NAMOI MINING PTY LTD

(ABN 24 071 158 373)

ANNUAL ENVIRONMENTAL MANAGEMENT REPORT

FOR THE

SUNNYSIDE COAL MINE (ML 1624)

01 December 2010 – 30 November 2011

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 ***01-12-2010*** – AEMR Completion Date ***30-11-2011***

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NSW Trade and Investment, Regional Infrastructure & Services – Division of Resources and Energy
NSW Trade and Investment, Regional Infrastructure & Services – Primary Industries, Food and Water
NSW Office of Water
Gunnedah Shire Council
Sunnyside Coal Mine Community Consultative Committee

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1 INTRODUCTION AND OBJECTIVES

1.1 Scope

1.1.1 Introduction and Period of Reporting

This is the third 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 2010 to 30 November 2011 (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.

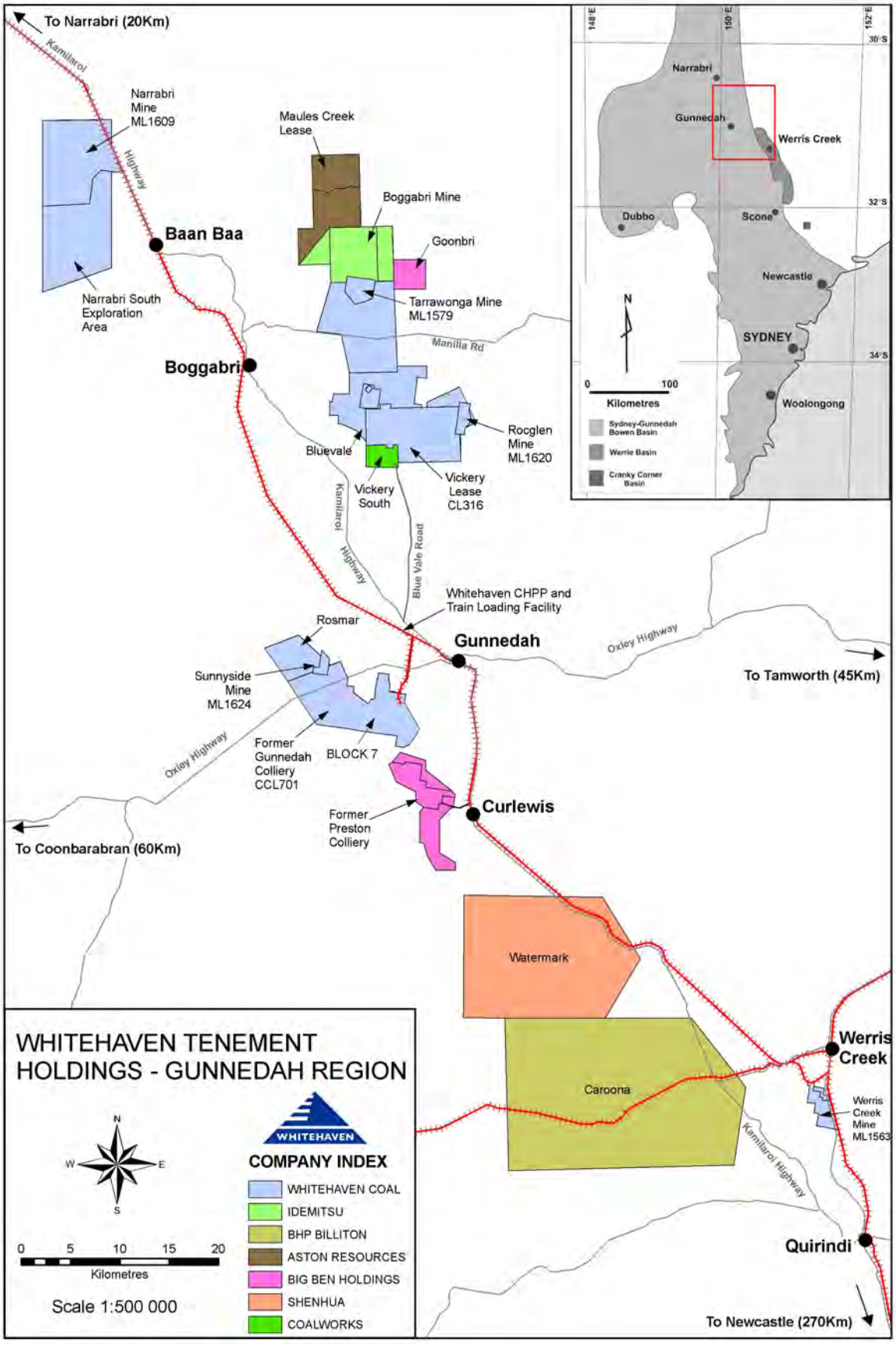

Figure 1 - Locality Plan

WCL's coal mining assets are as follows:

- Canyon Coal Mine (formerly Whitehaven Coal Mine), 10km south of Tarrawonga, 100% owned by WCL, which ceased production in July 2009, and is currently under final rehabilitation;
- 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. Production commenced second quarter 2010;
- Tarrawonga Coal Mine, 42km north-west of Gunnedah, owned by Tarrawonga Coal Pty Ltd which is a joint venture between WCMPL (70%) and Idemitsu Boggabri Coal (30%);
- Rocglen Coal Mine, 28km north of Gunnedah, 100% owned by WCL, which commenced July 2008;
- 100% ownership of the Bonshaw project near Ashford;
- 100% ownership of the former Gunnedah Colliery through Namoi Mining Pty Ltd; and
- 100% ownership of the former Vickery site, with environmental assessment work underway with a view to re-opening the former Vickery and adjacent deposits.

WCL is also actively pursuing other prospective tenements with a view of maintaining a long term presence within 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 Acting Project Manager, Mr Craig Woodhead. 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;
- Countrywide Ecological Services;
- Orica Blasting Limited;
- G&B Ward Earthmoving;
- GP Turf.

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)	23rd December 1996 (Renewed 8th June 2005 and 6th May 2008)	22nd December 2010	Application for renewal has been lodged. Awaiting approval and new expiry date.
Minister for Planning	Project Approval (PA) 06_0308 (Appendix 1)	24th September 2008	5th 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)	20th December 2011 (Replaces EPL issued 15th December 2008)	Nil Anniversary date: 15th December Next review: 20th December 2016	Approval for Mining for Coal and Coal Works to 2 Mtpa. Inclusion of Coal Mine Particulate Matter Control Best Practice.
Department of Primary Industries (DPI) *[1]	ML 1624	5th November 2008	5th November 2029	Approval of open cut
Department of Water and Energy (DWE)*	Water Licence 90BL254961 90BL253767 90BL253768 90BL253769 90BL254686 90BL254687 90BL254688 90BL254689 90BL254690	27th April 2009 9th Feb 2007 9th Feb 2007 9th Feb 2007 26th Mar 2008 26th Mar 2008 26th Mar 2008 26th Mar 2008 26th Mar 2008	27th April 2014 Perpetuity Perpetuity Perpetuity Perpetuity Perpetuity Perpetuity Perpetuity Perpetuity	Mining Test Test Test Monitoring Monitoring Monitoring Monitoring Monitoring

*[1] NSW Trade and Investment, Regional Infrastructure and Services (DTIRIS)
*[2] Now, Office of Environment and Heritage (OEH)
*[3] Now, NSW Office of Water (NOW)

1.2.2 Amendments to Leases, Licences and Approvals

Whilst just outside the reporting period, reference is made to the revision of the EPL in December 2011 as it affects operations for the next reporting period. The EPL requires the site to conduct a Best Practice Management (BPM) determination to identify the most practicable means to reduce particle emissions and to prepare a report with specific outcomes.

The EPL requires that the report be submitted to the Environment Protection Authority by the 29th June 2012 and be made publicly available on the Company's website by the 6th July 2012. Outcomes of the assessment will be provided in the AEMR for the next reporting period.

1.3 Actions Requested at Previous AEMR Review

The 2009-2010 AEMR was submitted to the former Industry & Investment NSW (I&I NSW – now DRE) and other relevant agencies in February 2011. Review of the document, and subsequent site inspection, have not yet been undertaken by DRE and therefore no actions have been requested.

A response was received by the former Department of Planning in March 2011 that indicated the form and content of the AEMR were acceptable. The letter did, however, note that the Department remains concerned that the mine operations have caused occasional exceedances of noise criteria at certain neighbouring residents and that the Department supports the approach taken by Whitehaven to negotiate a private agreement with the owners of "Glendower". DoP stated that Whitehaven must report the outcome of its negotiations by direct communication to the Department as soon as these negotiations have been concluded, and also in the 2011 AEMR.

Discussions were held with the owners of the "Glendower" property with a view to entering into a private agreement, however, at the time of preparing this report, the landowners had not indicated an intent or desire to consider alternate noise limits and/or noise mitigation measures at their property. As evidenced in the noise management section of the report, the "Glendower" property has not been subject to any noise exceedances during the reporting period, with no indications of ongoing noise concerns presented by the landholders during this time. As a consequence, no further actions relating to noise mitigation at the "Glendower" property is considered necessary at this time.

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 mining pit. During the reporting period 46 open holes were drilled, for a total of 2,653m of drilling on ML1624.

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 open cut operations.

A resource estimate in August 2009 showed there was 11.38 million tonnes of open cut coal within ML1624. In August 2011 a mineable reserve of approximately 2.5 million tonnes of recoverable coal and 2.28 million tonnes of marketable coal was estimated to exist in the current open cut consent area.

2.1.3 Estimated Mine Life

Based on the current production rate of 0.8Mtpa or below, the mine life is approximately 3 years from the end of the reporting period, 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 9.7ha. 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 25,750m^3 topsoil and subsoil was stripped and stockpiled. Existing stockpile locations are shown on Plan 3.

Table 2, the "Production and Waste Summary", shows that at the end of the reporting period, 9,030m^3 of topsoil and subsoil had been replaced for rehabilitation purposes.

Table 2 - Production and Waste Summary

	Cumulative Production			
	Start of Reporting period (up to 01/12/10)	**During Reporting period (1/12/10 to 30/11/11)**	**Cumulative Total at End of Reporting period**	**Cumulative Total at End of next Reporting period (estimated)**
Soil Stripped (m^3)	151,536	25,750	177,286	177,286
Soil Used/spread (m^3)	12,140	9,030	21,170	30,000
Waste Rock (m^3)	3,984,865	3,651,635	7,636,500	11,288,135
ROM Coal (t)*	410,309	360,592	770,901	1,131,493
Processing Waste (t)**	51,226	28,711	79,937	108,648
Product (t)	320,653	296,831	617,484	914,315

* 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 of the establishment of the coal load out bin and permanent coal crushing facility. This facility became fully operational on the 21st March 2011.

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, 3,651,635 bcm of friable and competent overburden was removed to produce 360,592t ROM coal at an average overburden:coal stripping ratio of 10:1 (See Table 2).

Plan 4 presents the status of mine and infrastructure development as of 30th November 2011 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 500m x 300m. 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.
- Major wet weather periods.

2.4.3 Mining Equipment

Table 3 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).

Table 3 - Mining Equipment

Item (or equivalent)	# on site	Function
Excavator (Hitachi EX1900)	1	Overburden and coal excavation
Excavator (Liebherr 994)	1	Overburden and coal excavation
Volvo IT Front-End Loader	1	Coal excavation and loading
CAT 785 Rear Dump Truck (150t capacity)	2	Overburden and coal haulage
CAT 777 Rear Dump Truck (90t Capacity)	4	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 14H Grader	1	Ancillaries
16 kL Water Truck	1	Dust suppression
Lighting Plants	6	Lighting
100 kVA Diesel Generator	1	Electricity generation (for site services)
840 kVA Diesel Generator	1	Electricity generation (for crushing plant)

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. Currently a split shift of day/evening is in rotation, with day shift working from 7:00am to 2:30pm and evening shift working from 2:30pm to 10pm.

Maintenance crews generally work 12 hour shifts (6:00am to 6:00pm), 5 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 35% was washed and 65% 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 360,592 tonnes of ROM coal was produced at the Sunnyside site, producing 235,091 tonnes by-pass coal (i.e. crushed product coal not requiring washing), and 116,889 tonnes of washed product (at an average yield of 75% from the plant).

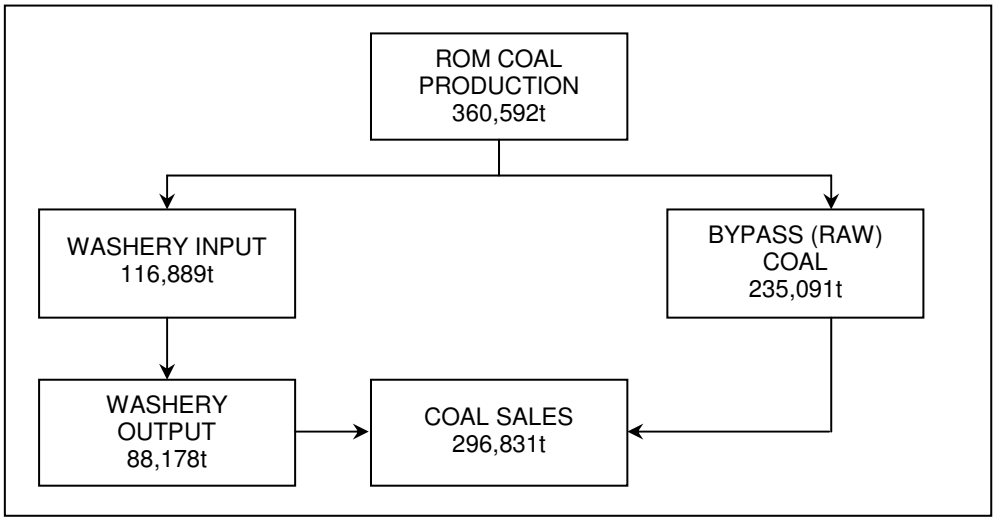

Figure 2 - Coal Movement and Production Summary
(2010/2011 Reporting Period)

2.5.2 Changes or Additions to the Process or Facilities

The only addition to site facilities was the establishment of the coal bin, and crushing plant for loading purposes.

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

On the 22nd July 2011, 20 heavy earthmoving tyres were disposed of within the current waste emplacement. The precise location of the disposal site was surveyed and based on the current height of the waste emplacement the tyres are buried approximately 20 meters below surface.

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 DRE, 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. The average stockpile volume during the reporting period was 33,350t with volumes ranging from 10,161t to 72,289t.

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 Coocooboonah Creek which flows north-west within a constructed waterway paralleling Coocooboonah 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 Coocooboonah 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 Coocooboonah Creek Upstream (CCUS – EPL ID No. 11) and Coocooboonah 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 it’s 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 generally remain low due to the high vegetation cover and water management structures existing on rehabilitated areas which assist in reducing sediment load of waters during runoff. This is reflected by the results of the one wet weather discharge event, where sediment levels were below EPL criteria.

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

During the reporting period, one wet weather discharge has occurred. The wet weather discharge occurred after 64.8mm of rain on the 10th December 2010, from storage dams SD3 and SD4 (both licensed discharge point). Both SD3 and SD4 recorded results which were compliant with EPL thresholds, with SD4 recording a total suspended solid (TSS) of 50mg/L, equalling the limit of 50mg/L and SD3 recording a TSS of 44mg/L. Electrical Conductivity (EC), oil and grease and pH recorded acceptable levels.

Coocooboonah Creek upstream (CCUS) and downstream (CCDS) samples were also taken at the time of discharge. High TSS was recorded at both locations, being 646mg/L at CCUS and 2030mg/L at CCDS. These high results are likely to be associated with the high amount of rainfall received in the 24 hours leading up to the event, causing significant flows across the area.

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 45 ML 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:

- 38.58 ML from groundwater sourced under licence from the production bore located on the "Werona" property; and
- 7 ML from surface water storages.

During the reporting period:

(i) 38.58 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. A slightly higher volume of water was used compared to the previous AEMR period. This is attributable to higher production levels this year as compared to last year. The volume of water used is substantially less than that predicted in the EA for the site on the basis that the site is not producing at the nominated production level of up to 1mtpa as assessed during the EA process.

A slightly higher volume of water was used compared to the previous AEMR period. This is attributable to an increase in production levels since the previous period as well as dry periods experienced over the reporting period.

2.9.5 Stored Water

Table 4 presents an estimate of the volume of stored water at the beginning and end of the reporting period.

Table 4 - 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)	6,300	3,890	26,210
Dirty Water (in Sediment Basins)	10,700	23,200	8,000
Controlled Discharge Water (salinity trading schemes)	N/A*	N/A*	N/A*
Pit Water	0	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 grease being stored within a bunded area, constructed in accordance with AS 1240-2004 (also see Section 2.9.2) and/or OEH 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 remove 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 361,485 tonnes of coal was transported from the mine over the reporting period. Throughout the reporting period an average of 32 truck loads per day was transported to the CHPP. 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/m^2/month.
- Mean annual dust deposition (all sources) – 4 g/m^2/month.
- Mean annual Total Suspended Particulate (TSP) matter (all sources) concentration – 90 µg/m^3.
- Mean annual PM_{10} particulate level – 30 µg/m^3.
- 24 hour average PM_{10} particulate level – 50 µg/m^3.

Notwithstanding the diversity of the criteria identified above, routine air quality monitoring at the Sunnyside Coal Mine is required for deposited dust and PM_{10} particulates.

Monitoring of deposited dust is undertaken on a monthly basis whilst PM_{10} levels are monitored every 6 days.

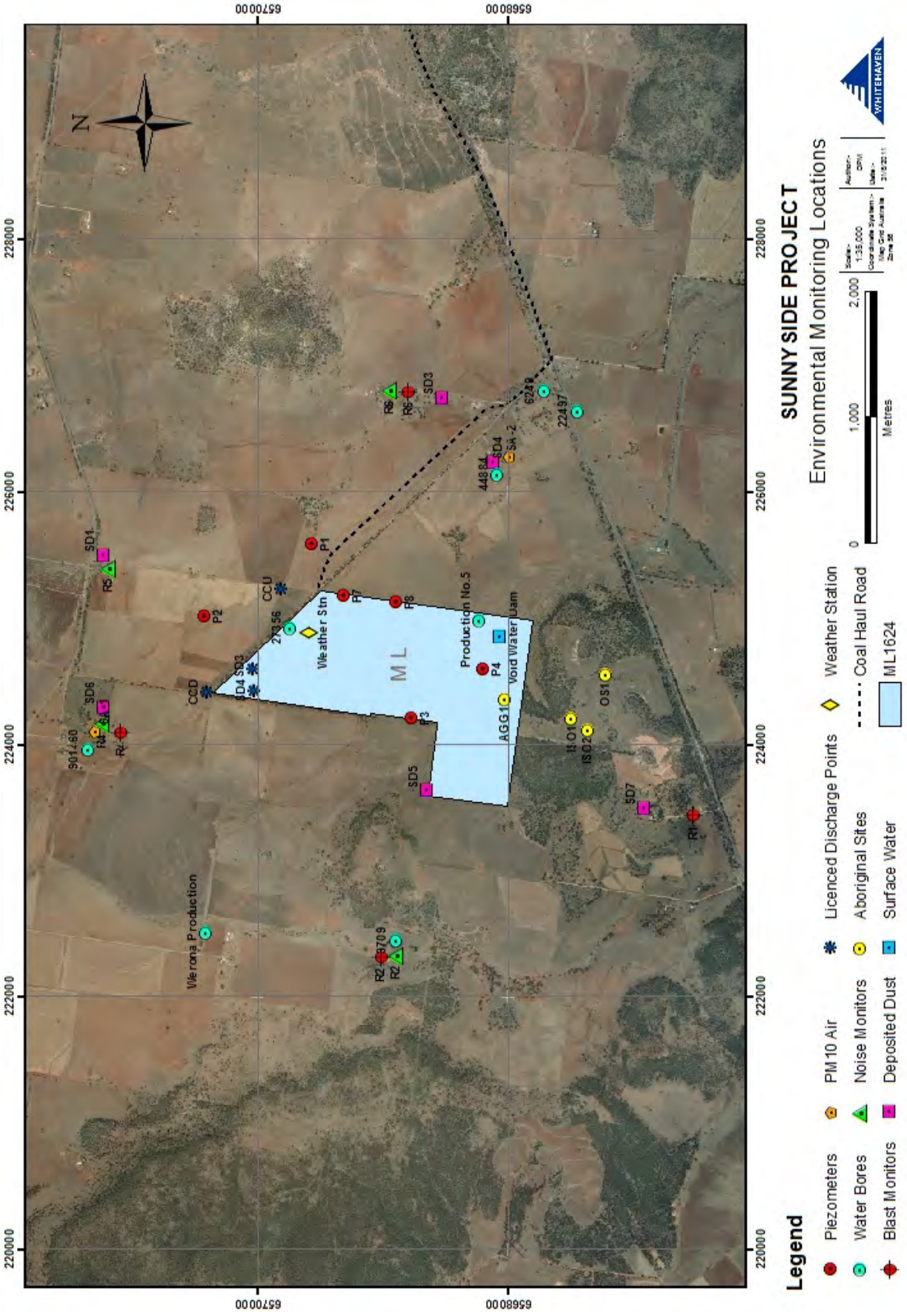

Figure 3 – Monitoring Locations

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 5 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 5 - Deposited Dust Monitoring Data (December 2010 to November 2011)

Site (see Figure 3)	Property Name	Mean Total Insoluble Solids (g/m^2/month)	Mean Ash (g/m^2/month)
SD-1	FERNDALE	2.4	1.3
SD-3	PLAINVIEW	1.2	0.9
SD-4	LILYDALE	1.0	2.1
SD-5	IVANHOE	1.9	1.1
SD-6	ILLILI	0.9	0.5
SD-7	INNISVALE	1.8	1.3
SD-8	WOODLAWN	0.8	0.5

A review of Table 5 and Appendix 4 shows that;

- The mean annual total insoluble solids (deposited dust) criterion was satisfied at all monitoring locations during the reporting period. Two outlying results were recorded at SD-4 Lilydale, which is owned by Whitehaven. This monitor returned elevated results in December 2010 and January 2011, where 33.0g/m²/month and 18.0g/m²/month was recorded. These two results have been excluded from the period's annual average, but are recorded in Appendix 4. Since these two outlying results, compliance has been met throughout the reporting period at SD-4, with the sites annual average for the period being 1.0 g/m^2/month when excluding the anomalous results.

- The additional monitor that was installed at "Woodlawn" at the end of the last period, following a request from the landholder, shows results well below the criteria.
- 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 (54%), SD-3 (75%), SD-4 (41%), SD-5 (58%), SD-6 (55%), SD-7 (72%) and SD-8 (62%).

Sunnyside Coal Mine has one High Volume Air Sampler (HVAS - PM_{10}) 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.

Overall, the PM_{10} results have indicated compliance with the annual average criteria for both sites, as indicated in Figure 4 and Figure 5. Since the last reporting period, results have shown a decrease in the running annual average which has been below 10 µg/m^3. No 24hr exceedances have been recorded since December 2009. The full data set for PM_{10} monitoring is contained within Appendix 4.

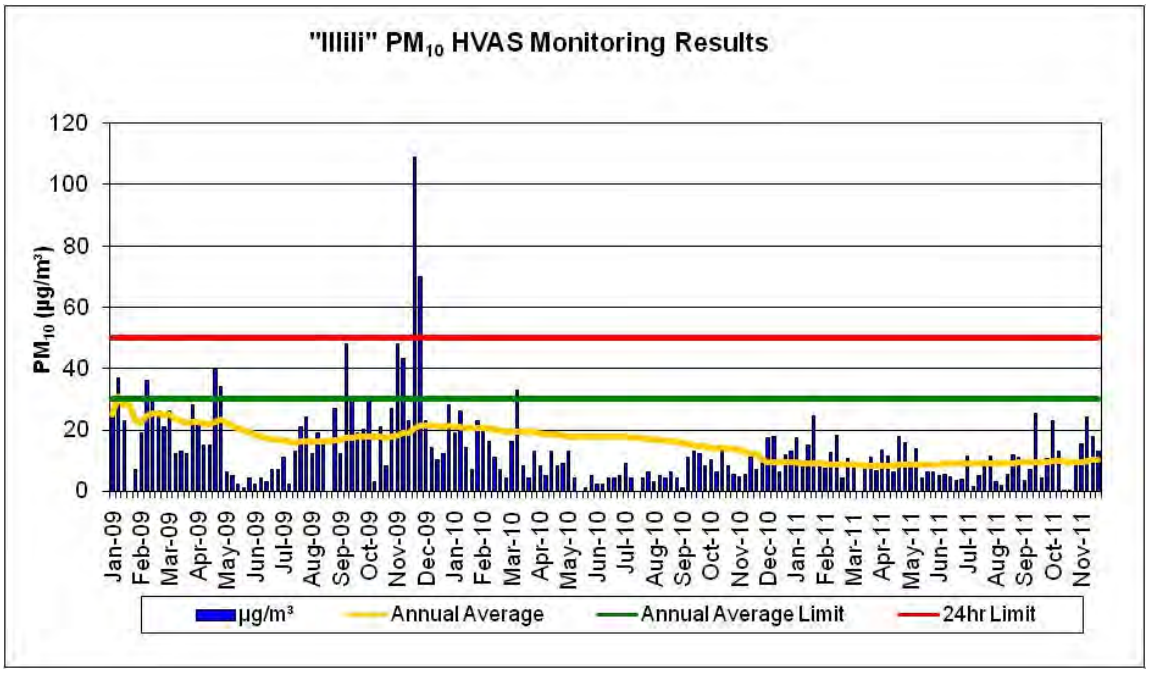

Figure 4 – "Illili" HVAS PM_{10} Data
January 2009 – November 2011

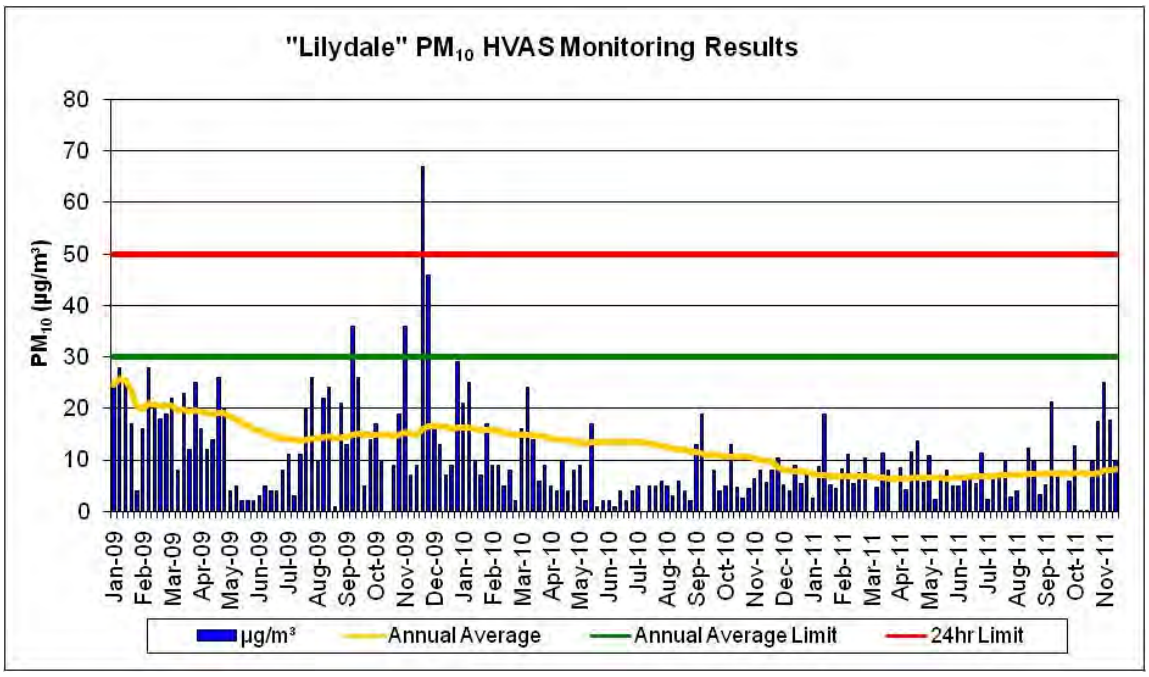

Figure 5 – "Lilydale" HVAS PM_{10} Data
January 2009 – November 2011

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 sediment ponds/weirs 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 are monitored accordingly 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 as part of routine monthly environmental inspections, undertaken by the Sunnyside Coal Mine Environmental Officer. Items such as water management structures, vegetation cover and sediment basins are inspected, with any ameliorative works initiated as and when required.

During the reporting period, to assist with the capture of sediment, a series of sediment traps were installed between the eastern amenity bund and the north eastern emplacement (see Plate 1). This drainage line carried a large amount of dirty water during wet weather events, which drains from the active emplacement and production areas. These traps have proved successful through their overflow system in reducing velocity of this water and capturing sediment which would usually drain directly into sediment basin 3 (SB3) which may cause erosion and sedimentation problems. The installation of contour banks on the northern emplacement has ensured correct drainage occurs on the rehabilitated slopes. These were installed with the intention of draining water from rehabilitated areas through the dirty water system at a low velocity. Sufficient vegetation cover on slopes has also reduced the amount of erosion and sedimentation of water storages.

As described above, all necessary controls were in place and operating as per design. This ensured the correct drainage of water through the dirty water system which reduces potential erosion and sediment load in storages.

Plate 1 – Newly constructed sediment traps 30/11/2011

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 6.

Table 6 - Surface Water monitoring results

Date	Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Total Organic Carbon (TOC) (mg/L)	Grease & Oil (mg/L)
10 August 2011	SB1	9.07	536	46	47	<5
22 November 2011	SB1	9.22	486	208	73	<5
5 May 2011	SB2	8.85	663	233	9	<1
10 August 2011	SB2	8.2	513	82	11	<5
22 November 2011	SB2	9.24	389	64	5	<5
8 March 2011	SB3	8.49	1300	20	<1	<5
5 May 2011	SB3	8.3	3020	147	6	<5
10 August 2011	SB3	8.35	1800	82	12	<5
18 October 2011	SB3	7.84	267	91	4	<5
22 November 2011	SB3	8.26	283	79	3	<5
9 May 2011	SB4	8.65	512	32	14	<5
10 August 2011	SB4	8.36	474	62	8	<5
22 November 2011	SB4	8.95	286	40	4	<5
5 May 2011	SB5	8.93	759	36	4	<5
10 August 2011	SB5	8.9	768	88	24	<5
22 November 2011	SB5	8.65	504	352	43	<5
8 March 2011	SD4	8.72	271	15	2	<5
9 May 2011	SD4	8.43	394	62	5	<5
10 August 2011	SD4	8.17	313	13	10	<5
11 August 2011	SD4	7.82	312	26	<1	<5
22 November 2011	SD4	8.74	299	19	8	<5
8 March 2011	Void	7.68	4220	23	<1	<5
9 May 2011	Void	8.3	4550	6	58	<5
10 August 2011	Void	8.3	4050	10	5	<5

The quarterly monitoring results show that water quality within onsite storages of the Sunnyside mine site was generally good, with the exception of marginally elevated Total Suspended Solids within the site's sediment basins, which is expected with the higher than average rainfall experienced at site. The elevated suspended solids did not impact on any downstream water bodies, with sediment settling prior to discharges from two licenced discharge points during a storm event. (see section 2.9.3).

Elevated electrical conductivity was detected in sediment basin 3 (SB3) early in the reporting period, with results in the latest sampling confirming levels lowering to acceptable limits. EC levels in SB3 will be monitored closely over the coming months to confirm EC levels remain consistent with EC levels in adjacent storages.

Void water revealed expected electrical conductivity levels, with little to no water available in the latest monitoring.

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 is 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 7.

3.4.2 Performance

Throughout the life of the mine to date, Sunnyside Mine's performance with respect to groundwater management, the prevention of pollution and the assessment of impacts on groundwater availability to other surrounding users, has been assessed through groundwater level and chemistry monitoring undertaken at a series of piezometers and bores within ML 1624 and extending to adjacent properties, where practicable, at the frequency and for the parameters identified in Table 7.

Table 7 - Groundwater Monitoring

Site (see Figure 3)	Registered Bore No. & Licence No	Property/ Location	Frequency		Purpose
			SWL*[2], EC*[3] and pH	Representative Metals and Ions	
P1*[1]	GW968386 90BL253767	"Plainview"	Quarterly	Annually	To determine existing status and any impacts
P2*[1]	GW968387 90BL253768	"Ferndale"	Quarterly	Annually	To determine existing status and any impacts
P3	GW968388 90BL253769	"Sunnyside"	Quarterly	Annually	To determine existing status and any impacts
P4	GW968389 90BL254686	"Sunnyside"	Destroyed by mining		
P5	GW968390 90BL254687	"Sunnyside"	Destroyed by mining		
P6	GW968391 90BL254688	"Sunnyside"	Destroyed by mining		
P7	GW968392 90BL254689	"Sunnyside"	Quarterly	Annually	To determine existing status and any impacts
P8	GW968393 90BL254690	"Sunnyside"	Quarterly	Annually	To determine existing status and any impacts
3709*[1]		"Ivanhoe"	Quarterly	Annually	To determine existing status and any impacts
22497*[1]		"Coocooboonah"	Quarterly	Annually	To determine existing status and any impacts
44677*[1]		"Werona"	Quarterly	Annually	To determine existing status and any impacts
44884*[1]		"Lilydale"	Quarterly	Annually	To determine existing status and any impacts
6249*[1]		"Lilydale"	Quarterly	Annually	To determine existing status and any impacts
No 5 Entry*[4]	90BL254691	"Sunnyside"	Quarterly	Annually	To determine existing status and any impacts
901460	GW901460 90BL249138	"Illiili"	Quarterly	-	To determine existing status and any impacts
27356	GW027356 90BL020042	"Sunnyside"	Quarterly	Annually	To determine existing status and any impacts
Werona Production	90BL255246	Werona	Quarterly	Annually	To determine existing status and any impacts

*[1] Non-Company owned bore *[2] SWL – Standing Water Level *[3] EC = Electrical Conductivity
*[4] Company production bore

Appendix 5 presents the results of the groundwater monitoring undertaken prior to commencement of mining and throughout the reporting period. Monitoring sites are shown on Figure 3. Below are some points to note regarding monitoring locations and frequencies:

- P4 is now located within the active pit area and will no longer be monitored. It's close proximity to mining operations explains the gradual drop of in standing water level over time.
- Monitoring site 3709 is now being monitored to gain water quality data. The standing water level of this bore cannot be measured as the bore is covered by a pump which services the property.

- Monitoring site 44677 is now being sampled for water quality, with standing water levels inaccessible due to the covered bore.
- SWL results were unavailable at sites 27356 and Werona during monitoring events due to the bore holes being covered by pumps.
- 901460 is now having standing water levels measured, as it was not accessible due to it been equipped with a windmill during the last reporting period.
- Water level data loggers, which store SWL data at 12 hourly intervals, have remained in P2 and P3 during the reporting period, 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 P4 which has showed a 7m drop in SWL since monitoring commenced, which is expected due to its close proximity to the pit. It has now been destroyed by mining.
- 44884 has shown a considerable drop in standing water level, due to the addition of a pumping windmill for stock purposes on the property.
- Continual monitoring will provide stronger data in standing water level of surrounding bores over time.
- No. 5 bore has recorded a dry standing water level since June 2011. This may be due to the volatility of underground workings as a water source. No water has been extracted from the No. 5 workings since 2009.

Groundwater quality

- The water in most bores is generally neutral in pH.
- The water in all bores can be described as fresh to brackish.
- During the September 2011 sampling, P7 recorded an elevated result in Ammonia as Nitrogen (224mg/L), with the sample value confirmed upon re-

analysis. The piezometer is located on the eastern boundary of the mining lease, in close proximity to the "Lilydale" property. Upon inspection of the site, it appears the casing of the piezometer had been broken off at ground level. The lease holder of "Lilydale" carries out rotational cropping in the area adjacent to P7. A possible source of the Ammonia is agricultural fertilizers used on "Lilydale", in close proximity to P7, with runoff possibly entering the piezometer at ground level. The stand pipe will be repaired in the immediate future to eliminate surface water entering the piezometer. P7 will then be closely monitored to confirm any more high Ammonia results, which would trigger a full investigation of possible sources.

- Water quality has been compared to the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000) (ANZECC) guidelines. Water quality at all other monitoring points is generally within the guidelines for stock watering purposes.
- Based on the monitoring data available to date, water quality at all other monitoring points 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 Coocooboonah 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 during the reporting period as the Rehabilitation and Landscape Management Plan has now been approved by DoPI. 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 two quadrats are established within the mine site to monitor ground cover and other vegetation changes in the area. Quadrat 1 is located in the north-eastern corner of the site and Quadrat 2 is located western corner of the site.

Additional quadrats will be established on the mined area once rehabilitation is complete. Once these plots are established, monitoring campaigns may be carried out to measure the performance of rehabilitation on a progressive basis.

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 continued since the last reporting period with 760 Koala feed trees planted, consisting of White Box, Yellow Box, Bimble Box and Kurrajong species planted in the koala corridor enhancement area on the mine site.

The initial fauna quadrat establishment was undertaken in November 2010 by Dr Leong Lim (Countrywide Ecological Services), where two grassland monitoring plots were established. Since establishment, roof tiles have been scattered throughout the quadrats to enhance the ground habitat structure and provide refuges for the ground fauna. The establishment of two woodland plots to the south of the active mining area occurred in February 2011, during a monitoring campaign. These plots are placed in open woodland, and open woodland with grassy understory communities.

During the February 2011 monitoring event the four established plots were monitored with a follow up monitoring campaign occurring in April 2011. The two campaigns recorded a number of Birds, Mammals, Amphibians and Reptiles in close proximity to the Sunnyside mine, confirming the Sunnyside has not had any major impact on the surrounding fauna populations to date. A spring monitoring campaign is scheduled for the next reporting period.

Two rehabilitation plots will be established once rehabilitation areas are further developed, with 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 targeted monthly 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. Slashing was undertaken between planted tube stock in the eastern koala corridor, for the control of Flaxleaf Fleabane.

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 L5 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 blast 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 18 blasts were initiated. Of the 18 blasts initiated, 3 of the blasts did not perform as expected, exceeding the overpressure criteria of 115.0dBL on each occasion. These blasts are detailed below:

3rd May 2011

On the 3rd May 2011, during blast 28, an exceedance of the overpressure criteria of 115.0dBL was recorded at monitoring points "Innisvale" (128.8dBL), "Plain View" (120.6dBL) and "Illili" (120.3dBL). The nearby property "Ferndale" was also monitored due to landholder concern and recorded 124.0 dBL. A full investigation into the cause of the overpressure exceedance was carried out by the blasting contractor Orica, and identified a design fault to be the cause in the overpressure exceedance. Three main factors were identified in the blast design that was found to be the cause of the overpressure exceedance. These included:

- Holes having a lower than recommended stemming height and pocket charges which was done in an attempt to reduce oversize;
- The row in which the ejection occurred had groups of 2 holes initiating very close together in time and space;
- The area in which the ejection occurred was double stitched, giving a high powder factor close to the surface where the holes converge.

