.7	1.2
SD-4	LILYDALE	1.1	0.7
SD-5	IVANHOE	2.7	1.1
SD-6	ILLILI	1.8	1.1
SD-7	INNISVALE	1.2	0.7

A review of Table 6 and Appendix 4 shows that;

- The mean annual total insoluble solids (deposited dust) criterion was satisfied at all monitoring locations during the reporting period. An additional monitor was installed in November 2010 at “Woodlawn” and results from this monitor will be added in the next AEMR.
- The mean ash content (i.e. the mineralogical component of the total deposited dust measured and that component possibly attributable to mining-related activities) percentage across the sites was as follows: SD-1 (32%), SD-3 (70%), SD-4 (63%), SD-5 (41%), SD-6 (61%) and SD-7 (58%).

Sunnyside Coal Mine has one High Volume Air Sampler (HVAS - PM₁₀) located at the property “Illili”, to the north-west of the mine site, and one HVAS unit on the

“Lilydale” property, to the east of the mine site. Each sampler runs for 24 hours every 6 days, with filter papers sent to an accredited laboratory for analysis.

In general, the PM₁₀ results have indicated compliance with the annual average criteria for both sites, as indicated in Figure 4 and Figure 5. However the 24hr limit was exceeded at both “Illili” and “Lilydale” during December 2009. “Lilydale” recorded 67µg/m³ on the 8th of December 2009 and “Illili” recorded 109µg/m³ and 70µg/m³ on the 8th and 14th of December 2009. These exceedances are directly related to a number of bushfires which occurred in the region during early December 2009. These fires also caused elevated PM₁₀ levels at monitoring locations at other mines in the area that are operated by WCL. Despite these exceedances, it is noteworthy that the annual average PM₁₀ level declined at both monitoring points as compared to last year. The full data set for PM₁₀ monitoring is contained within Appendix 4.

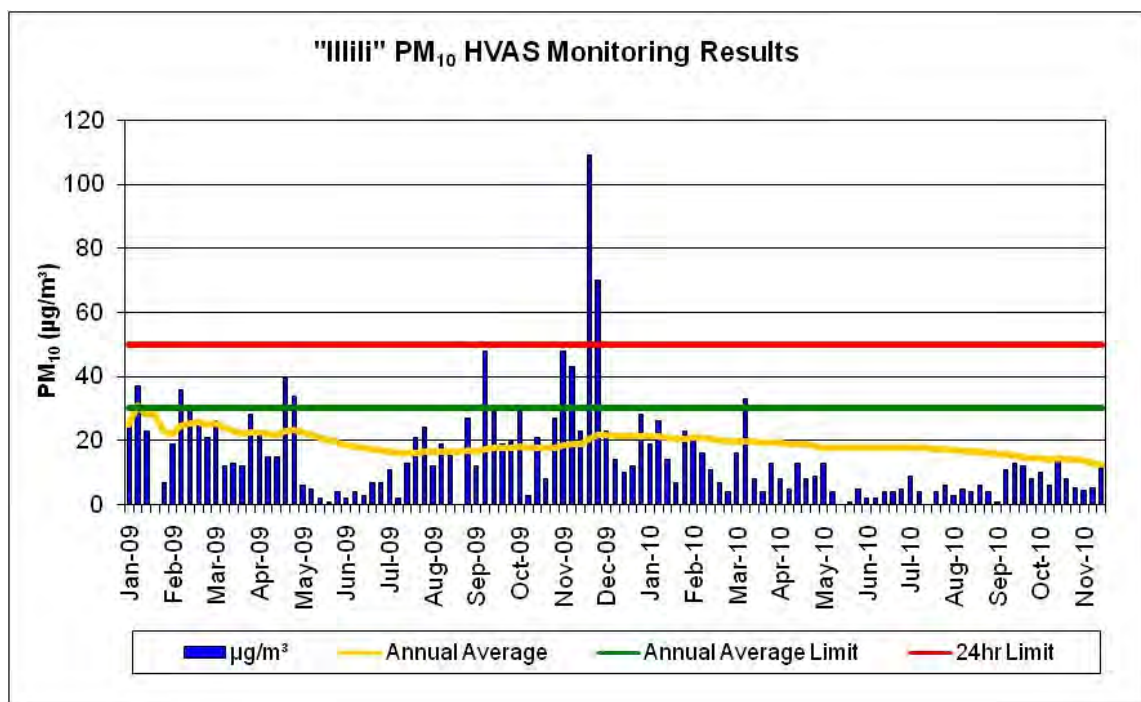


Figure 4 – “Illili” HVAS PM₁₀ Data
January 2009 – November 2010

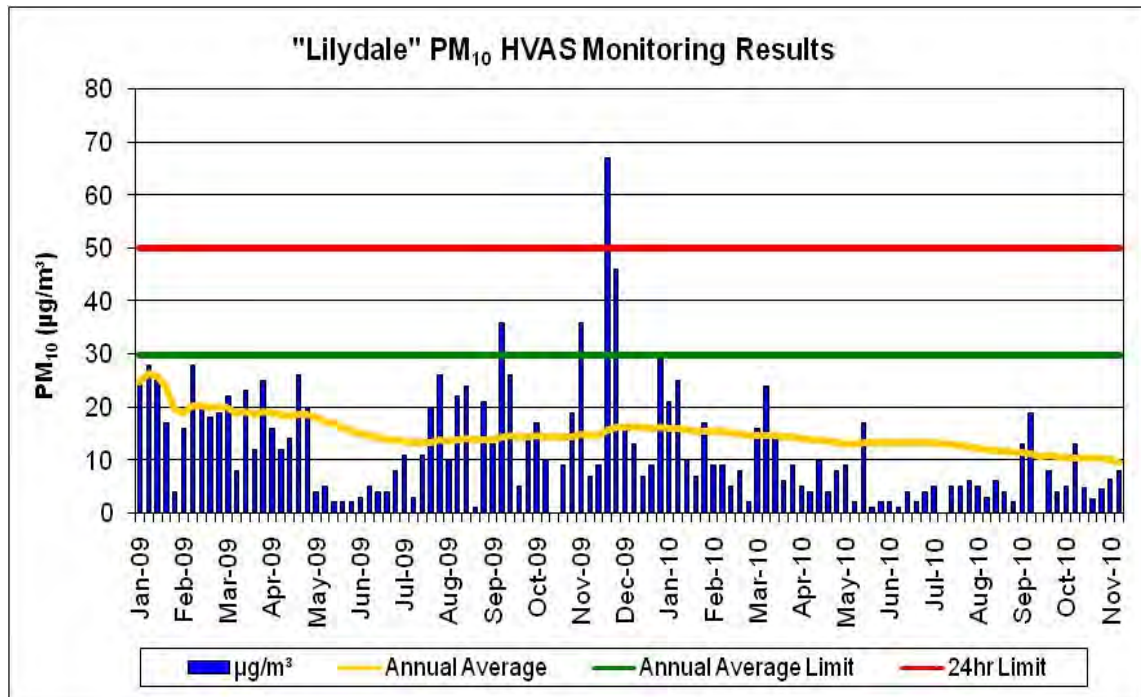


Figure 5 – “Lilydale” HVAS PM₁₀ Data
January 2009 – November 2010

3.2 Erosion and Sedimentation

3.2.1 Management

Methods for the management of erosion and sediment control at the Sunnyside Coal Mine are presented in the MOP and Site Water Management Plan prepared in accordance with PA 06_0308.

Control of erosion and sediment generation is achieved primarily through the implementation of water management controls identified in Section 2.9.2 and shown on Plan 4 as well as water usage for dust suppression which ensures adequate storage capacity is available within the various water containment structures to receive inflows. Additional measures which assist in the control of erosion and sedimentation include:

- Minimising the extent of disturbance consistent with operational requirements. Where possible, a maximum of 2 x 50 m is generally disturbed in advance of mining;
- Revegetation of long-term subsoil and topsoil stockpiles, areas shaped to their final landform and areas no longer required for mining-related purposes;

- Undertaking soil management activities generally in accordance with the soil stripping and stockpiling recommendations from Geoff Cunningham Natural Resource Consultants; and
- Installation of contour banks and rock-lined waterways on the final landform following soil application.

Soil stockpiles have been placed in gently sloping or near flat areas surrounded by grassland which effectively reduces the runoff velocity, and hence erosive potential, from any run-on waters. However, NMPL is aware of the potential for stockpile erosion and will adopt stockpile protective procedures to minimise impacts as required over the remaining life of the mine. All soil stockpiles on the Sunnyside site have, or will be, sown to cover crops on completion (and when weather conditions permit) to aid in stabilisation.