25th June 2011

On the 25th June 2011, during blast 31, a minor exceedance of the overpressure criteria of 115.0dBL was recorded at monitoring point "Plain View", recording 115.9dBL. An investigation into the cause of the overpressure exceedance was carried out by the blasting contractor Orica.

It was identified though the blast video and an analysis of blast monitor data, that there was no stemming ejection or face burst, and that the cause of the overpressure exceedance was face movement. The following recommendations were made by Orica:

- Future designs where stand up blasts are to occur should be vertical holes, with the initiation through the centre of the blast
- If initiation is through the free face then avoid the use of fast timing that promotes forward movement of the blast
- Consideration of using soft start or deliberate slowing of lead holes when initiating through the free face

25th October 2011

On the 25th October 2011, during blast 38, a minor exceedance of the overpressure criteria (115.0dBL) was recorded at monitoring point "Plain View" (115.1dBL). An investigation into the cause of the overpressure exceedance was carried out by the blasting contractor Orica.

It was identified though the blast video that a series of cratering events (blow-outs) starting near the point of initiation was the root cause of the overpressure exceedance. These cratering events were caused by high energy, and low burden at the point of initiation. Some blast holes had inadequate stemming. The following recommendations were made by Orica:

- Train Technical Services Engineers in the use of the face profile and blasthole measurement holes as well as loading of face holes so that each blast is designed with appropriate charges to control overpressure.

- Increase the stemming length in holes to 3.8m and ensure adequate burden is present, which should control the overpressure from ejection and cratering.

- Use end blast initiation when blasting in circumstances (environmentally) where overpressure is likely to be a problem.

All parties, including DoPI, OEH and affected landholders have been notified of these exceedances.

Two nearby properties – "Illili" and "Ferndale" have had structural engineering assessments in October 2011, in a response to landholder concern. These assessments were carried out by a qualified structural engineer to investigate the possibility of blasting impacts on the dwellings since mining has commenced, including cracking defects. Both properties had initial pre-blast inspections in November 2008. Upon completion of these inspections in October 2011, it was found that defects present in both dwellings were not considered to be caused by blasting at the Sunnyside Mine.

Whitehaven are working closely with the blasting contractor Orica on the improvement of future blasts at Sunnyside. Orica have committed to additional blast design procedures to ensure correct blast design reduces the likelihood of future overpressure exceedances. Whitehaven continually liaise with all affected landholders in relation to blast impacts and concern.

The maximum recorded peak overpressure recorded during the reporting period was 128.8 dBL at "Innisvale" on the 3rd May 2011.

The maximum recorded ground vibration during the Reporting period was 1.92 mm/s recorded at "Plain View" on the 25th June 2011. 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 $L_{10(15minute)}$ noise emission criterion of 40 dB(A) during initial construction period; and

(b) an $L_{Aeq(15\ minute)}$ 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 $L_{A10(15\ minute)}$	***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 $L_{Aeq(15\ minute)}$	***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 $L_{A1eq(1\ hour)}$	***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, e.g. 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 2011 Noise Monitoring*

On the 8th February 2011 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 mine noise was below the criterion of 35 dB(A) or inaudible at all monitoring locations during the day and evening monitoring events.

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 19 trucks (7 full, 7 empty and 5 other heavy vehicles) passing the site were measured from 11:05am on the 9th February 2011. The measured Leq noise level from mine vehicles was 54 dB(A), below the noise criterion of 55 dB(A) Leq (1 hour).

3.10.3.3 *May 2011 Noise Monitoring*

On the 19th May 2011 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 mine noise was below the criterion of 35 dB(A) or inaudible at all monitoring locations during the day and evening monitoring events.

The product coal from the Sunnyside mine is transported by road trucks to the Whitehaven CHPP, near Gunnedah. At the time of monitoring the transport of coal was on a campaign type basis with no transport from Sunnyside at the time of monitoring and therefore monitoring of road noise could not be undertaken.

3.10.3.4 *August 2011 Noise Monitoring*

On the 4th August 2011 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 mine noise was below criteria or inaudible at all monitoring locations during daytime monitoring.

- Mine noise exceeded the noise criterion of 35 dB(A) Leq (15 min) at the "Plain View" (37 dB(A)) and "Lilydale" (36 dB(A)) monitoring locations during the evening. The mine noise at both "Lilydale" and "Plain View" consisted of haul truck engine revs, dozer engine and track noise and general mine hum. Mine noise was below criteria or inaudible at all other monitoring locations. Upon investigation of the meteorological conditions it was found that a temperature inversion was present. This is thought to have amplified mine noise at the two monitoring points. Lilydale is mine owned residence. "Plain View" is privately owned and Whitehaven has indicated to the landholders an intention to discuss options for a noise agreement. It is proposed to discuss the possibility of an agreement with the landholder in the immediate future.

Additionally on the 5th August 2011 at 8:05 am, traffic noise was measured at the "Roslyn" property on Torrens Lane, near the CHPP. A total of 8 heavy vehicles travelled along Torrens Lane during the monitoring period. These consisted of 4 full and 4 empty coal haulage trucks. Over the approximate 1 hour monitoring period the measured Leq noise level from vehicles on Torrens Lane was 51.66 dB(A). This is below the noise criterion for a local road of 55 dB(A) Leq (1 hour).

3.10.3.5 *November 2011 Noise Monitoring*

On the 7th November 2011 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 mine noise was below criteria or inaudible at all monitoring locations during the day and evening monitoring events.

On the 7th November 2011 from 5:00 pm traffic noise was measured at the "Roslyn" property on Torrens Lane, near the CHPP. Over a one hour period, a total of 6 heavy vehicles travelled along Torrens Lane. These consisted of 4 full and 1 empty coal haulage trucks and one fuel truck leaving site. The measured Leq noise level from vehicles on Torrens Lane was 50.7 dB(A) Leq (1 hour). This is in compliance with the noise criterion for a local road of 55 dB(A) Leq (1 hour).

The two noise exceedances recorded during the reporting period (from one monitoring event on the 4th August 2011) compare favourably to the four noise exceedances recorded in the previous 12 months. One of the exceedances was recorded at the project related property "Lilydale" and therefore the exceedance at "Plain View" is the only exceedance recorded at a private residence.

As the Sunnyside pit has developed, more in-pit dumping has occurred as the northern emplacement area has reached its maximum elevation. This in-pit dumping has reduced noise impacts on surrounding properties, with the northern emplacement area acting as a noise buffer between the active pit and the surrounding properties.

With regard to the noise exceedance at "Plain View" on 4th August 2011, although inversion conditions were present, to reduce the likelihood of any future noise

impacts, a private agreement will be sought with the landholders during the coming reporting period.

3.11 Visual, Light

3.11.1 Management

Light from the Sunnyside Coal Mine is visible from the Oxley Highway, Quia Road and Coocooboonah 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 6 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, where possible. 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 continues to reduce visual impacts from Coocooboonah Lane and neighbouring properties. The bund has well established pasture and reduces impact from the coal stockpile and the coal load out bin.

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 8. 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 8 - 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 down slope of a contour bank down slope 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 OEH.

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 or the environmental officer 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.

No cultural material of significance was identified during the one soil stripping campaign in July 2011. 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 (Coocooboonah) 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 2,956,941 litres of diesel fuel was used on site for mining related activity. Assuming an energy content of diesel fuel of 38.6GJ/kL, and using Table 3 of the "National Greenhouse Accounts (NGA) Factors" – July 2011, the estimated direct – scope 1, Greenhouse Gas Emissions including all CO_2 and non CO_2 gases are as follows.

Table 9 - GHG Emissions - Diesel Fuel

	Diesel Fuel Usage kL	Emission Factor T $CO_{2\text{-}e}$/kL	Equivalent Tonnes
GHG 2010/11	2,956	2.7	7,981

The site does not utilise electricity from the power grid, but via 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 2,565 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 456 equivalent tonnes of CO_2.

Fugitive Emissions

ROM coal production is used to estimate fugitive emission factors. Based on 360,592 tonnes of ROM coal production during the reporting period and a conversion factor of 0.045 (from Table 7 of the "National Greenhouse Accounts (NGA) Factors" – July 2011), it is estimated that 16,226 tonnes of CO_2 were emitted during the reporting period.

Summary

A summary of calculated total CO_2 equivalent tonnes/year for the reporting period is provided in Table 10.

Table 10 - GHG Emissions Summary

Source	Calculated Total CO_2 Equivalent tonnes/year
Diesel	7,895
Explosives	456
Fugitive Emissions	16,226
TOTAL	**24,577**

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 8.2 litres/tonne ROM coal as compared to 6.5 litres/tonne ROM coal in the previous reporting. This slight increase in fuel burn is due to the increase in ROM coal production since the last reporting period and need to move more overburden as the active pit moves into the rising topography.

Sunnyside's Energy Savings Action Plan predicted diesel use for the third year of production to be 3,665,372 litres, although production levels have increased since the last reporting period, Sunnyside burnt less diesel and as a consequence produced less greenhouse gas than predicted. This is attributable to the lower ROM coal production for the period than that was predicted in the Mining Operations Plan (MOP).

Whitehaven reported greenhouse gas emissions for the Whitehaven Group (including Sunnyside) for the 2010/2011 financial year via the Federal Government's National Greenhouse and Energy Reporting Scheme (NGERS). Reporting was undertaken in October 2011 and will continue in subsequent years.

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, where a site sign in register is in place 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, II and VII. These areas will continue to be disturbed over the life of the approved mine.

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 11 and Figure 6. Full station data is presented in Appendix 8.

Table 11 - Rainfall Data
(December 2010 – November 2011)

Month	Monthly Rainfall Reporting period	Long Term Average Rainfall*[1]	Rain days Reporting period	Long Term Average Rain days*[1]
December 2010	159.4	70	11	6
January 2011	99.4	71.1	6	5.6
February 2011	44.2	66.5	5	5.1
March 2011	33.6	47.9	7	3.9
April 2011	31.8	37.6	6	3.4
May 2011	30.4	42.5	4	4.1
June 2011	8.6	43.6	5	4.8
July 2011	2.6	42.4	1	4.8
August 2011	20.8	41.4	6	4.8
September 2011	89.4	40.3	5	4.5
October 2011	74.6	55.5	7	5.4
November 2011	148.8	62.5	7	5.7
TOTAL	**743.6**	**621.3**	**70**	**58**

* Gunnedah Pool (Station 055 023) averages from 1876-2011.

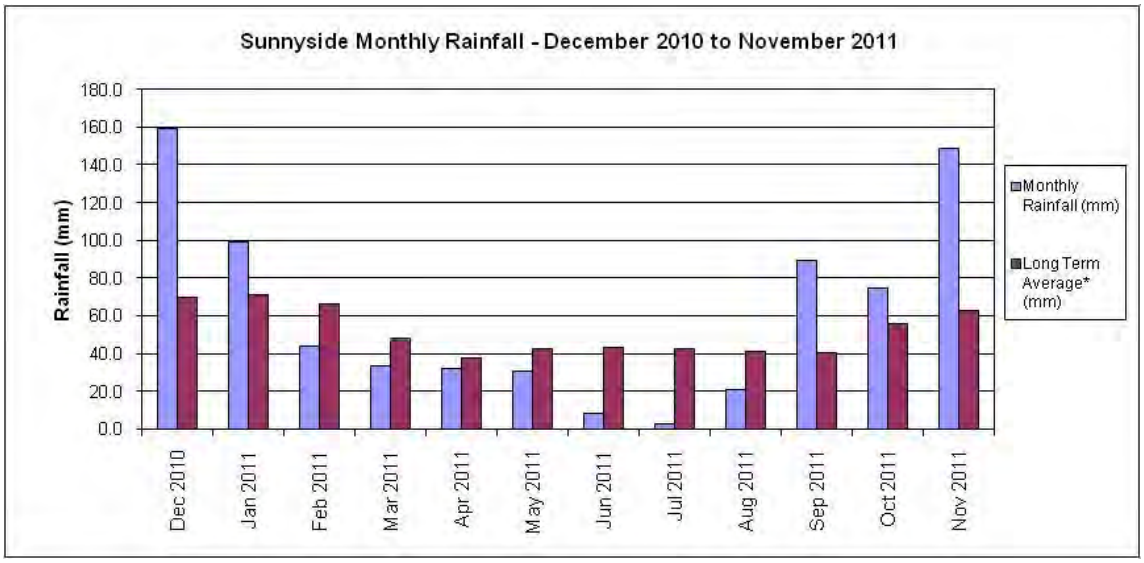

Figure 6 - Monthly Rainfall Data

A review of Table 11 and Figure 6 shows that the total rainfall at the mine during the reporting period was 743.6mm. The total rainfall recorded at the site was 122.3mm higher than the annual average rainfall for Gunnedah and 43mm higher than the previous reporting period. Above average falls occurred in the warmer months with December 2010 and November 2011 recording 308.2mm for the period. Below average rainfall was recorded for 7 months of the year, in particular the colder months with June and July 2011 recording a total of 11.2mm of rain.

A high number of rain days (falls equal or above 1mm) occurred during the reporting period, where it exceeded the annual average by 12 days. Monthly rain day averages was exceeded in every month except July.

3.22.3 Temperature

Average maximum and minimum temperatures for the reporting period are presented in
Table 12 together with long-term monthly averages for Gunnedah Pool (Bureau of Meteorology Station 055023).

Table 12 - Average Monthly Temperatures (December 2010 – November 2011)

Month	Average Daily Temperature			
	Reporting period (°C)		Station 055023 (Gunnedah Pool)* (°C)	
	Min	Max	Min	Max
December 2010	16.7	28.4	16.8	32.9
January 2011	19.1	33.6	18.4	34.0
February 2011	19.7	33.9	18.1	32.9
March 2011	13.3	31.1	15.8	30.7
April 2011	11.1	26.3	11.4	26.4
May 2011	5.2	20.9	7.1	21.3
June 2011	3.7	17.8	4.3	17.6
July 2011	1.4	17.3	3.0	16.9
August 2011	4.9	20.7	4.2	18.9
September 2011	5.9	23.9	7.0	22.8
October 2011	10.8	24.5	10.7	26.7
November 2011	15.6	29.5	14.2	30.3

* Gunnedah Pool (Station 055 023) averages from 1876-2011.

Table 12 shows that:

- Average minimum temperatures at the mine site were above the Gunnedah average for the 3 months of the reporting year, with 9 months similar to or below the Gunnedah averages.
- Average maximum temperatures were similar to Gunnedah averages for 8 months of the year. Lower than average temperatures were recorded in December 2010 and October 2011, higher than average temperatures were recorded in July, August and September.

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, and upon review of previous years, is a common trend.
- Wind speeds were generally in the range of 1-5m/s, with gusts greater than 5m/s, which is common at Sunnyside.
- Westerly and north-westerly winds, often at speeds greater than 5m/s, were more prevalent in September and November 2011, these winds generally occur in the warmer months at Sunnyside.
- July was dominated by south-west and south easterly winds, these winds generally occur in the winter months at Sunnyside.

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 August 2011 (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”.

Four complaints were received during the reporting period in relation to operations at Sunnyside Coal Mine. One complaint was received during Community Consultative Committee (CCC) meetings, two complaints were received via the designated complaints line and one complaint was received directly to the project manager. The nature of the complaints, details and responses to each complaint are presented in Table 13.

Table 13 - Complaints Summary

Date/Time of Complaint	Nature of Complaint	Investigation	Action Taken / Follow-up
22nd December 2010 2:34pm	Complaint in relation to truck noise and obeying road rules during coal haulage from Sunnyside.	The Project Manager advised complainant he would discuss the matter with the contract truck driver. The Environmental Manager requested the Toll Project Manager address the matter with the contractor and ensures drivers obey road rules, particularly in terms of stopping and giving way as required, as well as limiting the use of exhaust braking, especially in proximity to residences.	The Project Manager spoke to the driver in question and reiterated the requirement to obey road rules and limit use of exhaust brakes.
5th May 2011 7:15am	Complaint in relation to blast conducted on Tuesday 5th May 2011 and impacts on his residence. The complainant described the blast as the worst he has encountered, not having felt Sunnyside blasts previously.	It was explained to the complainant that the blast did not go as expected and that Orica were instructed to complete an investigation. The outcome of the Orica investigation was discussed, including the identification of a fault in blast design which led to the enhanced overpressure felt at his property. It was also explained that monitors at adjoining properties had confirmed an exceedance in blast compliance criteria, and that advice had issued to the DoPI and OEH. The complainant asked how it was possible for the blasting experts to get it so wrong and was advised that Whitehaven would work closely with Orica Blasting Services to ensure the potential for poor blast designs could be avoided in future.	No follow up required.
1st June 2011 3:45pm	Complaint in relation to a blast on the 9th of April. Although he wasn't at home at the time of the blast on the 9th April 2011 he was advised by a neighbour that it was a damaging blast.	Whitehaven advised that the blast had not exceeded criteria and that blast monitor results would be provided at the next CCC meeting.	Monitor results were provided at CCC meeting in September 2011.
11th August 2011 3:10pm	Complaint was in relation to the blast on 11 August, which shook the complainant's house. He described it as 2/3 as bad as the shot that he complained about previously. Believed Orica to be deficient in their blast practices as this is the second event in the last 4 months.	Complainant was advised that at the time Whitehaven did not have the monitoring results available but would investigate his concerns once they were available. On review of monitoring data, all monitoring locations were well below the blasting limits with the highest overpressure recorded being 105.9dBL at "Plain View" and the highest vibration being 0.7mm/s, also at "Plain View".	Written advice was issued to the complainant confirming the blast was within allowable limits.

Date/Time of Complaint	Nature of Complaint	Investigation	Action Taken / Follow-up
		These results indicated the blast performed as expected. Review of the video of the shot also did not indicate any significant ejection from the blast. The blast had already been delayed from 10:00am that day due to unfavourable weather conditions and the shot was taken at a time more conducive to blasting.	

Any complaints that are made are reported to the Community Consultative Committee and documented in the AEMR as shown above. Last reporting period, two complaints were recorded, compared to four for this reporting period. It is evident from the nature of complaints received that there is a general concern relating to blasting at the Sunnyside operation. Blasting performance and management is addressed in Section 3.9.

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 15 full-time and 4 part-time personnel. Mining contractor MMG, which assists in mining and maintenance, had an average of 8 fulltime casual staff onsite. In addition personnel were employed by contractors in the haulage of coal from the mine site back to the Whitehaven CHPP. All Namoi Mining employees reside in the Gunnedah region.

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 1st December 2010, 2nd March 2011, 1st June 2011 and 14th September 2011.

Sunnyside Mine representatives and Whitehaven's Community Liaison Officer 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 removal of buildings was undertaken over the reporting period.

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 14 and Table 15 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 pasture cover, as shown in Plate 2 showing the results of seeding in May 2011, on the north east area of the emplacement area.

Rehabilitation works have commenced on the upper batter of the north western section of the waste emplacement, as identified Plate 3. Approximately 5 hectares of this area has had contour banks installed to assist drainage and to prevent erosion. The area has also been seeded with a pasture mix consisting of Bambatsi Panic, Japanese Millet, Premier Digit, Arrowleaf Clover and Green Panic. The area was mounded with a specialised mounding implement, with the mounds having two main purposes; to promote tree growth by providing a suitable earthen mound and to prevent erosion by capturing and slowing water runoff on the slope. This captured water inevitably waters the planted trees within the furrow below the mound.

For the development of woodland on rehabilitated areas, 1,000 trees have been planted at Sunnyside during late spring and early summer of 2011 planting campaigns. The primary areas targeted were the north and north eastern emplacement areas. Mixes of Eucalypts, Ironbark, Kurrajong and a range of understory wattles were planted.

In addition to this, works have continued on providing for enhancements to the koala habitat in the area; with additional plantings of 760 koala feed tree species during June 2011.

Plate 2 - Established Pasture on upper batter of waste emplacement

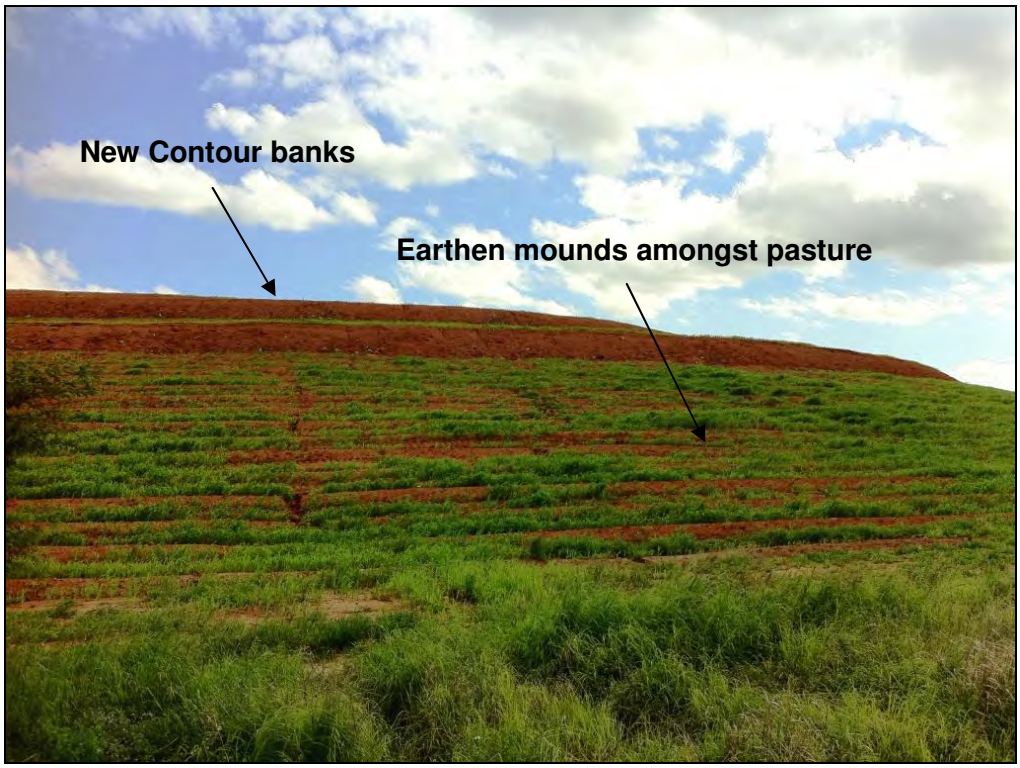

Plate 3 – Newly constructed contours, mounds and developing pasture

Table 14 - Rehabilitation Summary

	Area Affected (hectares)			
	This Report Period (as of 30.11.2011)	**Last Report Period (30.11.10)**	**Cumulative Next Report Period (estimated)**	
A: MINE LEASE AREA				
A1 Mine Lease(s) Area	233.9			
B: DISTURBED AREAS				
B1 Infrastructure area (other disturbed areas to be rehabilitated at closure including facilities, roads)	9	11.8	9	
B2: Active Mining Area (excluding items B3 - B5 below)	30.6	26.3	30	
B3 Waste emplacements, (active/unshaped/in or out-of-pit)	25.8	16.8	35	
B4 Tailings emplacements, (active/unshaped/uncapped)	N/A	N/A	N/A	
B5 Shaped waste emplacement (awaits final vegetation)	0	1.6	5	
ALL DISTURBED AREAS	65.4	56.5	79	F1
C REHABILITATION PROGRESS				
C1 Total Rehabilitated area* (except for maintenance)	22.6**	14.38**	30	F2
D: REHABILITATION ON SLOPES				
D1 10 to 18 degrees	7.67	2.4	10	
D2 Greater than 18 degrees	0	0	0	
E: SURFACE OF REHABILITATED LAND				
E1 Pasture and grasses	22.6**	14.38**	30	
E2 Native forest/ecosystems*	1	0	4	
E3 Plantations and crops	0	0	0	
E4 Other (include non vegetative outcomes)	0	0	0	

* 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 15 - Maintenance Activities on Rehabilitated Land

NATURE OF TREATMENT	Area Treated (ha)		
	Report period	**Next period**	**Comment/control strategies/ treatment detail**
Additional erosion control works (drains re-contouring, rock protection**)**	Nil	1	Some minor erosion repairs to be carried out on rehabilitated waste emplacement, areas will be re-profiled and re-seeded.
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	~3	Re-seeding of grass and clover species in areas on a needs basis.
Adversely Affected by Weeds (detail - type and treatment)	6	2	Flaxleaf Fleabane to be controlled through slashing and herbicides.
Feral animal control (detail - additional fencing, trapping, baiting etc)	Nil	Nil	

5.3 Rehabilitation Monitoring and Performance

Rehabilitation is monitored through monthly environmental inspections, in accordance with the approved Rehabilitation and Landscape Management Plan. Monitoring of rehabilitation efforts is completed through the inspection of ground cover, trees and the presence of erosion and weeds. As woodland establishment has recently taken place, the placement of rehabilitation control plots for detailed monitoring will take place during the next reporting period.

In terms of the rehabilitation that was completed this period, a good cover was achieved on the reshaped upper batter of the waste emplacement as a consequence of the planting timing with the above average rainfall during the warmer months. The trees that were planted for woodland establishment have shown a good growth and survival rate.

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;
- 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 through establishing drainage and sediment control structures, with no exceedance of water quality criteria during one discharge from site, despite above average rainfalls over the period;
- Commencement of pasture establishment rehabilitation on the upper slopes of the waste emplacement;
- Commencement of woodland establishment through tubestock plantation of the lower slopes of the rehabilitated waste emplacement;

- Continuation of koala habitat enhancement, with establishment of tubestock of koala feed tree species; and
- Continuation of monthly site environmental inspection that has allowed identification of any environmental issues requiring attention and the continual improvement of environmental performance on site.

6.3 Targets and Goals

- The ongoing development of rehabilitation of the reshaped out of pit overburden emplacement;
- Commencement of rehabilitation and the installation of surface water management structures on the plateau of the active waste emplacement:
- The continuation of development and maintenance of the koala habitat enhancement area;
- Continued development of woodland establishment on the rehabilitated waste emplacement;
- Continued community liaison, support and involvement / education in the mines activities;
- Compliance with all relevant conditions of the lease, licences and consents;
- Improved outcomes relating to noise impacts to minimise effects on surrounding neighbours;
- Improved outcomes relating to blasting impacts from site; and
- Development of a detailed Mine Closure Plan.

N6570000
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E225000
E225500
163 DP 755503
3 DP 1140891
494 DP 755503
12 DP 755503
108 DP 755503
1 DP 393755
DP 755503
216
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164 DP 755503
ML 1624
SD4
SD3
SB4
SB1
SB2
SB3
SD1
SD2
Weighbridge
ACCESS TS
ROM PAD
SITE OFFICE & FACILITIES
HELIPAD
VOID WATER DAM
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Aboriginal Site
SUNNYSIDE HAUL ROAD
COOCOOBOONAH LANE
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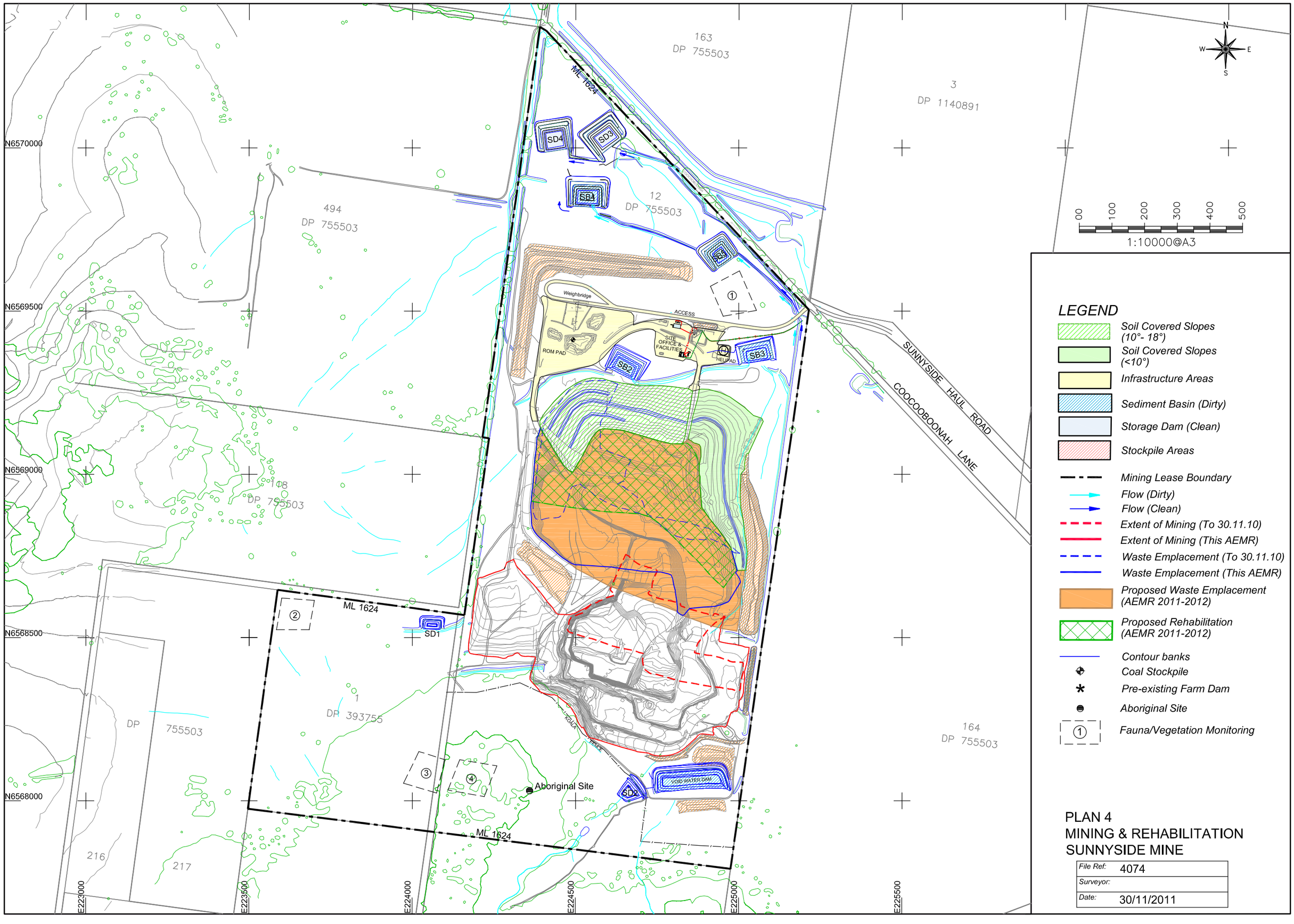
LEGEND

- Soil Stripping Area (2010/2011 AEMR)
- Soil Stripping Area (2011/2012 AEMR)
- Stockpile Areas
- Infrastructure Areas
- Sediment Basin (Dirty)
- Storage Dam (Clean)
- Mining Lease Boundary
- Limit of Open Cut
- Vegetation Boundary
- TS Topsoil
- Aboriginal Site
- * Pre-existing Farm Dam
- (1) Fauna/Vegetation Monitoring

PLAN 3
LAND PREPARATION
SUNNYSIDE MINE

File Ref:	4074
Surveyor:	
30/11/2011	



PLAN 4
MINING & REHABILITATION
SUNNYSIDE MINE

File Ref:	4074
Surveyor:	
Date:	30/11/2011

Appendix 1

PA 06_0308

Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

I approve the project referred to in schedule 1, subject to the conditions in schedules 2 to 5.

These conditions are required to:
- prevent and/or minimise adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

The Honourable Kristina Keneally MP
Minister for Planning

24/5/08

Sydney 2008

SCHEDULE 1

Application No:	06_0308
Proponent:	Namoi Mining Pty Limited
Approval Authority:	Minister for Planning
Land:	See Appendix 1
Project:	Sunnyside Coal Project

TABLE OF CONTENTS

DEFINITIONS

AEMR	Annual Environmental Management Report
AgQuip	The AqQuip Festival, held at Blackjack Road, generally during the 3rd week in August
BCA	Building Code of Australia
CCC	Community Consultative Committee
CHPP	Coal handling and preparation plant
Council	Gunnedah Shire Council
Day	The period from 7am to 6pm on Monday to Saturday
DECC	Department of Environment and Climate Change
Department	Department of Planning
Director-General	Director-General of Department of Planning, or delegate
DPI	Department of Primary Industries
DWE	Department of Water and Energy
EA	Environmental Assessment prepared for Namoi Mining Pty Limited entitled *Environmental Assessment Sunnyside Coal Project via Gunnedah* and *Specialist Consultant Studies Compendium,* Volumes 1 & 2 (April 2008)
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2000*
EPL	Environment Protection Licence issued under the *Protection of the Environment Operations Act 1997*
Evening	The period from 6pm to 10pm
Land	The whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval
Material harm to the environment	Material harm to the environment as defined in *Protection of the Environment Operations Act 1997*
Mining operations	The removal and emplacement of overburden and the extraction, processing and transportation of coal on and from the site
Minister	Minister for Planning, or delegate
Privately-owned land	Land that is not owned by a public agency, or a mining company (or its subsidiary)
Proponent	Namoi Mining Pty Limited or any other person or persons who rely on this approval to carry out the project that is subject to this approval
Project	The Sunnyside Coal Project described in the EA
Reasonable and Feasible	Reasonable relates to the application of judgement in arriving at a decision, taking into account: mitigation benefits, cost of mitigation versus benefits provided, community views and the nature and extent of potential improvements. Feasible relates to engineering corrections and what is practical to build
RTA	Roads and Traffic Authority
ROM	Run-of-mine
Site	Land to which the project application applies (see Appendix 1 and 2)
Statement of Commitments	The Proponent's Final Statement of Commitments for Site Operations and Management in Appendix 3

SCHEDULE 2
ADMINISTRATIVE CONDITIONS

Obligation to Minimise Harm to the Environment

1. The Proponent shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the project.

Terms of Approval

2. The Proponent shall carry out the project generally in accordance with the:
   (a) EA;
   (b) Sunnyside Coal Project Response to Public and Government Agency Submissions (June 2008);
   (c) Sunnyside Coal Project Supplementary Response to Submissions (July 2008);
   (d) Statement of Commitments (see Appendix 3); and
   (e) conditions of this approval.

   Notes:
   - *The general layout of the project is shown in Figure 1 of Appendix 2; and*
   - *The Statement of Commitments is reproduced in Appendix 3.*

3. If there is any inconsistency between the above documents, the latter document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.

4. The Proponent shall comply with any reasonable and feasible requirements of the Director-General arising from the Department's assessment of:
   (a) any reports, plans, programs, strategies or correspondence that are submitted in accordance with the conditions of this approval; and
   (b) the implementation of any actions or measures contained in these reports, plans, programs, strategies or correspondence.

Limits on Approval

5. Mining operations may take place on the site for 7 years from the grant of the mining lease for the project.

   Note: Under this Approval, the Proponent is required to rehabilitate the site to the satisfaction of the Director-General and DPI. Consequently this approval will continue to apply in all other respects other than the right to conduct mining operations until the site has been rehabilitated to a satisfactory standard.

6. The Proponent shall not extract more than 1 million tonnes of ROM coal a year from the site.

7. The Proponent shall use the coal transport route shown in Figure 2 of Appendix 2 to transport all coal from the site to the Whitehaven Siding CHPP.

Hours of Operation

8. Construction activities may take place only between 7 am to 6 pm each Monday to Friday and 7 am to 4 pm on Saturdays, and not on Public Holidays.

9. Mining operations may take place only between 7 am to 10 pm each Monday to Friday and 7 am to 6 pm on Saturdays, and not on Public Holidays.

10. Transport of coal may take place only between 7 am to 6 pm Monday to Friday (or between 7 am to 8 pm during Eastern Summer Time) and between 7 am to 4 pm on Saturdays, and not on Public Holidays.

    Note: See condition 39 of Schedule 3.

Management Plans / Monitoring Programs

11. With the approval of the Director-General, the Proponent may submit any management plan or monitoring program required by this approval on a progressive basis.

Structural Adequacy

12. The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA.

Notes:
- *Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.*
- *Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.*

Demolition

13. The Proponent shall ensure that all demolition work is carried out in accordance with *Australian Standard AS 2601-2001: The Demolition of Structures*, or its latest version.

Operation of Plant and Equipment

14. The Proponent shall ensure that all plant and equipment used on site is:
    (a) maintained in a proper and efficient condition; and
    (b) operated in a proper and efficient manner.

Community Enhancement Funds

15. By 31 November 2008, and on each anniversary of that date until and including 2012, the Proponent shall provide development contributions of $100,000 per annum to the Gunnedah Shire Council for expenditure by the Council on community enhancement projects.

SCHEDULE 3
SPECIFIC ENVIRONMENTAL CONDITIONS

ACQUISITION OF AFFECTED PROPERTIES

Acquisition Upon Request

1. Upon receiving a written request for acquisition from the owner of "Lilydale", the Proponent shall acquire the land in accordance with the procedures in conditions 8-10 of schedule 4.

NOISE

Note: These conditions must be read in conjunction with Section 8 of the Statement of Commitments.

Construction Noise Impact Assessment Criteria

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 $L_{A10(15\ minute)}$	***Land***
40	Any residence on, or more than 25% of, any privately owned land (except at "Lilydale")

Operational Noise Impact Assessment Criteria

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/Evening $L_{Aeq(15\ minute)}$	***Land***
35	Any residence on, or more than 25% of, any privately owned land (except at "Lilydale")

Notes:

- *To determine compliance with the $L_{Aeq(15\ minute)}$ limit, noise from the project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the project is impractical, the DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*
- *These limits apply under meteorological conditions of:*
  - *wind speeds of 3 m/s at 10 metres above ground level; or*
  - *up to 3°C/100 m temperature inversion strength for all receivers, plus a 2 m/s source-to-receiver component drainage flow wind at 10 metres above ground level for those receivers where applicable.*

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.

Land Acquisition Criteria

4. If the noise generated by the project exceeds the level in Table 3, the Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 8-10 of schedule 4.

Table 3: Land acquisition criterion dB(A)

Day/Evening $L_{Aeq(15\ minute)}$	***Land***
40	Any residence on, or more than 25% of, any privately owned land (except at "Lilydale")

Note: Noise generated by the project is to be measured in accordance with the notes presented below Table 1.

Additional Operational Noise Mitigation Measures

5. Upon receiving a written request from the landowner of:
   (a) "Illili", "Ferndale", or
   (b) any residence on privately owned land where noise generated by the project exceeds 37 dB(A) $L_{Aeq(15\ minute)}$,

   the Proponent shall implement additional noise mitigation measures such as double glazing, insulation, and/or air conditioning at any residence on the land in consultation with the landowner.

   These additional mitigation measures must be reasonable and feasible.

   If within 3 months of receiving this request from the landowner, the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution.

   Within 3 months of this approval, the Proponent shall notify all applicable landowners of their entitlements under this condition.

Traffic Noise Impact Assessment Criteria

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:

Table 4: Traffic noise criterion dB(A)

Day/Evening $L_{Aeq(1\ hour)}$	***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.

Additional Traffic Noise Mitigation Measures

7. If the traffic noise generated by the project exceeds the criterion in Table 4, the Proponent shall, upon receiving a written request from any landowner adjacent to Torrens Road, implement noise mitigation measures such as double glazing, insulation, and/or air conditioning at any residence on the land in consultation with the landowner.

   These additional mitigation measures must be reasonable and feasible.

   If within 3 months of receiving this request from the landowner, the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution.

   Within 3 months of this approval, the Proponent shall notify all applicable landowners of their entitlements under this condition.

Continuous Improvement

8. The Proponent shall:
   (a) implement all reasonable and feasible best practice noise mitigation measures;
   (b) investigate ways to reduce the noise generated by the project, including off-site road noise; and
   (c) report on these investigations and the implementation and effectiveness of these measures in the AEMR,

   to the satisfaction of the Director-General.

Monitoring

9. The Proponent shall prepare and implement a detailed Noise Monitoring Program for the project to the satisfaction of the Director-General. This program must:
   (a) be prepared in consultation with DECC;
   (b) be submitted to the Director-General for approval prior to carrying out any development on site; and
   (c) include:
   - attended monitoring measures; and
   - a noise monitoring protocol for evaluating compliance with the noise impact assessment and land acquisition criteria in this approval.

BLASTING AND VIBRATION

Note: These conditions should be read in conjunction with section 8 of the Statement of Commitments.

Airblast Overpressure Limits

10. The Proponent shall ensure that the airblast overpressure level from blasting at the project does not exceed the criteria in Table 5 at any residence on privately-owned land.

Table 5: Airblast overpressure impact assessment criteria

Airblast overpressure level (dB(Lin Peak))	Allowable exceedance
115	5% of the total number of blasts in a 12 month period
120	0%

Note: The overpressure values in Table 5 apply when the measurements are performed with equipment having a lower cut-off frequency of 2 Hz or less. If the instrumentation has a higher cut-off frequency a correction of 5 dB should be added to the measured value. Equipment with a lower cut-off frequency exceeding 10 Hz should not be used.

Ground Vibration Impact Assessment Criteria

11. The Proponent shall ensure that the ground vibration level from blasting, or any other activity at the project does not exceed the levels in Table 6 at any residence on privately-owned land.

Table 6: Ground vibration impact assessment criteria

Peak particle velocity (mm/s)	Allowable exceedance
5	5% of the total number of blasts in a 12 month period
10	0%

Blasting Hours

12. The Proponent shall carry out blasting on site only between 10 am and 5 pm each Monday to Friday and 10 am and 2 pm on Saturdays (excepting Public Holidays).

Blasting Frequency

13. The Proponent shall not carry out more than:
    (a) 2 blasts a day; and
    (b) 5 blasts a week, averaged over any 12 month period;
    on site.

Property Inspections

14. At least 2 months before carrying out any blasting on the site, the Proponent shall advise all landowners within 2 km of proposed blasting activities, and any other landowner nominated by the Director-General, that they are entitled to a property inspection to establish the baseline condition of the property.

15. If the Proponent receives a written request for a property inspection from any such landowner, the Proponent shall:
    (a) commission a suitably qualified person, whose appointment has been approved by the Director-General, to inspect and report on the condition of any building or structure on the land, and recommend measures to mitigate any potential blasting impacts; and
    (b) give the landowner a copy of this property inspection report.

    Note: It is preferable for the property inspection to be carried out prior to the commencement of blasting activities on the site, and the Proponent should facilitate this occurring wherever possible.

Property Investigations

16. If any landowner within 2 km of proposed blasting activities, or any other landowner nominated by the Director-General, claims that his/her property, including vibration-sensitive infrastructure such as water supply or underground irrigation mains, has been damaged as a result of blasting at the project, the Proponent shall within 3 months of receiving this request:
    (a) commission a suitably qualified person whose appointment has been approved by the Director-General to investigate the claim and prepare a property investigation report; and
    (b) give the landowner a copy of the report.

    If this independent investigation confirms the landowner's claim, and both parties agree with these findings, then the Proponent shall repair the damage to the satisfaction of the Director-General.

    If the Proponent or landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Director-General for resolution.

Monitoring

17. Prior to the commencement of blasting, the Proponent shall prepare and implement a detailed Blast Monitoring Program for the project, in consultation with the DECC and to the satisfaction of the Director-General.

AIR QUALITY

Note: These conditions must be read in conjunction with Section 11 of the Statement of Commitments.

Impact Assessment Criteria

18. The Proponent shall ensure that dust emissions generated by the project do not cause additional exceedances of the criteria listed in Tables 7 to 9 at any residence on privately owned land, or on more than 25 percent of any privately-owned land.

Table 7: Long term impact assessment criteria for particulate matter

Pollutant	Averaging period	Criterion
Total suspended particulate (TSP) matter	Annual	90 µg/m^3
Particulate matter < 10 µm (PM_{10})	Annual	30 µg/m^3

Table 8: Short term impact assessment criterion for particulate matter

Pollutant	Averaging period	Criterion
Particulate matter < 10 µm (PM_{10})	24 hour	50 µg/m^3

Table 9: Long term impact assessment criterion for deposited dust

Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level
Deposited dust	Annual	2 g/m^2/month	4 g/m^2/month

Note: Deposited dust is assessed as insoluble solids as defined by Standards Australia, 1991, AS/NZS 3580.10.1-2003: Methods for Sampling and Analysis of Ambient Air - Determination of Particulates - Deposited Matter - Gravimetric Method.

Monitoring

19. The Proponent shall prepare and implement an Air Quality Monitoring Program for the project to the satisfaction of the Director-General. This program must:
    (a) be submitted to the Director-General prior to the commencement of construction activities;
    (b) be prepared in consultation with the DECC; and
    (c) use a combination of high volume samplers and dust deposition gauges to monitor the performance of the project.

METEOROLOGICAL MONITORING

Note: This condition must be read in conjunction with Section 11 of the Statement of Commitments

20. During the project, the Proponent shall ensure there is a suitable continuously operating meteorological station on site that complies with the requirements in *Approved Methods for Sampling of Air Pollutants in New South Wales* (DECC, 2007), or its latest version.

WATER MANAGEMENT

Note: These conditions must be read in conjunction with Section 7 & 10 of the Statement of Commitments.

Discharge

21. Except as may be expressly provided for by an EPL, or in accordance with section 120 of the *Protection of the Environment Operations Act 1997*, the Proponent shall not discharge any mine water from the site.

Water Management Plan

22. The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Director-General. This plan must be submitted to the Director-General for approval prior to the commencement of construction activities (not including public road upgrades other than the realignment of Coocooboonah Lane) in consultation with the DECC and DWE by suitably qualified expert/s whose appointment/s have been approved by the Director-General and include a:
    (a) Site Water Balance;
    (b) Erosion and Sediment Control Plan;
    (c) Surface Water Monitoring Plan;
    (d) Groundwater Monitoring Program; and
    (e) Groundwater Contingency Plan.

Site Water Balance

23. The Site Water Balance must:
    (a) include details of:
        - sources and security of water supply;
        - water use on site;
        - water management on site;
        - off-site water transfers;
        - reporting procedures;
    (b) describe measures to minimise water use by the project; and
    (c) be reviewed and recalculated each year using the most recent water monitoring data.

Erosion and Sediment Control

24. The Erosion and Sediment Control Plan must:
    (a) be consistent with the requirements of *Managing Urban Stormwater: Soils and Construction* manual (Landcom, 2004), or its latest version;
    (b) identify activities that could cause soil erosion and generate sediment;
    (c) describe measures to minimise soil erosion and the potential for transport of sediment to downstream waters;
    (d) describe the location, function, and capacity of erosion and sediment control structures; and
    (e) describe what measures would be implemented to monitor and maintain the structures over time.

Surface Water Monitoring Program

25. The Surface Water Monitoring Program must include:
    (a) detailed baseline data on surface water flows and quality in creeks and other waterbodies that could be affected by the project;
    (b) surface water impact assessment criteria;
    (c) a program to monitor the impact of the project on surface water flows and quality; and
    (d) procedures for reporting the results of this monitoring.

Groundwater Monitoring Program

26. The Groundwater Monitoring Program must include:
    (a) further development of the regional and local groundwater model;
    (b) detailed baseline data to benchmark the natural variation in groundwater levels, yield and quality (including at any privately owned bores in the vicinity of the site);
    (c) groundwater impact assessment criteria;
    (d) a program to monitor the impact of the project on groundwater levels, yield and quality; and
    (e) procedures for reporting the results of this monitoring.

Groundwater Contingency Plan

27. The Groundwater Contingency Plan must:
    (a) provide measures to mitigate any impacts of the mine on the quality or quantity of groundwater supplies available on privately-owned land;
    (b) establish trigger levels, benchmarks and contingency criteria; and
    (c) provide for negotiated agreements with affected landowners, including compensation where mining impacts result in increased extraction costs for landowners.

LANDSCAPE MANAGEMENT

Koala Habitat

Note: This condition must be read in conjunction with Sections 2, 9 and 18 of the Statement of Commitments.

28. The Proponent shall implement the Koala habitat management and enhancement actions described in the EA (shown conceptually in Figure 6 in Appendix 4) in consultation with the DECC and to the satisfaction of the Director-General.

Note: Conditions 29 – 31 must be read in conjunction with Section 17 of the Statement of Commitments.

Rehabilitation

29. The Proponent shall rehabilitate the site to the satisfaction of the Director-General and DPI.

Rehabilitation and Landscape Management Plan

30. The Proponent shall prepare and implement a detailed Rehabilitation and Landscape Management Plan for the site to the satisfaction of the Director-General and DPI. This plan must:
    (a) be prepared in consultation with DECC, DWE and Council by suitably qualified expert/s whose appointment/s have been approved by the Director-General; and
    (b) be submitted to the Director-General and DPI for approval by 1 March 2009;
    (c) include:
        - the rehabilitation objectives for the site;
        - a description of how the rehabilitation of the site would be integrated with the landscape of the surrounding area;
        - detailed performance and completion criteria for the rehabilitation of the site;
        - a detailed description of the measures that would be implemented to achieve the performance and completion criteria for each site, including the procedures to be implemented for
            - protection and enhancement of koala habitat;
            - progressively rehabilitating the areas disturbed by mining operations;
            - restoration of agricultural land suitability;
            - revegetating the site;
            - protecting and/or enhancing areas in the vicinity of the disturbance area;
            - conserving and re-using any topsoil;
            - controlling weeds and feral pests;
            - controlling access; and
            - bushfire management.
        - a program to monitor the performance of the rehabilitation against the stated objectives, performance and completion criteria;
        - a description of the potential risks to successful rehabilitation, and a description of the contingency measures that would be implemented to minimise these risks; and
        - details of who is responsible for monitoring, reviewing and implementing the plan.

Mine Closure Plan

31. At least 2 years prior to the cessation of mining operations on the site the Proponent shall prepare a Mine Closure Plan. This plan must:
    (a) define the objectives and criteria for mine closure;
    (b) investigate options for the future use of the site;
    (c) provide a detailed methodology for decommissioning the site's storage dams;
    (d) investigate ways to minimise the adverse socio-economic effects associated with mine closure, including reduction in local and regional employment levels;
    (e) describe the measures that would be implemented to minimise or manage the on-going environmental effects of the project; and
    (f) describe how the performance of these measures would be monitored over time.

HERITAGE

Note: These conditions must be read in conjunction with Section 12 of the Statement of Commitments.

Aboriginal Cultural Heritage Management Plan

32. The Proponent shall not destroy any known Aboriginal objects (as defined in the *National Parks and Wildlife Act 1974*) without the written approval of the Director-General.

33. The Proponent shall prepare and implement an Aboriginal Cultural Heritage Management Plan for the project to the satisfaction of the Director-General. This plan must:
    (a) be submitted to the Director-General prior to the commencement of construction activities (not including public road upgrades other than the realignment of Coocooboonah Lane);
    (b) be prepared in consultation with the DECC and the local Aboriginal community;

(c) include a protocol for the ongoing consultation and involvement of Aboriginal communities in the conservation and management of Aboriginal heritage on site; and
(d) describe the measures that would be implemented to protect Aboriginal sites on site, or if any new Aboriginal objects or skeletal remains are discovered during the project.

TRANSPORT

Note: These conditions must be read in conjunction with Section 2 of the Statement of Commitments.

Monitoring of Coal Transport

34. The Proponent shall keep records of the amount of coal transported from the site each year, and include these records in the AEMR.

Traffic Management

35. Prior to transporting any coal off-site, the Proponent shall:
(a) construct a realignment of Coocooboonah Lane to the satisfaction of the landowner and Council;
(b) upgrade the intersection of Coocooboonah Lane and the Oxley Highway to the satisfaction of the RTA and Council;
(c) upgrade the intersection of the Oxley Highway and Blackjack Road to the satisfaction of the RTA and Council;
(d) upgrade the section of Blackjack Road to be used for coal transport to the satisfaction of Council;
(e) upgrade the intersection of Blackjack Road and Quia Road to the satisfaction of Council;
(f) upgrade the section of Quia Road to be used for coal transport to the satisfaction of Council;
(g) upgrade the intersection of Quia Road and Farrar Road to the satisfaction of Council;
(h) upgrade the intersection of Quia Road and Torrens Road to the satisfaction of Council; and
(i) upgrade Torrens Road to the satisfaction of Council.

36. Prior to carrying out any development on site, the Proponent shall prepare, and subsequently implement, a Construction Traffic Management Plan for the project to the satisfaction of the RTA and Council.

37. Within 6 months of this approval the Proponent shall enter into an agreement with Council for the maintenance of the section of the Oxley Highway between Coocooboonah Lane and Blackjack Road.

38. Prior to transporting coal from the site the Proponent shall construct 2 bus stops on the Oxley Highway to the satisfaction of Council.

39. Notwithstanding condition 10 of Schedule 2, the Proponent shall ensure no coal is transported from the site during AgQuip.

VISUAL IMPACT

Visual Amenity

40. The Proponent shall minimise the visual impacts of the project to the satisfaction of the Director-General.

Lighting Emissions

41. The Proponent shall ensure that:
(a) no outdoor lights shine above the horizontal; and
(b) all external lighting associated with the project complies with *Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting*.

GREENHOUSE GAS

Energy Savings Action Plan

42. The Proponent shall prepare and implement an Energy Savings Action Plan for the project to the satisfaction of the Director-General. This plan must:
    (a) be prepared in accordance with the *Guidelines for Energy Savings Action Plans* (DEUS, 2005), or its latest version;
    (b) include consideration of energy use by mobile equipment;
    (c) be submitted to the Director-General for approval within 3 months of this approval; and
    (d) include a program to monitor the effectiveness of measures to reduce energy use on site.

WASTE

Waste Minimisation

43. The Proponent shall prepare and implement a Waste Management Plan for the project to the satisfaction of the Director-General. This plan must:
    (a) be submitted to the Director-General for approval prior to commencing of construction;
    (b) identify the various waste streams of the project;
    (c) describe what measures would be implemented to reuse, recycle, or minimise the waste generated by the project;
    (d) ensure irrigation of treated wastewater is undertaken in accordance with *Environmental Guidelines: Use of Effluent by Irrigation* (DEC, 2004), or its latest version; and
    (e) include a program to monitor the effectiveness of these measures.

SCHEDULE 4
ADDITIONAL PROCEDURES

NOTIFICATION OF LANDOWNERS

1. Within 1 month of this approval, the Proponent shall notify the owner of "Lilydale" in writing that he/she has the right to require the Proponent to acquire their land at any stage during the project.

2. If the results of monitoring required in schedule 3 identify that impacts generated by the project are greater than the relevant impact assessment criteria in schedule 3, then the Proponent shall notify the Director-General and the affected landowners and/or existing or future tenants (including tenants of mine owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the project is complying with the criteria in schedule 3. However, no notification is required if the impact is predicted in the EA or where an agreement has been negotiated with a landowner that excludes the requirement for ongoing notification of such impacts.

INDEPENDENT REVIEW

3. If a landowner considers the project to be exceeding the impact assessment criteria in schedule 3, except where this is predicted in the EA, then he/she may ask the Director-General in writing for an independent review of the impacts of the project on his/her land.

   If the Director-General is satisfied that an independent review is warranted, the Proponent shall within 2 months of the Director-General's decision:
   (a) consult with the landowner to determine his/her concerns;
   (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to conduct monitoring on the land, to:
      - determine whether the project is complying with the relevant impact assessment criteria in schedule 3; and
      - identify the source(s) and scale of any impact on the land, and the project's contribution to this impact; and
   (c) give the Director-General and landowner a copy of the independent review.

   If the independent review determines that the project is complying with the relevant impact assessment criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the Director-General.

4. If the independent review determines that the project is not complying with the relevant impact assessment criteria in schedule 3, and that the project is primarily responsible for this non-compliance, then the Proponent shall:
   (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the project complies with the relevant criteria; and
   (b) conduct further monitoring to determine whether these measures ensure compliance; or
   (c) secure a written agreement with the landowner to allow exceedances of the relevant criteria,
   to the satisfaction of the Director-General.

   If further monitoring under paragraph (b) determines that the project is complying with the relevant criteria, then the Proponent may discontinue the independent review with the approval of the Director-General.

5. If further monitoring under condition 4(b) determines that measures implemented under condition 4(a) have not achieved compliance with the land acquisition criteria in schedule 3, and the Proponent cannot then secure within 3 months a written agreement with the landowner under condition 4(c) to allow these exceedances, then the Proponent shall, upon receiving a written request from the landowner, acquire all or part of the landowner's land in accordance with the procedures in conditions 7-9 below.

6. If:
   (a) the landowner disputes the results of the independent review; or
   (b) the Proponent is unable to secure a written agreement under condition 4(c) with the landowner
   then (subject to condition 5) either the Proponent or the landowner may refer the matter to the Director-General for resolution.

Where matters referred to the Director-General under this condition cannot be resolved by the Director-General within 28 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process.

LAND ACQUISITION

7. Within 3 months of receiving a written request from a landowner with acquisition rights, the Proponent shall make a binding written offer to the landowner based on:
   (a) the current market value of the landowner's interest in the property at the date of this written request, as if the property was unaffected by the project the subject of the project application, having regard to the:
      - existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and
      - presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of the 'additional noise mitigation measures' in conditions 5 and 7 of schedule 3;
   (b) the reasonable costs associated with:
      - relocating within the Gunnedah local government area, or to any other local government area determined by the Director-General;
      - obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and
   (c) reasonable compensation for any disturbance caused by the land acquisition process.

   However, if at the end of this period, the Proponent and landowner cannot agree on the acquisition price of the land, and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Director-General for resolution.

   Upon receiving such a request, the Director-General shall request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer or Fellow of the Institute, to consider submissions from both parties, and determine a fair and reasonable acquisition price for the land, and/or terms upon which the land is to be acquired.

   The appointed valuer is to provide a full report and explanation of the determination and proposed terms to the Proponent, landowner and the Director-General.

   Within 14 days of receiving the independent valuer's determination, the Proponent shall make a written offer to purchase the land at a price not less than the independent valuer's determination.

   If the landowner refuses to accept this offer within 6 months of the date of the Proponent's offer, the Proponent's obligations to acquire the land shall cease, unless otherwise agreed by the Director-General.

8. The Proponent shall bear the costs of any valuation or survey assessment requested by the independent valuer, or the Director-General and the costs of determination referred above.

9. If the Proponent and landowner agree that only part of the land shall be acquired, then the Proponent shall pay all reasonable costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of the plan at the Office of the Registrar-General.

SCHEDULE 5

ENVIRONMENTAL MANAGEMENT, MONITORING, AUDITING AND REPORTING

Note: This schedule must be read in conjunction with section 18 of the Statement of Commitments.

ENVIRONMENTAL MANAGEMENT STRATEGY

1. The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Director-General. This strategy must be submitted to the Director-General prior to the commencement of construction activities, and:
   (a) provide the strategic context for environmental management of the project;
   (b) identify the statutory requirements that apply to the project;
   (c) describe in general how the environmental performance of the project would be monitored and managed;
   (d) describe the procedures that would be implemented to:
      - keep the local community and relevant agencies informed about the operation and environmental performance of the project;
      - receive, handle, respond to, and record complaints;
      - resolve any disputes that may arise during the course of the project;
      - respond to any non-compliance;
      - manage cumulative impacts; and
      - respond to emergencies; and
   (e) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project.

ENVIRONMENTAL MONITORING PROGRAM

2. The Proponent shall prepare and implement an Environmental Monitoring Program for the project to the satisfaction of the Director-General. This program must be submitted to the Director-General within 6 months of this approval and consolidate the various monitoring requirements in schedule 3 of this approval into a single document.

REPORTING

Incident Reporting

3. As soon as practicable, and in any event within 24 hours of detecting an exceedance of the limits/performance criteria in this approval or the occurrence of an incident that causes (or may cause) material harm to the environment, the Proponent shall notify the Department and other relevant agencies of the exceedance/incident.

4. Within 6 days of notifying the Department and other relevant agencies of an exceedance/incident, the Proponent shall provide the Department and these agencies with a written report that:
   (a) describes the date, time, and nature of the exceedance/incident;
   (b) identifies the cause (or likely cause) of the exceedance/incident;
   (c) describes what action has been taken to date; and
   (d) describes the proposed measures to address the exceedance/incident.

Annual Reporting

5. Within 12 months of this approval, and annually thereafter, the Proponent shall submit an AEMR to the Director-General and to all relevant agencies. This report must:
   (a) identify the standards and performance measures that apply to the project;
   (b) describe the works carried out in the last 12 months;
   (c) describe the works that would be carried out in the next 12 months;
   (d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years;
   (e) include a summary of the monitoring results for the project during the past year;
   (f) include an analysis of these monitoring results against the relevant:
      - impact assessment criteria/limits;
      - monitoring results from previous years; and

- predictions in the EA;

(g) identify any trends in the monitoring results over the life of the project;
(h) identify any non-compliance during the previous year; and
(i) describe what actions were, or are being, taken to ensure compliance.

INDEPENDENT ENVIRONMENTAL AUDIT

6. Within 2 years of this approval, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:
   (a) be conducted by suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;
   (b) include consultation with the relevant agencies;
   (c) assess the environmental performance of the project and assess whether it is complying with the relevant requirements of this approval and any relevant mining lease or EPL (including any strategy, plan or program required under these approvals);
   (d) review the adequacy of strategies, plans or programs required under these approvals; and, if appropriate,
   (e) recommend measures or actions to improve the environmental performance of the project, and/or any strategy, plan or program required under these approvals.

   Note: This audit team must be led by a suitably qualified auditor and include experts in the fields of water, noise management and mine rehabilitation.

7. Within 6 weeks of the completing of this audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.

8. Within 3 months of submitting the audit report to the Director-General, the Proponent shall review, and if necessary revise the strategies/plans/programs required under this approval to the satisfaction of the Director-General.

COMMUNITY CONSULTATIVE COMMITTEE

9. Within 3 months of this approval, the Proponent shall establish a Community Consultative Committee (CCC) for the project. This CCC must be established and operated in accordance with the *Guideline for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007)*, or its latest version, and to the satisfaction of the Director-General.

ACCESS TO INFORMATION

10. Within 3 months of the approval of any strategy/plan/ program required under this approval (or any subsequent revision of these strategies/plans/ programs), or the completion of the audits or AEMRs required under this approval, the Proponent shall:
    (a) provide a copy of the relevant document/s to the relevant agencies and CCC; and
    (b) put a copy of the relevant document/s on its website.

11. During the project, the Proponent shall:
    (a) make a summary of all monitoring results required under this approval publicly available at the mine and on its website; and
    (b) update these results on a regular basis (at least every three months).

APPENDIX 1
SCHEDULE OF PROJECT LAND

Parish	***Land Title Reference***
Gill	*Lot 1 DP 393755* *Lot 12 DP 755503* *Lot 16 DP 7555031* *Lot 162 DP 755503* *Various Road Reserves*

APPENDIX 2
PROJECT MAPS

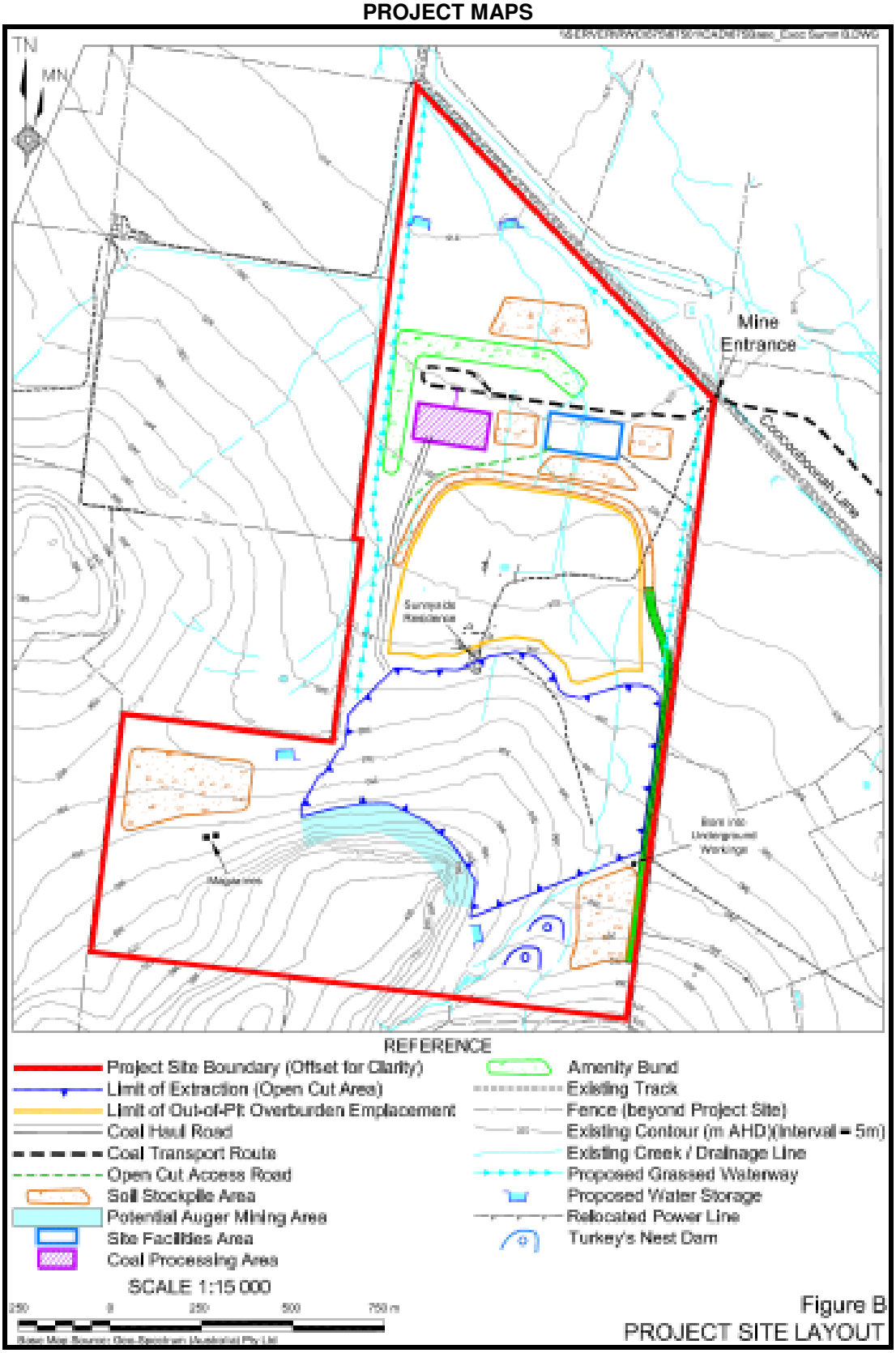


Figure 1: *Project Layout*

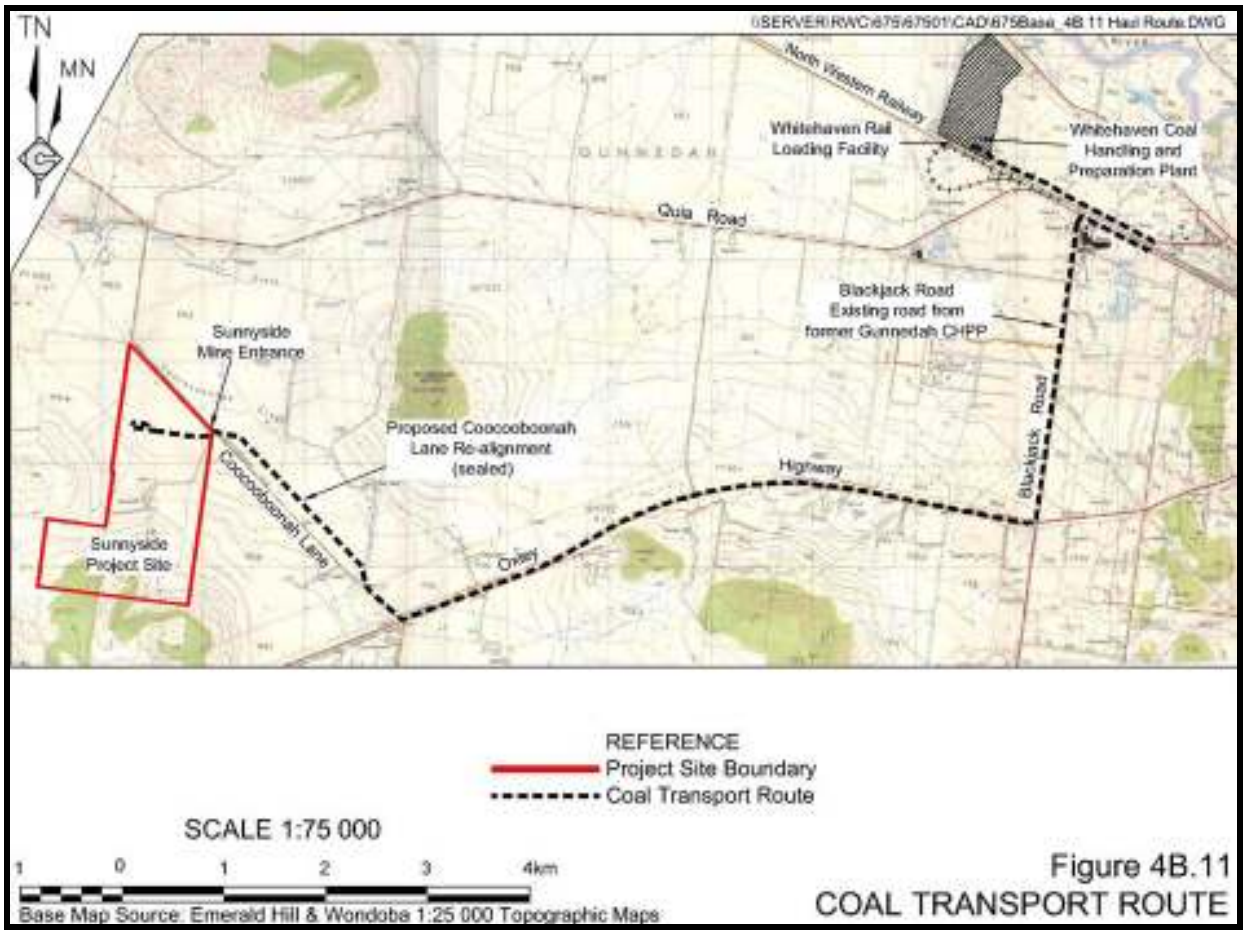


Figure 2: *Coal transport route*

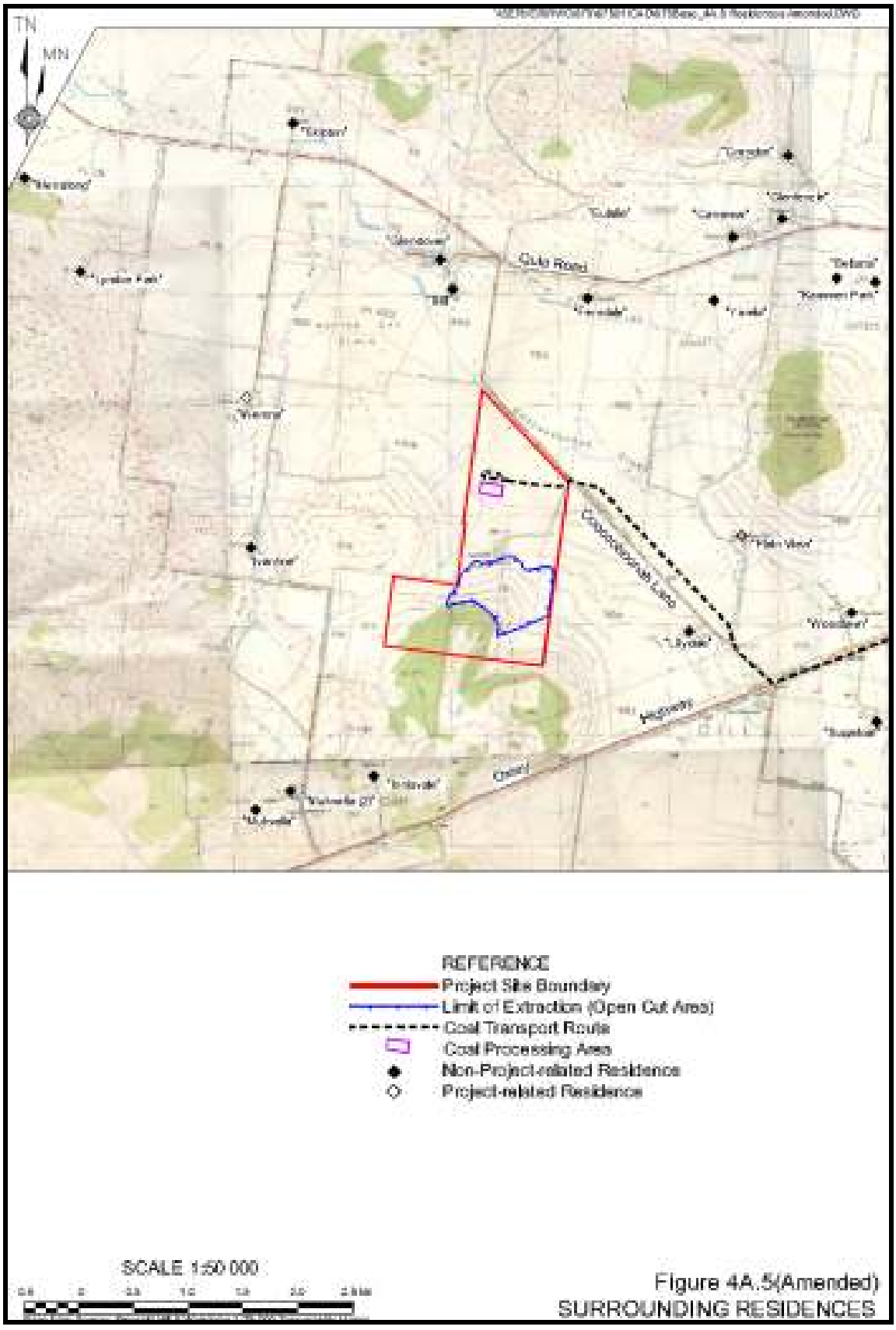


Figure 3: *Residences in proximity to the site*

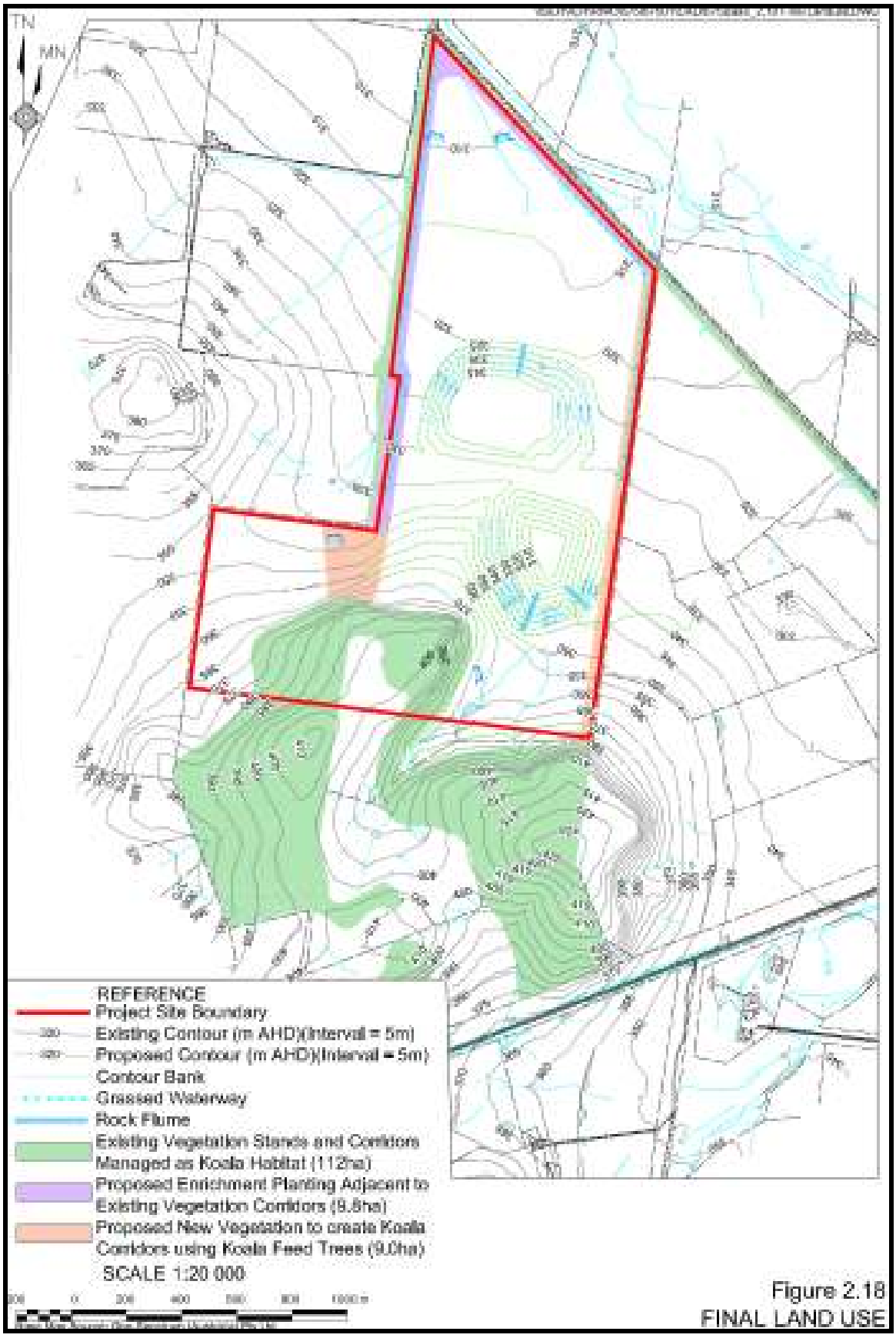


Figure 4: *Conceptual final land-use showing Koala habitat protection and enhancement areas*

APPENDIX 3
STATEMENT OF COMMITMENTS

Desired Outcome	Action		Timing
1. General Project Development			
Operate the Project to ensure that all component activities are undertaken in a responsible and proactive manner	1.1	All activities will be subject to the Mining, Rehabilitation and Environmental Management Process managed by the Department of Primary Industries – Mineral Resources.	Ongoing.
	1.2	Operate the mine with comprehensive systems to manage and monitor groundwater, surface water, noise, blasting, air quality, visibility, Aboriginal heritage, flora, fauna, traffic, visual and socio-economic aspects.	Ongoing.
	1.3	Apply for a Mining Lease with boundaries generally coincident with the Project Site.	Late 2007.
	1.4	Obtain all necessary certifications for all buildings constructed or relocated on site from Gunnedah Shire Council.	Mid 2008.
	1.5	Seek approval from Gunnedah Shire Council to install a septic system on site.	Prior to Project commencement.
	1.6	Undertake all rehabilitation and site decommissioning within 12 months of the end of mining. This would include re-instating Coocooboonah Lane to its pre-mining alignment	Approximately December 2013.
	1.7	Implement management strategies to minimise the likelihood of spontaneous combustion.	Ongoing.
	1.8	Construct the out-of-pit overburden emplacement in a manner that would ensure the initial emplaced overburden would form an acoustic barrier around the operating area within the emplacement.	During Year 1 of mining operations.
	1.9	Undertake a geological and geotechnical assessment prior to any auger mining to confirm it is both safe and economic to proceed.	During mining operations.
	1.10	Direct surface runoff water around the final void.	Ongoing.
	1.11	Potable water would be transported from Gunnedah to supplement rainwater collected off site buildings and stored in tanks. Ablutions water would be transported from Gunnedah.	Ongoing.