3.2.2 Performance

The effectiveness of the procedures for erosion and sedimentation management are assessed visually as part of routine mine operations and supervision undertaken by Sunnyside Coal Mine personnel, with any ameliorative works initiated as and when required.

During the reporting period, all necessary controls were in place and operating as per design. The mine had good pasture establishment on soil stockpiles and storage dam/sediment basin banks and drainage lines (Plate 1).



Plate 1 - Established Pasture in Drainage Line

3.3 Surface Water Pollution

3.3.1 Management

The prevention of surface water pollution is achieved through the management of surface water as presented in Section 2.9.2.

3.3.2 Performance

Surface water management controls have operated well throughout the reporting period, with all water being contained onsite.

Sunnyside Coal Mine has a schedule to undertake surface water monitoring on a quarterly basis, in addition to any wet weather discharge monitoring. Above average rainfall during this reporting period has provided adequate storage of water to undertake quarterly surface water monitoring, as required. Quarterly surface water results are shown below in Table 7.

Table 7 - Surface Water monitoring results

Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Total Organic Carbon (TOC) (mg/L)	Grease & Oil (mg/L)
29/12/2009	CC Downstream	6.8	95	19	13	
4/3/2010	SB5	7.85	412	30	6	<5
4/3/2010	SB2	8.3	554	17	<1	8
4/3/2010	SD4	8.08	321	12	<1	<5
24/5/2010	SB2	8.14	586	30	2	7
24/5/2010	SD4	8.11	351	9	2	6
11/8/2010	SD4	7.82	312	26	<1	<5
15/11/2010	SD4	7.81	186	56	3	<5
15/11/2010	SD3	7.54	166	140	3	<5

The quarterly monitoring results show that water quality within onsite storages and downstream of the Sunnyside mine site was generally good, with the exception of marginally elevated Total Suspended Solids within SD4 and SD3, with 56mg/L and 140mg/L recorded in November 2010. These elevated levels were due to high rainfall resulting in surface runoff, however all runoff was contained within the storages on site. As a consequence, there was no impact from operations on sediment loads in downstream water bodies.

3.4 Groundwater Pollution

3.4.1 Management

With the exception of fuels and oils, no materials occur, or are retained on the mine site which are likely to be a source of groundwater pollution.

The methods for management of potential pollutants are summarised in Section 2.9.6. Ongoing monitoring to assess trends in groundwater chemistry will enable assessment of potential contaminants to groundwater, with particular emphasis on heavy metals, and major cations and anions. Groundwater monitoring requirements are identified in Table 8.

- Monitoring site 3709 has not been sampled to date due to site access issues. The “Ivanhoe” property does not have permanent residents, and as such, the access points are generally locked and inaccessible. It is proposed to contact the landowner to verify if they wish to have monitoring of their bore undertaken and determine appropriate access arrangements.
- Access was granted to site 22497 after arrangements with the property owner in early December 2009. Previously access had been restricted with no resident at the property. Quarterly monitoring commenced on the 21st December 2009 and will be maintained throughout the next reporting period.
- Monitoring site 44677 was unable to be sampled due to the bore being fully sealed.
- SWL results were unavailable at sites 44884, 27356, No 5 Entry and Werona during some monitoring events due to the bore holes being covered by pumps.
- 901460 was not sampled over the period as it was not accessible due to it been equipped with a windmill.
- Water level data loggers, which store SWL data at 12 hourly intervals, have been installed in P2 and P3, and are monitored by Geoterra Pty Ltd.

Groundwater sampling and analysis was conducted by ALS Acirl Pty Ltd during the reporting period.

A review of the groundwater monitoring results presented in Appendix 5 shows the following trends:

Groundwater levels

- Groundwater levels have remained relatively consistent at all monitoring locations with the exception of P5 which showed a 2.5m drop in SWL between December 2009 and May 2010, before being destroyed by mining, which is expected due to its close proximity to the pit.
- Monitoring location P7 has experienced a recharge of 1.6m since December 2009, which is most likely due to the above average rainfall over the period.
- Ongoing monitoring will provide a more robust trend in standing water level over time.

Groundwater quality

- The water in most bores is generally neutral in pH.
- The water in all bores can be described as fresh to brackish.
- Water quality has been compared to the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000) (ANZECC) guidelines. Water quality is generally within the guidelines for stock watering purposes.
- Based on the monitoring data available to date, water quality appears relatively consistent since monitoring commenced.

3.5 Contaminated or Polluted Land

Prior to mining, the Project Approval Area was a greenfields site. Discussion with landowners during the preparation of the EA revealed that no environmentally harmful products had been used on their landholding nor had there been any disposal of potential environmental contaminants. This situation has remained unchanged throughout the life of the mine to-date and consequently there is no reason to expect that contaminated lands would be present within the Project Approval Area.

3.6 Threatened Flora

Investigations into the occurrence of threatened flora within the Project Approval Area were undertaken as part of the Environmental Assessment by Geoff Cunningham Natural Resource Consultants Pty Ltd in 2007 following field surveys in October and December 2006. The investigation identified no significant impact on threatened flora species, endangered ecological communities, endangered flora populations or critical habitat as a consequence of the development, either because they do not exist in the area or avoidance is possible due to project design.

Investigations identified a remnant of the White Box Yellow Box Blakely's Red Gum Woodland endangered ecological community within the study area but concluded that it would not be affected in any significant manner by the mine.

A remnant of the Native Vegetation on Cracking Clay Soils of the Liverpool Plains endangered ecological community was also identified within the study area. It was noted that a small section of this community would be temporarily affected by the Coochoonah Lane re-alignment but the community would be rehabilitated and enhanced following rehabilitation after mining ceases. It was assessed that this action, due to its temporary impact and final environmental enhancement, would not require approval under the Commonwealth EPBC Act.

Much of the area has been cleared in the past and most of this cleared area has been cultivated. The vegetation on the cleared areas has been invaded by introduced species. The establishment of the mine site does not involve clearing of native vegetation and as such no biodiversity offsets are required.

The initial flora quadrat establishment and monitoring was undertaken in June 2010 by Geoff Cunningham Natural Resource Consultants Pty Ltd. This monitoring will become more refined upon approval of the Rehabilitation and Landscape Management Plan which is currently being reviewed by the DoP. The vegetation communities present at Sunnyside include:

- **Community 1** – Cleared Cropland and Pastureland Community;
- **Community 2** – Regenerating Grasslands Community;
- **Community 3** – Bare Disturbed Land with Minimal Vegetation Cover;
- **Community 4** – *Atalaya hemiglauca* [Whitewood] Community;
- **Community 5** – Dry Scrub Community of the Rocky Scarp;
- **Community 6** – *Eucalyptus dealbata* [Tumbledown Gum] – *Geijera parviflora* [Wilga] – *Callitris glaucophylla* [White Cypress Pine] Community;
- **Community 7** – *Eucalyptus albens* [White Box] Community;
- **Community 8** – *Eucalyptus populnea* subsp. *bimbil* [Bimble Box] – *Eucalyptus melliodora* [Yellow Box] - *Eucalyptus albens* [White Box] Woodland Community; and
- **Community 9** - Degraded *Austrostipa aristiglumis* [Plains Grass] Grassland.

The mine is located wholly within Community 1 and therefore a single quadrat was established within the mine site to monitor ground cover and other vegetation changes in the area.

Additional quadrats will be established on the mined area once rehabilitation is complete.

3.7 Threatened Fauna

Investigations into the occurrence of threatened fauna within the Project Approval Area were undertaken by Kevin Mills and Associates as part of the Environment Assessment, following surveys conducted in September 2006. These investigations identified that the proposed development was unlikely to significantly affect any of the threatened species, fauna populations or communities listed under the *Threatened Species Conservation Act 1995*, or their habitats.

It was also concluded that development of the mine was not likely to have a significant impact on any matter of national environmental significance listed under the *Environment Protection and Biodiversity Conservation Act 1999*. Referral to the Commonwealth Minister for the Environment for assessment and approval was therefore not warranted.

The area surrounding the mine site supports a viable Koala population. NMPL has committed to a number of measures to minimise the impacts on this population, including:

- Relocating the southern section of Coocooboonah Lane to avoid disturbing remnant Koala habitat;
- Erecting a Koala-proof fence around the active mine area;
- Minimising clearing and utilising local tree species for revegetation with an emphasis on Koala feed trees. This has commenced with 80 White Box and 80 Yellow Box trees established in the area of koala corridor enhancement on the mine site.