Desired Outcome	Action	Timing
1. General Project Development		
Operate the Project to ensure that all component activities are undertaken in a responsible and proactive manner (Cont'd).	1.12 Operational water will initially be supplied from water within the Gunnedah Coal Mine N^{o} 5 Entry underground workings. This will eventually augment the pit groundwater inflow and water drawn from the various sedimentation and fresh water dams that would form part of the site surface water management system.	Ongoing.
	1.13 Power will be predominantly generated on site by diesel powered generators.	Ongoing.
	1.14 There will be capacity to store 68 000L of diesel and 10 000L of oil on site in self-bunded fuel tanks.	Ongoing.
	1.15 An Environment Protection Licence to be applied for.	Mid 2008.
	1.16 RTA approval to be sought for proposed roadworks along the Oxley Highway.	Mid 2008.
	1.17 Road Construction Permit to be applied for from Gunnedah Shire Council prior to modifications and other roadworks associated with re-alignment of Coocooboonah Lane and public road intersections along the coal transport route.	Mid 2008.
	1.18 A Water Licence be applied for and granted before installation and operation of a water bore into the Gunnedah N^{o} 5 Colliery workings.	Mid 2008.
	1.19 A licence be applied and granted from WorkCover for the installation of explosives magazine within the Project Site area.	Mid 2008.
2. Traffic and Transport		
	2.1 Ensure all trucks transporting coal are well maintained and that drivers act in a courteous manner at all times.	Ongoing.
	2.2 Avoid loading trucks that are unroadworthy or not carrying covers.	Ongoing.
	2.3 Ensure all truck drivers operate in accordance with a Transport Policy and Code of Conduct.	Ongoing.

Desired Outcome	Action	Timing
2. Traffic and Transport (cont'd)		
	2.4 Contact all potentially affected landowners and surrounding residents prior to initial construction and the commencement of any upgrading works to inform / discuss the proposed works.	Prior to initial construction and ongoing.
	2.5 Liaise routinely with local residents to ensure their satisfaction with all aspects of changed traffic conditions.	Ongoing.
	2.6 Relocate part of Coocooboonah Lane to avoid disturbing remnant Koala habitat. RTA requested changes will result in approximately three trees being removed.	Prior to mining commencing.
	2.7 Upgrade parts of the proposed coal transport route beyond Coocooboonah Lane and various intersections to improve traffic flow and safety aspects.	Prior to coal transportation.
	2.8 The truck fleet will consist of a mix of standard 28t capacity semi-trailers and 40t capacity B-Double vehicles.	Ongoing.
	2.9 Develop a Road Maintenance and Capital Improvement Agreement with Gunnedah Shire Council.	Prior to mining commencing.
	2.10 Erect appropriate road signage.	Prior to coal transportation.
	2.11 Ensure all employees and contractors are regularly informed about the safe driving requirements to and from the Project Site.	Ongoing.
	2.12 Transport all oversize loads with all necessary permits.	During transport of oversize loads (primarily during site establishment).
	2.13 Erect a blast board at the Project Site entrance and update at least 24 hours prior to each blast.	Prior to initial blast.

Desired Outcome	Action		Timing
3. Operating Hours – Site Establishment			
Management of construction activities in accordance with the approved operating hours.	3.1	Undertake on-site construction within the hours of: 7.00am to 6.00pm / Monday to Friday, 7.00am to 4.00pm / Saturday.	During site establishment.
	3.2	Undertake coal transport route construction within the hours of: 7:00am to 6:00pm / Monday to Friday with the contingency to extend to 8.00pm if light and seasonal conditions permit, 7.00am to 4.00pm / Saturday	During site establishment.
4. Operating Hours – Operations			
Management of operating hours of work in accordance with the approved consent conditions	4.1	Undertake vegetation clearing / soil removal within the hours: 7.00am to 6.00pm Monday to Friday with a contingency to extend operations to 8.00pm if light and seasonal conditions permit. Saturday activity would be between 7.00am and 4.00pm with contingency to extend through to 6.00pm	During vegetation clearing and soil removal.
	4.2	Undertake drilling within the hours: 7.00am to 8.00pm / Monday to Friday and 7.00am to 6.00pm Saturday.	During drilling.
	4.3	Undertake blasting within the hours: 10.00am to 5.00pm / Monday to Friday and 10.00am to 2.00pm Saturday	During blasting.
	4.4	Undertake overburden / interburden removal and placement within the hours 7.00am to 10.00pm Monday to Friday and 7.00am to 4.00pm Saturday.	During overburden / interburden removal and placement.
	4.5	Undertake internal transport of coal product to ROM stockpile within the hours 7.00am to 10.00pm Monday to Friday and 7.00am to 4.00pm Saturday.	During internal transport of coal.
	4.6	Undertake on-site processing within the hours 7.00am to 10.00pm Monday to Friday and 7.00am to 6.00pm Saturday.	Ongoing.
	4.7	Undertake coal transport to Whitehaven CHPP and Rail Loading Facility within the hours 7.00am to 6.00pm Monday to Friday with contingency to extend to 8.00pm light and seasonal conditions permitting.	During coal transport.
	4.8	Undertake maintenance within the hours: 24 hours over 7 days.	During maintenance.
	4.9	Undertake rehabilitation within the hours: 7.00am to 6.00pm / Monday to Friday and 7.00am to 4.00pm Saturday.	During rehabilitation.

Desired Outcome	Action		Timing
5. Waste Management			
Minimisation of general waste creation and maximisation of recycling wherever possible.	5.1	Place all paper and general wastes originating from the Site Facilities Area, together with routine maintenance consumables from the daily servicing of equipment in garbage bins located adjacent to the various buildings.	Continuous.
Minimisation of the potential risk of environmental impact due to waste creation, storage and/or disposal.	5.2	Collect general waste bins and place contents in large waste skip bins positioned adjacent to the heavy vehicle maintenance building to await removal by licensed contractor.	Daily - wastebins. As required – skip bins.
	5.3	Collect industrial waste regularly.	Fortnightly.
	5.4	Collect waste oils and grease and pump to bulk storage tanks.	As required.
	5.5	Store waste oils and grease at the maintenance workshop for collection by a licensed waste recycling contractor.	Bi-monthly.
	5.6	Collect all parts and packaging and transfer to the maintenance workshop for disposal or recycling.	As required.
	5.7	Install adequate toilet and ablution facilities within the mine facilities area for the site workforce and visitors.	During site establishment.
	5.8	Direct sewage to a bio-cycle (or equivalent system) with effluent irrigation to land – to be approved by Gunnedah Shire Council.	Ongoing following installation.
	5.9	Store potentially hydrocarbon-contaminated water in the oil/water separator for regular removal from site by a licensed contractor.	As required.
	5.10	Assemble all proposed waste management practices in a Waste Management Plan.	Within 6 months of the start of site establishment.
6. Safety and Security			
To protect the safety of employees (including contractors), visitors to the mine, the public as well as local land owners and land users.	6.1	Ensure compliance with statutory regulations and maintain awareness of changes.	Ongoing.
	6.2	Eliminate or control safety and health hazards in the work environment.	Ongoing.
	6.3	Provide relevant occupational health and safe working practices and job training.	Ongoing.
	6.4	Conduct regular safety meetings and provide open forum for input from all employees.	Ongoing.
	6.5	Provide effective emergency arrangements for all employees and general public protection.	Ongoing.
	6.6	Undertake regular employee assessment and counselling if required.	Ongoing.

Desired Outcome	Action		Timing
6. Safety and Security (cont'd)			
	6.7	Ensure all contractors adopt the NMPL's policy objectives and maintain safety standards at all times while working on the premises.	Ongoing.
To protect the safety of employees (including contractors), visitors to the mine, the public as well as local land owners and land users. (Cont'd)	6.8	Develop an Occupational Health and Safety Management System and Major Hazard Management System to be approved by the Chief Inspector of Coal Mines.	Prior to mining and Ongoing.
	6.9	Erect and maintain all boundary fencing encompassing the Project Site.	During site establishment.
	6.10	Install lockable mine entrance gate.	During site establishment.
	6.11	Erect appropriate security fencing signs at key locations in and around the Project Site.	During site establishment.
	6.12	Erect advisory truck traffic warning signage prior to intersection of private sections of the proposed coal transport route along the re-aligned Coocooboonah Lane.	During site establishment.
	6.13	Ensure all equipment complies with Mine Design Guidelines (MDG15).	Prior to commencement of operations.
	6.14	Submit Mining Operations Plan to the Department of Primary Industries.	Prior to commencement of operations.
7. Groundwater			
Access to groundwater resources within the N^{o} 5 underground as a supplementary water source for mine operations.	7.1	Obtain all necessary approvals and construct a groundwater bore (see **Figure A**) to withdraw water collected in the void of the Gunnedah N^{o} 5 underground workings.	During site establishment.
Prevention of groundwater contamination.	7.2	Control dirty or contaminated surface water within surface structures (see Commitments in Section 10).	Ongoing.
	7.3	Refuel the mining fleet within designated areas of the Project surface facilities.	Ongoing.
	7.4	Undertake all maintenance works requiring the use of oils, greases and lubricants within designated areas of the Project surface facilities.	Ongoing.
	7.5	Direct all water from wash-down areas and workshops, except some mobile equipment to oil / water separators and containment systems.	Ongoing.
	7.6	Ensure all storage tanks are either self-bunded tanks or bunded with an impermeable surface and a capacity to contain a minimum 110% of the largest storage tank capacity.	Prior to mining and Ongoing.

Desired Outcome	Action		Timing
7. Groundwater (Cont'd)			
Prevention of groundwater contamination. (Cont'd)	7.7	Construct two turkey's nest dams for the storage of any surplus open cut pit inflows (rather than direct placement into underground workings).	Ongoing.
	7.8	Preferentially use water in the two turkey's nest dams for on-site dust suppression (rather than placing water from these dams underground).	Ongoing.
	7.9	Construct a suitable bore and install appropriate pumping equipment to place diluted pit water (from Turkey's Nest Dam N^{o} 2) into the N^{o} 5 underground workings. (All bores would be licenced by DWE).	Prior to the completion of construction of Turkey's Nest Dam N^{o} 2.
	7.10	Pump water to the N^{o} 5 underground workings only from the second turkey's nest dam (to ensure only diluted water is placed underground). This would occur in the event of excessive wet weather when the second turkey's nest dam is approaching its capacity.	As required.
Preparation of a contingency plan in the event that the availability or quality of groundwater is reduced for local groundwater users.	7.11	Undertake remedial action if the available groundwater for existing groundwater users is reduced by over 15% due to mine activities.	As required.
Implement a groundwater monitoring program to confirm predictions and to identify emerging issues.	7.12	Implement the water monitoring programme outlined in Section 4B.1.6.1 including ongoing review and modification as required.	Before commencement of Project and ongoing throughput life of Project.
	7.13	Develop contingency measures identified to address any impacts identified by monitoring.	Ongoing.
	7.14	Include relevant data in the Sunnyside Mine Annual Environmental Management Report (AEMR)	Annually.
	7.15	Prepare a monitoring report at the conclusion of mining to outline changes in the local groundwater system.	At conclusion of mining.
	7.16	Establish and maintain a coverage of piezometers to the satisfaction of DWE in the vicinity of the open pit and the Project Site.	Within 12 months after the commencement of mining operations.

Desired Outcome	Action	Timing
8. Noise and Vibration		
Noise generated by site establishment, construction and operational activities does not exceed DECC nominated criteria nor significantly impact on neighbouring landowners and/or residents.	8.1 Seal the re-aligned Coocooboonah Lane and all other upgraded road sections.	Prior to commencement of coal transportation.
	8.2 Regularly maintain all roads comprising the proposed coal transport route under a contribution plan with Gunnedah Shire Council.	Ongoing.
	8.3 Avoid all noisy activities occurring concurrently during construction particularly before 9.00am when the affects of local inversions may be noticeable.	During construction.
	8.4 Construct the out-of-pit overburden emplacement to provide an acoustic barrier between the open cut and Non-Project-related residences.	During emplacement construction in Year 1.
	8.5 Construct the amenity bund around the coal processing area to act as an acoustic barrier.	At commencement of overburden stripping.
	8.6 Adhere strictly to hours of operation, including transport activities, enforced by Mine Management.	Ongoing.
	8.7 Use equipment with lower sound power levels in preference to more noisy equipment.	Ongoing.
	8.8 Regularly service all equipment used on site to ensure the power sound levels remain at or below the levels used in the modelling to assess generated noise levels and compliance with the criteria.	Ongoing.
	8.9 Ensure that bulldozers either operate in first gear when reversing on the out-of-pit emplacement (and demonstrating compliance with noise criteria) **or** suspends operations (when compliance is not achieved with noise criteria).	During adverse weather conditions, particularly during periods of temperature inversions.
	8.10 Manage scraper operations through seasonal / daily programming to avoid operations during inversion conditions and, when necessary to reduce the number of scrapers operating from two to one when noise monitoring demonstrates the $L_{Aeq\ (15\ minute)}$ criteria of 35dB(A) is or will be exceeded.	Under inversion conditions or as required.
	8.11 Confine operations to lower levels of the in-pit overburden emplacement to mitigate noise exceedances under adverse wind conditions, ie. avoid operations on elevated section of the overburden emplacements during inversions and SSW winds.	Under adverse wind conditions or as required.

Desired Outcome	Action	Timing
8. Noise and Vibration (cont'd)		
Noise generated by site establishment, construction and operational activities does not exceed DECC nominated criteria nor significantly impact on neighbouring landowners and/or residents.	8.12 Fit mid frequency broadband reversing beepers to mobile mining equipment, decreasing sound power levels by 2dB(A) to 3dB(A).	At start of Project.
	8.13 Ensure the on-site road network is well maintained to limit body noise from empty trucks travelling on internal roads.	Ongoing.
	8.14 Maintain dialogue with neighbours and local community to ensure any concerns over construction, operational or transport noise are addressed.	Ongoing.
	8.15 Establish a noise monitoring program, in consultation with the DECC, prior to the commencement of the Project, designed to initially validate the predictions arising from the modelling and then record noise levels against the Project noise criteria.	Prior to construction.
	8.16 Document all proposed noise management strategies formally in a Noise Management Plan.	Prior to construction and mining activity.
	8.17 Monitor construction noise near "Lilydale" when the realignment of Coocooboonah Lane is being undertaken.	During construction.
	8.18 Conduct operational noise monitoring monthly for the first six months of mining operations, reverting to quarterly for the remainder of the year.	Ongoing.
	8.19 Instruct all truck drivers to avoid the use of engine brakes when approaching the Project Site entrance and coal transport route intersections and to be mindful when accelerating.	During inductions and ongoing.
	8.20 Adhere strictly to approved hours of coal transportation.	Ongoing.
	8.21 Ensure all blasts are designed to comply with blast limits specified in the Environment Protection Licence.	All blasts.
	8.22 Install a blast monitor at all residences within a 2km radius of the active blasting area to monitor blast parameters.	Ongoing.

Desired Outcome	Action	Timing
	9. Flora and Fauna	
	8.23 Use aggregates for blast hole stemming to prevent venting of explosion gases.	During blasting. Ongoing.
	8.24 Use average size blasts (MIC 960kg) when within the range of 150m to 210m of axe grinding groove (AGGI).	When mining near axe grinding groove.
	9.1 Re-align Coocooboonah Lane to avoid removal of Koala habitat.	Prior to off-site coal transportation.
	9.2 Erect fencing to exclude livestock from Koala habitat areas.	Prior to topsoil removal.
	9.3 Erect a Koala-proof fence around the active mine area.	Progressively, as required.
	9.4 Restrict speeds of all vehicles on the Project Site to 40kph.	Entire mine life.
	9.5 Utilise local tree species in revegetation of disturbed areas with an emphasis on Koala feed trees.	During rehabilitation.
	9.6 Re-establish a small area of the Endangered ecological community Native Vegetation on Cracking Clay Soils of the Liverpool Plains.	After Coocooboonah Lane is re-established in pre-mining location.
	9.7 Undertake clearing so the extent is minimised and consistent with operational requirements.	Ongoing.
	9.8 Clearly define all areas to be cleared.	Ongoing.
	9.9 Transfer soil material and biomass removed beyond the first 18 to 24 months of mining directly to an active rehabilitation area, where practicable.	Ongoing.
	9.10 Undertake progressive rehabilitation of all disturbed areas.	Ongoing.
	9.11 Control noxious weeds at all times.	Ongoing.
	9.12 Adopt a strategy to rehabilitate specific areas of the Project Site to native vegetation, create and / or improve habitat corridors on and adjacent to the Project Site, and protect areas of native vegetation from agricultural activities on NMPL land external to the Project Site.	Ongoing.
	9.13 Maintain, expand and / or create several Koala habitat corridors to promote the linkage of remnant vegetation in the local area.	Ongoing.

Desired Outcome	Action		Timing
9. Flora and Fauna (cont'd)			
	9.14	Conserve the existing native vegetation on the Project Site during the life of the proposal and in the final landform.	Ongoing.
	9.15	Carry out, where possible, tree removal, especially the mature trees in late spring and early autumn to avoid spring nesting birds and over-wintering bats.	Ongoing.
	9.16	Undertake inspections of mature trees for nesting birds and roosting bats prior to each clearing campaign where mature tree with hollows are to be removed.	Prior to clearing.
	9.17	Relocate any nesting and roosting hollows, as well as nests, used by listed threatened species to appropriate locations nearby.	Prior to clearing.
	9.18	Bury all stumps, branches and tree trunks from felled timber within the overburden emplacements.	Ongoing.
	9.19	Commence post-mining rehabilitation of the Box Cut area as soon as possible. Re-establish the connectivity of habitat corridor along Coocooboonah Lane. Commence post-mining establishment of the Koala habitat corridors between Coocooboonah Lane and the remnant woodlands south of the Project Site as soon as practicable to re-establish and enhance the connectivity of local Koala habitat corridors.	As early as possible during mining activity.
	9.20	Include a vertebrate pest control program as part of the mining operation and management plan.	Ongoing.
	9.21	Avoid the clearing of native vegetation along the road shoulders where the proposed coal transport route utilizes public roads.	Ongoing.
10. Surface Water			
Prevention of discharge of dirty, saline or contaminated water from the Project Site.	10.1	Securely store all hydrocarbon products in accordance with the approved Hydrocarbon Management Plan.	Ongoing.
	10.2	Refuel all of the NMPL's mining fleet within designated areas of the Project surface facilities.	Ongoing.
	10.3	Direct all water from wash-down areas and workshops to oil/water separators and containment systems.	Ongoing.

Desired Outcome	Action	Timing
10. Surface Water (cont'd)		
Prevention of discharge of dirty, saline or contaminated water from the Project Site.	10.4 Ensure all storage tanks are either self-bunded tanks or bunded with an impermeable surface and have a capacity to contain a minimum 110% of the largest storage tank capacity.	Ongoing.
	10.5 Construct catchment banks / drains directing sediment-laden water to sediment basins.	Prior to commencing activities in relevant catchment.
	10.6 Maintain groundcover on all land that is not being used for processing facilities, administration / maintenance facilities, roads, mining activities and the overburden emplacement.	Ongoing.
	10.7 Add flocculants to dirty water within the sediment basins, if required, to expedite the settlement process.	Ongoing.
	10.8 Implement the monitoring program nominated in the Environment Protection Licence to enable appropriate auditing and management.	Ongoing.
	10.9 Record any periods when elevated levels of sediment occur in water discharged from site.	As required.
	10.10 Enlarge the sediment basins or construct additional sediment basins, if required, to capture a minimum of a 5 day 90%ile storm event.	As required. Ongoing.
Minimisation of erosion and sedimentation.	10.11 Construct an additional storage dam downstream, if required. This dam would become the new site discharge point and monitoring location.	As required. Ongoing.
	10.12 Implement a 3-phase remedial action plan in the event of a major hydrocarbon spill.	As required. Ongoing.
Adequate water is available for site dust suppression.	10.13 Prepare an annual review of the water balance for management of surface and pit water.	Annually.
11. Air Quality		
Site activities are undertaken without exceeding DECC air quality criteria or goals.	11.1 Fence off all land which is not to be disturbed to encourage natural regeneration.	At start of mining.
	11.2 Establish ground cover on disturbed areas and emplacement area as soon as possible.	Ongoing.
	11.3 Undertake soil stripping at a time when there is sufficient soil moisture to prevent significant lift-off of dust.	Ongoing.
	11.4 Avoid stripping soil in periods of high wind.	Ongoing.
	11.5 Use water application for dust suppression to increase soil moisture should stripping occur during periods of high wind or low soil moisture.	As required.

Desired Outcome	Action	Timing
11. Air Quality (cont'd)		
	11.6 Utilise water injection on the drill rigs or alternatively fit them with dust collectors.	Ongoing.
	11.7 Use aggregates for blast hole stemming to prevent venting of explosion gases.	Ongoing.
	11.8 Conduct blasting both before the establishment, and after the break up of low-level atmospheric temperature inversions.	As required.
	11.9 Avoid ripping of softer overburden material during periods of high wind.	As required.
	11.10 Spray low moisture coal with water prior to excavation to raise moisture content to >6%.	As required.
	11.11 Minimise clearing ahead of construction activities.	Ongoing.
	11.12 Water cleared areas regularly during construction activities.	During construction.
	11.13 Minimise clearing ahead of road construction.	During construction.
	11.14 Water active construction areas regularly.	Ongoing.
Site activities are undertaken without exceeding DECC air quality criteria or goals. (Cont'd)	11.15 Restrict truck speeds on roads under construction to <50kph.	During construction.
	11.16 Apply water to the coal at the feed hopper, crusher and all conveyor transfer and discharge points at the rate of approximately 2.0L/t coal processed.	Ongoing.
	11.17 Temporarily cease operation in the event of protracted dry periods, high winds and significant dust generation and dispersal towards the surrounding residences.	As required.
	11.18 Minimise the extent of clearing / site preparation in advance of mining.	Ongoing.
	11.19 Clearly define any access or haul roads and restrict vehicles and equipment to those roads.	Ongoing.
	11.20 Routinely apply water with or without chemical dust suppressants.	Ongoing.
	11.21 Progressively rehabilitate areas of disturbance including topsoil and subsoil stockpiles.	Ongoing.
	11.22 Install bund walls and wind breaks as required.	Ongoing.
	11.23 Regularly water haul roads.	Ongoing.
	11.24 Avoid coal being loaded above the truck body sides.	Ongoing.

Desired Outcome	Action	Timing
11. Air Quality (cont'd)		
	11.25 Cover all trucks carrying product coal from the mine with approved covers and securely fix the tailgates to prevent windblown dust emission or spillages.	Ongoing.
	11.26 Fit all earthmoving equipment on-site with exhaust controls which satisfy NSW DECC emission requirements.	Prior to commencing site activity. Ongoing.
	11.27 Ensure all equipment is properly maintained to ensure no unacceptable exhaust emissions occur and commit to the removal of any vehicle or item of mobile equipment from on-site activities which is observed not to comply with NSW DECC guidelines.	Ongoing.
	11.28 Direct the exhausts of all equipment upwards or to the side so as not to impinge on the ground and cause dust lift-off.	Ongoing.
	11.29 Undertake an air quality monitoring program to demonstrate compliance with the nominated goals specified in the Environment Protection Licence. •1 Deposited dust at selected residences and strategic locations surrounding the Project Site. •2 Continuous wind speed and direction at the Project Site weather station. •3 PM_{10} dust at a residence nearby six day cycle. Refer Section 4B.5.8.	Ongoing. Monthly / Ongoing Continuous. Six day cycle.
	11.30 Avoid burning vegetation.	Ongoing.
	11.31 Use water injection or dust collectors during drilling.	During drilling.
Site activities are undertaken without exceeding DECC air quality criteria or goals. (Cont'd)	11.32 Avoid ripping softer overburden material during periods of high wind.	Ongoing.
	11.33 Establish and maintain a dust monitoring program in line with recommended locations.	Ongoing.
	11.34 Install and maintain an automatic weather station within the Project Site.	Established
Minimise Greenhouse Gas Emissions wherever possible.	11.35 Adopt strategies to reduce GHG environs as nominated in EA Section 4B.5.5.4.	Ongoing.
Avoidance of accumulation of coal dust in domestic water tanks.	11.36 Install first flush devices on the domestic water tanks at "Werona", "Ivanhoe"," Mulwalla"," Mulwalla (2)","Innisvale","Sugarloaf", "Lilydale", "Woodlawn", "Plain View", "Illili", "Glendower", "Ferndale" and"Eulalie".	Prior to recovery of coal.

Desired Outcome	Action		Timing
12. Aboriginal Heritage			
Provide appropriate protection to identified Aboriginal artefacts.	12.1	Undertake medium sized blasts when open cut pit is near axe grinding groove.	As required.
	12.2	Cover axe grinding groove with straw bales to prevent possible fly rock damage when blasting is nearby.	As required.
Minimise potential to impact upon unidentified Aboriginal artefacts.	12.3	Invite Aboriginal monitors to site for all soil stripping and ground disturbance activities. Manage any sites detected in accordance with the relevant acts.	Ongoing.
	12.4	Cease work at any area if further Aboriginal objects are uncovered during the course of the Project, and contact the NSW DECC for advice.	Ongoing.
Employees who are sensitive and respectful of possible identified Aboriginal sites and artefacts.	12.5	Conduct a Cultural Heritage Awareness Induction Course for staff, contractors and any heritage monitors working on the Project Site to help raise awareness and ameliorate any impact on heritage sites during site establishment and subsequent mining activities.	During induction of employees/contractors.
13. Visibility			
Restriction of vantage points of Project activities from neighbouring residences and public roads.	13.1	Minimise cleared or non-vegetated areas by progressively rehabilitating the Project Site.	Ongoing.
	13.2	Design the overburden emplacements to as much as possible, replicate existing topographic features.	During planning and design.
	13.3	Minimise the extent of land disturbance / clearing in advance of mining.	Ongoing.
	13.4	Implement air quality controls as identified in Section 4B.5.5.	Ongoing.
	13.5	Maintain the mine and associated areas of disturbance in a clean and tidy condition at all times.	Ongoing.
.	13.6	Construct amenity bund around coal processing area to provide visual screening.	At start of Project.
The operation of the Siding Springs Observatory is not affected by Project operations.	13.7	Use a maximum of six lighting plants for night-time activities.	Ongoing.
	13.8	Position and direct floodlights to minimise emissions.	Ongoing.
Ongoing communication with neighbours.	13.9	Maintain regular communications with those residents whose visual amenity is affected by the Project and implement any reasonable additional controls to further reduce the impact on their visual amenity.	Ongoing.

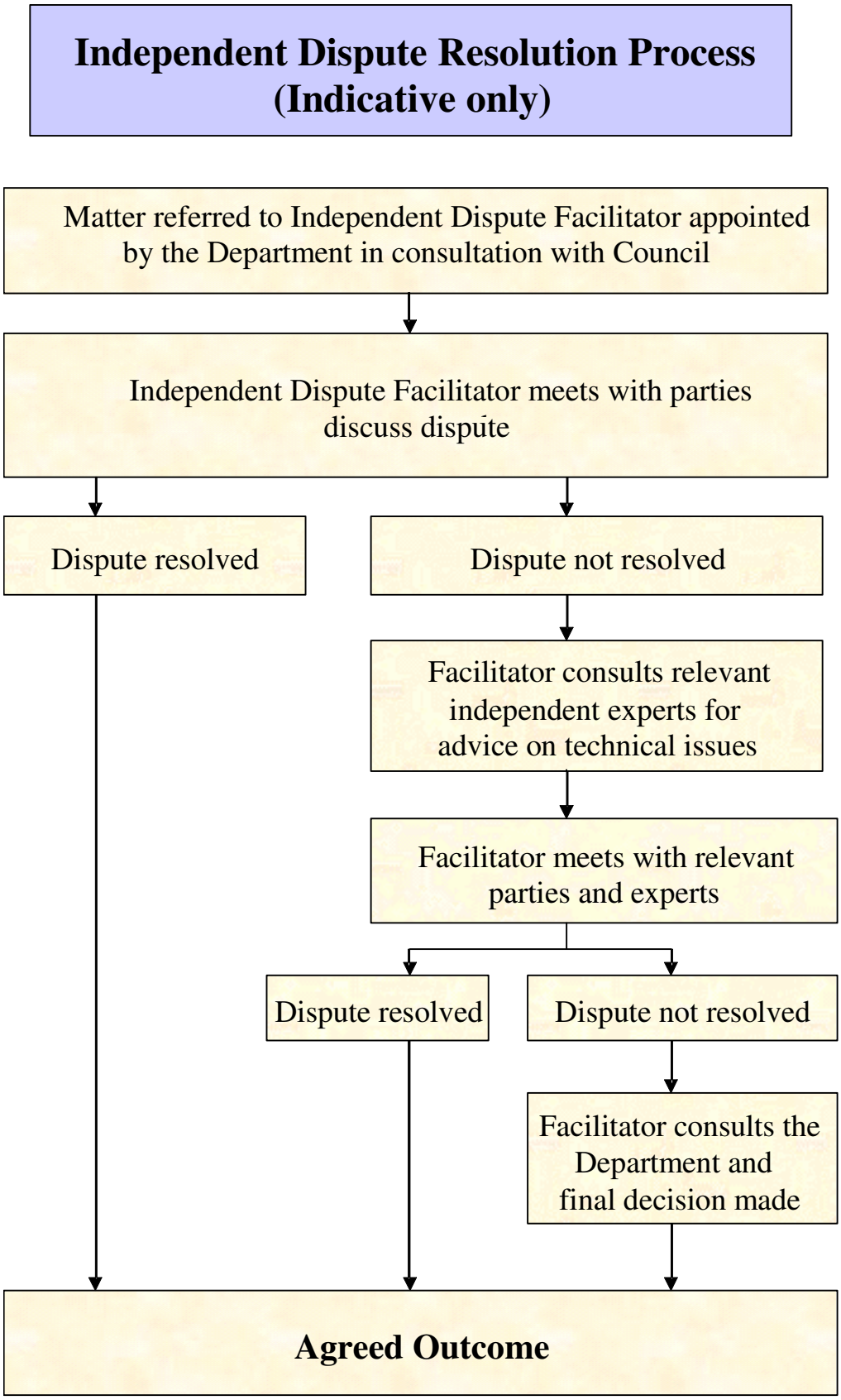
Desired Outcome	Action		Timing
14. Soils, Land Capability and Agricultural Suitability			
Maintenance of soil value for rehabilitation and minimisation of soil loss though erosion.	14.1	Strip topsoil from each SMU to a depth of 15cm. Stockpile topsoil for later retrieval and spreading over specific areas during the first 18 to 24 months of mine operations. Beyond this period, Project Site topsoil would be typically directly transferred onto sections of the final landform.	Ongoing.
	14.2	Strip subsoil from each SMU to a depth of 50cm below the topsoil. Stockpiles would be available for re-spreading as areas become available for rehabilitation.	Ongoing.
	14.3	Strip further subsoil to bedrock and segregate each SMU.	Ongoing.
	14.4	Place higher alkalinity soils over the surface of the overburden emplacement to provide neutralising capacity in the event pockets of acid forming rock are encountered.	Ongoing.
	14.5	Install erosion protection around stockpiles of this material with direct transfer from source to sink commenced as soon as practicable.	Ongoing.
	14.6	Topsoil stockpiles not exceed 2m in height and where practicable, be maintained as windrows in preference to larger structures.	Ongoing.
	14.7	Seed any stockpiles with a non-persistent cover crop as soon as possible after they have been established to reduce erosion potential and assist in the maintenance of the biological viability of the soil.	Ongoing.
	14.8	Subsoil stockpiles to generally not exceed 3m in height and typically be placed in larger stockpiles than the topsoil.	Ongoing.
	14.9	Maintain and regularly reconcile with rehabilitation requirements an inventory of soil resources present on the Project Site, ie. both in stockpiles and awaiting stripping.	Ongoing.
	14.10	Utilise water management structures to divert surface water flow away from soil stockpile areas to reduce the potential for erosion.	Ongoing.
	14.11	Place silt-stop fencing or similar immediately downslope of stockpiles where required, until stable vegetation cover is established.	Ongoing.
	14.12	Monitor erosion from soil stockpiles or rehabilitated surfaces throughout the life of the Project with remedial works undertaken should erosion be observed.	Ongoing.

Desired Outcome	Action	Timing
14. Soils, Land Capability and Agricultural Suitability (cont'd)		
	14.13 Undertake all clearing and topsoil stripping in campaigns on an as-needs basis.	Ongoing.
15. Bushfire Controls		
Avoid fire initiation.	15.1 Clear vegetation away from blast (>20m).	During blasting.
	15.2 Remove all coal from open cut around blast.	As required. Ongoing
	15.3 Undertake blast design by qualified personnel.	Ongoing.
	15.4 Undertake refuelling within designated fuel bays or within cleared area of the Project Site.	Ongoing.
	15.5 Turn vehicle engines off during refuelling.	Ongoing.
	15.6 Enforce no smoking policy in designated areas of the Project Site.	Ongoing.
	15.7 Maintain fire extinguishers within all site vehicles.	Ongoing.
	15.8 Regularly inspect and water stockpiles.	Ongoing.
	15.9 Control stockpile height and volume to limit the duration coal is retained in stockpiles.	Ongoing.
	15.10 Maintenance of housekeeping by mine management.	Ongoing.
	15.11 Ensure water cart is available to assist in extinguishing any fire ignited.	Ongoing.
16. Socio-Economic		
	16.1 Implement a policy which encourages employment of local district personnel with training and certification of suitable local persons provided.	During recruitment and induction. Ongoing.
	16.2 Provide a local induction kit to any new workers (from outside the district) including contact details for community groups and services throughout the region.	New arrivals. Ongoing.
	16.3 Inform Gunnedah Council of the predicted increase of population based on employment at the Project.	During recruitment. Ongoing.
	16.4 Establish a community enhancement fund to the value of $500,000.	Five equal annual payments commencing within 3 months of the receipt of Project Approval.

Desired Outcome	Action		Timing
17. Rehabilitation			
Ensure ongoing viable landuse post-mining.	17.1	Stabilise earthworks, drainage lines and disturbed areas no longer required for mine-related activities in order to minimise erosion and the associated generation of sediment-laden water, and to reduce the visibility of activities from adjacent properties and the local road network.	Ongoing.
	17.2	Provide a low maintenance, geotechnically snd safe landform which is commensurate with a variety of agricultural land uses and / or nature conservation.	Ongoing.
	17.3	Blend the created landforms with the surrounding land fabric as far as practicable.	Ongoing.
	17.4	Utilise native tree, shrub and grass species and / or pasture species comparable with either the existing vegetation communities or those which occurred in the area prior to mining and agriculture-related disturbance.	Ongoing.
	17.5	Rehabilitate out-of-pit emplacement with agricultural pasture species and incorporate random tree plantings.	Ongoing.
18. Management Plans			
Develop and implement a series of Management Plans to assist with appropriate control of potentially impacting activities.	18.1	Mining Operations Plan.	Prior to commencement of any site activities.
	18.2	Koala Management Plan.	Prior to commencing site activities.
	18.3	Vegetation Management Plan.	Prior to commencing site activities.
	18.4	Blast Monitoring Plan.	Prior to blasting commencing and ongoing.
	18.5	Surface Water Management Plan.	Already produced and to be updated prior to site activities.
	18.6	Waste Management Plan.	Within 6 months of the start of site establishment.
	18.7	Spontaneous Combustion Monitoring Plan.	Within 6 months of the start of mining operations.
	18.8	Hydrocarbon Management Plan.	Prior to commencing site activities.
	18.9	Mine Closure Plan.	At least 2 years prior to mine closure.

Desired Outcome	Action		Timing
18. Management Plans (cont'd)			
	18.10	Prepare a Traffic Management Plan to ensure appropriate procedures are in place for public traffic during the realignment of Coocooboonah Lane and intersection upgrades – for submission with Section 138 permit applications to Gunnedah Shire Council and RTA.	Prior to commencement of the realignment of Coocooboonah Lane and intersection upgrades.
	18.11	Construction Noise Management Plan.	Prior to commencement of site activities.
	18.12	Operations Noise Management Plan.	Prior to commencing Project Operations stage.
	18.13	Traffic Noise Management Plan.	Prior to commencement of coal transportation.
	18.14	Air Quality Monitoring Plan.	Prior to commencing site activities.
	18.15	Groundwater Management Plan	Within 6 months of the start of mining operations.
	18.16	Archaeological Site Management Plan.	Prior to blasting commencing.
	18.17	Bushfire Management Plan.	Prior to commencing site activities.

APPENDIX 4
INDEPENDENT DISPUTE RESOLUTION PROCESS



Appendix 2

ENVIRONMENT PROTECTION LICENCE 12957

Environment Protection Licence

Licence - 12957

Licence Details	
Number:	12957
Anniversary Date:	15-December

Licensee

NAMOI MINING PTY. LTD.

PO BOX 600

GUNNEDAH NSW 2380

Premises

SUNNYSIDE COAL PROJECT

259 COOCOOBOONAH LANE

GUNNEDAH NSW 2380

Scheduled Activity

Coal Works

Mining for Coal

Fee Based Activity	Scale
Coal works	0-2000000 T handled
Mining for coal	> 500000-2000000 T produced

Region

North West - Armidale

Level 1, NSW Govt Offices, 85 Faulkner Street
ARMIDALE NSW 2350

Phone: (02) 6773 7000

Fax: (02) 6772 2336

PO Box 494 ARMIDALE

NSW 2350

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Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act); and
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

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The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

NAMOI MINING PTY. LTD.
PO BOX 600
GUNNEDAH NSW 2380

subject to the conditions which follow.

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1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled development work listed below at the premises listed in A2:
Construction of surface infrastructure including but not limited to access roads, intersection and surface facilities prior to mining.

A1.2 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Coal Works	Coal works	0 - 2000000 T handled
Mining for Coal	Mining for coal	> 500000 - 2000000 T produced

A1.3 The licensee must not carry on any scheduled activities until the scheduled development works are completed, except as elsewhere provided in this licence.

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
SUNNYSIDE COAL PROJECT
259 COOCOOBOONAH LANE
GUNNEDAH
NSW 2380
LOT 1 DP 393755, LOT 16 DP 755031, LOT 12 DP 755503, LOT 162 DP 755503

A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in

connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

Air

EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Ambient Air Monitoring		Deposited dust location labelled 'SD1' on property Ferndale identified on Figure titled "Sunnyside Coal Mine - Air Quality Monitoring Network and Sunnyside Meteorological Station, 10 December 2008" submitted to DECC in email dated 12 December 2008.
2	Ambient Air Monitoring		Deposited dust location labelled 'SD3' on property PlainView identified on Figure titled "Sunnyside Coal Mine - Air Quality Monitoring Network and Sunnyside Meteorological Station, 10 December 2008" submitted to DECC in email dated 12 Dec 2008.
3	Ambient Air Monitoring		Deposited dust location labelled 'SD4' on property Lilydale identified on Figure titled "Sunnyside Coal Mine - Air Quality Monitoring Network and Sunnyside Meteorological Station, 10 December 2008" submitted to DECC in email dated 12 December 2008.
4	Ambient Air Monitoring		Deposited dust location labelled 'SD5' on property Ivanhoe identified on Figure titled "Sunnyside Coal Mine - Air Quality Monitoring Network and Sunnyside Meteorological Station, 10 December 2008" submitted to DECC in email dated 12 December 2008.
5	Ambient Air Monitoring		Deposited dust location labelled 'SD6' on property Illili identified on Figure titled "Sunnyside Coal Mine - Air Quality Monitoring Network and Sunnyside Meteorological Station, 10 December 2008" submitted to DECC in email dated 12 December 2008.
6	Ambient Air Monitoring		Deposited dust location labelled 'SD7' on property Innisvale identified on Figure titled "Sunnyside Coal Mine - Air Quality Monitoring Network and Sunnyside Meteorological Station, 10 December 2008" submitted to DECC in email dated 12 December 2008.

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7	Ambient Air Monitoring	PM10 location labelled 'SA1' on property Illili identified on Figure titled "Sunnyside Coal Mine - Air Quality Monitoring Network and Sunnyside Meteorological Station, 10 December 2008" submitted to DECC in email dated 12 December 2008.
8	Ambient Air Monitoring	PM10 location labelled 'SA2' on property Lilydale identified on Figure titled "Sunnyside Coal Mine - Air Quality Monitoring Network and Sunnyside Meteorological Station, 10 December 2008" submitted to DECC in email dated 12 December 2008.

P1.2 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

P1.3 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

Water and land

EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
9	Wet weather discharge Discharge water quality monitoring	Wet weather discharge Discharge water quality monitoring	Discharge point from Storage Dam 3 located on northern side of premises labelled "SD3" on figure ttitled "Proposed Wet Weather Discharge Monitoring Points" submitted with licence variation application dated 14 May 2009.
10	Wet weather discharge Discharge water quality monitoring	Wet weather discharge Discharge water quality monitoring	Discharge point from Storage Dam 4 located on northern side of premises labelled "SD4" on figure ttitled "Proposed Wet Weather Discharge Monitoring Points" submitted with licence variation application dated 14 May 2009.
11	Ambient water quality monitoring		Monitoring point on Coocooboonah Creek upstream of project site labelled "CCUS" on figure ttitled "Proposed Wet Weather Discharge Monitoring Points" submitted with licence variation application dated 14 May 2009.
12	Ambient water quality monitoring		Monitoring point on Coocooboonah Creek downstream of project site labelled "CCDS" on figure ttitled "Proposed Wet Weather Discharge Monitoring Points" submitted with licence variation application dated 14 May 2009.

P1.4 The following point(s) in the table are identified in this licence for the purpose of the monitoring of

Environment Protection Licence

weather parameters at the point.

EPA identification number	Type of monitoring point	Description of location
W1	Weather analysis	Weather monitoring station on Sunnyside labelled as W1in figure titled "Sunnyside Coal Mine - Air Quality Monitoring Network and Sunnyside Meteorological Station, dated 10 December 2008"

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

L2.1 For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L2.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L2.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.

L2.4 Water and/or Land Concentration Limits

POINT 9,10

Pollutant	Units of Measure	50 percentile concentration limit	90 percentile concentration limit	3DGM concentration limit	100 percentile concentration limit
Oil and Grease	milligrams per litre	-	-	-	10
pH	pH	-	-	-	6.5 - 8.5
Total suspended solids	milligrams per litre	-	-	-	50

L2.5 The Total Suspended Solids concentration limits specified for Points 9 and 10 may be exceeded for water discharged provided that:

(a) the discharge occurs solely as a result of rainfall measured at the premises that exceeds 38.4 millimetres over any consecutive 5 day period immediately prior to the discharge occurring; and

(b) all practical measures have been implemented to dewater all sediment dams within 5 days of rainfall such that they have sufficient capacity to store run off from a 38.4 millimetre, 5 day rainfall event.

Note: 38.4 mm equates to the 5 day 90%ile rainfall depth for Gunnedah sourced from Table 6.3a Managing Urban Stormwater: Soils and Construction Volume 1: 4th edition, March 2004.

L3 Waste

L3.1 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.

L3.2 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if those activities require an environment protection licence.

L4 Noise limits

L4.1 Noise from the premises must not exceed:

(a) an L10 (15 minute) noise emission criterion of 40 dB(A) during initial construction period; and
(b) an LAeq (15 minute) noise emission criterion of 35 dB(A) at all times (day, evening and night time periods).

L4.2 Definitions

LAeq (15 minute) is the equivalent continuous noise level- the level of noise equivalent to the energy- average of noise levels occurring over a measures period (i.e. 15 minutes).

LA1(1 minute) is the A-weighted sound pressure level that is exceeded for 1 per cent of the time over a 1 minute measurement period.

Day time is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and public holidays.

Evening is defined as the period from 6pm to 10pm.

Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays.

Initial Construction Period is limited to a maximum of a 6 month period from commencement of construction activities on the premises.

Note: To determine compliance with the LAeq (15 minute) noise limits, noise from the project is to be

measured at the most affected point within the residential boundary, or at the most affected point within 30m of a dwelling where the dwelling is more than 30m from the boundary, over a period of 15 minutes using “FAST“ response on the sound level meter.

To determine compliance with LA1(1 minute) noise limits, noise from the project is to be measured at 1 metre from the dwelling façade.

Where it can be demonstrated that direct measurement of noise from the project is impractical, the DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Policy).

The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.

L4.3 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".

Note: Field meteorological indicators for non-significant weather conditions are described in the NSW Industrial Noise Policy, Chapter 5 and Appendix E in relation to wind and temperature inversions.

L4.4 The noise limits set by this 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.

L5 Blasting

L5.1 The airblast overpressure level from blasting operations at the premises must not exceed 115dB (Lin Peak) at any noise sensitive locations for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L5.2 The airblast overpressure level from blasting operations at the premises must not exceed 120dB (Lin Peak) at any time at any noise sensitive locations. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L5.3 Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 5mm/sec at any noise sensitive locations for more than five per cent of the total number of blasts over each reporting period. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

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L5.4 Ground vibration peak particle velocity from the blasting operations at the premises must not exceed 10mm/sec at any time at any noise sensitive locations. Error margins associated with any monitoring equipment used to measure this are not to be taken into account in determining whether or not the limit has been exceeded.

L6 Hours of operation

L6.1 Construction activities covered by this licence must only be carried out between the hours of 0700 to 1800 hrs Monday to Friday and between 0700 and 1600 hrs Saturday and at no time on Sundays and Public Holidays.

L6.2 Mining operations covered by this licence (other than transport of coal from the premises and blasting) must only be carried out between the hours of 0700 and 2200 hrs Monday to Friday, and 0700 and 1800 hrs Saturday, and at no time on Sundays and Public Holidays.

L6.3 Transportation of coal from the premises must only be carried out between the hours of 0700 and 1800 (Eastern Standard Time) hrs Monday to Friday, and 0700 and 2000 hrs (Eastern Summer Time) Monday to Friday, and 0700 to 1600 hrs on Saturdays, and at no time on Sundays and Public Holidays.

L6.4 Blasting in or on the premises must only be carried out between the hours of 1000 and 1700 hours Monday to Friday, and 1000 and 1400 hrs on Saturdays, and no time on Sundays and Public Holidays.

L6.5 Conditions L6.1, L6.2, L6.3 and L6.4 do not apply to the delivery of material, and mining operation, if required by police or other authorities for safety reasons; and/or the operation or personnel or equipment are endangered. In such circumstances notification must be provided to the EPA and affected residents as soon as practicable.

L6.6 The hours of operation specified in conditions L6.1, L6.2, L6.3 and L6.4 may be varied with written consent if the EPA is satisfied that the amenity of the residents in the locality will not be adversely affected.

L7 Other limit conditions

L7.1 Extraction limits

The maximum tonnage of extraction of ROM coal at the premises during the reporting period must not exceed 1 million tonnes

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:

a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.

O3.2 Trucks transporting coal from the premises must be covered immediately after loading to prevent wind blown emissions and spillage. The covering must be maintained until immediately before unloading the trucks.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:

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M2.2 Air Monitoring Requirements

POINT 1,2,3,4,5,6

Pollutant	Units of measure	Frequency	Sampling Method
Particulates - Deposited Matter	grams per square metre per month	Continuous	AM-19

POINT 7,8

Pollutant	Units of measure	Frequency	Sampling Method
PM10	micrograms per cubic metre	Continuous	AM-18

M2.3 Water and/ or Land Monitoring Requirements

POINT 9,10

Pollutant	Units of measure	Frequency	Sampling Method
Conductivity	microsiemens per centimetre	Special Frequency 1	In situ
Oil and Grease	milligrams per litre	Special Frequency 1	Grab sample
pH	pH	Special Frequency 1	In situ
Total organic carbon	milligrams per litre	Special Frequency 1	Grab sample
Total suspended solids	milligrams per litre	Special Frequency 1	Grab sample

POINT 11,12

Pollutant	Units of measure	Frequency	Sampling Method
Conductivity	microsiemens per centimetre	Special Frequency 2	In situ
Oil and Grease	milligrams per litre	Special Frequency 2	Grab sample
pH	pH	Special Frequency 2	In situ
Total organic carbon	milligrams per litre	Special Frequency 2	Grab sample
Total suspended solids	milligrams per litre	Special Frequency 2	Grab sample

M2.4 For the purposes of the table(s) above Special Frequency 1 means the collection of samples as soon as practicable after each discharge commences and in any case not more than 12 hours after each discharge commences.

M2.5 For the purposes of the table(s) above Special Frequency 2 means the collection of samples quarterly (in the event of a flow during the quarter) at a time when there is flow and as soon as practicable after each wet weather discharge from points 9 and 10 commences and in any case

not more than 12 hours after each discharge commences.

Note: Water monitoring requirements will be included as part of a licence variation following completion of construction works of the approved site water management plan as documented in the report "Site Water Management Plan for the Sunnyside Coal Mine, Namoi Mining Pty. Ltd., 8/8/2008"

Note: Groundwater monitoring points have not been formally included in the licence. However, the licensee is required to undertake groundwater monitoring in accordance with a Department of Planning approved Water Management Plan required under Schedule 3, condition 2 Project Approval 06-0308 dated 24 May 2008. The licensee has submitted the document "Site Water Management Plan for the Sunnyside Coal Mine, Namoi Coal Mining Pty Ltd, 2008." This document has been approved by Planning following consultation by the licensee with the EPA. The results of this monitoring are required to be reported in the Annual Environmental Management Report (AEMR) and submitted to the EPA under the conditions of approval.

M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:
a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2010* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

M4 Weather monitoring

M4.1 For each monitoring point specified in the table below, the licensee must monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units of measure, averaging period and sample at the frequency, specified opposite in the other columns.

Point W1

Parameter	Units of Measure	Frequency	Averaging Period	Sampling Method
Rainfall	millimetres	Continuous	1 hour	AM-4

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Wind speed @10 metres	metres per second	Continuous	15 minute	AM-2 & AM-4
Wind direction @10 metres	degrees clockwise from true north	Continuous	15 minute	AM-2 & AM-4
Temperature @2 metres	degrees celsius	Continuous	15 minute	AM-4
Temperature @10 metres	degrees celsius	Continuous	15 minute	AM-4
Sigma theta @10 metres	degrees clockwise from true north	Continuous	15 minute	AM-2 & AM-4
Solar radiation	wattes per square metre	Continuous	15 minute	AM-4
Additional requirements - Siting	-	-	-	AM-1 & AM-4
Additional requirements - Measurement	-	-	-	AM-2 & AM-4

M5 Recording of pollution complaints

M5.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M5.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M6 Telephone complaints line

M6.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M6.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M6.3 The preceding two conditions do not apply until 3 months after:
a) the date of the issue of this licence or

b) if this licence is a replacement licence within the meaning of the Protection of the Environment Operations (Savings and Transitional) Regulation 1998, the date on which a copy of the licence was served on the licensee under clause 10 of that regulation.

M7 Requirement to monitor volume or mass

Note: Volume monitoring requirements will be included as part of a licence variation following completion of construction works of the approved site water management plan as documented in the report "Site Water Management Plan for the Sunnyside Coal Mine, Namoi Mining Pty. Ltd., 8/8/2008"

M8 Blasting

M8.1 To determine compliance with condition(s) L5.1, L5.2, L5.3 and L5.4:

a) Airblast overpressure and ground vibration levels experienced at the following noise sensitive locations must be measured and recorded for all blasts carried out in or on the premises;
- and electronically recorded at receptors R1, R2, R4 and R6

b) Instrumentation used to measure the airblast overpressure and ground vibration levels must meet the requirements of Australian Standard AS 2187.2-2006.

Note: A breach of the licence will still occur where airblast overpressure or ground vibration levels from the blasting operations at the premises exceeds the limit specified in this licence at any "noise sensitive locations" other than the locations identified in the above condition.

M8.2 For the purpose of conditions M8.1 and M9.1, the noise monitoring locations are described as:

EPA identification number	Description of location
R1	Property 'Innisvale' residence
R2	Property 'Ivanhoe' residence
R4	Property 'Illili' residence
R5	Property "Ferndale" residence
R6	Property 'Plain View' residence

Note: The location, frequency of monitoring and the parameters to be monitored may be varied by the EPA once the variability of the noise impact is established.

M9 Other monitoring and recording conditions

M9.1 For each monitoring point specified below, the Licensee must monitor the noise or vibration parameter specified in Column 1. The Licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns.

POINTS: R2, R4, R5, and R6

Parameter	Units of Measure	Frequency	Sampling Method
Ambient Noise	LAeq (15 minute) LAmax LA10 LA90 LAmin	Frequency of monitoring as detailed in the document "Noise Monitoring Program for the Sunnyside Coal Project, incorporating a Noise Management Protocol and Noise Monitoring Program, Namoi Mining Pty. Ltd, dated 1/8/08"	Type 1 Noise Meter – Attended monitoring as detailed in the document "Noise Monitoring Program for the Sunnyside Coal Project, incorporating a Noise Management Protocol and Noise Monitoring Program, Namoi Mining Pty. Ltd, dated 1/8/08"

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
a) a Statement of Compliance; and
b) a Monitoring and Complaints Summary.
At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:
a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

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R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R1.8 A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.

R2 Notification of environmental harm

Note: The licensee or its employees must notify the EPA of incidents causing or threatening material harm to the environment as soon as practicable after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;
c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any

complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

R4 Other reporting conditions

R4.1 BLAST REPORTING

R4.2 The licensee must report any exceedence of the licence blasting limits to the regional office of the EPA as soon as practicable after the exceedence becomes known to the licensee or to one of the licensee's employees or agents.

R4.3 The results of the blast monitoring required by this licence must be submitted to the EPA at the end of each reporting period.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

8 Pollution Studies and Reduction Programs

U1 PRP 1: Coal Mine Particulate Matter Control Best Practice

U1.1 The Licensee must conduct a site specific Best Management Practice (BMP) determination to identify the most practicable means to reduce particle emissions.

U1.2 The Licensee must prepare a report which includes, but is not necessarily limited to, the following:
- identification, quantification and justification of existing measures that are being used to minimise particle emissions;
- identification, quantification and justification of best practice measures that could be used to minimise particle emissions;
- evaluation of the practicability of implementing these best practice measures; and
- a proposed timeframe for implementing all practicable best practice measures.

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In preparing the report, the Licensee must utilise the document entitled Coal Mine Particulate Matter Control Best Practice – Site Specific Determination Guideline - November 2011.

U1.3 All cost related information is to be included as Appendix 1 of the Report required by condition U1.2 above.

U1.4 The report required by condition U1.2 must be submitted by the Licensee to the Environment Protection Authority, Manager Armidale Region, at PO Box 494 Armidale NSW 2350 by 29 June 2012.

U1.5 The report required by condition U1.2 above, except for cost related information contained in Appendix 1 of the Report, must be made publicly available by the Licensee on the Licensee's website 6 July 2012.

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder describe d at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste

Mr Stephen O'Donoghue

Environment Protection Authority

(By Delegation)

Date of this edition: 15-December-2008

End Notes

1 Licence varied by notice 1103274, issued on 18-Aug-2009, which came into effect on 18-Aug-2009.

2 Licence varied by notice 1126972, issued on 13-Jul-2011, which came into effect on 13-Jul-2011.

3 Licence varied by notice 1503266 issued on 20-Dec-2011

Appendix 3

COMPLIANCE REVIEWS

- PA 06_0308 (Table A3-1)
- Environment Protection Licence No 12957 (Table A3-2)
- ML 1624 (Table A3-3)

TABLE A3.1

Compliance Review – PA 06_0308

Condition	Conditional Requirement	Compliance	Comments
Schedule 2: Administrative Conditions			
1.	The Proponent shall implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the project.	Yes	Activities on site are undertaken on the basis of minimising harm to the environment.
2.	The Proponent shall carry out the project generally in accordance with the: a) EA; b) Sunnyside Coal Project Response to Public and government Agency Submissions Government Agency Submissions (June 2008); c) Sunnyside Coal Project Supplementary Response to Submissions (July 2008) d) Statement of Commitments (see Appendix 3); and e) Conditions of this approval.	Yes	The activities on site were being undertaken in accordance with the nominated documents.
3.	If there is an inconsistency between the above documents, the latter document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.	Not Applicable	
4.	The Proponent shall comply with any reasonable and feasible requirements of the Director-General arising from the Departments assessment of: (a) any reports, plans, programs, strategies or correspondence that are submitted in accordance with the conditions of this approval; and (b) the implementation of any actions or measures contained in these reports, plans, programs, strategies or correspondence.	Yes	Any requests by the Department have been addressed.
5.	Mining operations may take place on the site for 7 years from the grant of the mining lease for the project. *Note: Under this Approval, the Proponent is required to rehabilitate the site to the satisfaction of the Director-General and DPI. Consequently this approval will continue to apply in all other respects other than the right to conduct mining operations until the site has been rehabilitated to a satisfactory standard.*	Not Yet Applicable	
6.	The Proponent shall not extract more than 1 million tonnes of ROM coal a year from the site.	Yes	During the reporting period 360,592 tonnes of ROM coal was extracted.
7.	The Proponent shall use the coal transport route shown in Figure 2 of Appendix 2 to transport all coal from the site to the Whitehaven Siding CHPP.	Yes	As per condition.
8.	Construction activities may take place only between 7 am to 6 pm each Monday to Friday and 7 am to 4pm on Saturdays, and not on Public Holidays.	Yes	All construction activities were undertaken within the hours set out in this condition.

Condition	Conditional Requirement	Compliance	Comments
9.	Mining operations may take place only between 7 am to 10 pm each Monday to Friday and 7 am to 6 pm on Saturdays, and not on Public Holidays.	Yes	As per condition.
10.	Transport of coal may take place only between 7 am to 6 pm Monday to Friday (or between 7 am to 8 pm during Eastern Summer Time) and between 7 am to 4 pm on Saturdays, and not on Public Holidays.	Yes	As per condition.
11.	With the approval of the Director-General, the Proponent may submit any management plan or monitoring program required by this approval on a progressive basis.	Not Yet Applicable	
12.	The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with the relevant requirements of the BCA. *Notes:* • *Under Part 4A of the EP&A Act, the Proponent is required to obtain construction and occupation certificates for the proposed building works.* • *Part 8 of the EP&A Regulation sets out the requirements for the certification of the project.*	Yes	As per condition.
13.	The Proponent shall ensure that all demolition work is carried out in accordance with *Australian Standard 2601-2001: The Demolition of Structures*, or its latest version.	Not Yet Applicable	No demolition works during Reporting Period.
14.	The Proponent shall ensure that all plant and equipment used on site is: (a) maintained in a proper and efficient condition; and (b) operated in a proper and efficient manner.	Yes	All plant and equipment maintained in a proper and efficient manner.
15.	By 31 November 2008, and on each anniversary of that date until and including 2012, the Proponent shall provide development contributions of $100,000 per annum to the Gunnedah Shire Council for expenditure by the Council on community enhancement projects.	Yes	As per condition.
Schedule 3: Specific Environmental Conditions			
1.	Upon receiving a written request for acquisition from the owner of "Lilydale", the Proponent shall acquire the land in accordance with the procedures in conditions 8-10 of schedule 4.	Not Applicable	Property purchased at commencement of the project.
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. • Over the day/evening limit of 40 $LA_{10(15\ minute)}$, for any residences on, or more than 25% of, any privately owned land (except at "Lilydale")	Yes	As per condition.

Condition	Conditional Requirement	Compliance	Comments
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: • Over the day/evening limit of 35 $LA_{eq(15\ minute)}$, for any residences 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.	No	See Section 3.10.3 for details regarding exceedances.
4.	If the noise generated by the project exceeds the level in Table 3, the Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in conditions 8-10 of schedule 4. • Over the day/evening limit of 40 $LA_{eq(15\ minute)}$, for any residences on, or more than 25% of, any privately owned land (except at "Lilydale")	Not Applicable	No written requests received to date.
5.	Upon receiving a written request from the landowner of: (a) "Illili", "Ferndale", or (b) any residence on privately owned land where noise generated by the project exceeds 37 dB(A) LAeq(15 minute), the Proponent shall implement additional noise mitigation measures such as double glazing, insulation, and/or air conditioning at any residence on the land in consultation with the landowner. These additional mitigation measures must be reasonable and feasible. If within 3 months of receiving this request from the landowner, the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution. Within 3 months of this approval, the Proponent shall notify all applicable landowners of their entitlements under this condition.	Not Applicable	No written requests received to date.
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: • Over the day/evening limit of 55 $LA_{eq(1\ hour)}$, for 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.*	Yes	As per condition.

Condition	Conditional Requirement	Compliance	Comments
7.	If the traffic noise generated by the project exceeds the criterion in Table 4, the Proponent shall, upon receiving a written request from any landowner adjacent to Torrens Road, implement noise mitigation measures such as double glazing, insulation, and/or air conditioning at any residence on the land in consultation with the landowner. These additional mitigation measures must be reasonable and feasible. If within 3 months of receiving this request from the landowner, the Proponent and the landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution. Within 3 months of this approval, the Proponent shall notify all applicable landowners of their entitlements under this condition.	Not yet applicable	No written requests received to date.
8.	The Proponent shall: (a) implement all reasonable and feasible best practice noise mitigation measures; (b) investigate ways to reduce the noise generated by the project, including off-site road and rail noise and; (c) report on these investigations and the implementation and effectiveness of these measures in the AEMR, to the satisfaction of the Director-General.	Yes	See Section 3.10.3 for further details on noise mitigation initiatives.
9.	The Proponent shall prepare and implement a Noise Monitoring Program for the project to the satisfaction of the Director-General. This program must: (a) be prepared in consultation with the DECC; (b) be submitted to the Director-General for approval prior to carrying out any development on site; and (c) include: • attended monitoring measures; and • a noise monitoring protocol for evaluating compliance with the noise impact assessment and	Yes	Plan approved by DG – 20th October 2008.
10.	The Proponent shall ensure that the airblast overpressure level from blasting at the project does no exceed the criteria in Table 5 and any residence on privately-owned land. • 115dBL, Allowable exceedances: 5% of the total number of blasts in a 12 month period. • 120dBL at any time.	No	Six exceedances. See Section 3.9 and Appendix 6.

Condition	Conditional Requirement	Compliance	Comments
11.	The Proponent shall ensure that the ground vibration level from blasting, or any other activity at the project does not exceed the criteria in Table 6 at any residence on privately-owned land. • 5mm/s, Allowable exceedances: 5% of the total number of blasts in a 12 month period. • 10mm/s at any time.	Yes	All ground vibration levels at non-project-related residences were less than 5mm/s. See Section 3.9 and Appendix 6.
12.	The Proponent shall carry out blasting on site only between 10 am and 5 pm each Monday to Friday and 10am and 2 pm on Saturdays (excepting Public Holidays).	Yes	As per condition. See Appendix 6.
13.	The Proponent shall not carry out more than: (a) 2 blasts a day; and (b) 5 blasts a week, averaged over any 12 month period on site.	Yes	As per condition. See Appendix 6.
14.	At least 2 months before carrying out any blasting on the site, the Proponent shall advise all landowners within 2 km of proposed blasting activities, and any other landowner nominated by the Director-General that they are entitled to a property inspection to establish the baseline condition of the property.	Yes	As per condition.
15.	If the Proponent receives a written request for a property inspection from any such landowner, the Proponent shall: (a) commission a suitably qualified person, whose appointment has been approved by the Director-General, to inspect and report on the condition of any building or structure on the land, and recommend measures to mitigate any potential blasting impacts; and (b) give the landowner a copy of this property inspection report. *Note: It is preferable for the property inspection to be carried out prior to the commencement of blasting activities on the site, and the Proponent should facilitate this occurring wherever possible.*	Yes	As per condition.

Condition	Conditional Requirement	Compliance	Comments
16.	If any landowner within 2 km of proposed blasting activities, or any other landowner nominated by the Director-General, claims that his/her property, including vibration-sensitive infrastructure such as water supply or underground irrigation mains, has been damaged as a result of blasting at the project, the Proponent shall within 3 months of receiving this request: (a) commission a suitably qualified person whose appointment has been approved by the Director-General to investigate the claim and prepare a property investigation report; and (b) give the landowner a copy of the report. If this independent investigation confirms the landowner's claim, and both parties agree with these findings, then the Proponent shall repair the damage to the satisfaction of the Director-General. If the Proponent or landowner disagrees with the findings of the independent property investigation, then either party may refer the matter to the Director-General for resolution.	No	Claims of blast related damage at the "Illili" and "Ferndale" properties made in May 2011. A structural engineer was engaged to assess property. Assessment carried out 4th August 2011 and report provided by structural engineer did not indicate blast related damage. Copy of report provided to "Illili" and "Ferndale" residents on 20th October 2011.
17.	Prior to the commencement of blasting, the Proponent shall prepare and implement a detailed Blast Monitoring Program for the project, in consultation with the DECC and to the satisfaction of the Director-General.	Yes	Approved by DG – 20th October 2008.
18.	The Proponent shall ensure that dust emissions generated by the project do not cause additional exceedances of the criteria listed in Tables 7 to 9 at any residence on privately owned land, or on more than 25 percent of any privately-owned land. • Total suspended particulate (TSP) matter – Annual average: 90µg/m3 • Particulate matter <10 µm(PM10) – Annual average: 30 µg/m3 • Particulate matter <10 µm(PM10) – 24 hour period - 50 µg/m3 • Deposited dust – Annual average: o Maximum increase in deposited dust level – 2 g/m^2/month o Maximum total deposited dust level – 4 g/m^2/month	No	See Section 3.1.3 for details regarding exceedance of the annual average increase criteria for deposited dust.
19.	The Proponent shall prepare and implement an Air Quality Monitoring Program for the project to the satisfaction of the Director-General. This program must: (a) be submitted to the Director-General prior to the commencement of construction activities; (b) be prepared in consultation with the DECC; and (c) use a combination of high volume samplers and dust deposition gauges to monitor the performance of the project.	Yes	Approved by DG – 20th October 2008.

Condition	Conditional Requirement	Compliance	Comments
20.	During the project, the Proponent shall ensure there is a suitable continuously operating meteorological station on site that complies with the requirements in *Approved Methods for Sampling of Air Pollutants in New South Wales* (DECC, 2007), or its latest version.	Yes	As per condition. See Section 3.22 and Appendix 8 for meteorological data.
21.	Except as may be expressly provided for by an EPL, or in accordance with section 120 of the *Protection of the Environment Operations Act 1997*, the Proponent shall not discharge any mine water from the site.	Yes	One discharge during the reporting period, all within EPL limits. See section 2.9.3.
22.	The Proponent shall prepare and implement a Water Management Plan for the project to the satisfaction of the Director-General. This plan must be submitted to the Director-General for approval prior to the commencement of construction activities (not including public road upgrades other than the realignment of Coocooboonah Lane) in consultation with the DECC and DWE by suitably qualified expert/s whose appointment/s have been approved by the Director-General and include a: (a) Site Water Balance; (b) Erosion and Sediment Control Plan; (c) Surface Water Monitoring Plan; (d) Groundwater Monitoring Program; and (e) Groundwater Contingency Plan.	Yes	Approved by DG – 20th October 2008.
23.	The Site Water Balance must: (a) include details of: • sources and security of water supply; • water use on site; • water management on site; • off-site water transfers; • reporting procedures; (b) describe measures to minimise water use by the project; and (c) be reviewed and recalculated each year using the most recent water monitoring data.	Yes	As per condition.
24.	The Erosion and Sediment Control Plan must: (a) be consistent with the requirements of *Managing Urban Stormwater: Soils and Construction* manual (Landcom, 2004), or its latest version; (b) identify activities that could cause soil erosion and generate sediment; (c) describe measures to minimise soil erosion and the potential for transport of sediment to downstream waters; (d) describe the location, function, and capacity of erosion and sediment control structures; and (e) describe what measures would be implemented to monitor and maintain the structures over time.	Yes	As per condition.

Condition	Conditional Requirement	Compliance	Comments
25.	The Surface Water Monitoring Program must include: (a) detailed baseline data on surface water flows and quality in creeks and other waterbodies that could be affected by the project; (b) surface water impact assessment criteria; (c) a program to monitor the impact of the project on surface water flows and quality; and (d) procedures for reporting the results of this monitoring.	Yes	As per condition.
26.	The Groundwater Monitoring Program must include: (a) further development of the regional and local groundwater model; (b) detailed baseline data to benchmark the natural variation in groundwater levels, yield and quality (including at any privately owned bores in the vicinity of the site); (c) groundwater impact assessment criteria; (d) a program to monitor the impact of the project on groundwater levels, yield and quality; and (e) procedures for reporting the results of this monitoring.	Yes	As per condition.
27.	The Groundwater Contingency Plan must: (a) provide measures to mitigate any impacts of the mine on the quality or quantity of groundwater supplies available on privately-owned land; (b) establish trigger levels, benchmarks and contingency criteria; and (c) provide for negotiated agreements with affected landowners, including compensation where mining impacts result in increased extraction costs for landowners.	Yes	As per condition.
28.	The Proponent shall implement the Koala habitat management and enhancement actions described in the EA (shown conceptually in Figure 6 in Appendix 4) in consultation with the DECC and to the satisfaction of the Director-General.	Yes	Rip lines installed in proposed enrichment planting areas and koala feed tree corridors. Planting of 760 koala feed tree species within the enrichment area on the north-eastern boundary.
29.	The Proponent shall rehabilitate the site to the satisfaction of the Director-General and DPI.	Not yet applicable	

Condition	Conditional Requirement	Compliance	Comments
30.	The Proponent shall prepare and implement a detailed Rehabilitation and Landscape Management Plan for the site to the satisfaction of the Director-General and DPI. This plan must: (a) be prepared in consultation with DECC, DWE and Council by suitably qualified expert/s whose appointment/s have been approved by the Director-General; and (b) be submitted to the Director-General and DPI for approval by 1 March 2009; (c) include: • the rehabilitation objectives for the site; • a description of how the rehabilitation of the site would be integrated with the landscape of the surrounding area; • detailed performance and completion criteria for the rehabilitation of the site; • a detailed description of the measures that would be implemented to achieve the performance and completion criteria for each site, including the procedures to be implemented for - protection and enhancement of koala habitat; - progressively rehabilitating the areas disturbed by mining operations; - restoration of agricultural land suitability; - revegetating the site; - protecting and/or enhancing areas in the vicinity of the disturbance area; - conserving and re-using any topsoil; - controlling weeds and feral pests; - controlling access; and - bushfire management. • a program to monitor the performance of the rehabilitation against the stated objectives, • performance and completion criteria; • a description of the potential risks to successful rehabilitation, and a description of the contingency measures that would be implemented to minimise these risks; • and details of who is responsible for monitoring, reviewing and implementing the plan.	No	The plan was submitted in September 2011 and was approved by DoPI in October 2011.

Condition	Conditional Requirement	Compliance	Comments
31.	At least 2 years prior to the cessation of mining operations on the site the Proponent shall prepare a Mine Closure Plan. This plan must: (a) define the objectives and criteria for mine closure; (b) investigate options for the future use of the site; (c) provide a detailed methodology for decommissioning the site's storage dams; (d) investigate ways to minimise the adverse socio-economic effects associated with mine closure, including reduction in local and regional employment levels; (e) describe the measures that would be implemented to minimise or manage the on-going environmental effects of the project; and (f) describe how the performance of these measures would be monitored over time.	Yes	Mine Closure Plan was developed as part of the Rehabilitation and Landscape Management Plan.
32.	The Proponent shall not destroy any known Aboriginal objects (as defined in the *National Parks and Wildlife Act 1974*) without the written approval of the Director-General.	Yes	As per condition.
33.	The Proponent shall prepare and implement an Aboriginal Cultural Heritage Management Plan for the project to the satisfaction of the Director-General. This plan must: (a) be submitted to the Director-General prior to the commencement of construction activities (not including public road upgrades other than the realignment of Coocooboonah Lane); (b) be prepared in consultation with the DECC and the local Aboriginal community; (c) include a protocol for the ongoing consultation and involvement of Aboriginal communities in the conservation and management of Aboriginal heritage on site; and (d) describe the measures that would be implemented to protect Aboriginal sites on site, or if any new Aboriginal objects or skeletal remains are discovered during the project.	Yes	Approved by DG – 20th October 2008
34.	The Proponent shall keep records of the amount of coal transported from the site each year, and include these records in the AEMR.	Yes	As per condition. See Section 2.12.

Condition	Conditional Requirement	Compliance	Comments
35.	Prior to transporting any coal off-site, the Proponent shall: (a) construct a realignment of Coocooboonah Lane to the satisfaction of the landowner and Council; (b) upgrade the intersection of Coocooboonah Lane and the Oxley Highway to the satisfaction of the RTA and Council; (c) upgrade the intersection of the Oxley Highway and Blackjack Road to the satisfaction of the RTA and Council; (d) upgrade the section of Blackjack Road to be used for coal transport to the satisfaction of Council; (e) upgrade the intersection of Blackjack Road and Quia Road to the satisfaction of Council; (f) upgrade the section of Quia Road to be used for coal transport to the satisfaction of Council; (g) upgrade the intersection of Quia Road and Farrar Road to the satisfaction of Council; (h) upgrade the intersection of Quia Road and Torrens Road to the satisfaction of Council; and (i) upgrade Torrens Road to the satisfaction of Council.	Yes No No Yes Yes Yes Yes Yes Yes	NMPL received approval from RTA and Council to commence haulage prior to upgrade of the Oxley Highway/Coocooboonah Lane intersection and Oxley Highway/Blackjack Road intersection. All transport route upgrades have been completed.
36.	Prior to carrying out any development on site, the Proponent shall prepare, and subsequently implement, a Construction Traffic Management Plan for the project to the satisfaction of the RTA and Council.	Yes	As per condition.
37.	Within 6 months of this approval the Proponent shall enter into an agreement with Council for the maintenance of the section of the Oxley Highway between Coocooboonah Lane and Blackjack Road.	No	Road Maintenance Agreement finalised August 2009.
38.	Prior to transporting coal from the site the Proponent shall construct 2 bus stops on the Oxley Highway to the satisfaction of Council.	Yes	As per condition.
39.	Notwithstanding condition 10 of Schedule 2, the Proponent shall ensure no coal is transported from the site during AgQuip.	Yes	As per condition.
40.	The Proponent shall minimise the visual impacts of the project to the satisfaction of the Director-General	Yes	As per condition (eg. rehabilitation establishment, amenity bund construction). See Section 3.11.2
41.	The Proponent shall ensure that: (a) no outdoor lights shine above the horizontal; and (b) all external lighting associated with the project complies with *Australian Standard AS4282 (INT) 1995 – Control of Obtrusive Effects of Outdoor Lighting.*	Yes	As per condition.