The initial fauna quadrat establishment was undertaken in November 2010 by Dr Leong Lim (Countrywide Ecological Services). This monitoring will become more refined with approval of the Rehabilitation and Landscape Management Plan which is currently being reviewed by the DoP. Due to rehabilitation only being in the very early stages at the site, only two grassland monitoring plots were established. Within the next reporting period two woodland plots will be established and two rehabilitation plots will be established once rehabilitation areas are further developed.

Further detail on the success of rehabilitation will be provided in subsequent AEMRs.

3.8 Weeds

3.8.1 Management

Weed management within the ML area involves general observations and targeted inspections to determine levels of weed infestation. Weed control is undertaken by contractors or Whitehaven's own qualified personnel. All persons involved with weed control hold required chemical handling certificates.

3.8.2 Performance

Sunnyside Coal Mine has not experienced any major weed issues during the reporting period. Minor ongoing weed management comprised spot spraying of Bathurst Burr, Galvanised Burr, Mexican Poppy and general weeds along the haul road and around the office facilities. Spot spraying of Prickly Pear was undertaken in the south-western corner of the mine lease.

3.9 Blasting

3.9.1 Blast Criteria and Control Procedures

3.9.1.1 *Blast Criteria*

Blasting criteria for the Sunnyside Coal Mine is nominated in Project Approval PA 06_0308 (Appendix 1), and Condition L7 of Environment Protection Licence 12957 (Appendix 2) and specify that:

- Blasting must only be carried out between 10:00 am and 5:00 pm, Monday to Friday, 10:00am to 2:00pm on Saturdays and at no time on Sundays or Public Holidays.
- The overpressure level from blasting operations must not:
 - (a) exceed 115dB (Lin Peak) for more than 5% of the total number of blasts over each reporting period; and
 - (b) exceed 120dB (Lin Peak) at any time.

at any residence on privately-owned land.

- Ground vibration peak particle velocity from the blasting operations must not:
 - (a) exceed 5mm/s for more than 5% of the total number of blasts during each reporting period; and
 - (b) exceed 10mm/s at any time,

at any residence on privately-owned land.

PA 06_0308 also specifies that the mine shall not carry out more than:

- (a) 2 blasts a day; and
- (b) 5 blasts a week, averaged over a 12 month period.

3.9.1.2 *Control Procedures*

Flyrock, air vibration, ground vibration and dust from blasting are controlled using a combination of design and operational methods which are detailed in the MOP and/or documented blasting procedures.

3.9.2 Performance

During the reporting period, a total of 10 blasts were initiated. There were no instances of peak overpressure exceeding 115.0 dBL or ground vibration peak particle velocity exceeding 5mm/s.

The maximum recorded peak overpressure recorded during the reporting period was 114.8 dBL at “Illili” on the 17th April 2010 and 23rd June 2010.

The maximum recorded ground vibration during the Reporting period was 2.39 mm/s recorded at “Plain View” on the 17th April 2010. This is well inside the consent criteria of 5 mm/s.

All blast monitoring results for the reporting period, including the time of initiation has been included in Appendix 6.

3.10 Operational Noise

3.10.1 Criteria

3.10.1.1 *EPA Criteria*

The EPA-nominated noise emission criteria, identified in Environment Protection Licence 12957 as applicable to the Sunnyside Coal Mine, are as follows.

L6.1 *Noise from the premises must not exceed:*

- (a) *an $L_{10(15\text{minute})}$ noise emission criterion of 40 dB(A) during initial construction period; and*
- (b) *an $L_{Aeq(15\text{ minute})}$ noise emission criterion of 35 dB(A) at all times (day, evening and night time periods).*

L6.2 (Provides definitions)

L6.3 *The noise emission limits identified in this licence apply under all meteorological conditions except:*

- (a) *during rain and wind speeds (at 10m height) greater than 3m/s; and*
- (b) *under "non-significant weather conditions".*

L6.4 *The noise limits set by condition L6.1 of the licence do not apply where a current legally binding agreement exists between the licensee and the occupant of a residential property that:*

- a) *agrees to an alternative noise limit for that property; or*
- b) *provides an alternative means of compensation to address noise impacts from the premises.*

A copy of any agreement must be provided to the EPA before the licensee can take advantage of the agreement.

3.10.1.2 *Consent Criteria*

Noise emission criteria nominated in Project Approval PA 06_0308 (Condition Schedule 3(2) and Schedule 3(3)) is as follows:

- 3(2) *The Proponent shall ensure that the noise generated during the construction of the project does not exceed the level set out in Table 1.*

Table 1: Construction noise impact assessment criterion dB(A)

Day/Evening <i>L_{A10(15 minute)}</i>	Land
40	Any residence on, or more than 25% of, any privately owned land (except at "Lilydale")

- 3(3) The Proponent shall ensure that the noise generated during mining operations and other activities on the site does not exceed the level set out in Table 2:

Table 2: Operational noise impact assessment criterion dB(A)

Day <i>L_{Aeq(15 minute)}</i>	Land
35	Any residence on, or more than 25% of, any privately owned land (except at "Lilydale")

However, if the Proponent has a written negotiated noise agreement with the landowner of any land, and a copy of this agreement has been forwarded to the Department and DECC, then the Proponent may exceed the noise limits in Table 1 or Table 2 on that land in accordance with the negotiated noise agreement.

- 3(6) The Proponent shall implement all reasonable and feasible measures to ensure that the traffic noise generated by the project combined with the traffic noise generated by other mines does not exceed the level in Table 4:

Day/Evening <i>L_{A1eq(1 hour)}</i>	Road
55	Any residence adjacent to Torrens Road

Note: Traffic noise generated by the project is to be measured in accordance with the relevant procedures in the DECC's Environmental Criteria for Road Traffic Noise.

3.10.2 Control Procedures

Control of noise generation and propagation on the Sunnyside Coal Mine site is by a combination of general source and propagation path methods including, where practical:

- Installation and maintenance of appropriate mufflers on plant and equipment;
- Where operationally feasible, scheduling activities to minimise operation of equipment in exposed locations when winds are blowing towards residences;

- Equipment removal or replacement;
- Changing operational procedures;
- Restricting hours of operations;
- Enclosure of fixed items of plant, eg generators;
- Bunding close to noise sources to create obstructions to the propagation path;
- On-going site road maintenance using the mine-based grader; and
- Regular equipment maintenance.

Sunnyside Coal Mine also regularly liaises with the majority of surrounding neighbours to seek feedback not only on noise, but on all mining activities. Any issues raised are investigated and appropriate measures are implemented to alleviate further impacts.

3.10.3 Operational Noise Monitoring

3.10.3.1 *Introduction*

The Noise Monitoring Program details the requirements for attended noise monitoring for construction, transport and operational noise associated with the Sunnyside Coal Mine. The noise monitoring sites are identified on Figure 3.

The following sub-sections present a summary of the outcomes of each monitoring event. Copies of all monitoring reports are presented in Appendix 7.

3.10.3.2 *February 2010 Noise Monitoring*

On the 23rd February 2010 attended noise monitoring was undertaken at “Illili” (R4), “Ferndale” (R5), “Plain View” (R6), “Lilydale” (R9) and “Glendower” (R15). “Ivanhoe” (R2) was not recorded as the property is not permanently occupied and access is generally unavailable. Spectrum Acoustics reported that:

- L_{Aeq} noise levels (all sources) during the day were 37 dB(A) at “Illili”, 49 dB(A) at “Ferndale”, 45 dB(A) at “Plain View” and 51 dB(A) at “Glendower”. “Lilydale” was not recorded due to access to the property being locked. Mine noise was at the limit of 35 dB(A) at “Plain View” and below the criterion of 35 dB(A) or inaudible at all other monitoring locations.

- L_{Aeq} noise levels (all sources) during the evening were 36 dB(A) at “Illili”, 44 dB(A) at “Ferndale”, 41 dB(A) at “Plain View”, 40 dB(A) at “Lilydale” and 40 dB(A) at “Glendower”. Mine noise was above criteria at 37 dB(A) at “Ferndale”, with all other sites being below criteria or inaudible.

The elevated noise at “Ferndale” was mainly due to emissions from haul trucks and a dozer. There was no temperature inversion at the time of monitoring. Wind was from the south east which may have influenced noise levels at the “Ferndale” monitor.

In addition to the site noise monitoring, traffic noise from the transport trucks was measured at the “Roslyn” property on Torrens Lane, near the CHPP, over a one hour period. The noise levels from 11 trucks (6 full, 4 empty and a water cart) passing the site were measured between 7.45 am and 8.45 am on 12th March 2010. The measured L_{eq} noise level from mine vehicles was 49.7 dB(A), below the noise criterion of 55 dB(A) L_{eq} (1 hour).

3.10.3.3 *May 2010 Noise Monitoring*

On the 14th May 2010 attended noise monitoring was undertaken at “Illili” (R4), “Ferndale” (R5), “Plain View” (R6), “Lilydale” (R9) and “Glendower” (R15). “Ivanhoe” (R2) was not recorded as the property is not permanently occupied and access is generally unavailable. Spectrum Acoustics reported that:

- L_{Aeq} noise levels (all sources) during the day were 40 dB(A) at “Illili”, 53 dB(A) at “Ferndale”, 41 dB(A) at “Plain View”, 46 dB(A) at “Lilydale” and 41 dB(A) at “Glendower”. Mine noise was above criteria at 38 dB(A) at “Ferndale” and below the criterion of 35 dB(A) or inaudible at all other monitoring locations.
- L_{Aeq} noise levels (all sources) during afternoon were 36 dB(A) at “Illili”, 37 dB(A) at “Ferndale”, 43 dB(A) at “Plain View”, 53 dB(A) at “Lilydale” and 36 dB(A) at “Glendower”. Mine noise was below criteria or inaudible at all sites.
- L_{Aeq} noise levels (all sources) during evening were 36 dB(A) at “Illili”, 36 dB(A) at “Ferndale”, 40 dB(A) at “Plain View”, 40 dB(A) at “Lilydale” and 33 dB(A) at “Glendower”. Mine noise was above criteria at “Plain View” being 40 dB(A), and was also above criteria at “Lilydale”, being 37 dB(A). “Illili” and “Ferndale” both recorded 35 dB(A), with all other monitors below criteria or inaudible.

The noise at “Ferndale”, which was variable in level, was mainly the result of emissions from haul trucks and a dozer. On review of the weather station details it

was confirmed that a temperature inversion was present at the time of monitoring on the morning of the 14th May (7:35am). Mine noise at “Plain View” and “Lilydale” was from trucks, engine revs, dozers, horns and dumping noise. Again, at the time of monitoring (6:30pm – 6:50pm), inversion conditions were experienced which would have contributed to the noise exceedances at these sites. As “Lilydale” is a mine owned property, noise compliance criteria does not apply. Further details are provided Appendix 7.

Additionally on the 14th May 2010, traffic noise was measured at the “Roslyn” property on Torrens Lane, near the CHPP. Several vehicles passed along Torrens Lane going into and out of the CHPP but no coal haulage trucks were present. The noise levels from eight light vehicles and two heavy vehicles passing the site were measured. Over the approximate 1 hour monitoring period the measured Leq noise level from vehicles on Torrens Lane was of 44 dB(A). This is below the noise criterion for a local road of 55 dB(A) Leq (1 hour).

3.10.3.4 August 2010 Noise Monitoring

On the 30th and 31st August 2010 attended noise monitoring was undertaken at “Illili” (R4), “Ferndale” (R5), “Plain View” (R6), “Woodlawn” (R7) “Lilydale” (R9) and “Glendower” (R15). “Ivanhoe” (R2) was not recorded as the property is not permanently occupied and access is generally unavailable. Spectrum Acoustics reported that:

- L_{Aeq} noise levels (all sources) during the day were 35 dB(A) at “Illili”, 47 dB(A) at “Ferndale”, 39 dB(A) at “Plain View”, 38 dB(A) at “Woodlawn”, 39 dB(A) at “Lilydale” and 38 dB(A) at “Glendower”. Mine noise was below criteria or inaudible at all monitoring locations.
- L_{Aeq} noise levels (all sources) during the evening were 34 dB(A) at “Illili”, 34 dB(A) at “Ferndale”, 32 dB(A) at “Plain View”, 33 dB(A) at “Woodlawn”, 43 dB(A) at “Lilydale” and 38 dB(A) at “Glendower”. Mine noise was below criteria or inaudible at all monitoring locations.

Additionally on the 31st August 2010, traffic noise was measured at the “Roslyn” property on Torrens Lane, near the CHPP. A total of 31 heavy vehicles travelled along Torrens Lane during the monitoring period. These consisted of 13 full and 14 empty coal haulage trucks, 2 full trucks transporting waste from road works on the access road, 1 garbage truck and 1 water cart. Over the approximate 1 hour

monitoring period the measured Leq noise level from vehicles on Torrens Lane was 56 dB(A). This was slightly higher than the noise criterion for a local road of 55 dB(A) Leq (1 hour). As a marginal exceedance only, no additional action was taken as a consequence of the noise monitoring, albeit the result was closely monitored at the next monitoring round to confirm ongoing compliance.

3.10.3.5 *November 2010 Noise Monitoring*

On the 3rd and 4th November 2010 attended noise monitoring was undertaken at “Illili” (R4), “Ferndale” (R5), “Plain View” (R6), “Lilydale” (R9) and “Glendower” (R15). “Ivanhoe” (R2) was not recorded as the property is not permanently occupied and access is generally unavailable. Spectrum Acoustics reported that:

- L_{Aeq} noise levels (all sources) during the day were 57 dB(A) at “Illili”, 43 dB(A) at “Ferndale”, 40 dB(A) at “Plain View”, 38 dB(A) at “Lilydale” and 49 dB(A) at “Glendower”. Mine noise was below criteria or inaudible at all monitoring locations.
- L_{Aeq} noise levels (all sources) during the evening were 52 dB(A) at “Illili”, 42 dB(A) at “Ferndale”, 50 dB(A) at “Plain View”, 41 dB(A) at “Lilydale” and 35 dB(A) at “Glendower”. Mine noise was below criteria or inaudible at all monitoring locations.

On the 4th November 2010 traffic noise was measured at the “Roslyn” property on Torrens Lane, near the CHPP. Over a one hour period, a total of 11 heavy vehicles travelled along Torrens Lane. These consisted of 7 full and 4 empty coal haulage trucks. The measured Leq noise level from vehicles on Torrens Lane was 53 dB(A) Leq (1 hour). This is in compliance with the noise criterion for a local road of 55 dB(A) Leq (1 hour).

As a consequence of monitoring over the reporting period, the potential for inversion impacts on noise propagation was realised at “Ferndale”, “Lilydale” and “Plain View” during February and May 2010 measurements. “Lilydale” is project related and noise criteria does not apply at this property. With regard to the noise exceedances at “Plain View” and “Ferndale”, the property holders have not raised any concerns with regard to noise levels. Concern has, however, been raised by the residents of the “Glendower” property. Whilst noise monitoring during the reporting period has indicated compliance at the property, the residents have indicated that they have experienced noise impacts from the mine. It has been identified that the most likely

noise source is haul trucks travelling to the ROM pad. The Company has initiated the possibility of a private agreement with the residents and discussions are ongoing.

Sunnyside has taken actions to limit noise impacts through avoiding, where possible, dumping in exposed locations under adverse conditions. Sunnyside has also implemented a revised procedure of communications between dump trucks and excavators during loading procedures. This has involved the installation of a buzzer system in the cabins of the equipment rather than the application of audible horns which can impact on surrounding receivers. It is also expected that over the next AEMR period, when more in-pit space is available, a greater capacity for in-pit dumping during inversion events will further minimise potential for ongoing noise impacts.

3.11 Visual, Light

3.11.1 Management

Light from the Sunnyside Coal Mine is visible from the Oxley Highway, Quia Road and Coochooboonah Lane, particularly during the winter months. The most affected residences are "Lilydale" (project related), "Ferndale", "Illili", "Glendower" and "Plain View". General lighting at night is restricted to the workshop and office facilities. There are currently four lighting plants in use. These plants run within the operating hours of up to 10pm Monday to Friday and 6pm on Saturdays. The lights are generally directed away from surrounding residences. No issues or complaints have been received by the mine in regards to the use of lighting plants to date.

Management / minimisation of local and more distant visual impacts are achieved by:

- Undertaking activities in accordance with the various management plans applicable to the mine, all of which incorporate safeguards which indirectly reduce visual impact;
- Minimising the extent of land disturbance / clearing in advance of mining;
- Construction of amenity bunds on the northern and eastern boundaries of the mine site;
- Progressive rehabilitation of disturbed areas; and

- Sympathetic positioning and direction of lights to avoid impacting on local residences.