Condition	Conditional Requirement	Compliance	Comments
42.	The Proponent shall prepare and implement an Energy Savings Action Plan for the project to the satisfaction of the Director-General. This plan must: (a) be prepared in accordance with the *Guidelines for Energy Savings Action Plans (DEUS, 2005)*, or its latest version; (b) include consideration of energy use by mobile equipment; (c) be submitted to the Director-General for approval within 3 months of this approval; and (d) include a program to monitor the effectiveness of measures to reduce energy use on site.	No	Approved by DG – July 2009.
43.	The Proponent shall prepare and implement a Waste Management Plan for the project to the satisfaction of the Director-General. This plan must: (a) be submitted to the Director-General for approval prior to commencing of construction; (b) identify the various waste streams of the project; (c) describe what measures would be implemented to reuse, recycle, or minimise the waste generated by the project; (d) ensure irrigation of treated wastewater is undertaken in accordance with Environmental Guidelines :Use of Effluent by Irrigation (DEC, 2004), or its latest version; and (e) include a program to monitor the effectiveness of these measures.	Yes	Approved by DG – 28th October 2008.
Schedule 4: Additional Procedures			
1.	Within 1 month of this approval, the Proponent shall notify the owner of "Lilydale" in writing that he/she has the right to require the Proponent to acquire their land at any stage during the project.	Not Applicable	See Condition 3(1).
2.	If the results of monitoring required in schedule 3 identify that impacts generated by the project are greater than the relevant impact assessment criteria in schedule 3, then the Proponent shall notify the Director-General and the affected landowners and/or existing or future tenants (including tenants of mine owned properties) accordingly, and provide quarterly monitoring results to each of these parties until the results show that the project is complying with the criteria in schedule 3. However, no notification is required if the impact is predicted in the EA or where an agreement has been negotiated with a landowner that excludes the requirement for ongoing notification of such impacts.	Yes	As per condition.

Condition	Conditional Requirement	Compliance	Comments
3.	If a landowner considers the project to be exceeding the impact assessment criteria in schedule 3, except where this is predicted in the EA, then he/she may ask the Director-General in writing for an independent review of the impacts of the project on his/her land. If the Director-General is satisfied that an independent review is warranted, the Proponent shall within 2 months of the Director-General's decision: (a) consult with the landowner to determine his/her concerns; (b) commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to conduct monitoring on the land, to: o determine whether the project is complying with the relevant impact assessment criteria in schedule 3; o and identify the source(s) and scale of any impact on the land, and the project's contribution to this impact; and (c) give the Director-General and landowner a copy of the independent review. If the independent review determines that the project is complying with the relevant impact assessment criteria in schedule 3, then the Proponent may discontinue the independent review with the approval of the Director-General.	Not Yet Applicable	No requests from adjoining landowners.
4.	If the independent review determines that the project is not complying with the relevant impact assessment criteria in schedule 3, and that the project is primarily responsible for this non-compliance, then the Proponent shall: (a) take all reasonable and feasible measures, in consultation with the landowner, to ensure that the project complies with the relevant criteria; and (b) conduct further monitoring to determine whether these measures ensure compliance; or (c) secure a written agreement with the landowner to allow exceedances of the relevant criteria, to the satisfaction of the Director-General. If further monitoring under paragraph (b) determines that the project is complying with the relevant criteria, then the Proponent may discontinue the independent review with the approval of the Director-General.	Not Yet Applicable	

Condition	Conditional Requirement	Compliance	Comments
5.	If further monitoring under condition 4(b) determines that measures implemented under condition 4(a) have not achieved compliance with the land acquisition criteria in schedule 3, and the Proponent cannot then secure within 3 months a written agreement with the landowner under condition 4(c) to allow these exceedances, then the Proponent shall, upon receiving a written request from the landowner, acquire all or part of the landowner's land in accordance with the procedures in conditions 7-9 below.	Not Yet Applicable	
6.	If: (a) the landowner disputes the results of the independent review; or (b) the Proponent is unable to secure a written agreement under condition 4(c) with the landowner then (subject to condition 5) either the Proponent or the landowner may refer the matter to the Director-General for resolution. Where matters referred to the Director-General under this condition cannot be resolved by the Director-General within 28 days, the Director-General shall refer the matter to an Independent Dispute Resolution Process.	Not Yet Applicable	
Schedule 5: Environmental Management, Monitoring, Auditing and Reporting			
1.	The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Director-General. This strategy must be submitted to the Director-General prior to the commencement of construction activities, and: (a) provide the strategic framework for environmental management of the project; (b) identify the statutory requirements that apply to the project; (c) describe in general how the environmental performance of the project would be monitored and managed; (d) describe the procedures that would be implemented to: • keep the local community and relevant agencies informed about the operation and environmental performance of the project; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise during the course of the project; • respond to any non-compliance; • manage cumulative impacts; and • respond to emergencies; and (e) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project.	Yes	Approved by DG – 20th October 2008.

Condition	Conditional Requirement	Compliance	Comments
2.	The Proponent shall prepare and implement an Environmental Monitoring Program for the project to the satisfaction of the Director-General. This program must be submitted to the Director-General within 6 months of this approval and consolidate the various monitoring requirements in schedule 3 of this approval into a single document.	No	Completed and approved by DoPI on 10th October 2011.
3.	As soon as practicable, and in any event within 24 hours of detecting an exceedance of the limits/performance criteria in this approval or the occurrence of an incident that causes (or may cause) material harm to the environment, the Proponent shall notify the Department and other relevant agencies of the exceedance/incident.	No	DECCW and DoP and the affected residents are notified as soon as possible after detecting an exceedance.
4.	Within 6 days of notifying the Department and other relevant agencies of an exceedance/incident, the Proponent shall provide the Department and these agencies with a written report that: (a) describe the date, time and nature of the exceedance/incident; (b) identifies the cause (or likely cause) of the exceedance/incident; (c) describes what action has been taken to date; and (d) describes the proposed measures to address the exceedance/incident.	No	Written notification provided as soon as possible on detecting an exceedance.
5.	Within 12 months of this approval, and annually thereafter, the Proponent shall submit an AEMR to the Director-General and to all relevant agencies. This report must: (a) identify the standards and performance measures that apply to the project; (b) describe the works carried out in the last 12 months; (c) describe the works that would be carried out in the next 12 months; (d) include a summary of the complaints received during the past year, and compare this to the complaints received in previous years; (e) include a summary of the monitoring results for the project during the past year; (f) include an analysis of these monitoring results against the relevant: o impact assessment criteria/limits; o monitoring results from previous years; and o predictions in the EA; (g) identify any trends in the monitoring results over the life of the project; (h) identify any non-compliance during the previous year; and (i) describe what actions were, or are being, taken to ensure compliance.	Yes	As per condition.

Condition	Conditional Requirement	Compliance	Comments
6.	Within 2 years of this approval, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must: (a) include consultation with the relevant agencies; (b) assess the environmental performance of the project and assess whether it is complying with the relevant requirements in this approval and any associated EPL or Mining Lease (including any strategy, plan or program required under these approvals); (c) review the adequacy of strategies, plans or programs required under these approvals; and, if appropriate, (d) recommend measures or actions to improve the environmental performance of the project, and/or any strategy, plan or program required under these approvals. *Note: This audit team must be led by a suitably qualified auditor and include experts in the fields of water, noise management and mine rehabilitation.*	No	Audit team approved by DG on 3/11/10 with the audit completed in April 2011.
7.	Within 6 weeks of the completing of this audit, or as otherwise directed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.	Yes	Audit report and action plan submitted to DoPI on 27th May 2011. Approved 17th June 2011.
8.	Within 3 months of submitting the audit report to the Director-General, the Proponent shall review, and if necessary revise the strategies/plans/programs required under this approval to the satisfaction of the Director-General.	Yes	Audit action plan implemented with update provided to DoPI 30th November 2011 and approved by DoPI on 1st December 2011.
9.	Within 3 months of this approval, the Proponent shall establish a Community Consultative Committee (CCC) for the project. This CCC must be established and operated in accordance with the *Guideline for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007)*, or its latest version, and to the satisfaction of the Director-General.	Yes	Sunnyside Community Consultative Committee established in January 2009.
10.	Within 3 months of the approval of any strategy/plan/program required under this approval (or any subsequent revision of these strategies/plans/programs), or the completion of the audits or AEMRs required under this approval, the Proponent shall: (a) provide a copy of the relevant document/s to the relevant agencies and CCC; and (b) put a copy of the relevant document/s on its website.	Yes	All relevant documentation available on the Whitehaven website. AEMR also provided to relevant agencies and CCC.

Condition	Conditional Requirement	Compliance	Comments
11.	During the project, the Proponent shall: (a) make a summary of all monitoring results required under this approval publicly available at the mine and on its website; and (b) update these results on a regular basis (at least every three months).	Yes	Data provided on website in CCC monitoring reports and AEMR.

TABLE A3.2

Compliance Review – Environment Protection Licence 12957

Condition	Conditional Requirement	Compliance	Comments
A1.2	Carry out of the scheduled development work at specified premises at a scale not exceeding >500,000 – 2,000,000t. Coal works: 0 – 2,000,000 t loaded	Yes	ROM coal production in 2010/2011 reporting period = 360,592 tonnes Coal loaded within specified limits.
A1.3	The licensee must not carry on any scheduled activities until the scheduled development works are completed, except as elsewhere provided in this licence.	Yes	As per condition.
A3.1	Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence. In this condition the reference to "the licence application" includes a reference to: (a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; (b) and the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.	Yes	As per condition.
L1.1	Comply with Section 120 of the POEO Act 1997 (re pollution of waters).	Yes	All efforts are maintained to ensure compliance with Section 120.
L2.1	Comply with concentration limits: Oil & Grease 10 mg/L pH 6.5 – 8.5 TSS 50 mg/L	Yes	During one discharge event, water was below concentration limits for all parameters.
L2.5	The Total Suspended Solids concentration limits specified may be exceeded for water discharged provided that: (a) the discharge occurs solely as a result of rainfall measured at the premises that exceeds 38.4 millimetres over any consecutive 5 day period immediately prior to the discharge occurring; and (b) all practical measures have been implemented to dewater all sediment dams within 5 days of rainfall such that they have sufficient capacity to store run off from a 38.4 millimetres, 5 day rainfall event. Note: 38.4 mm equates to the 5 day 90%ile rainfall depth for Gunnedah sourced from Table 6.3a Managing Urban Stormwater: Soils and Construction Volume 1: 4th edition, March 2004.	Not yet applicable	Total suspended Solids concentration limit was not exceeded during one discharge from site.

Condition	Conditional Requirement	Compliance	Comments
L3.1	The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.	Yes	As per condition.
L3.2	This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if those activities require an environment protection licence.	Yes	As per condition.
L4.1	Ensure noise compliance: (a) $L_{Aeq(15min)}$ criterion of 35dB(A) at all times (day, evening and night time periods); and (b) $L_{10(15\ min)}$ criterion of 40dB(A) during initial construction period.	No	See Section 3.10.3 for details regarding exceedances.
L4.3	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".	Yes	As per condition.
L4.4	The noise limits set this 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.	Not Applicable	No legally binding agreements in place.
L5.1	The overpressure level from blasting operations at the premises must not exceed 115dB(Lin Peak) for more than 5% of total number of blasts over reporting period.	No	Six exceedances. See Section 3.9 and Appendix 6.
L5.2	The overpressure level from blasting operations at the premises must not exceed 120dB(Lin Peak) at any time.	No	Four exceedances. See Section 3.9 and Appendix 6.
L5.3	Ground vibration peak particle velocity from blasting operations must not exceed 5mm/s for more than 5% of the total number of blasts during each reporting period.	Yes	See Appendix 6. No exceedances during reporting period.
L5.4	Ground vibration peak particle velocity from blasting operations must not exceed 10mm/s at any time.	Yes	See Appendix 6. No exceedances during reporting period.

Condition	Conditional Requirement	Compliance	Comments
L6.1	Construction activities covered by this licence must only be carried out between the hours of 0700 to 1800 hrs Monday to Friday and between 0700 and 1600 hrs Saturday and at no time on Sundays and Public Holidays.	Yes	As per condition.
L6.2	Mining operations covered by this licence (other than transport of coal from the premises and blasting) must only be carried out between the hours of 0700 and 2200 hrs Monday to Friday, and 0700 and 1800 hrs Saturday, and at no time on Sundays and Public Holidays.	Yes	As per condition.
L6.3	Transportation of coal from the premises must only be carried out between the hours of 0700 and 1800 (Eastern Standard Time) hrs Monday to Friday, and 0700 and 2000 hrs (Eastern Summer Time) Monday to Friday, and 0700 to 1600 hrs on Saturdays, and at no time on Sundays and Public Holidays.	Yes	As per condition.
L6.4	Blasting in or on the premises must only be carried out between the hours of 1000 and 1700 hours Monday to Friday, and 1000 and 1400 hrs on Saturdays, and no time on Sundays and Public Holidays.	Yes	As per condition.
L6.5	Conditions L6.1, L6.2, L6.3 and L6.4 do not apply to the delivery of material, and mining operation, if required by police or other authorities for safety reasons; and/or the operation or personnel or equipment are endangered. In such circumstances notification must be provided to the EPA and affected residents as soon as practicable.	Not yet applicable	
L6.6	The hours of operation specified in conditions L6.1, L6.2, L6.3 and L6.4 may be varied with written consent if the EPA is satisfied that the amenity of the residents in the locality will not be adversely affected.	Not yet applicable	
L7.1	The maximum tonnage of extraction of ROM coal at the premises during the reporting period must not exceed 1 million tonnes.	Yes	ROM coal during reporting period – 360,592 tonnes
O1.1	Carry out licensed activities in a competent manner, i.e. (a) processing, handling, movement and storage of materials and substances; and (b) treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.	 Yes Yes	As per licence condition.

Condition	Conditional Requirement	Compliance	Comments
O2.1	All plant and equipment installed at the premises or used in connection with the licensed activity must: (a) be maintained in a proper and efficient condition; and (b) be operated in a proper and efficient manner.	Yes	All plant and equipment is closely monitored and regularly serviced by Sunnyside Coal Mine personnel.
O3.1	Minimise or prevent emission of dust from the premises.	Yes	Dust emissions are minimised (unable to "prevent" dust emission) principally through watering and progressive rehabilitation.
03.2	Ensure all trucks cover their loads after loading to prevent wind blown emissions and spillage. The covering must be maintained until immediately before unloading the trucks.	Yes	All trucks are required to use tarpaulins in the transport of coal.
M1.1	Record and retain monitoring results required as per this licence.	Yes	Monitoring records maintained as per condition.
M1.2	Keep all monitoring records associated with this licence: (a) in a legible form; (b) for at least 4 years; (c) produced in a legible form to any authorised officer of the EPA who asks to see them.	Yes	As per condition.
M1.3	Keep the following records in respect to samples required: (a) sampling date; (b) sampling time; (c) sampling location; and (d) sample collector's name.	 Yes Yes Yes Yes	As per condition.
M2.1	Monitor the concentration of each pollutant specified using the sampling method, units and frequency specified.	Yes	As per condition.
M3.1	Monitor air pollutants in accordance with the Approved Methods publication or as approved by EPA.	Yes	Test method used refers to the EPA approved publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW."
M3.2	Monitor pollutants discharged to waters in accordance with the Approved Methods publication or as approved by EPA.	Yes	All pollutants monitored for one discharge event during the reporting period. The Site Water Management Plan sets out the requirements for monitoring discharge events.
M4.1	Monitor meteorological conditions as specified.	Yes	As per condition.
M5.1	Keep a legible record of all complaints re pollution arising from licenced activity.	Yes	Complaints register maintained by Environmental Manager.

Condition	Conditional Requirement	Compliance	Comments
M5.2	Keep the following records of complaints. (a) date and time of complaint; (b) method complaint made; (c) any personal details of complainant; (d) nature of complaint; (e) licensee's action in response, any follow-up contact; and (f) if no action – reason why.	 Yes Yes Yes Yes Yes Yes	Complaints records are compiled in accordance with the condition.
M5.3	Keep records of complaints for 4 years.	Yes	All records have been kept to date.
M5.4	Present records to EPA upon request.	Yes	All records would be made available to the EPA upon request.
M6.1	Operate telephone complaints line for receipt of complaints from the public.	Yes	Sunnyside Coal Mine operates a complaints hotline on telephone No. 0427 106 384.
M6.2	Notify the public of the complaints telephone line number.	Yes	Complaints hotline advertised in local press.
M8.1	To determine compliance with conditions L5.1, L5.2, L5.3 and L5.4 (a) Airblast overpressure and ground vibration levels must be measured and electronically recorded at receptors R1, R2, R4 and R6 - for all blasts carried out in or on the premises; and (b) Instrumentation used to measure the airblast overpressure and ground vibration levels must meet the requirements of Australian Standard AS 2187.2-2006.	Yes	As per condition.
M9.1	For monitoring points specified, monitor noise or vibration parameter utilising sampling method, units and frequency as directed.	Yes	As per condition.
R1.1	Complete and supply Annual Return to EPA comprising: (a) Statement of Compliance; (b) Monitoring & Complaints Summary.	Yes	Second Annual Return submitted on the 28/1/2011 for the period 15/12/2009 to 14/12/2010. Next Annual Return due in February 2012.
R1.2	An Annual Return must be prepared in respect of each reporting period, except as provided below	Yes	Second Annual Return submitted on the 28/1/2011 for the period 15/12/2009 to 14/12/2010. Next Annual Return due in February 2012.

Condition	Conditional Requirement	Compliance	Comments
R1.3	Where this licence is transferred from the licensee to a new licensee: (a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and (b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.	Not Yet Applicable	
R1.4	Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on: (a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or (b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.	Not Yet Applicable	
R1.5	Provide EPA with Annual Return no later than 60 days after end of each reporting period.	Yes	Second Annual Return submitted on the 28/1/2011 for the period 15/12/2009 to 14/12/2010.
R1.6	Retain copy of Annual Return for 4 years.	Yes	As per condition
R1.7	Certify the Statement of Compliance within the Annual Return and sign the Monitoring and Complaints Summary by: (a) licence holder; or (b) approved person.	Yes	As per condition
R2.1	Notify EPA of threatening or harmful incidents as soon as practicable by phoning EPA's Pollution Line service.	Not Yet Applicable	No incidents during reporting period.
R2.2	Provide written details of the incident to EPA within 7 days of incident.	Not Yet Applicable	No incidents during reporting period.
R3.1	Upon an EPA officer suspecting that an event is causing or likely to cause environmental harm: (a) at the premises; or (b) in connection with vehicles or plant associated with the licenced activities; a request may be made for a written report of the event.	Not Yet Applicable	No requests received from EPA during Reporting Period (or to date).

Condition	Conditional Requirement	Compliance	Comments
R3.2	The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.	Not Yet Applicable	No requests received from EPA during reporting period (or to date).
R3.3	The report may be required to include: (a) event cause, time and duration; (b) type, volume and concentration of every pollutant discharged; (c) contact details of employees or agents of licensee who witnessed event; (d) contact details of any other persons witnessing the event; (e) the action taken and follow-up contact with complainants in relation to event; (f) mitigation measures proposed to prevent recurrence; (g) any other relevant matters.	Not Yet Applicable	No requests received from EPA during reporting period (or to date).
R3.4	EPA may request further details – must be supplied within specified time.	Not Yet Applicable	No requests received from EPA during reporting period (or to date).
R4.2	Report any exceedance of the licence blasting limits to the regional office of the EPA as soon as practicable after the exceedance becomes known.	Yes	All blasting exceedances were reported to the regional office as soon as practicable.
R4.3	The results of the blast monitoring required by this licence must be submitted to the EPA at the end of each reporting period.	Yes	Blast results are provided in Appendix 6.
G1.1	Retain a copy of this licence at premises to which the licence applies.	Yes	Retained in the Sunnyside Site Office.
G1.2	Produce licence to EPA officer upon request.	Not Yet Applicable	Sunnyside Coal Mine personnel would produce the licence upon request.
G1.3	Make licence available for inspection by any employee or agent of licensee working at premises.	Yes	Licence is located in Sunnyside Site Office if required. Sunnyside Coal Mine personnel would produce the licence upon request.
U1.1	The Licensee must conduct a site specific Best Management Practice (BMP) determination to identify the most practicable means to reduce particle emissions.	Not Yet Applicable	Currently in progress.
U1.2	The licensee must prepare a report addressing items identified in the licence and utilise the document entitled Coal Mine Particulate Matter Control Best Practice – Site Specific Determination Guideline - November 2011.	Not Yet Applicable	Currently in progress.
U1.3	All cost related information is to be included as Appendix 1 of the Report required by condition U1.2 above.	Not Yet Applicable	

Condition	Conditional Requirement	Compliance	Comments
U1.4	The report required by condition U1.2 must be submitted by the Licensee to the Environment Protection Authority by 29 June 2012.	Not Yet Applicable	
U1.5	The report required by condition U1.2 above, except for cost related information contained in Appendix 1 of the Report, must be made publicly available by the Licensee on the Licensee's website 6 July 2012.	Not Yet Applicable	

TABLE A3-3

Compliance Review – ML 1624

Relevant Condition	Conditional Requirement	Compliance	Comments
1	Service of notice on landholders within 3 months of granting of mining lease.	Not Applicable.	NMPL only landholders on mining lease.
2	Implement all practicable measures to prevent and/or minimise any harm to the environment that may result from the construction, operation or rehabilitation of the development.	Yes	As per condition.
3	Prepare and submit a MOP in accordance with DG's guidelines.	Yes	Initial MOP lodged with DPI and accepted on the 25th September 2008. MOP period ends September 2015.
4	Lodge an annual Environmental Management Report with DG annually.	Yes	This is the third AEMR since commencement of the mine in 2008.
5.	Prepare the EMR in accordance with requirements in the Mining Lease.	Yes	Prepared in accordance with the requirements.
6	Submit additional environmental reports as directed by the DG.	Not Yet Applicable	No directions issued.
7	Rehabilitate disturbed land to a sustainable/agreed end land use to the satisfaction of the DG.	Yes	Progressive rehabilitation occurring, with satisfaction of the DG evident from previous AEMR approval.
8	Prepare a Subsidence Management Plan prior to commencing underground mining, in accordance with specified requirements	Not Applicable	Open cut operation
9	(a) Ensure that at least 10 competent people are efficiently employed on the lease area on each day week day except Sunday or any week day that is a public holiday, OR (b) Expend on operations an amount of not less than $175, 000 per annum whilst the lease is in force.	Yes	As per condition.
10	Comply with any direction given by an Environmental Officer of the Department in regard to non-compliance with the Act or any condition of this lease.	Not Yet Applicable	No direction received during reporting period.
11	Provide an exploration report, within a period of 28 days after each anniversary of the date this lease has effect. The report must be to the satisfaction of the DG and contain the specified requirements.	Yes	Report was submitted on 24th November 2011 for the reporting period 5th November 2010 – 4th November 2011.

Relevant Condition	Conditional Requirement	Compliance	Comments
15(a)	Ensure that ground vibration peak particle velocity generated by any blasting does not exceed 10mm/sec and does not exceed 5mm/sec in more than 5% of the total number of blasts over a period of 12 months at any dwelling or occupied premises.	Yes	No exceedances recorded. See Appendix 6.
15(b)	Ensure that blast overpressure noise level generated by any blasting does not exceed 120 dB (linear) and does not exceed 115 dB (linear) more than 5% of the total number of blasts over a period of 12 months, at any dwelling or occupied premises.	No	Six exceedances recorded. See Section 3.9 and Appendix 6.
16	Carry out operations in a manner that ensures the safety of persons and stock.	Yes	As per condition.
17(a)	Advise DWE Regional hydrogeologist of intention to drill exploration holes 28 days prior to commencement.	Yes	The DWE Regional hydrogeologist was advised on 20th April 2011 of the proposed exploration drill holes.
17(b)	All exploration drill holes must be completed to the satisfaction of the Director General in relation to:- • adequate marking/survey • sealed to prevent collapse • sealed with cement plugs to prevent discharge of groundwaters • if meets gas, it is plugged to prevent escape • if meets artesian or sub-artesian flow is sealed to prevent contamination of aquifer • once no longer used, is sealed according to Department guidelines • once no longer used, the land is left in a clean, tidy and stable condition.	Yes	As per condition.
18	Operations must be carried out so as not to cause or aggravate air pollution, water pollution or soil contamination or erosion.	Yes	As per Air Quality and Site Water Management Plans.
19	Operations must not interfere with transmission lines, communication lines, pipelines or any other utility, without prior written approval of the DG and subject to any conditions he may stipulate.	Yes	As per condition.
20	Activities must not interfere with or damage fences and gates must be closed or left open in accordance with landholder requirements.	Yes	As per condition.

Relevant Condition	Conditional Requirement	Compliance	Comments
21(a)	Operations must not affect any road unless in accordance with the MOP or written approval of Director General.	Yes	As per condition.
21(b)	Leaseholder must pay to the authority responsible for the road the cost incurred in fixing any damage to the roads caused by the operations.	Yes	Agreement in place with GSC.
22	Access tracks kept to a minimum and positioned so as not to cause unnecessary damage. Temporary tracks to be ripped, topsoiled and revegetated when no longer required.	Yes	As per condition.
23(a)	Trees must not be felled without the consent of the landholder who is entitled to the use of the timber.	Yes	As per condition.
23(b)	Trees must not be felled on the lease area except where it directly obstructs or prevents the carrying out of operations.	Yes	As per condition.
23(c)	Timber from Crown land within the lease area must not be used until all relevant approvals have been obtained.	Yes	As per condition.
25	Comply with direction of Director General if notice is issued with regard to resource recovery	Not Yet Applicable	No notice issued.
27	Provision of Security of $3,175,000 to the Minister to ensure fulfilment of lease conditions.	Yes	As per condition.
31	Make every reasonable attempt, and demonstrate attempts, to enter into a cooperation agreement with the holder(s) of any overlapping petroleum title(s).	Not Yet Applicable	

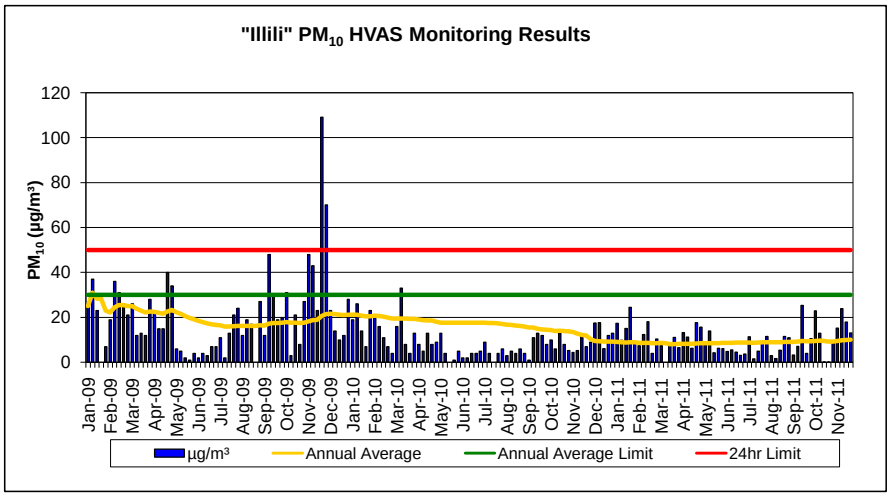
Appendix 4

DUST MONITORING RESULTS

PM10 - SA1 "Illili"

Date	mg/paper	µg/m³	Annual Average	Annual Average	24hr Limit
24/01/2009	37.4	25	25.00	30	50
30/01/2009	56.5	37	31.00	30	50
5/02/2009	34.9	23	28.33	30	50
11/02/2009			28.33	30	50
17/02/2009	11.3	7	23.00	30	50
23/02/2009	28.7	19	22.20	30	50
1/03/2009	55.5	36	24.50	30	50
7/03/2009	49.3	31	25.43	30	50
13/03/2009	41.3	26	25.50	30	50
19/03/2009	33.6	21	25.00	30	50
25/03/2009	41.3	26	25.10	30	50
31/03/2009	18.8	12	23.91	30	50
6/04/2009	20.1	13	23.00	30	50
12/04/2009	18.9	12	22.15	30	50
18/04/2009	45	28	22.57	30	50
24/04/2009	34.6	22	22.53	30	50
30/04/2009	24.2	15	22.06	30	50
6/05/2009	23.5	15	21.65	30	50
12/05/2009	64.7	40	22.67	30	50
18/05/2009	55.2	34	23.26	30	50
24/05/2009	21.7	6	22.40	30	50
30/05/2009	19	5	21.57	30	50
5/06/2009	3.1	2	20.68	30	50
11/06/2009	2.1	1	19.83	30	50
17/06/2009	6.7	4	19.17	30	50
23/06/2009	5.5	2	18.48	30	50
29/06/2009	3.7	4	17.92	30	50
5/07/2009	4.6	3	17.37	30	50
11/07/2009	12	7	17.00	30	50
17/07/2009	11.4	7	16.66	30	50
23/07/2009	17.8	11	16.47	30	50
29/07/2009	2.6	2	16.00	30	50
4/08/2009	20.7	13	15.91	30	50
10/08/2009	33.4	21	16.06	30	50
16/08/2009	39	24	16.29	30	50
22/08/2009	19.2	12	16.17	30	50
28/08/2009	28.6	19	16.25	30	50
3/09/2009	27.6	17	16.27	30	50
9/09/2009	<0.1	<1	16.27	30	50
15/09/2009	42.6	27	16.55	30	50
21/09/2009	19.2	12	16.44	30	50
27/09/2009	75.6	48	17.23	30	50
3/10/2009	47.6	30	17.54	30	50
9/10/2009	30.5	19	17.57	30	50
15/10/2009	31.1	20	17.63	30	50
21/10/2009	48.7	31	17.93	30	50
27/10/2009	5.5	3	17.60	30	50
2/11/2009	32.7	21	17.67	30	50
8/11/2009	12.4	8	17.47	30	50
14/11/2009	42.6	27	17.67	30	50
20/11/2009	75.4	48	18.29	30	50
26/11/2009	65.6	43	18.78	30	50
2/12/2009	36.5	23	18.86	30	50
8/12/2009	161.7	109	20.60	30	50
14/12/2009	107.8	70	21.53	30	50
20/12/2009	36	23	21.56	30	50
26/12/2009	21.3	14	21.42	30	50
1/01/2010	15.3	10	21.21	30	50
7/01/2010	18.9	12	21.05	30	50
13/01/2010	42.6	28	21.17	30	50
19/01/2010	30.4	19	21.14	30	50
25/01/2010	39.6	26	21.15	30	50
31/01/2010	20.8	14	20.76	30	50
6/02/2010	10.3	7	20.49	30	50
12/02/2010	34.4	23	20.53	30	50
18/02/2010	31.1	20	20.75	30	50
24/02/2010	24.2	16	20.70	30	50
2/03/2010	16.4	11	20.28	30	50
8/03/2010	11.1	7	19.88	30	50
14/03/2010	6.6	4	19.52	30	50
20/03/2010	24.9	16	19.43	30	50
26/03/2010	50.8	33	19.55	30	50
1/04/2010	11.6	8	19.48	30	50
7/04/2010	6.7	4	19.33	30	50
13/04/2010	20.6	13	19.35	30	50
19/04/2010	12.8	8	19.02	30	50
25/04/2010	8.4	5	18.73	30	50
1/05/2010	20.9	13	18.70	30	50
7/05/2010	13.3	8	18.58	30	50
13/05/2010	14.2	9	18.07	30	50
19/05/2010	20.4	13	17.72	30	50
25/05/2010	7	4	17.68	30	50
31/05/2010	0	0	17.60	30	50
6/06/2010	1	1	17.58	30	50
12/06/2010	9	5	17.65	30	50
18/06/2010	3.8	2	17.62	30	50
24/06/2010	3.2	2	17.62	30	50
30/06/2010	5.9	4	17.62	30	50
6/07/2010	6	4	17.63	30	50
12/07/2010	8	5	17.60	30	50
18/07/2010	14.1	9	17.63	30	50
24/07/2010	6.9	4	17.52	30	50
30/07/2010	0.1	0	17.48	30	50
5/08/2010	7	4	17.33	30	50
11/08/2010	8.9	6	17.08	30	50
17/08/2010	4.6	3	16.73	30	50
23/08/2010	8.2	5	16.62	30	50
29/08/2010	6.4	4	16.37	30	50
4/09/2010	8.9	6	16.18	30	50
10/09/2010	7.1	4	15.98	30	50
16/09/2010	1.7	1	15.56	30	50
22/09/2010	17.9	11	15.54	30	50
28/09/2010	20	13	14.97	30	50
4/10/2010	18.9	12	14.67	30	50
10/10/2010	12.9	8	14.49	30	50

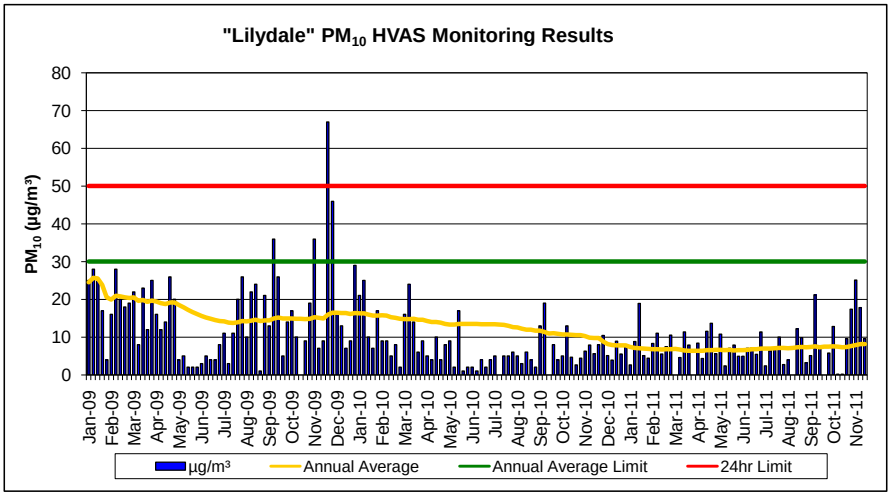
Date	mg/paper	µg/m³	Annual Average	Annual Average	24hr Limit
16/10/2010	16.6	10	14.33	30	50
22/10/2010	9.8	6	13.92	30	50
28/10/2010	22.4	14	14.10	30	50
3/11/2010	13.1	8	13.89	30	50
9/11/2010	8.4	5.2	13.84	30	50
15/11/2010	7.1	4.4	13.47	30	50
21/11/2010	8.4	5.2	12.77	30	50
27/11/2010	18.7	11.5	12.25	30	50
3/12/2010	11.7	7	11.99	30	50
9/12/2010	15.1	9	10.35	30	50
15/12/2010	29.4	17.5	9.49	30	50
21/12/2010	29.6	17.6	9.40	30	50
27/12/2010	10.3	6.1	9.27	30	50
2/01/2011	20	11.9	9.30	30	50
8/01/2011	21.7	12.9	9.32	30	50
14/01/2011	29.2	17.4	9.14	30	50
20/01/2011	16.6	9.8	8.99	30	50
26/01/2011	25.4	15.1	8.81	30	50
1/02/2011	41.2	24.5	8.99	30	50
7/02/2011	14.3	8.5	9.01	30	50
13/02/2011	12.5	7.4	8.75	30	50
19/02/2011	20.9	12.4	8.63	30	50
25/02/2011	30.4	18.1	8.66	30	50
3/03/2011	6.8	4	8.55	30	50
9/03/2011	17.6	10.4	8.60	30	50
15/03/2011	12.4	7.4	8.66	30	50
21/03/2011	<0.1	<0.1	8.54	30	50
27/03/2011	14.5	8.6	8.13	30	50
2/04/2011	18.7	11.1	8.18	30	50
8/04/2011	11	6.6	8.23	30	50
14/04/2011	21.8	13.2	8.23	30	50
20/04/2011	18.7	11.2	8.28	30	50
26/04/2011	10.6	6.3	8.31	30	50
2/05/2011	29.8	17.7	8.38	30	50
8/05/2011	26.2	15.6	8.51	30	50
14/05/2011	13.3	7.9	8.49	30	50
20/05/2011	23.4	13.9	8.51	30	50
26/05/2011	7.1	4.2	8.51	30	50
1/06/2011	10.4	6.2	8.61	30	50
7/06/2011	10.2	6.1	8.70	30	50
13/06/2011	8	4.8	8.70	30	50
19/06/2011	9.3	5.5	8.75	30	50
25/06/2011	7.6	4.5	8.80	30	50
1/07/2011	5.3	3.2	8.78	30	50
7/07/2011	6.2	3.7	8.78	30	50
13/07/2011	19.1	11.4	8.88	30	50
19/07/2011	2.5	1.5	8.76	30	50
25/07/2011	8.4	5	8.78	30	50
31/07/2011	14.6	8.7	8.92	30	50
6/08/2011	19.3	11.5	9.05	30	50
12/08/2011	5	3	9.00	30	50
18/08/2011	2.9	1.7	8.97	30	50
24/08/2011	9.1	5.4	8.98	30	50
30/08/2011	19.5	11.6	9.11	30	50
5/09/2011	18.3	10.9	9.19	30	50
11/09/2011	5.6	3.3	9.18	30	50
17/09/2011	11.9	7.1	9.28	30	50
23/09/2011	42.7	25.4	9.52	30	50
29/09/2011	6.7	4	9.37	30	50
5/10/2011	17.6	10.5	9.34	30	50
11/10/2011	38.4	22.9	9.59	30	50
17/10/2011	21.8	13	9.64	30	50
23/10/2011	0.4	0.2	9.55	30	50
29/10/2011	0.4	0.2	9.32	30	50
4/11/2011	15.6	9.3	9.34	30	50
10/11/2011	25.6	15.2	9.50	30	50
16/11/2011	40.2	23.9	9.83	30	50
22/11/2011	30	17.9	10.04	30	50
28/11/2011	19.6	13.1	10.07	30	50



PM10 - SA2 "Lilydale"