3.11.2 Performance

Sunnyside Coal Mine did not receive any complaints during the reporting period which related to visual or light impacts.

The eastern amenity bund was designed to reduce the visual impacts at the “Lilydale” property to the east of the mine. Although “Lilydale” is mine owned the bund provides an effective screen to all residences east of the mine.

The northern amenity bund (Plate 2) continues to reduce visual impacts from Coocoofoonah Lane. The bund has established pasture and reduces impact from the coal stockpile and the coal load out bin.

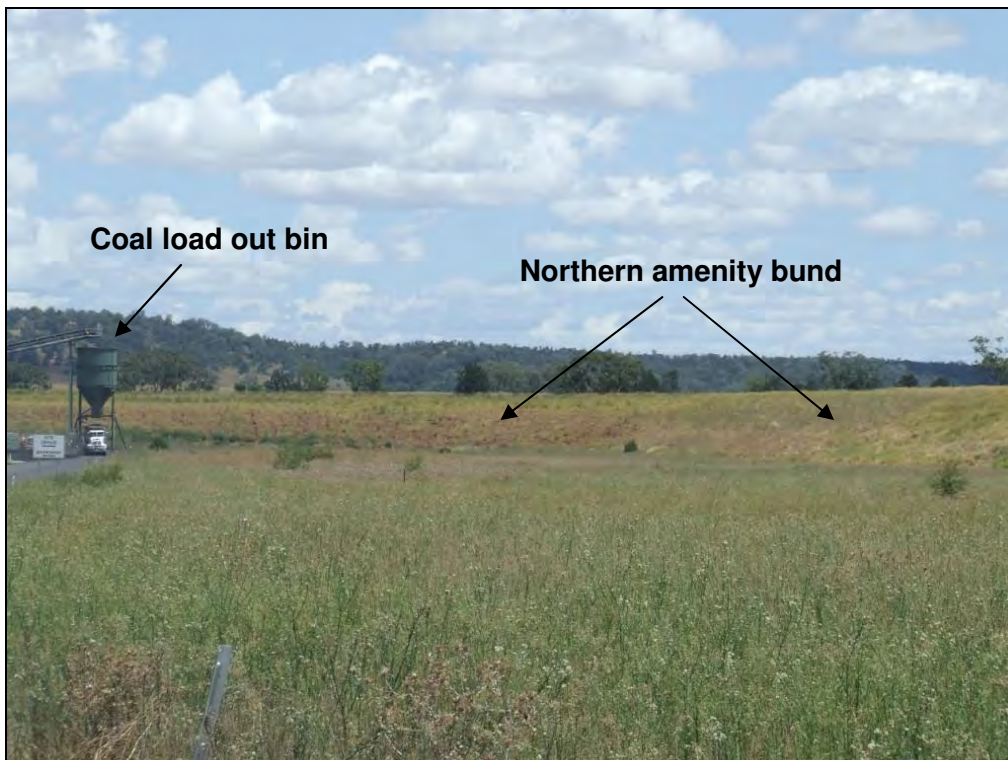


Plate 2 - Northern Amenity Bund

All practicable measures are taken to minimise impacts on surrounding landholders, whilst ensuring safe operations at the mine site, and Sunnyside Coal Mine will

endeavour to address any issues or concerns which may be raised by landholders in the future.

3.12 Aboriginal Heritage Management

3.12.1 Sites Management and Performance

An assessment of the cultural heritage of the mine site was conducted by Archaeological Surveys and Reports Pty Ltd (ASR). Prior to the investigation, ASR contacted the Red Chief Local Aboriginal Land Council (LALC) and Bigundi Biame Gunnedarr Traditional People to arrange for site officers to assist in the survey. A representative from each group was present for the site survey conducted on the 12th September 2006 and the coal transport route survey on the 7th December 2006. The ASR assessment was used in the preparation of the Environmental Assessment for the mine, undertaken by R.W. Corkery & Co. Pty Ltd on behalf of Namoi Mining Pty.

Four sites were recorded during the investigation, as detailed in Table 9. Only one site (AGG1) was recorded within the mine site while the three isolated artefact sites were identified to the south of the mine site.

Table 9 - Aboriginal Artefacts

Site Name	Site Type	Site Description/Comments
Sunnyside AGG1	Axe Grinding Groove	Axe grinding groove at the rim of a cliff-like scarp (beside a small water-filled natural depression in the rock). Dimensions: 28cm (L) x 6cm (W) x 2cm (D). Located approximately 150m from the southern side of the open cut area.
Sunnyside ISO1	Isolated Artefact	Flake with possible retouch to one margin located on the bank beside the upper reaches of a dry creek (on a vehicle track). Dimensions: 21 x 12 x 3mm
Sunnyside ISO2	Isolated Artefact	Proximal fragment of a flake located on the bank beside the upper reaches of a dry creek. Dimensions: 22 x 22 x 5mm.
Sunnyside OS1	Artefact Scatter	Artefact scatter of at least ten artefacts in a lozenge-shaped area of 30 x 8m, on the upper slopes downslope of a contour bank downslope of a saddle. Artefact types: flakes and flaked pieces, including a backed blade.
Source: Modified after ASR (2007) – EA SCSC Part 7		

All Aboriginal Heritage sites are managed in accordance with the Sunnyside Coal Mine Aboriginal Cultural Heritage Management Plan, prepared in accordance with Condition 3(32) of PA 06_0308. The specific management measures for each of the identified sites are as follows:

AGG1

Although the site will not be directly impacted upon by mining operations and associated facilities, there is some potential for indirect impact from fly-rock as the site is located approximately 150 m from the extent of open cut operations.

In consultation with the relevant Aboriginal groups, it was determined that the site requires measures to ensure it is not damaged from flyrock. This has been achieved by the covering of the site with a straw blanket.

Sites ISO1, ISO2 and OS1

Each of these artefact sites are located outside the site boundary and more than 500m from any mining related activity. On this basis no specific protection mechanisms are considered necessary.

In the event that additional protective measures are required in the future, Sunnyside Coal Mine will initiate such actions in consultation with local Aboriginal groups and the DECCW.

3.12.2 Consultation

Sunnyside Coal Mine, through the soil stripping contractor, regularly consults with representatives of the local Aboriginal community. In accordance with the agreement with the representative aboriginal groups, notification of planned topsoil stripping is provided by the soil stripping contractor directly to the nominated Aboriginal site monitors approximately 2 to 3 days in advance of planned activities.

Given that pre-stripping (separate stripping of topsoil, subsoil and friable overburden) is undertaken well in advance of mining and the soil stripping contractor is also engaged in other activities on the mine site, the flexibility exists to delay topsoil stripping activities should the situation ever arise in the future where monitors are temporarily unavailable.

During the reporting period, no cultural material of significance was identified during soil stripping activity. To date, the measures in place to protect Aboriginal Cultural Heritage are considered satisfactory, with all measures identified in the EA and consent criteria in place. No additional Aboriginal Cultural Heritage items have been discovered during the operation of the mine over the reporting period.

3.13 Natural Heritage

There are no features of Natural Heritage within the Project Approval Area and hence, no specific management procedures are required.

3.14 Spontaneous Combustion

3.14.1 Management

Sunnyside Coal Mine is located within the Hoskissons Coal Seam which has been mined for over 120 years with a number of reported outbreaks of spontaneous combustion. Tests have confirmed that coal from the Sunnyside Coal Mine has the potential to spontaneously combust. On this basis, a Spontaneous Combustion Management Plan has been developed to prevent and manage spontaneous combustion issues.

In the event of spontaneous combustion, Sunnyside Coal Mine personnel are present within the area of the ROM coal stockpiles during work hours and are trained to watch for indications of spontaneous combustion. Any incident would be followed by excavation to identify the source and extinguishment through water saturation.

3.14.2 Performance

There were no incidents of spontaneous combustion during the reporting period.

3.15 Bushfire Management

3.15.1 Management

Sunnyside Coal Mine is located within an area of cleared agricultural land. The mine maintains fire fighting equipment as well as earthmoving equipment and a water truck which could be used in the control of fires. Sunnyside personnel also liaise with the local (Coocoofoonah) Rural Fire Service, as required.

3.15.2 Performance

There have been no bushfire incidents on or adjacent to the mine site since development commenced.

3.16 Mine Subsidence

Mine subsidence is not an issue with open cut mines and hence it is not an issue with the Sunnyside Coal Mine.

3.17 Hydrocarbon Contamination

3.17.1 Management

It is Sunnyside Coal Mine's objective that:

- All bulk hydrocarbons, i.e. fuel, oils, grease etc (both new and waste) retained at the mine be contained within bunded areas within the contained water management system as described in Section 2.9.2.
- All fixed or portable equipment incorporate self-contained bunding;
- Hydrocarbon-contaminated materials be disposed of appropriately; and
- Minor spillages, if occurring, are cleaned up and the contaminated soil either bio-remediated or transferred off-site to an appropriately licensed waste disposal area.

Major spillages, if occurring, would be treated in the mine's Hydrocarbon Management Plan.

3.17.2 Performance

Sunnyside Coal Mine's procedures for hydrocarbon management have been effective throughout the reporting period with:

- No surface or groundwater contamination evident or reported by landowners;
and
- No requirement for off-site disposal of contaminated materials.

3.17.3 Greenhouse Gas Emissions

Diesel Consumption

During the reporting period, a total of 1,964,305 litres of diesel fuel was used on site for mining related activity. Assuming an energy content of diesel fuel of 38.6MJ/L, and using Table 3 of the "National Greenhouse Accounts (NGA) Factors" – November 2008, the estimated direct – scope 1, Greenhouse Gas Emissions including all CO₂ and non CO₂ gases are as follows.

Table 10 - GHG Emissions - Diesel Fuel

	Diesel Fuel Usage kL	Emission Factor T CO₂-e/kL	Equivalent Tonnes
GHG 2009/10	1964	2.7	5,302

The site does not utilise electricity from the power grid, but via a number of diesel powered gensets. The emissions associated with diesel consumption by the gensets are included in the table above.

Explosives

During the reporting period, a total of 1,728 t of explosives was used at Sunnyside Coal Mine. Assuming a conversion factor of 0.1778, it is estimated that blasting at the mine yielded 307 equivalent tonnes of CO₂.

Fugitive Emissions

ROM coal production is used to estimate fugitive emission factors. Based on 298,492 tonnes of ROM coal production during the reporting period and a conversion factor of 0.045 (from Table 8 of the "National Greenhouse Accounts (NGA) Factors" –

November 2008), it is estimated that 13,432 tonnes of CO₂ were emitted during the reporting period.

Summary

A summary of calculated total CO₂ equivalent tonnes/year for the reporting period is provided in Table 11.

Table 11 - GHG Emissions Summary

Source	Calculated Total CO₂ Equivalent tonnes/year
Diesel	5,302
Explosives	307
Fugitive Emissions	13,432
TOTAL	19,041

The potential for reducing greenhouse gas emissions at Sunnyside is related predominantly to consumption of diesel use by plant and equipment. Methods are in place at site to maximise efficiency from the mining fleet through regular maintenance scheduling and, where possible, minimising the gradient and length of loaded haul runs for the operating dump trucks.

Sunnyside Coal Mine is committed to a reduction in emission levels as a result of operations at the mine site. As part of this process, the mine continues to operate a newer fleet of new Caterpillar rear dump trucks which burn less diesel fuel as compared to older trucks with the same capacity. Fuel burn during the reporting period was approximately 6.5 litres/tonne ROM coal as compared to 20 litres/tonne ROM coal in the previous reporting period which was skewed by higher tonnages of overburden and lower volumes of coal associated with the start-up of the mine.

In addition to this, the coal haulage contractor, Toll Resources continues to utilise a fleet of purpose built B-Doubles with the prime movers specifically engineered to comply with emission and noise criteria. This includes being speed limited to 94km/hr which has been determined as the optimum operating speed in terms of operational and fuel efficiency.

The Whitehaven Group has recently registered with the Commonwealth's Energy Efficiency Opportunities Program, which requires the completion of an Assessment

and Reporting Schedule, and subsequent identification of energy efficiency improvements. As part of this process, the Sunnyside operation will be reviewed and reported against for energy efficiency improvements over the life of the Assessment and Reporting Schedule.

3.18 Methane Drainage / Ventilation

Methane drainage / ventilation are not of relevance to open cut mines and hence are not an issue at Sunnyside Coal Mine.

3.19 Public Safety

3.19.1 Management

The Sunnyside Coal Mine is located wholly on NMPL owned land in a relatively remote area. The northern boundary of the mine site is adjacent to Coocooboonah Lane, an unsealed road used by local traffic only. The site is fenced and appropriate signs have been installed. The access gate is locked when the mine is not operating.

Visitors to the mine are required to report to the mine office and unauthorised personnel are not permitted to move around the mine area unaccompanied. Procedures are in place with respect to blasting to ensure the area around each blast site is clear of personnel and that all surrounding residents are advised in advance of proposed blasts.

3.19.2 Performance

The procedures in place have been effective throughout the reporting period.

3.20 Feral Animal Control

Feral animals are not a significant land management issue on Sunnyside Coal Mine's landholding and are limited to isolated occurrences of foxes, hares and rabbits.

In view of the low frequency of occurrence, and in the absence of an extensive programme by all surrounding landowners, no broad scale feral animal control programme was considered warranted during the reporting period.

In accordance with prior commitments, Sunnyside Coal will continue to monitor feral animal occurrences and implement necessary control programmes if and when necessary.

3.21 Land Capability

All land currently disturbed by mining is classified as Land Capability Class II and III with the remaining areas to be disturbed over the life of the approved mine primarily comprising the same classes as well as Class VII.

On completion of all mining activities, the successful rehabilitation of areas of disturbance and the relinquishment of the mining leases, the land affected by mining within the Project Approval area will, in the main, be returned to a classification similar to that prior to mining. Sections of the waste emplacement will be returned to Class IV whilst the depression formed by the re-shaped final void will be Class VIII.

3.22 Meteorological Monitoring

3.22.1 Introduction

The Sunnyside meteorological station, shown on Figure 3, has been operating continuously since 2007 recording 15 minute wind speed, wind direction, temperatures, humidity and rainfall.

Daily meteorological data for is presented in Appendix 8.

3.22.2 Rainfall

Rainfall data from the previous 12 months is presented in Table 12 and Figure 6. Full station data is presented in Appendix 8.

Table 12 - Rainfall Data
(December 2009 – November 2010)

Month	Monthly Rainfall Reporting period	Long Term Average Rainfall* ¹	Raindays Reporting period	Long Term Average Raindays* ¹
December 2009	53.6	68.6	10	7
January 2010	43.2	71.3	11	6.5
February 2010	36.6	66.5	7	6.1
March 2010	82.0	48.1	7	4.7
April 2010	20.6	37.7	5	4.3
May 2010	34.8	42.4	6	5.1
June 2010	32.0	43.9	16	6.3
July 2010	73.8	42.7	14	6.3
August 2010	52.0	41.3	18	6.2
September 2010	41.0	39.9	15	5.8
October 2010	74.8	55.4	10	6.9
November 2010	156	61.3	12	6.8
TOTAL	700.4	619.1	131	72

*¹Gunnedah Pool (Station 055 023) averages from 1876-2010.

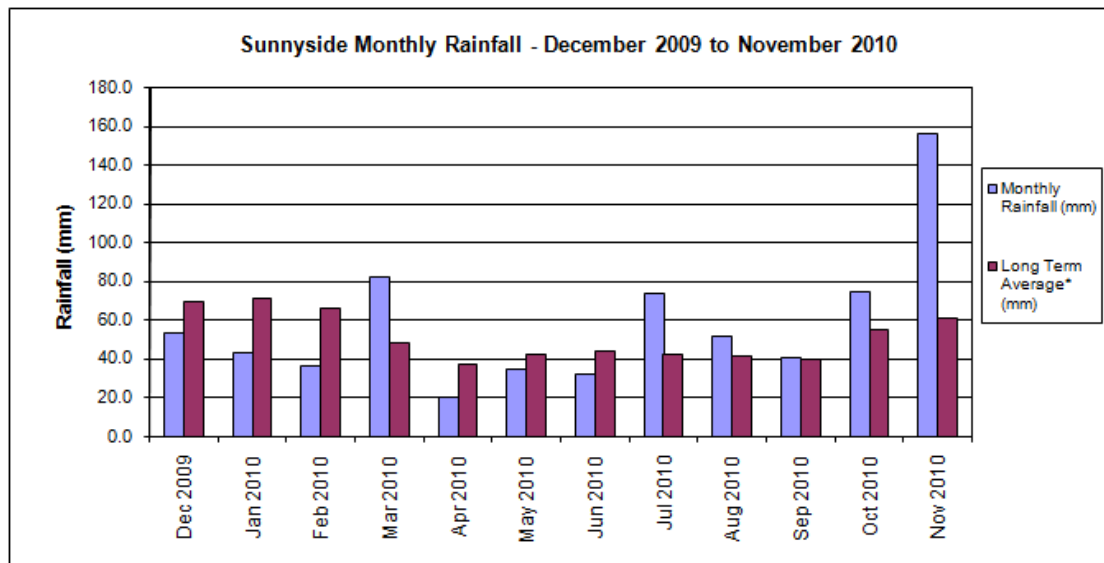


Figure 6 - Monthly Rainfall Data

A review of Table 12 and Figure 6 shows that the total rainfall at the mine during the reporting period was 700.4mm. This is considered to be an underestimate of total rainfall as comparisons to the onsite manual rain gauge and BOM data indicated much higher rainfall during the months of December 2009 – February 2010. It is believed that the weather station may have not recorded rainfall accurately due to a blockage in the rain gauge.