Date	mg/paper	µg/m³	Annual Average	Annual Average	24hr Limit
14/1/2009	36.7	24	24.00	30	50
24/01/2009	36.9	25	24.50	30	50
30/01/2009	42.3	28	25.67	30	50
5/02/2009	37.7	25	25.50	30	50
11/02/2009	27.1	17	23.80	30	50
17/02/2009	6.8	4	20.50	30	50
23/02/2009	25.2	16	19.86	30	50
1/03/2009	42.7	28	20.88	30	50
7/03/2009	31.1	20	20.78	30	50
13/03/2009	28.5	18	20.50	30	50
19/03/2009	30.2	19	20.36	30	50
25/03/2009	34.5	22	20.50	30	50
31/03/2009	13	8	19.54	30	50
6/04/2009	37.1	23	19.79	30	50
12/04/2009	19	12	19.27	30	50
18/04/2009	40.2	25	19.63	30	50
24/04/2009	24.8	16	19.41	30	50
30/04/2009	19.6	12	19.00	30	50
6/05/2009	22.5	14	18.74	30	50
12/05/2009	41.9	26	19.10	30	50
18/05/2009	31.9	20	19.14	30	50
24/05/2009	13	4	18.45	30	50
30/05/2009	17	5	17.87	30	50
5/06/2009	3.5	2	17.21	30	50
11/06/2009	4	2	16.60	30	50
17/06/2009	3.4	2	16.04	30	50
23/06/2009	6.6	3	15.56	30	50
29/06/2009	4.1	5	15.18	30	50
5/07/2009	6.9	4	14.79	30	50
11/07/2009	6	4	14.43	30	50
17/07/2009	13.1	8	14.23	30	50
23/07/2009	17.1	11	14.13	30	50
29/07/2009	4.7	3	13.79	30	50
4/08/2009	17.8	11	13.71	30	50
10/08/2009	31.7	20	13.89	30	50
16/08/2009	41.1	26	14.22	30	50
22/08/2009	16.5	10	14.11	30	50
28/08/2009	33.9	22	14.32	30	50
3/09/2009	38.2	24	14.56	30	50
9/09/2009	1.2	1	14.23	30	50
15/09/2009	32.5	21	14.39	30	50
21/09/2009	20.6	13	14.36	30	50
27/09/2009	57.3	36	14.86	30	50
3/10/2009	41.5	26	15.11	30	50
9/10/2009	8.8	5	14.89	30	50
15/10/2009	21.4	14	14.87	30	50
21/10/2009	27.1	17	14.91	30	50
27/10/2009	16.3	10	14.81	30	50
2/11/2009	Power Failure	Power Failure	14.81	30	50
8/11/2009	14.7	9	14.69	30	50
14/11/2009	29.2	19	14.78	30	50
20/11/2009	55.8	36	15.20	30	50
26/11/2009	12.5	7	15.04	30	50
2/12/2009	13.6	9	14.92	30	50
8/12/2009	99.9	67	15.89	30	50
14/12/2009	71.2	46	16.44	30	50
20/12/2009	24.8	16	16.43	30	50
26/12/2009	20.8	13	16.37	30	50
1/01/2010	10.9	7	16.37	30	50
7/01/2010	14.3	9	16.08	30	50
13/01/2010	43.2	29	16.30	30	50
19/01/2010	33	21	16.25	30	50
25/01/2010	38.5	25	16.25	30	50
31/01/2010	15.9	10	15.95	30	50
6/02/2010	10.6	7	15.65	30	50
12/02/2010	25.7	17	15.65	30	50
18/02/2010	13.3	9	15.73	30	50
24/02/2010	12.7	9	15.62	30	50
2/03/2010	8	5	15.23	30	50
8/03/2010	11.9	8	15.03	30	50
14/03/2010	3.8	2	14.77	30	50
20/03/2010	24.7	16	14.72	30	50
26/03/2010	36.7	24	14.75	30	50
1/04/2010	21.9	14	14.85	30	50
7/04/2010	9.2	6	14.57	30	50
13/04/2010	14.6	9	14.52	30	50
19/04/2010	8.2	5	14.18	30	50
25/04/2010	6.9	4	13.98	30	50
1/05/2010	16.1	10	13.95	30	50
7/05/2010	6.2	4	13.78	30	50
13/05/2010	12.5	8	13.48	30	50
19/05/2010	14.3	9	13.30	30	50
25/05/2010	3	2	13.27	30	50
31/05/2010	26.8	17	13.47	30	50
6/06/2010	2.4	1	13.45	30	50
12/06/2010	3.1	2	13.45	30	50
18/06/2010	3.9	2	13.45	30	50
24/06/2010	1.6	1	13.42	30	50
30/06/2010	6.9	4	13.40	30	50
6/07/2010	3.4	2	13.37	30	50
12/07/2010	6.8	4	13.37	30	50
24/07/2010	8	5	13.36	30	50
30/07/2010	0.4	0	13.31	30	50
5/08/2010	7.9	5	13.20	30	50
11/08/2010	7.4	5	12.95	30	50
17/08/2010	9.3	6	12.61	30	50
23/08/2010	7.4	5	12.53	30	50
29/08/2010	5	3	12.20	30	50
4/09/2010	8.6	6	11.90	30	50
10/09/2010	5.9	4	11.95	30	50
16/09/2010	3	2	11.63	30	50
22/09/2010	20.6	13	11.63	30	50
28/09/2010	29.1	19	11.34	30	50

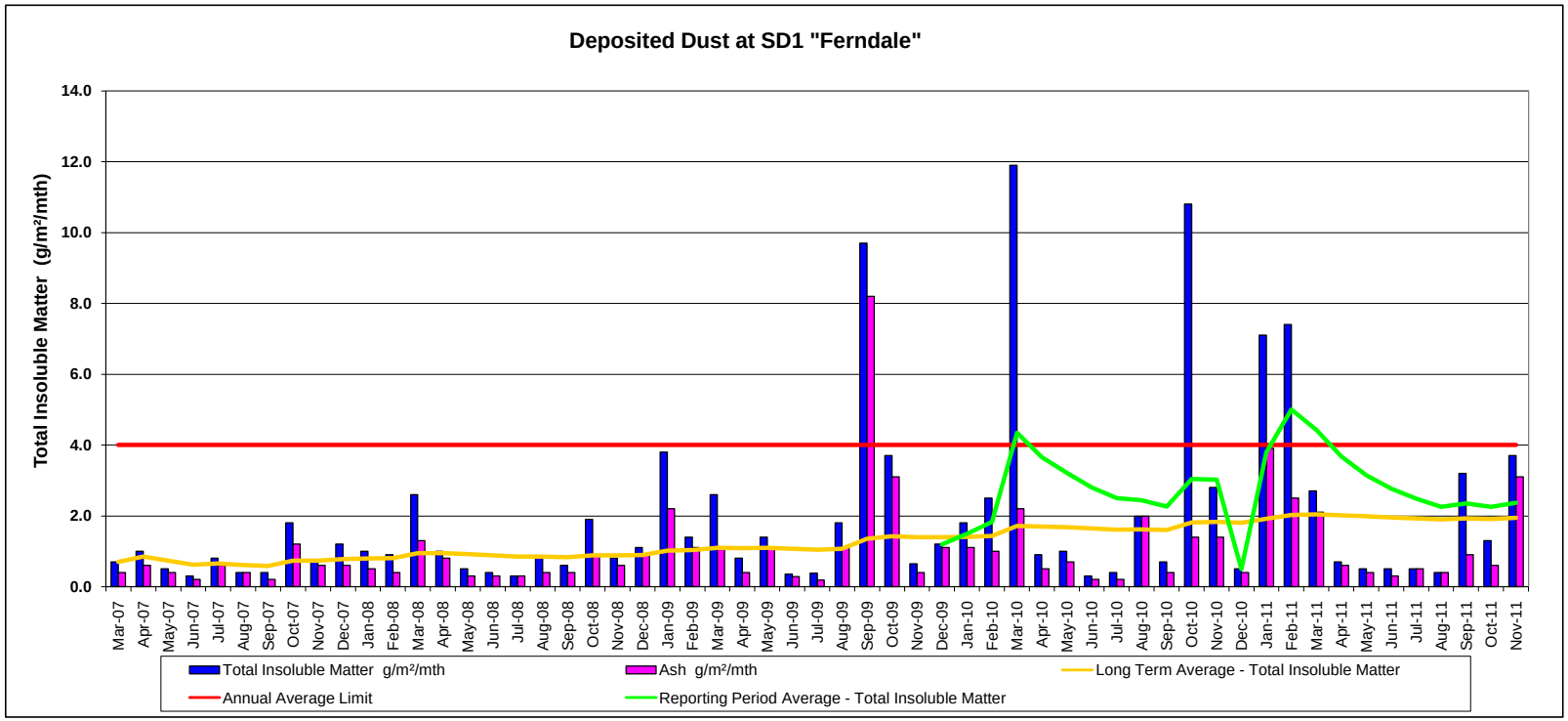
Date	mg/paper	µg/m³	Annual Average	Annual Average	24hr Limit
4/10/2010	0.5	0	10.90	30	50
10/10/2010	12.9	8	11.00	30	50
16/10/2010	6.6	4	10.83	30	50
22/10/2010	8.1	5	10.62	30	50
28/10/2010	19.5	13	10.67	30	50
3/11/2010	7.7	4.7	10.57	30	50
9/11/2010	4.3	2.6	10.46	30	50
15/11/2010	7.1	4.4	10.46	30	50
21/11/2010	10.3	6.3	10.25	30	50
27/11/2010	12.9	7.9	9.77	30	50
3/12/2010	9.5	5.6	9.75	30	50
9/12/2010	13.4	8	9.73	30	50
15/12/2010	17.5	10.4	8.77	30	50
21/12/2010	8.5	5.1	8.08	30	50
27/12/2010	6.5	3.9	7.87	30	50
2/01/2011	14.9	8.9	7.80	30	50
8/01/2011	9.3	5.5	7.78	30	50
14/01/2011	12.4	7.4	7.75	30	50
20/01/2011	4.3	2.6	7.30	30	50
26/01/2011	14.7	8.8	7.10	30	50
1/02/2011	28.1	18.9	6.99	30	50
7/02/2011	8.6	5.1	6.91	30	50
13/02/2011	7.4	4.4	6.87	30	50
19/02/2011	13.9	8.3	6.72	30	50
25/02/2011	18.5	11	6.75	30	50
3/03/2011	9.3	5.5	6.69	30	50
9/03/2011	12.6	7.5	6.74	30	50
15/03/2011	17.7	10.5	6.78	30	50
21/03/2011	<0.1	<0.1	6.86	30	50
27/03/2011	7.8	4.6	6.66	30	50
2/04/2011	19.2	11.4	6.45	30	50
8/04/2011	26.4	7.9	6.34	30	50
14/04/2011	No Access	No Access	6.35	30	50
20/04/2011	14.1	8.4	6.34	30	50
26/04/2011	7.3	4.3	6.32	30	50
2/05/2011	19.4	11.5	6.46	30	50
8/05/2011	23	13.7	6.52	30	50
14/05/2011	9.4	5.6	6.55	30	50
20/05/2011	18.1	10.8	6.60	30	50
26/05/2011	4	2.4	6.48	30	50
1/06/2011	11.8	7	6.57	30	50
7/06/2011	13.3	7.9	6.41	30	50
13/06/2011	8.2	4.9	6.48	30	50
19/06/2011	8.3	4.9	6.53	30	50
25/06/2011	11.7	7	6.62	30	50
1/07/2011	11.9	7.1	6.72	30	50
7/07/2011	9.1	5.4	6.75	30	50
13/07/2011	19.2	11.4	6.91	30	50
19/07/2011	4	2.4	6.89	30	50
25/07/2011	10.7	6.4	6.91	30	50
31/07/2011	11.3	6.7	7.03	30	50
6/08/2011	16.7	10	7.12	30	50
12/08/2011	4.2	2.7	7.08	30	50
18/08/2011	6.8	4	7.04	30	50
24/08/2011	<0.1	<0.1	7.08	30	50
30/08/2011	20.4	12.2	7.24	30	50
5/09/2011	16.5	9.8	7.31	30	50
11/09/2011	5.3	3.2	7.29	30	50
17/09/2011	8.6	5.1	7.35	30	50
23/09/2011	35.6	21.2	7.50	30	50
29/09/2011	11.7	7	7.28	30	50
5/10/2011	0.7	Power Failure	7.41	30	50
11/10/2011	9.7	5.8	7.39	30	50
17/10/2011	21.5	12.8	7.54	30	50
23/10/2011	0.4	0.2	7.46	30	50
29/10/2011	0.4	0.2	7.23	30	50
4/11/2011	16.1	9.6	7.32	30	50
10/11/2011	29.2	17.4	7.58	30	50
16/11/2011	42.2	25.1	7.89	30	50
22/11/2011	29.8	17.8	8.09	30	50
28/11/2011	16.2	9.6	8.12	30	50



Deposited Dust - SD1 "Ferndale"

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Matter g/m²/mth	Reporting Period Average - Total Insoluble Matter	Long Term Average - Total Insoluble Matter	Annual Average Limit	Ash g/m²/mth	Comment
26519.01	SD1 - Ferndale	03-Apr-07	Mar-07	Client	1620	440	0.7		0.7	4.0	0.4	
26630.01	SD1 - Ferndale	02-May-07	Apr-07	Client	1550	375	1.0		0.9	4.0	0.6	
26959.01	SD1 - Ferndale	05-Jun-07	May-07	Client	1555	1170	0.5		0.7	4.0	0.4	
27233.01	SD1 - Ferndale	02-Jul-07	Jun-07	Client	1600	1310	0.3		0.6	4.0	0.2	
27530.01	SD1 - Ferndale	03-Aug-07	Jul-07	Client	1225	215	0.8		0.7	4.0	0.6	
27819.01	SD1 - Ferndale	04-Sep-07	Aug-07	Client	1400	1145	0.4		0.6	4.0	0.4	
28118.01	SD1 - Ferndale	05-Oct-07	Sep-07	Client	0915	60	0.4		0.6	4.0	0.2	
28397.01	SD1 - Ferndale	02-Nov-07	Oct-07	Client	1415	825	1.8		0.7	4.0	1.2	
28661.01	SD1 - Ferndale	05-Dec-07	Nov-07	Client	940	1075	0.7		0.7	4.0	0.6	
28922.01	SD1 - Ferndale	02-Jan-08	Dec-07	Client	1645	2110	1.2		0.8	4.0	0.6	
29223.01	SD1 - Ferndale	04-Feb-08	Jan-08	Client	1545	1375	1.0		0.8	4.0	0.5	
29524.01	SD1 - Ferndale	05-Mar-08	Feb-08	Client	-	1635	0.9		0.8	4.0	0.4	
29772.01	SD1 - Ferndale	04-Apr-08	Mar-08	Client	1405	165	2.6		0.9	4.0	1.3	
30054.01	SD1 - Ferndale	08-May-08	Apr-08	Client	1545	330	1.0		1.0	4.0	0.8	
30385.01	SD1 - Ferndale	03-Jun-08	May-08	Client	0835	770	0.5		0.9	4.0	0.3	
30659.01	SD1 - Ferndale	09-Jul-08	Jun-08	Client	0845	670	0.4		0.9	4.0	0.3	
30901.01	SD1 - Ferndale	04-Aug-08	Jul-08	Client	1545	455	0.3		0.9	4.0	0.3	
31209.01	SD1 - Ferndale	02-Sep-08	Aug-08	Client	0800	510	0.8		0.9	4.0	0.4	
31526.01	SD1 - Ferndale	03-Oct-08	Sep-08	Client	1020	815	0.6		0.8	4.0	0.4	
31774.01	SD1 - Ferndale	05-Nov-08	Oct-08	Client	1050	1160	1.9		0.9	4.0	0.9	
32022.01	SD1 - Ferndale	02-Dec-08	Nov-08	Client	1115	1760	0.8		0.9	4.0	0.6	
32517.01	SD1 - Ferndale	06-Jan-09	Dec-08	Client	0950	1005	1.1		0.9	4.0	0.9	
32245.01	SD1 - Ferndale	03-Feb-09	Jan-09	Client	1051	300	3.8		1.0	4.0	2.2	
32862.01	SD1 - Ferndale	03-Mar-09	Feb-09	Client	1024	1200	1.4		1.0	4.0	1.1	
2600 1005 - 00	SD1 - Ferndale	02-Apr-09	Mar-09	ALS	1105	50	2.6		1.1	4.0	1.1	Insects
2600 1016 - 00	SD1 - Ferndale	04-May-09	Apr-09	ALS	1035	350	0.8		1.1	4.0	0.4	Insects
2600 1035 - 01	SD1 - Ferndale	03-Jun-09	May-09	ALS	1420	600	1.4		1.1	4.0	1.1	
2600 1040 - 02	SD1 - Ferndale	06-Jul-09	Jun-09	ALS	1455	600	0.3		1.1	4.0	0.3	Insects
2600 1052 - 01	SD1 - Ferndale	03-Aug-09	Jul-09	ALS	1658	400	0.4		1.0	4.0	0.2	Insects, Bird Droppings
2600 1063 - 00	SD1 - Ferndale	01-Sep-09	Aug-09	ALS	0916	10	1.8		1.1	4.0	1.1	Insects
2600 1099 - 01	SD1 - Ferndale	30-Sep-09	Sep-09	ALS	1244	1100	9.7		1.4	4.0	8.2	Dust storm 23/9, Insects, Bird Droppings
2600 1129 - 00	SD1 - Ferndale	04-Nov-09	Oct-09	ALS	1047	700	3.7		1.4	4.0	3.1	Insects
2600 1204 - 116	SD1 - Ferndale	02-Dec-09	Nov-09	ALS	1021	10	0.6		1.4	4.0	0.4	Insects, Plant Material
2600 1222 - 116	SD1 - Ferndale	31-Dec-09	Dec-09	ALS	900	2200	1.2	1.2	1.4	4.0	1.1	
2600 1234 - 000	SD1 - Ferndale	02-Feb-10	Jan-10	ALS	1230	2100	1.8	1.5	1.4	4.0	1.1	Insects, Plant Material
2600 1247 - 000	SD1 - Ferndale	04-Mar-10	Feb-10	ALS	1005	2000	2.5	1.8	1.4	4.0	1.0	Insects,One Frog
2600 1260 - 000	SD1 - Ferndale	01-Apr-10	Mar-10	ALS	950	900	11.9	4.4	1.7	4.0	2.2	Insects,Plant Material
2600 1268 - 000	SD1 - Ferndale	29-Apr-10	Apr-10	ALS	1230	100	0.9	3.7	1.7	4.0	0.5	Insects,Plant Material
2600 1277 - 000	SD1 - Ferndale	27-May-10	May-10	ALS	1335	40	1.0	3.2	1.7	4.0	0.7	Insects,Plant Material
2600 1288 - 778	SD1 - Ferndale	24-Jun-10	Jun-10	ALS	1330	300	0.3	2.8	1.6	4.0	0.2	Insects,Plant Material
26001289-879	SD1 - Ferndale	22-Jul-10	Jul-10	ALS	1430	800	0.4	2.5	1.6	4.0	0.2	Insects,Plant Material
2600-1309-912	SD1 - Ferndale	23-Aug-10	Aug-10	ALS	1150	1800	2.0	2.4	1.6	4.0	2.0	Insects,Plant Material
2600-1319	SD1 - Ferndale	22-Sep-10	Sep-10	ALS	1150	1000	0.7	2.3	1.6	4.0	0.4	Insects, Plant Material
2600-1340-17	SD1 - Ferndale	22-Oct-10	Oct-10	ALS	1055	2500	10.8	3.0	1.8	4.0	1.4	dead frog in bottle
1002974-001	SD1 - Ferndale	23-Nov-10	Nov-10	ALS	1055	2500	2.8	3.0	1.8	4.0	1.4	N/A
1003112-001	SD1 - Ferndale	23-Dec-10	Dec-10	ALS	10:30	?	0.5	0.5	1.8	4.0	0.4	No field observations
1100198-001	SD1 - Ferndale	24-Jan-11	Jan-11	ALS	11:20	1400	7.1	3.8	1.9	4.0	3.9	Insects, Bird droppings, plant material-Dead frog in bottle
1100461-001	SD1 - Ferndale	23-Feb-11	Feb-11	ALS	12:30	?	7.4	5.0	2.0	4.0	2.5	No field observations

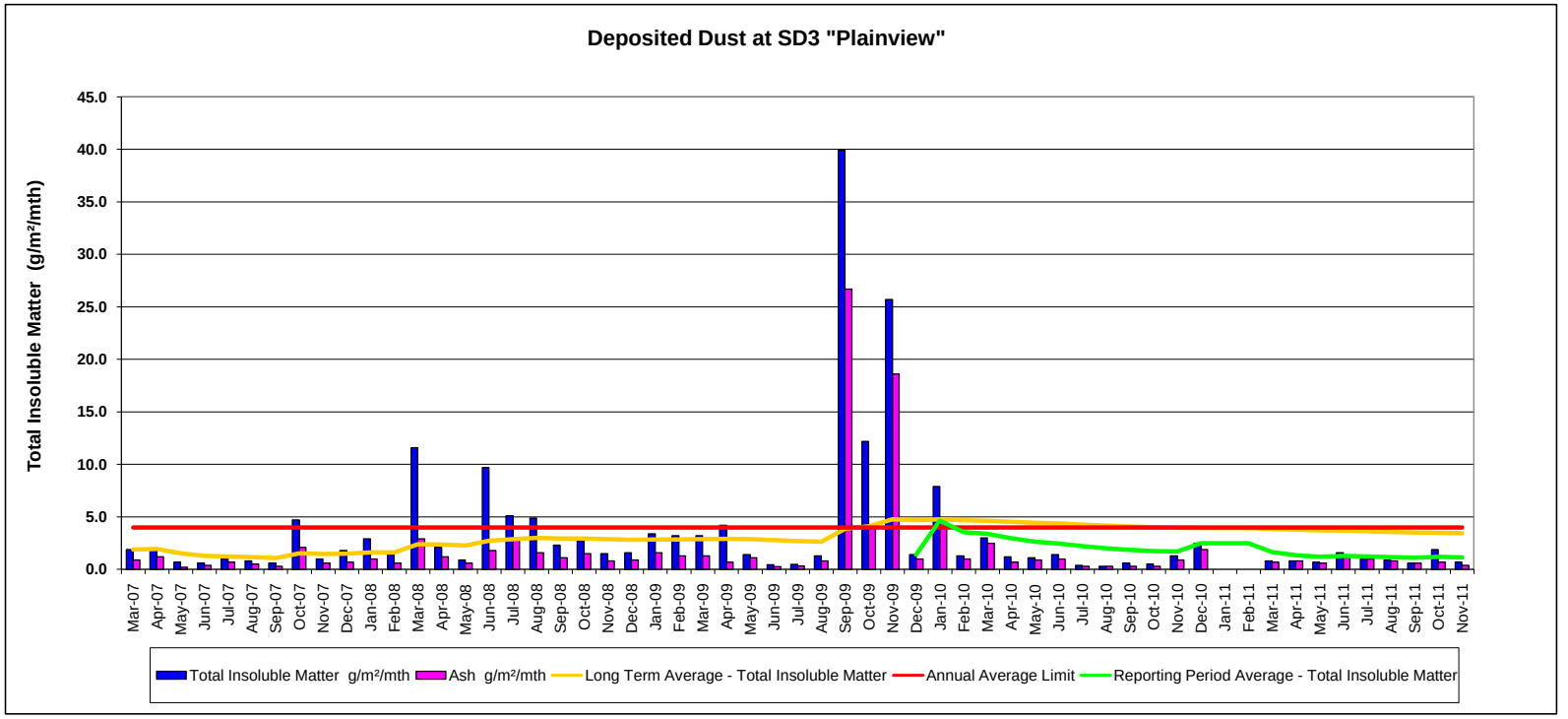
Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Matter g/m²/mth	Reporting Period Average - Total Insoluble Matter	Long Term Average - Total Insoluble Matter	Annual Average Limit	Ash g/m²/mth	Comment
1100716-001	SD1 - Ferndale	25-Mar-11	Mar-11	ALS	12:25	400	2.7	4.4	2.0	4.0	2.1	Insects, plant material
1100964-001	SD1 - Ferndale	21-Apr-11	Apr-11	ALS	13:30	400	0.7	3.7	2.0	4.0	0.6	Insects, plant material
1101206-001	SD1 - Ferndale	23-May-11	May-11	ALS	12:40	400	0.5	3.2	2.0	4.0	0.4	No field observations
1101487-001	SD1 - Ferndale	23-Jun-11	Jun-11	ALS	11:10	500	0.5	2.8	2.0	4.0	0.3	Plant material
1101835-001	SD1 - Ferndale	20-Jul-11	Jul-11	ALS	9:00	50	0.5	2.5	1.9	4.0	0.5	No field observations
1102364-001	SD1 - Ferndale	19-Aug-11	Aug-11	ALS	10:20	400	0.4	2.3	1.9	4.0	0.4	Insects, Plant material
1102817-001	SD1 - Ferndale	20-Sep-11	Sep-11	ALS	11:55	600	3.2	2.4	1.9	4.0	0.9	Insects, Bird Droppings, Plant material
1103134-001	SD1 - Ferndale	18-Oct-11	Oct-11	ALS	11:10	900	1.3	2.3	1.9	4.0	0.6	Insects, Plant material
1103513-001	SD1 - Ferndale	18-Nov-11	Nov-11	ALS	10:25	800	3.7	2.4	1.9	4.0	3.1	Insects, Plant material



Deposited Dust - SD3 "Plainview"

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Matter g/m²/mth	Reporting Period Average - Total Insoluble Matter	Long Term Average - Total Insoluble Matter	Annual Average Limit	Ash g/m²/mth	Comment
26519.03	SD3 - Plainview	03-Apr-07	Mar-07	Client	1630	660	1.9		1.9	4.0	0.9	
26630.03	SD3 - Plainview	02-May-07	Apr-07	Client	1715	400	2.0		2.0	4.0	1.2	
26959.03	SD3 - Plainview	05-Jun-07	May-07	Client	1645	1255	0.7		1.5	4.0	0.2	
27233.03	SD3 - Plainview	02-Jul-07	Jun-07	Client	1650	1400	0.6		1.3	4.0	0.4	
27530.03	SD3 - Plainview	03-Aug-07	Jul-07	Client	1400	165	1.0		1.2	4.0	0.7	
27819.03	SD3 - Plainview	04-Sep-07	Aug-07	Client	1505	1300	0.8		1.2	4.0	0.5	
28118.03	SD3 - Plainview	05-Oct-07	Sep-07	Client	0830	80	0.6		1.1	4.0	0.3	
28397.03	SD3 - Plainview	02-Nov-07	Oct-07	Client	1515	870	4.7		1.5	4.0	2.1	
28661.03	SD3 - Plainview	05-Dec-07	Nov-07	Client	0830	1290	1.0		1.5	4.0	0.6	
28922.03	SD3 - Plainview	02-Jan-08	Dec-07	Client	1730	2235	1.8		1.5	4.0	0.7	
29223.03	SD3 - Plainview	04-Feb-08	Jan-08	Client	1635	1535	2.9		1.6	4.0	1.0	
29524.03	SD3 - Plainview	05-Mar-08	Feb-08	Client	0810	2070	1.6		1.6	4.0	0.6	
29772.03	SD3 - Plainview	04-Apr-08	Mar-08	Client	1510	325	11.6		2.4	4.0	2.9	
30054.03	SD3 - Plainview	08-May-08	Apr-08	Client	1730	500	2.1		2.4	4.0	1.2	
30385.03	SD3 - Plainview	03-Jun-08	May-08	Client	1025	950	0.9		2.3	4.0	0.6	
30659.03	SD3 - Plainview	09-Jul-08	Jun-08	Client	1100	790	9.7		2.7	4.0	1.8	
30901.03	SD3 - Plainview	04-Aug-08	Jul-08	Client	1625	590	5.1		2.9	4.0	3.0	
31209.03	SD3 - Plainview	02-Sep-08	Aug-08	Client	0910	570	4.9		3.0	4.0	1.6	
31526.03	SD3 - Plainview	03-Oct-08	Sep-08	Client	1150	930	2.3		3.0	4.0	1.1	
31774.03	SD3 - Plainview	05-Nov-08	Oct-08	Client	1140	1250	2.8		3.0	4.0	1.5	
32022.03	SD3 - Plainview	02-Dec-08	Nov-08	Client	1245	2070	1.5		2.9	4.0	0.8	
32517.03	SD3 - Plainview	06-Jan-09	Dec-08	Client	1347	1580	1.6		2.8	4.0	0.9	
32245.02	SD3 - Plainview	03-Feb-09	Jan-09	Client	1208	585	3.4		2.8	4.0	1.6	
32862.03	SD3 - Plainview	03-Mar-09	Feb-09	Client	1142	1410	3.2		2.9	4.0	1.3	
2600 1005 - 00	SD3 - Plainview	02-Apr-09	Mar-09	ALS	1115	50	3.2		2.9	4.0	1.3	Insects
2600 1016 - 00	SD3 - Plainview	04-May-09	Apr-09	ALS	1045	300	4.2		2.9	4.0	0.7	Insects
2600 1035 - 01	SD3 - Plainview	03-Jun-09	May-09	ALS	1330	600	1.4		2.9	4.0	1.1	
2602 1040 - 02	SD3 - Plainview	06-Jul-09	Jun-09	ALS	1420	600	0.5		2.8	4.0	0.3	Insects, Plant Material
2601 1052 - 01	SD3 - Plainview	03-Aug-09	Jul-09	ALS	1708	450	0.5		2.7	4.0	0.3	Insects, Plant Material, Bird Droppings
2600 1063 - 00	SD3 - Plainview	01-Sep-09	Aug-09	ALS	0824	10	1.3		2.7	4.0	0.8	Insects, Plant Material
2600 1063 - 00	SD3 - Plainview	30-Sep-09	Sep-09	ALS	1222	1200	39.9		3.9	4.0	26.7	Insects, Bird Droppings,
2600 1129 - 00	SD3 - Plainview	04-Nov-09	Oct-09	ALS	1141	300	12.2		4.1	4.0	4.0	Dust storm - 23/9, sample contamination
2600 1204 - 116	SD3 - Plainview	02-Dec-09	Nov-09	ALS	0932	100	25.7		4.8	4.0	18.6	Insects, Bird Droppings, Plant Material
2600 1222 - 116	SD3 - Plainview	31-Dec-09	Dec-09	ALS	819	2000	1.4	1.4	4.7	4.0	1	Insects
2600 1234 - 000	SD3 - Plainview	02-Feb-10	Jan-10	ALS	1145	2400	7.9	4.7	4.8	4.0	4.7	Insects, Plant Material
2601 1247 - 000	SD3 - Plainview	04-Mar-10	Feb-10	ALS	1120	2200	1.3	3.5	4.7	4.0	1	Insects
2600 1260 - 000	SD3 - Plainview	01-Apr-10	Mar-10	ALS	925	900	3	3.4	4.6	4.0	2.5	Insects,Plant Material
2600 1268 - 000	SD3 - Plainview	29-Apr-10	Apr-10	ALS	1130	100	1.2	3.0	4.5	4.0	0.7	Insects,Plant Material
2600 1277 - 000	SD3 - Plainview	27-May-10	May-10	ALS	1300	50	1.1	2.7	4.4	4.0	0.9	Insects,Plant Material
2600 1288 - 778	SD3 - Plainview	24-Jun-10	Jun-10	ALS	1405	300	1.4	2.5	4.4	4.0	1	Plant Material
26001289-879	SD3 - Plainview	22-Jul-10	Jul-10	ALS	1510	800	0.4	2.2	4.3	4.0	0.3	Insects
2600-1309-912	SD3 - Plainview	23-Aug-10	Aug-10	ALS	1325	1800	0.3	2.0	4.2	4.0	0.3	Insects
2600-1319	SD3 - Plainview	22-Sep-10	Sep-10	ALS	1325	900	0.6	1.9	4.1	4.0	0.3	Insects, Plant Material
2600-1340-17	SD3 - Plainview	22-Oct-10	Oct-10	ALS	1250	2500	0.5	1.7	4.0	4.0	0.3	N/A
1002974-002	SD3 - Plainview	23-Nov-10	Nov-10	ALS	1250	2500	1.3	1.7	4.0	4.0	0.9	N/A
1003112-002	SD3 - Plainview	23-Dec-10	Dec-10	ALS	10:00	N/A	2.5	2.5	3.9	4.0	1.9	No field observations
N/A	SD3 - Plainview	N/A	Jan-11	ALS	N/A	N/A	N/A	2.5	3.9	4.0	N/A	SD3 Damaged. To be replaced.
N/A	SD3 - Plainview	N/A	Feb-11	ALS	N/A	N/A	N/A	2.5	3.9	4.0	N/A	SD3 Damaged. To be replaced.

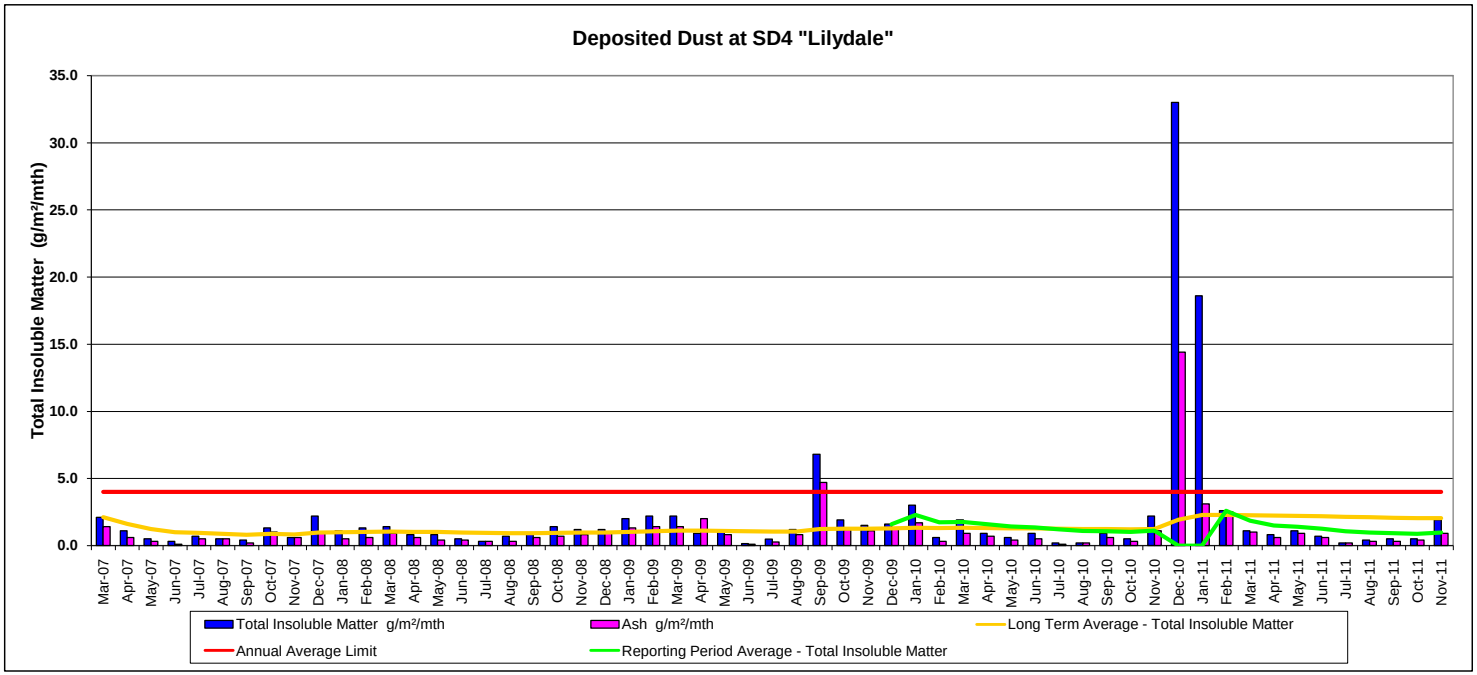
Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Matter g/m²/mth	Reporting Period Average - Total Insoluble Matter	Long Term Average - Total Insoluble Matter	Annual Average Limit	Ash g/m²/mth	Comment
1100716-002	SD3 - Plainview	25-Mar-11	Mar-11	ALS	13:05	500	0.8	1.7	3.9	4.0	0.7	Insects, plant material
1100964-002	SD3 - Plainview	21-Apr-11	Apr-11	ALS	13:50	500	0.8	1.4	3.8	4.0	0.8	Insects, plant material
1101206-002	SD3 - Plainview	23-May-11	May-11	ALS	13:35	500	0.7	1.2	3.7	4.0	0.6	Insects
1101487-002	SD3 - Plainview	23-Jun-11	Jun-11	ALS	11:50	500	1.6	1.3	3.7	4.0	1.3	Insects/Plant material
1101835-002	SD3 - Plainview	20-Jul-11	Jul-11	ALS	9:10	100	1.0	1.2	3.6	4.0	1.0	Insects, Plant material
1102364-002	SD3 - Plainview	19-Aug-11	Aug-11	ALS	10:40	400	0.9	1.2	3.6	4.0	0.8	Plant material
1102817-002	SD3 - Plainview	20-Sep-11	Sep-11	ALS	10:00	800	0.6	1.1	3.5	4.0	0.6	Insects
1103134-002	SD3 - Plainview	18-Oct-11	Oct-11	ALS	11:50	1100	1.9	1.2	3.5	4.0	0.7	Insects, Bird Droppings, Plant material
1103513-002	SD3 - Plainview	18-Nov-11	Nov-11	ALS	11:10	800	0.7	1.2	3.4	4.0	0.4	Insects, Plant material



Deposited Dust - SD4 "Lilydale"