The total rainfall recorded at the site was 81.3mm higher than the annual average rainfall for Gunnedah and 289mm higher than the previous reporting period. Below average rainfall was recorded for 6 months of the year. However, as discussed above it is believed that recorded rainfall for December 2009 – February 2010 was less than that recorded at the BOM station which indicated above average rainfall for these months. Above average falls occurred in March, and more notably the second half of the year being July, August, September, October, and November. November rainfall was 156mm, more than twice the long term average for that month.

A high number of rain days occurred during the reporting period, where it exceeded the annual average by 59 days. Monthly rain day averages was exceeded in every month, with more rain days occurring in the second half of 2010.

3.22.3 Temperature

Average maximum and minimum temperatures for the reporting period are presented in Table 13 together with long-term monthly averages for Gunnedah Pool (Bureau of Meteorology Station 055023).

**Table 13 - Average Monthly Temperatures
(December 2009 – November 2010)**

Month	Average Daily Temperature			
	Reporting period (°C)		Station 055023 (Gunnedah Pool)* (°C)	
	Min	Max	Min	Max
December 2009	19.0	32.9	16.8	33.0
January 2010	19.2	33.6	18.3	34.0
February 2010	18.0	28.8	18.1	32.9
March 2010	16.6	29.7	15.8	30.7
April 2010	12.1	26.0	11.4	26.4
May 2010	6.7	21.4	7.1	21.3
June 2010	4.7	17.1	4.3	17.6
July 2010	5.2	16.8	3.0	16.9
August 2010	4.1	17.0	4.2	18.9
September 2010	7.7	21.2	7.0	22.8
October 2010	11.4	24.2	10.7	26.7
November 2010	14.5	26.2	14.1	30.3

* Gunnedah Pool (Station 055 023) averages from 1876-2010.

Table 13 shows that:

- Average minimum temperatures at the mine site were above the Gunnedah average for the majority of the reporting year, except for February 2010, May 2010 and August 2010 which were similar to the Gunnedah averages.
- Average maximum temperatures were similar to Gunnedah averages for 7 months of the year. Lower than average temperatures were recorded in February, August, September, October and November 2010.

3.22.4 Wind Speed and Direction

Fifteen minute average wind speed and direction data is collected from the meteorological station as it, together with operational records and environmental monitoring results, can be used to assess the environmental effects or consequences of specific activities undertaken at the mine or in surrounding areas.

Monthly wind roses are presented in Appendix 8, and show the following:

- The predominant wind direction during the reporting period was from the east/south-east.
- Wind speeds were generally in the range of 1-5m/s, with gusts greater than 5m/s.
- Westerly winds, often at speeds greater than 5m/s, were more prevalent in August 2010.

3.22.5 Inversions

Sunnyside's meteorological station is fitted with temperature sensors at 2m and 10m intervals to assist in the determination of inversion conditions. Meteorological data was used to identify inversion conditions which were present during recorded noise exceedances in May 2010 (see Section 3.10.3).

4 COMMUNITY RELATIONS

4.1 Environmental Complaints

Sunnyside Coal Mine maintains a designated complaints line, with messages checked on a daily basis (seven days/week) by the Environmental Manager. In the event of a complaint, details pertaining to the complainant, complaint and action taken are recorded on a "Complaints Form".

Two complaints were received during the reporting period in relation to operations at Sunnyside Coal Mine. Both complaints were received during Community Consultative Committee (CCC) meetings. No complaints were received via the designated complaints line. The nature of the complaints, details and responses to each complaint are presented in Table 14.

Table 14 - Complaints Summary

Date/Time of Complaint	Complainant	Nature of Complaint	Investigation	Action Taken / Follow-up
9 th June 2010 3:00pm	Stephen Benham (GSC rep Sunnyside CCC) on behalf of an undisclosed complainant.	Concern about Toll trucks cornering too quickly at the Coocooboonah Lane/Oxley Highway intersection resulting in the trucks not remaining within the dedicated acceleration lane.	Matter referred to Leigh Lamey (Toll HSE Compliance Officer). Leigh advised that matter would be raised at next round of toolbox talks and Whitehaven would be advised when toolbox talks were completed.	Toolbox talks completed and copies of attendance records provided to Sunnyside Project Manager.
8 th September 2010 3:00pm	Andrew Kennedy (community representative on Sunnyside CCC) on behalf of the "Glendower" residents.	Concern regarding ongoing noise from the mine site, particularly at night with the extended operating hours.	A meeting was held with the "Glendower" residents on 13 th September 2010 to discuss their concerns. At the time of their complaint it was identified that haul trucks to the ROM pad were most likely the noise source.	As a means of addressing their concern the option of a private agreement in relation to noise levels was raised and discussions are ongoing.

Any complaints that are made are reported to the Community Consultative Committee and documented in the AEMR as shown above. Last reporting period, three complaints were recorded, compared to two for this reporting period. It is evident from the infrequent nature of complaints received that there are not any systemic issues of concern for the Sunnyside operation.

4.2 Employment Status, Demography and Socio-Economic Contributions

4.2.1 Employment Status and Demography

During the reporting period, the mine had an average of 8 full-time and 6 permanent casual personnel. Additional personnel were employed by contractors in the haulage of coal from the mine site back to the Whitehaven CHPP. All mine related employees reside in the Gunnedah area.

4.2.2 Social and Economic Contributions

In addition to direct and indirect employment, and the purchase of goods and services from local suppliers, the Whitehaven Group continues to support the local community. Namoi Mining Pty Ltd has contributed over \$150,000 to the community during the reporting period. Whitehaven also contributes to the annual maintenance of the haul roads for this mine.

Whitehaven also contributes to the provision of cadetships and vacation work to a number of young students from the regional area who study at various universities.

As members of the Gunnedah / Boggabri area community, mine-related employees also contribute socially and economically through their involvement in community sporting, educational and social organisations and expenditure of a component of their disposable income.

4.3 Community Liaison

In accordance with Condition 9 of Schedule 5 of PA 06_0308 a Community Consultative Committee (CCC) was formed in January 2009. The committee, which meets on a quarterly basis, comprises representatives of Gunnedah Shire Council, Sunnyside Coal Mine and the community and is chaired by Mr Michael Broekman.

During the reporting period meetings were held on the 9th December 2009, 10th March 2010, 9th June 2010 and 8th September 2010.

Sunnyside Mine representatives and Whitehaven's Community Liaison Officers (1 x full time, 1 x part time) continue to maintain regular personal contact with the neighbours in the vicinity of the mine. These contacts not only provide a means of information dissemination, but also enable Whitehaven to ascertain and address any potential issues which may arise from time to time.

Community organisations and other local businesses and institutions regularly identify an interest with activities occurring at the mine site. In this regard, and to maintain links with those business and community members, information is provided as required, and on occasion, guided tours of the facility have been undertaken.

5 REHABILITATION

5.1 Buildings

No further removal of buildings was undertaken over the reporting period. The former “Sunnyside” residence remains on an adjacent property for future use by that landholder.

5.2 Rehabilitation of Disturbed Land

5.2.1 Objectives

Sunnyside Coal Mine’s rehabilitation/land use objectives for the mine site are as follows:

(a) Areas affected by mining – short term

- (i) Stabilising all earthworks, drainage lines and disturbed areas that are no longer required for mine related activities; and
- (ii) Reducing the visibility of mining activities from adjacent properties and the local road network.

(b) Areas affected by mining – long term

- (i) Creating a low maintenance, geotechnically stable and safe landform which is commensurate with the agricultural and nature conservation land uses on and around the mine site;
- (ii) Blending of the final landform with the surrounding topography such that the visual impact of the post-mining landform is minimised; and
- (iii) Re-establishing 100ha of agricultural land over the areas disturbed by the mine with approximately 16ha of land rehabilitated to a woodland vegetation community.

(c) Areas to be unaffected by mining

- (i) Stock exclusion through fencing of the entire mining lease. This includes areas disturbed and rehabilitated with native vegetation and existing agricultural land fenced to exclude stock and allowed to naturally revegetate.

5.2.2 Achievements During the Reporting Period

Table 15 and Table 16 present a Rehabilitation Summary and listing of maintenance activities as required in the DMR Guidelines. Areas disturbed during the previous reporting period now have well established grass cover, as shown in Plate 3. Rehabilitation works have commenced on the lower batter of the waste emplacement, as identified Plate 4. In addition to this, works have commenced on providing for enhancements to the koala habitat in the area, with ripping of tree lines undertaken and initial plantings of koala feed tree species (160 White Box and Yellow Box trees).



Plate 3 - Established Pasture on Northern Drainage Line

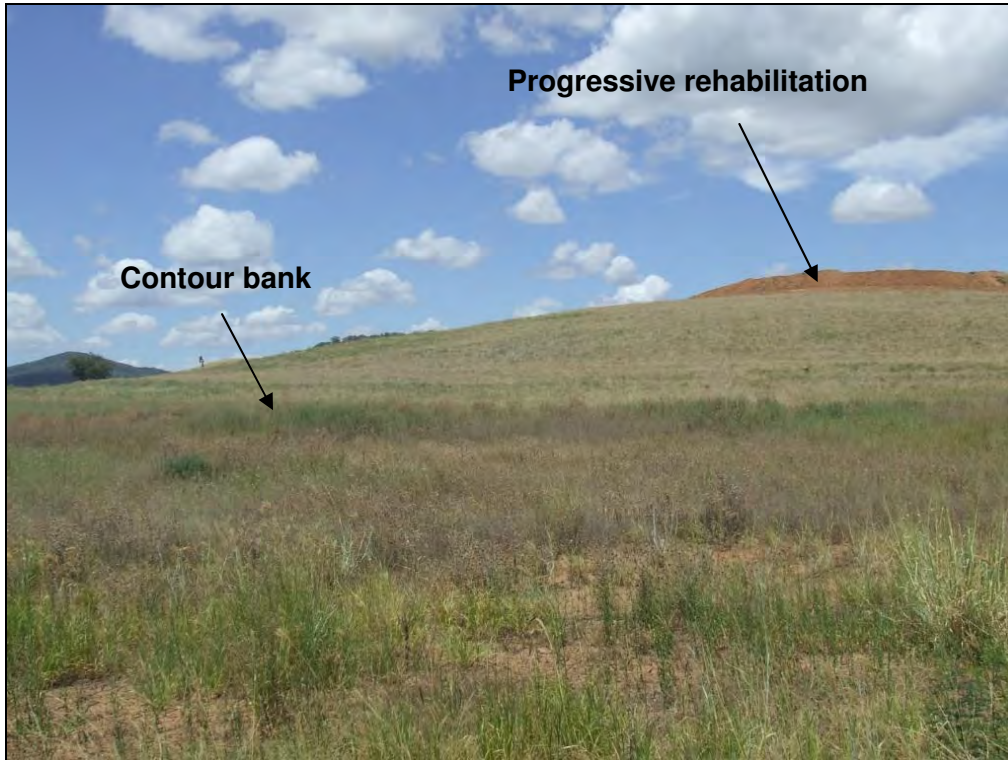


Plate 4 - Pasture Establishment on Lower Batter of Waste Emplacement

Table 15 - Rehabilitation Summary

	Area Affected (hectares)		
	This Report Period (as of 30.11.10)	Last Report Period (30.11.09)	Cumulative Next Report Period (estimated)
A: MINE LEASE AREA			
A1 Mine Lease(s) Area			
B: DISTURBED AREAS			
B1 Infrastructure area (other disturbed areas to be rehabilitated at closure including facilities, roads)	11.8	9.9	11.8
B2: Active Mining Area (excluding items B3 - B5 below)	26.3	18.9	32.9
B3 Waste emplacements, (active/unshaped/in or out-of-pit)	16.8	31	16.8
B4 Tailings emplacements, (active/unshaped/uncapped)	N/A	N/A	N/A
B5 Shaped waste emplacement (awaits final vegetation)	1.6	4	3
ALL DISTURBED AREAS	56.5	63.8	64.5
C REHABILITATION PROGRESS			
C1 Total Rehabilitated area* (except for maintenance)	14.38**	N/A	25.3
D: REHABILITATION ON SLOPES			
D1 10 to 18 degrees	2.4	0	0
D2 Greater than 18 degrees	0	0	0
E: SURFACE OF REHABILITATED LAND			
E1 Pasture and grasses	14.38**	0	25.3
E2 Native forest/ecosystems*	0	0	0
E3 Plantations and crops	0	0	0
E4 Other (include non vegetative outcomes)	0	0	0

F1

F2

* Areas with established tube stock are considered to be "native forest/ecosystem" and contribute to the Total Rehabilitated Area. "Pasture and Grasses" includes areas with recently planted tube stock that are not yet established.

** Includes area for northern and eastern amenity bunds

Table 16 - Maintenance Activities on Rehabilitated Land

NATURE OF TREATMENT	Area Treated (ha)		Comment/control strategies/ treatment detail
	Report period	Next period	
Additional erosion control works (drains re-contouring, rock protection)	Nil	Nil	
Re-covering (detail - further topsoil, subsoil sealing etc)	Nil	Nil	
Soil treatment (detail - fertilizer, lime, gypsum etc)	Nil	Nil	
Treatment/Management (detail - grazing, cropping, slashing etc)	Nil	Nil	
Re-seeding/Replanting (detail - species density, season etc)	Nil	Nil	
Adversely Affected by Weeds (detail - type and treatment)	2	6	
Feral animal control (detail - additional fencing, trapping, baiting etc)	Nil	Nil	

5.3 Rehabilitation Monitoring and Performance

As rehabilitation only commenced on site during this reporting period, it is not possible to undertake any significant monitoring of rehabilitation efforts. This will take place over time as rehabilitation becomes established and can be compared to control plots established over the reporting period.

In terms of the rehabilitation that was completed this period, a good cover was achieved on the reshaped waste emplacement as a consequence of the above average rainfall. Initial tree planting in these areas will take place during the Autumn/Winter period.

6 CONTINUOUS IMPROVEMENT AND TARGET INITIATIVES

6.1 Objectives

Namoi Mining Pty Ltd has an ongoing commitment to environmental management and aims to minimise any adverse impacts on the physical, biological, cultural and socio-economic environment in the area of the mine and in surrounding areas.

Improvements in environmental management will be achieved through the effective implementation of the operational and monitoring aspects of the Mining Operations Plan, which in turn, will incorporate relevant aspects of various management plans and monitoring programs prepared in accordance with the Mine's Project Approval.

6.2 Achievements to Date

Achievements at the mine over this reporting period have included:

- The continued implementation of a working environmental management program and the establishment of culture of environmental awareness / responsibility within all levels of the workforce;
- Routine implementation of all relevant aspects of approved management plans;
- Inclusion of the operation into the Whitehaven Group Energy Efficiency Opportunities Program and the requirement to investigate efficiency measures;
- The establishment and maintenance of an open and honest relationship with the neighbours, community in general, regulatory authorities, Local Government and other groups such as the local Aboriginal community;
- Demonstration of adequate surface water controls, with no discharge from site despite above average rainfalls over the period;
- Commencement of initial rehabilitation of the lower slopes of the rehabilitated waste emplacement;
- Commencement of koala habitat enhancement, with establishment of rip-lines and initial plantings of koala feed tree species; and

- Implementation of monthly site environmental inspection to allow identification of any issues requiring attention.

6.3 Targets and Goals

- The ongoing development of rehabilitation of the reshaped out of pit overburden emplacement;
- Approval to the submitted Rehabilitation and Landscape Management Plan;
- Continued community liaison, support and involvement / education in the mines activities;
- Compliance with all relevant conditions of the lease, licences and consents;
- Ongoing development of the koala habitat enhancement area; and
- Improved outcomes relating to noise impacts to minimise effects on surrounding neighbours;
- Commencement of woodland establishment on the rehabilitated waste emplacement.