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Matter g/m²/mth	Reporting Period Average - Total Insoluble Matter	Long Term Average - Total Insoluble Matter	Annual Average Limit	Ash g/m²/mth	Comment
26519.04	SD4 - Lilydale	03-Apr-07	Mar-07	Client	1635	365	2.1		2.1	4.0	1.4	
26630.04	SD4 - Lilydale	02-May-07	Apr-07	Client	1705	405	1.1		1.6	4.0	0.6	
26959.04	SD4 - Lilydale	05-Jun-07	May-07	Client	1640	1180	0.5		1.2	4.0	0.3	
27233.04	SD4 - Lilydale	02-Jul-07	Jun-07	Client	1645	1360	0.3		1.0	4.0	0.1	
27530.04	SD4 - Lilydale	03-Aug-07	Jul-07	Client	1345	115	0.7		0.9	4.0	0.5	
27819.04	SD4 - Lilydale	04-Sep-07	Aug-07	Client	1500	1190	0.5		0.9	4.0	0.5	
28118.04	SD4 - Lilydale	05-Oct-07	Sep-07	Client	0840	65	0.4		0.8	4.0	0.2	
28397.04	SD4 - Lilydale	02-Nov-07	Oct-07	Client	1505	640	1.3		0.9	4.0	1.0	
28661.04	SD4 - Lilydale	05-Dec-07	Nov-07	Client	0840	1240	0.6		0.8	4.0	0.6	
28922.04	SD4 - Lilydale	02-Jan-08	Dec-07	Client	1720	2075	2.2		1.0	4.0	1.0	
29223.04	SD4 - Lilydale	04-Feb-08	Jan-08	Client	1625	1510	1.1		1.0	4.0	0.5	
29524.04	SD4 - Lilydale	05-Mar-08	Feb-08	Client	0820	1740	1.3		1.0	4.0	0.6	
29772.04	SD4 - Lilydale	04-Apr-08	Mar-08	Client	1500	140	1.4		1.0	4.0	0.9	
30054.04	SD4 - Lilydale	08-May-08	Apr-08	Client	1725	355	0.8		1.0	4.0	0.6	
30385-04	SD4 - Lilydale	03-Jun-08	May-08	Client	1020	915	0.8		1.0	4.0	0.4	
30659.04	SD4 - Lilydale	09-Jul-08	Jun-08	Client	1050	670	0.5		1.0	4.0	0.4	
30901.04	SD4 - Lilydale	04-Aug-08	Jul-08	Client	1615	465	0.3		0.9	4.0	0.3	
31209.04	SD4 - Lilydale	02-Sep-08	Aug-08	Client	0900	525	0.7		0.9	4.0	0.3	
31526.04	SD4 - Lilydale	03-Oct-08	Sep-08	Client	1135	785	0.9		0.9	4.0	0.6	
31774.04	SD4 - Lilydale	05-Nov-08	Oct-08	Client	1130	1030	1.4		0.9	4.0	0.7	
32022.04	SD4 - Lilydale	02-Dec-08	Nov-08	Client	1235	1895	1.2		1.0	4.0	0.8	
32517.04	SD4 - Lilydale	06-Jan-09	Dec-08	Client	1338	1090	1.2		1.0	4.0	0.9	
32245.03	SD4 - Lilydale	03-Feb-09	Jan-09	Client	1151	125	2.0		1.0	4.0	1.3	
32862.04	SD4 - Lilydale	03-Mar-09	Feb-09	Client	1127	1090	2.2		1.1	4.0	1.4	
2600 1005 - 00	SD4 - Lilydale	02-Apr-09	Mar-09	ALS	1036	50	2.2		1.1	4.0	1.4	Insects
2600 1016 - 00	SD4 - Lilydale	04-May-09	Apr-09	ALS	1109	250	0.9		1.1	4.0	2.0	Insects
2600 1035 - 01	SD4 - Lilydale	03-Jun-09	May-09	ALS	1325	500	1.0		1.1	4.0	0.8	
2603 1040 - 02	SD4 - Lilydale	06-Jul-09	Jun-09	ALS	1415	650	0.1		1.1	4.0	0.1	Insects, Plant Material
2602 1052 - 01	SD4 - Lilydale	03-Aug-09	Jul-09	ALS	1635	450	0.5		1.0	4.0	0.3	
2600 1063 - 00	SD4 - Lilydale	01-Sep-09	Aug-09	ALS	0830	10	1.2		1.0	4.0	0.8	Insects
2600 1063 - 00	SD4 - Lilydale	30-Sep-09	Sep-09	ALS	1139	900	6.8		1.2	4.0	4.7	Dust storm 23/9
2600 1129 - 00	SD4 - Lilydale	04-Nov-09	Oct-09	ALS	1127	600	1.9		1.3	4.0	1.2	Insects, Bird Dropping, Plant Material
2600 1204 - 116	SD4 - Lilydale	02-Dec-09	Nov-09	ALS	0925	15	1.5		1.3	4.0	1.1	Insects, Plant Material
2600 1222 - 116	SD4 - Lilydale	31-Dec-09	Dec-09	ALS	8:30	2200	1.6	1.6	1.3	4.0	1.3	
2600 1234 - 000	SD4 - Lilydale	02-Feb-10	Jan-10	ALS	11:25	2200	3.0	2.3	1.3	4.0	1.7	Insects, Plant Material
2602 1247 - 000	SD4 - Lilydale	04-Mar-10	Feb-10	ALS	11:15	1800	0.6	1.7	1.3	4.0	0.3	Insects, Bird droppings, Plant Material
2600 1260 - 000	SD4 - Lilydale	01-Apr-10	Mar-10	ALS	915	800	1.9	1.8	1.3	4.0	0.9	Insects,Plant Material
2600 1268 - 000	SD4 - Lilydale	29-Apr-10	Apr-10	ALS	1115	75	0.9	1.6	1.3	4.0	0.7	Insects,Bird Droppings,Plant Material, Frogs

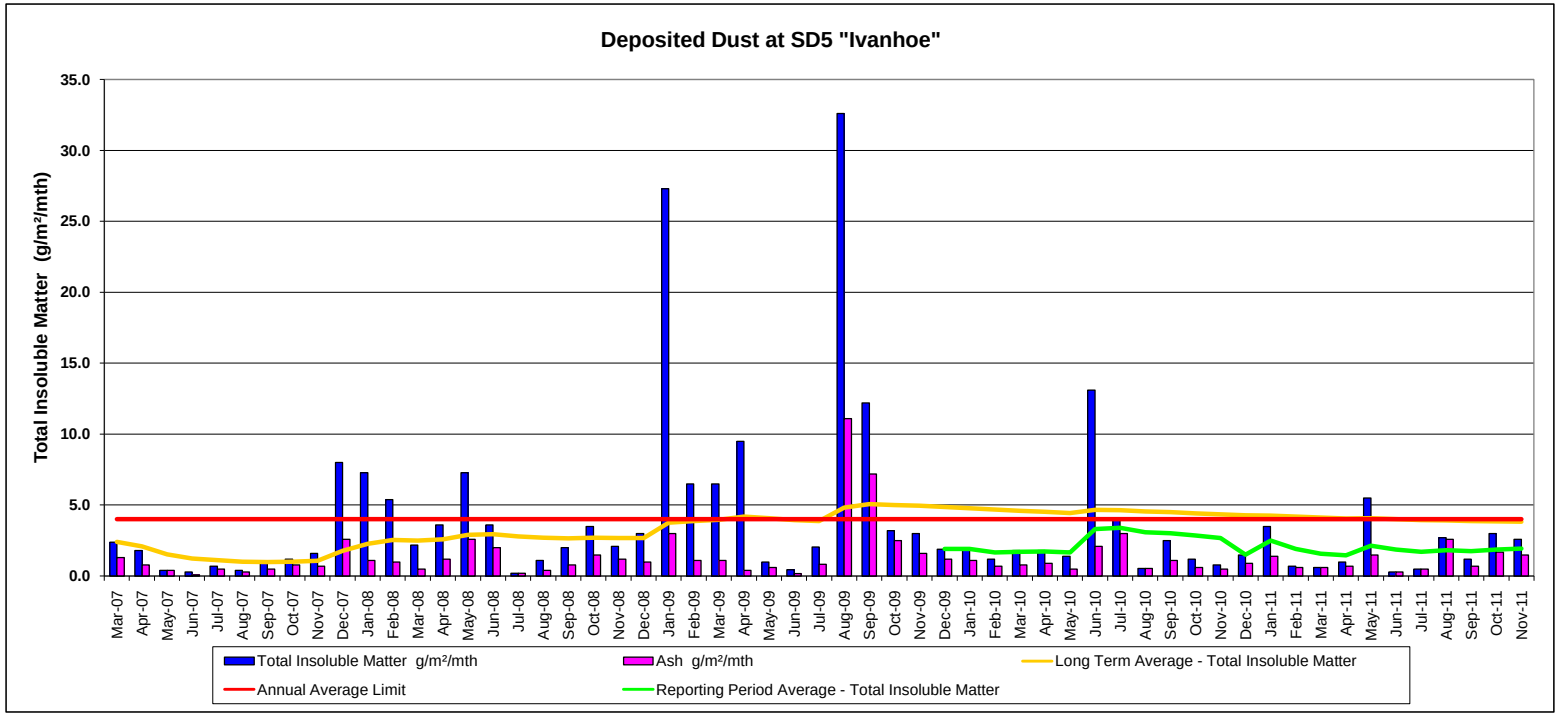
Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Matter g/m²/mth	Reporting Period Average - Total Insoluble Matter	Long Term Average - Total Insoluble Matter	Annual Average Limit	Ash g/m²/mth	Comment
2600 1277 - 000	SD4 - Lilydale	27-May-10	May-10	ALS	1245	50	0.6	1.4	1.3	4.0	0.4	Plant Material
2600 1288 - 778	SD4 - Lilydale	24-Jun-10	Jun-10	ALS	1415	200	0.9	1.4	1.3	4.0	0.5	Insects,Plant Material
26001289-879	SD4 - Lilydale	22-Jul-10	Jul-10	ALS	15:00	600	0.2	1.2	1.3	4.0	0.1	Insects
2600-1309-912	SD4 - Lilydale	23-Aug-10	Aug-10	ALS	10:05	1800	0.2	1.1	1.2	4.0	0.2	Insects
2600-1319	SD4 - Lilydale	22-Sep-10	Sep-10	ALS	10:05	800	0.9	1.1	1.2	4.0	0.6	Insects
2600-1340-17	SD4 - Lilydale	22-Oct-10	Oct-10	ALS	12:15	2500	0.5	1.0	1.2	4.0	0.3	dead frog in bottle
1002974-003	SD4 - Lilydale	23-Nov-10	Nov-10	ALS	12:15	2500	2.2	1.1	1.2	4.0	1.1	N/A
1003112-003	SD4 - Lilydale	23-Dec-10	Dec-10	ALS	9:00	N/A	33.0	Outlier	1.9	4.0	14.4	No field observations
1100198-003	SD4 - Lilydale	24-Jan-11	Jan-11	ALS	12:30	1000	18.6	Outlier	2.3	4.0	3.1	Insects, plant material
1100461-003	SD4 - Lilydale	23-Feb-11	Feb-11	ALS	13:45	N/A	2.6	2.6	2.3	4.0	2.5	No field observations
1100716-003	SD4 - Lilydale	25-Mar-11	Mar-11	ALS	13:25	600	1.1	1.9	2.3	4.0	1.0	Insects, plant material
1100964-003	SD4 - Lilydale	21-Apr-11	Apr-11	ALS	14:05	400	0.8	1.5	2.2	4.0	0.6	Insects, plant material
1101206-003	SD4 - Lilydale	23-May-11	May-11	ALS	13:50	300	1.1	1.4	2.2	4.0	0.9	Insects
1101487-003	SD4 - Lilydale	23-Jun-11	Jun-11	ALS	12:05	500	0.7	1.3	2.2	4.0	0.6	Insects/Plant material
1101835-003	SD4 - Lilydale	20-Jul-11	Jul-11	ALS	8:30	100	0.2	1.1	2.1	4.0	0.2	Insects
1102364-003	SD4 - Lilydale	19-Aug-11	Aug-11	ALS	10:50	400	0.4	1.0	2.1	4.0	0.3	Insects, Plant material
1102817-003	SD4 - Lilydale	20-Sep-11	Sep-11	ALS	10:30	600	0.5	0.9	2.1	4.0	0.3	Insects, Plant material
1103134-003	SD4 - Lilydale	18-Oct-11	Oct-11	ALS	12:15	900	0.5	0.9	2.0	4.0	0.4	Insects, Plant material
1103513-003	SD4 - Lilydale	18-Nov-11	Nov-11	ALS	11:20	800	1.9	1.0	2.0	4.0	0.9	Insects, Plant material



Deposited Dust - SD5 "Ivanhoe"

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Matter g/m²/mth	Reporting Period Average - Total Insoluble Matter	Long Term Average - Total Insoluble Matter	Annual Average Limit	Ash g/m²/mth	Comment
26519.05	SD5 - Ivanhoe	03-Apr-07	Mar-07	Client	1655	410	2.4		2.4	4.0	1.3	
26630.05	SD5 - Ivanhoe	02-May-07	Apr-07	Client	1445	430	1.8		2.1	4.0	0.8	
26959.05	SD5 - Ivanhoe	05-Jun-07	May-07	Client	1625	1345	0.4		1.5	4.0	0.4	
27233.05	SD5 - Ivanhoe	02-Jul-07	Jun-07	Client	1630	1570	0.3		1.2	4.0	0.1	
27530.05	SD5 - Ivanhoe	03-Aug-07	Jul-07	Client	1330	185	0.7		1.1	4.0	0.5	
27819.05	SD5 - Ivanhoe	04-Sep-07	Aug-07	Client	1440	1325	0.4		1.0	4.0	0.3	
28118.05	SD5 - Ivanhoe	05-Oct-07	Sep-07	Client	0905	80	0.9		1.0	4.0	0.5	
28397.05	SD5 - Ivanhoe	02-Nov-07	Oct-07	Client	1450	830	1.2		1.0	4.0	0.8	
28661.05	SD5 - Ivanhoe	05-Dec-07	Nov-07	Client	0920	1545	1.6		1.1	4.0	0.7	
28922.05	SD5 - Ivanhoe	02-Jan-08	Dec-07	Client	1705	2265	8.0		1.8	4.0	2.6	
29223.05	SD5 - Ivanhoe	04-Feb-08	Jan-08	Client	1610	1330	7.3		2.3	4.0	1.1	
29524.05	SD5 - Ivanhoe	05-Mar-08	Feb-08	Client	0940	1415	5.4		2.5	4.0	1.0	
29772.05	SD5 - Ivanhoe	04-Apr-08	Mar-08	Client	1425	155	2.2		2.5	4.0	0.5	
30054.05	SD5 - Ivanhoe	08-May-08	Apr-08	Client	1635	480	3.6		2.6	4.0	1.2	
30385-05	SD5 - Ivanhoe	03-Jun-08	May-08	Client	931	1060	7.3		2.9	4.0	2.6	
30659.05	SD5 - Ivanhoe	09-Jul-08	Jun-08	Client	1015	695	3.6		2.9	4.0	2.0	
30901.05	SD5 - Ivanhoe	04-Aug-08	Jul-08	Client	1600	375	0.2		2.8	4.0	0.2	
31209.05	SD5 - Ivanhoe	02-Sep-08	Aug-08	Client	0830	535	1.1		2.7	4.0	0.4	
31526.05	SD5 - Ivanhoe	03-Oct-08	Sep-08	Client	1100	865	2.0		2.7	4.0	0.8	
31774.05	SD5 - Ivanhoe	05-Nov-08	Oct-08	Client	1114	1060	3.5		2.7	4.0	1.5	
32022.05	SD5 - Ivanhoe	02-Dec-08	Nov-08	Client	1145	2030	2.1		2.7	4.0	1.2	
32517.05	SD5 - Ivanhoe	06-Jan-09	Dec-08	Client	1321	1395	3.0		2.7	4.0	1.0	
32245.04	SD5 - Ivanhoe	03-Feb-09	Jan-09	Client	1130	375	27.3		3.8	4.0	3.0	
32862.05	SD5 - Ivanhoe	03-Mar-09	Feb-09	Client	1100	1550	6.5		3.9	4.0	1.1	
2600 1005 - 00	SD5 - Ivanhoe	02-Apr-09	Mar-09	ALS	1044	150	6.5		4.0	4.0	1.1	Insects, Bird droppings
2600 1016 - 00	SD5 - Ivanhoe	04-May-09	Apr-09	ALS	1120	300	9.5		4.2	4.0	0.4	Insects,
2600 1035 - 01	SD5 - Ivanhoe	03-Jun-09	May-09	ALS	1345	600	1.0		4.1	4.0	0.6	Insects, plant material
2604 1040 - 02	SD5 - Ivanhoe	06-Jul-09	Jun-09	ALS	1520	700	0.4		3.9	4.0	0.2	
2603 1052 - 01	SD5 - Ivanhoe	03-Aug-09	Jul-09	ALS	1642	450	2.1		3.9	4.0	0.8	Insects, Bird Droppings
2600 1063 - 00	SD5 - Ivanhoe	01-Sep-09	Aug-09	ALS	0847	10	32.6		4.8	4.0	11.1	Insects, Bird Droppings, Plant Material
2600 1063 - 00	SD5 - Ivanhoe	30-Sep-09	Sep-09	ALS	1206	1100	12.2		5.1	4.0	7.2	Dust storm 23/9, sample contamination
2600 1129 - 00	SD5 - Ivanhoe	04-Nov-09	Oct-09	ALS	1113	600	3.2		5.0	4.0	2.5	Insects, Plant Material
2600 1204 - 116	SD5 - Ivanhoe	02-Dec-09	Nov-09	ALS	1000	100	3		4.9	4.0	1.6	Insects, Bird Droppings, Plant Material
2600 1222 - 116	SD5 - Ivanhoe	31-Dec-09	Dec-09	ALS	10:35	2500	1.9	1.9	4.9	4.0	1.2	Insects, Plant Material
2600 1234 - 000	SD5 - Ivanhoe	02-Feb-10	Jan-10	ALS	12:00	300	1.9	1.9	4.8	4.0	1.1	Insects, Bird droppings, Plant Material
2603 1247 - 000	SD5 - Ivanhoe	04-Mar-10	Feb-10	ALS	10:45	1800	1.2	1.7	4.7	4.0	0.7	Insects
2600 1260 - 000	SD5 - Ivanhoe	06-Apr-10	Mar-10	ALS	930	1000	1.8	1.7	4.6	4.0	0.8	Insects, Bird droppings
2600 1268 - 000	SD5 - Ivanhoe	29-Apr-10	Apr-10	ALS	1150	100	1.8	1.7	4.5	4.0	0.9	Insects,Plant Material
2600 1277 - 000	SD5 - Ivanhoe	27-May-10	May-10	ALS	1310	50	1.4	1.7	4.4	4.0	0.5	Insects,Plant Material
2600 1288 - 778	SD5 - Ivanhoe	24-Jun-10	Jun-10	ALS	1350	300	13.1	3.3	4.7	4.0	2.1	Insects,Plant Material, Bird Droppings
26001289-879	SD5 - Ivanhoe	22-Jul-10	Jul-10	ALS	14:45	800	4	3.4	4.6	4.0	3	Insects, Bird Droppings
2600-1309-912	SD5 - Ivanhoe	23-Aug-10	Aug-10	ALS	11:00	1800	0.6	3.1	4.5	4.0	0.6	Insects, Bird Droppings
2600-1319	SD5 - Ivanhoe	22-Sep-10	Sep-10	ALS	11:00	900	2.5	3.0	4.5	4.0	1.1	Insects

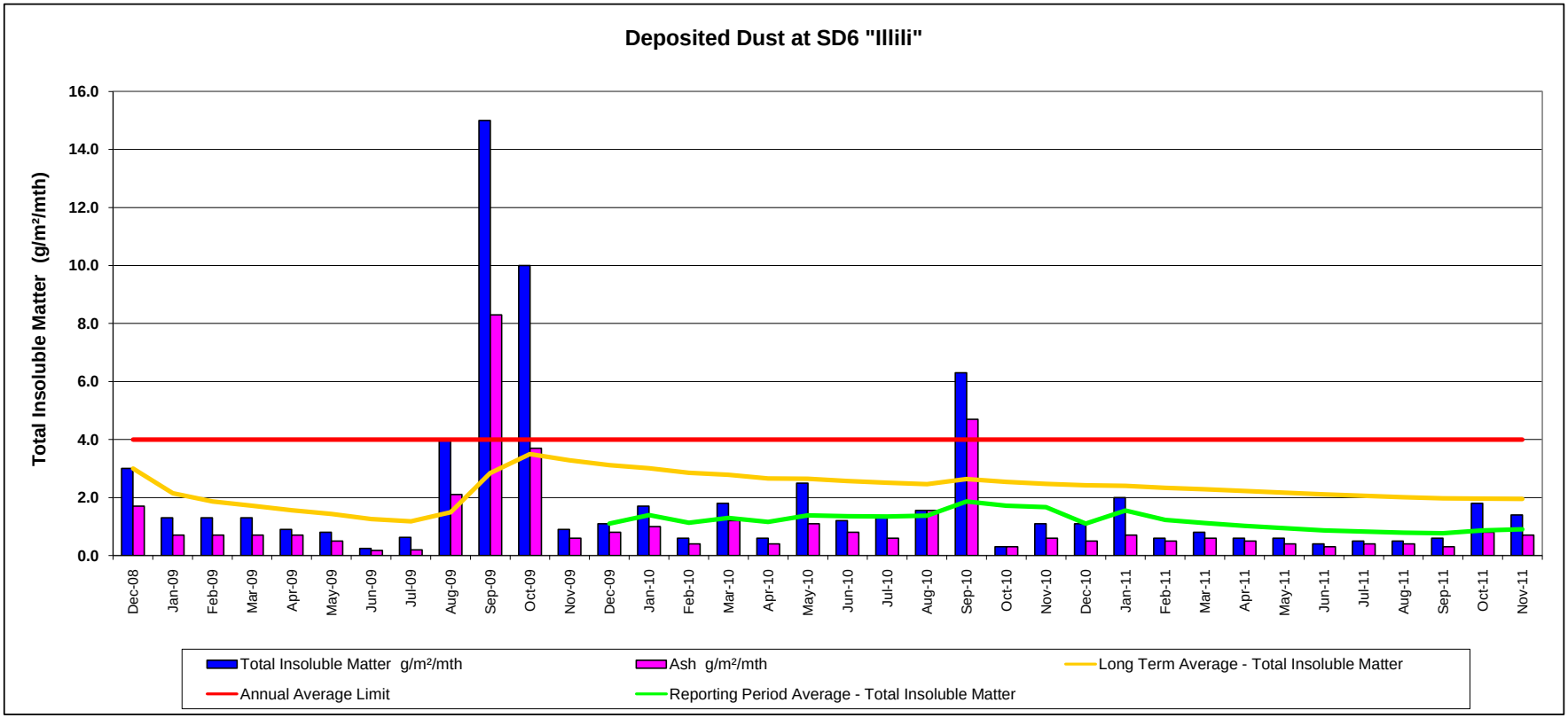
Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Matter g/m²/mth	Reporting Period Average - Total Insoluble Matter	Long Term Average - Total Insoluble Matter	Annual Average Limit	Ash g/m²/mth	Comment
2600-1340-17	SD5 - Ivanhoe	22-Oct-10	Oct-10	ALS	11:50	2500	1.2	2.9	4.4	4.0	0.6	N/A
1002974-004	SD5 - Ivanhoe	23-Nov-10	Nov-10	ALS	11:50	2500	0.8	2.7	4.3	4.0	0.5	N/A
1003112-004	SD5 - Ivanhoe	23-Dec-10	Dec-10	ALS	9:30	N/A	1.5	1.5	4.3	4.0	0.9	No field observations
1100198-004	SD5 - Ivanhoe	24-Jan-11	Jan-11	ALS	12:00	1100	3.5	2.5	4.3	4.0	1.4	Insects, bird droppings, plant material-Oiley substance in bottle
1100461-004	SD5 - Ivanhoe	23-Feb-11	Feb-11	ALS	13:10	N/A	0.7	1.9	4.2	4.0	0.6	No field observations
1100716-004	SD5 - Ivanhoe	25-Mar-11	Mar-11	ALS	12:50	700	0.6	1.6	4.1	4.0	0.6	Insects, plant material
1100964-004	SD5 - Ivanhoe	21-Apr-11	Apr-11	ALS	14:30	300	1.0	1.5	4.1	4.0	0.7	Insects, plant material
1101206-004	SD5 - Ivanhoe	23-May-11	May-11	ALS	13:10	500	5.5	2.1	4.1	4.0	1.5	Insects/Bird Droppings/Plant material
1101487-004	SD5 - Ivanhoe	23-Jun-11	Jun-11	ALS	11:40	500	0.3	1.9	4.0	4.0	0.3	Plant material
1101835-004	SD5 - Ivanhoe	20-Jul-11	Jul-11	ALS	14:00	100	0.5	1.7	3.9	4.0	0.5	Insects, Plant material
1102364-004	SD5 - Ivanhoe	19-Aug-11	Aug-11	ALS	12:10	400	2.7	1.8	3.9	4.0	2.6	Insects, Plant material
1102817-004	SD5 - Ivanhoe	20-Sep-11	Sep-11	ALS	11:30	600	1.2	1.8	3.9	4.0	0.7	Insects, Bird Droppings, Plant material
1103134-004	SD5 - Ivanhoe	18-Oct-11	Oct-11	ALS	11:35	900	3.0	1.9	3.9	4.0	1.7	Insects, Plant material
1103513-004	SD5 - Ivanhoe	18-Nov-11	Nov-11	ALS	10:50	800	2.6	1.9	3.8	4.0	1.5	Insects, Bird Droppings, Plant material



Deposited Dust - SD6 "Illili"

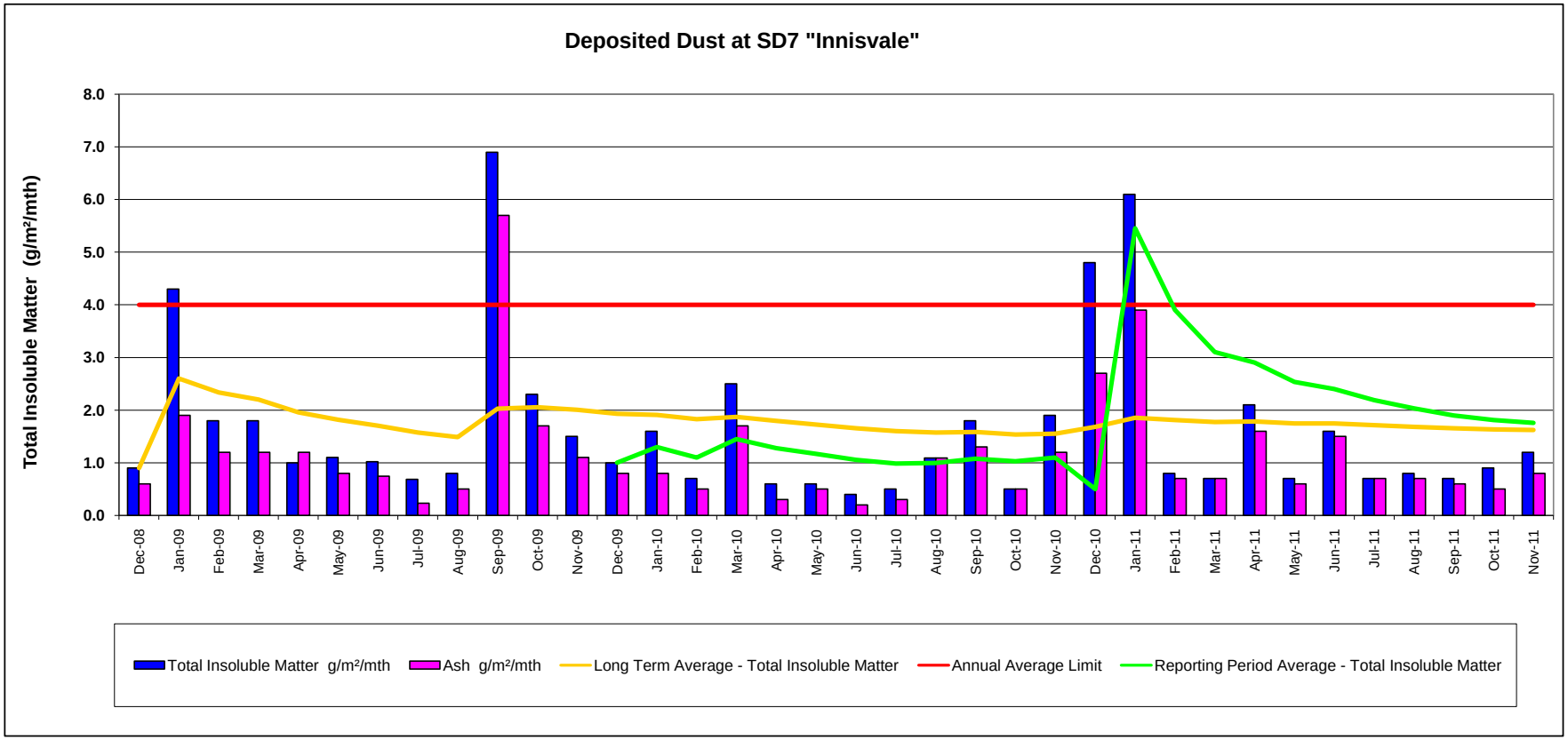
Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Matter g/m²/mth	Reporting Period Average - Total Insoluble Matter	Long Term Average - Total Insoluble Matter	Annual Average Limit	Ash g/m²/mth	Comment
32517.06	SD6 - Illili	06-Jan-09	Dec-08	Client	1219	1090	3.0		3.0	4.0	1.7	
32245.05	SD6 - Illili	03-Feb-09	Jan-09	Client	1104	210	1.3		2.2	4.0	0.7	
32862.06	SD6 - Illili	03-Mar-09	Feb-09	Client	1030	1425	1.3		1.9	4.0	0.7	
2600 1005 - 00	SD6 - Illili	02-Apr-09	Mar-09	ALS	1055	50	1.3		1.7	4.0	0.7	Insects, Bird droppings
2600 1016 - 00	SD6 - Illili	04-May-09	Apr-09	ALS	1130	300	0.9		1.6	4.0	0.7	Insects, Bird droppings
2600 1035 - 01	SD6 - Illili	03-Jun-09	May-09	ALS	1400	700	0.8		1.4	4.0	0.5	Plant material
2605 1040 - 02	SD6 - Illili	06-Jul-09	Jun-09	ALS	1440	650	0.2		1.3	4.0	0.2	Insects, Plant Material
2604 1052 - 01	SD6 - Illili	03-Aug-09	Jul-09	ALS	1653	350	0.6		1.2	4.0	0.2	Insects, Plant Material
2600 1063 - 00	SD6 - Illili	01-Sep-09	Aug-09	ALS	0902	20	4.0		1.5	4.0	2.1	
2600 1063 - 00	SD6 - Illili	30-Sep-09	Sep-09	ALS	1236	1200	15.0		2.8	4.0	8.3	Dust storm 23/9, contamination
2600 1129 - 00	SD6 - Illili	04-Nov-09	Oct-09	ALS	1057	700	10.0		3.5	4.0	3.7	Insects, Plant Material
2600 1204 - 116	SD6 - Illili	02-Dec-09	Nov-09	ALS	0940	20	0.9		3.3	4.0	0.6	Insects
2600 1222 - 116	SD6 - Illili	31-Dec-09	Dec-09	ALS	8:51	2400	1.1	1.1	3.1	4.0	0.8	Insects, Bird Droppings
2600 1234 - 000	SD6 - Illili	02-Feb-10	Jan-10	ALS	12:20	2100	1.7	1.4	3.0	4.0	1.0	Insects, Plant Material
2604 1247 - 000	SD6 - Illili	04-Mar-10	Feb-10	ALS	10:20	2200	0.6	1.1	2.9	4.0	0.4	Insects
2600 1260 - 000	SD6 - Illili	01-Apr-10	Mar-10	ALS	940	1000	1.8	1.3	2.8	4.0	1.2	Insects, Plant Material
2600 1268 - 000	SD6 - Illili	29-Apr-10	Apr-10	ALS	1215	100	0.6	1.2	2.7	4.0	0.4	Insects, Plant Material
2600 1277 - 000	SD6 - Illili	27-May-10	May-10	ALS	1330	50	2.5	1.4	2.6	4.0	1.1	Insects, Bird Dtroppings, Plant Material
2600 1288 - 778	SD6 - Illili	24-Jun-10	Jun-10	ALS	1340	300	1.2	1.4	2.6	4.0	0.8	Insects, Plant Material
26001289-879	SD6 - Illili	22-Jul-10	Jul-10	ALS	14:35	800	1.3	1.4	2.5	4.0	0.6	Insects, Bird Droppings
2600-1309-912	SD6 - Illili	23-Aug-10	Aug-10	ALS	11:35	1800	1.6	1.4	2.5	4.0	1.6	Insects, Bird Droppings
2600-1319	SD6 - Illili	22-Sep-10	Sep-10	ALS	11:35	900	6.3	1.9	2.6	4.0	4.7	Insects, Plant Material
2600-1340-17	SD6 - Illili	22-Oct-10	Oct-10	ALS	11:15	2500	0.3	1.7	2.5	4.0	0.3	N/A
1002974-005	SD6 - Illili	23-Nov-10	Nov-10	ALS	11:15	2500	1.1	1.7	2.5	4.0	0.6	N/A
1003112-005	SD6 - Illili	23-Dec-10	Dec-10	ALS	10:15	?	1.1	1.1	2.4	4.0	0.5	No field observations
1100198-005	SD6 - Illili	24-Jan-11	Jan-11	ALS	11:30	1000	2.0	1.6	2.4	4.0	0.7	Insects, plant material
1100461-005	SD6 - Illili	23-Feb-11	Feb-11	ALS	12:45	?	0.6	1.2	2.3	4.0	0.5	No field observations
1100716-005	SD6 - Illili	25-Mar-11	Mar-11	ALS	12:15	400	0.8	1.1	2.3	4.0	0.6	Insects, plant material
1100964-005	SD6 - Illili	21-Apr-11	Apr-11	ALS	13:35	200	0.6	1.0	2.2	4.0	0.5	Plant material
1101206-005	SD6 - Illili	23-May-11	May-11	ALS	12:50	400	0.6	1.0	2.2	4.0	0.4	Insects
1101487-005	SD6 - Illili	23-Jun-11	Jun-11	ALS	11:20	500	0.4	0.9	2.1	4.0	0.3	Insects/Plant material/dead spider in bottle
1101835-005	SD6 - Illili	20-Jul-11	Jul-11	ALS	8:40	100	0.5	0.8	2.1	4.0	0.4	Insects, Bird droppings, Plant material

EN1102364-005	SD6 - Illili	19-Aug-11	Aug-11	ALS	10:30	400	0.5	0.8	2.0	4.0	0.4	Plant material
EN1102817-005	SD6 - Illili	20-Sep-11	Sep-11	ALS	11:10	600	0.6	0.8	2.0	4.0	0.3	Insects, Plant material
EN1103134-005	SD6 - Illili	18-Oct-11	Oct-11	ALS	11:25	900	1.8	0.9	2.0	4.0	0.8	Insects, Plant material
EN1103513-005	SD6 - Illili	18-Nov-11	Nov-11	ALS	10:30	800	1.4	0.9	2.0	4.0	0.7	Insects, Plant material



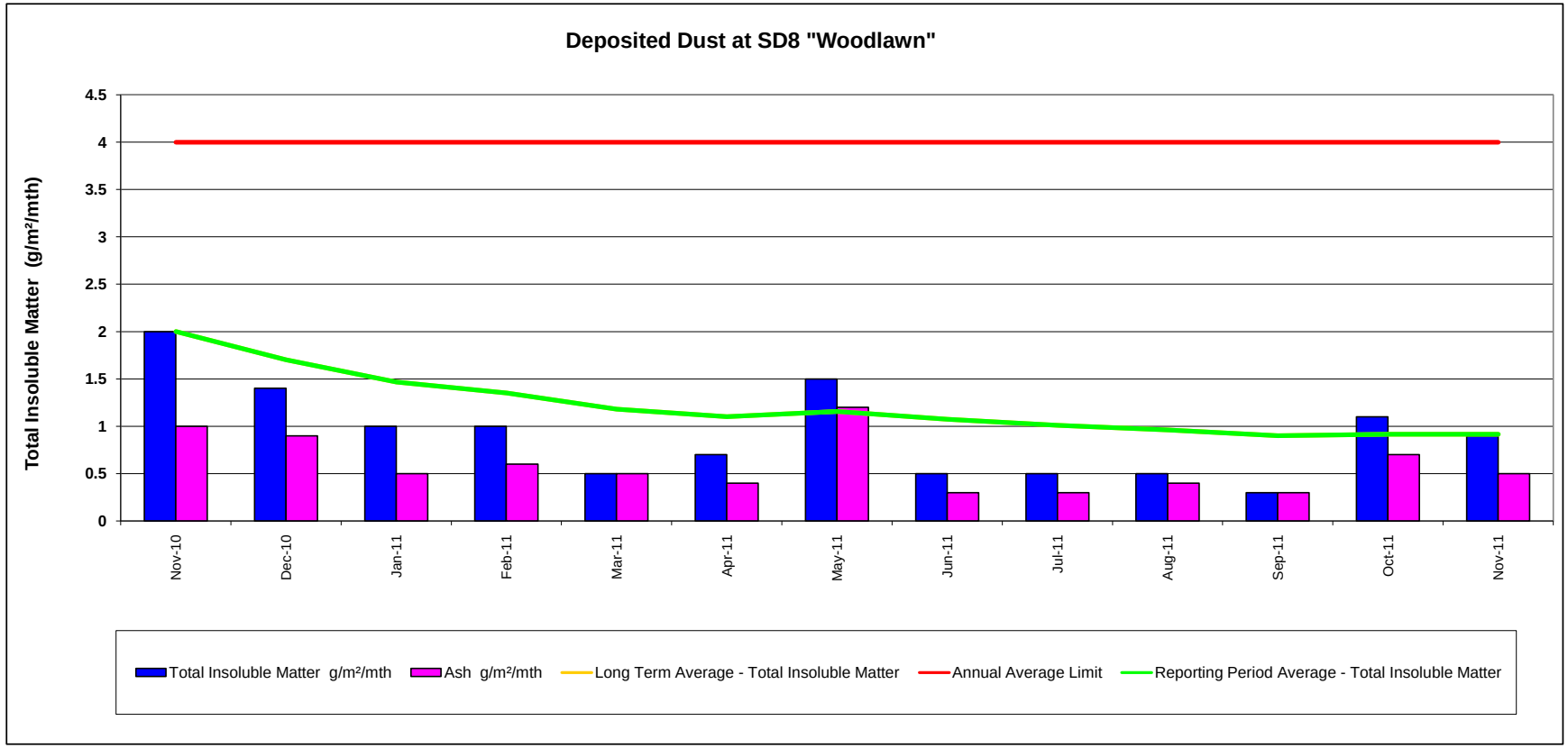
Deposited Dust - SD7 "Innisvale"

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Matter g/m²/mth	Reporting Period Average - Total Insoluble Matter	Long Term Average - Total Insoluble Matter	Annual Average Limit	Ash g/m²/mth	Comment
32517.07	SD7 - Innisvale	06-Jan-09	Dec-08	Client	1400	975	0.9		0.9	4.0	0.6	
32245.06	SD7 - Innisvale	03-Feb-09	Jan-09	Client	1238	200	4.3		2.6	4.0	1.9	
32862.07	SD7 - Innisvale	03-Mar-09	Feb-09	Client	1158	1495	1.8		2.3	4.0	1.2	
2600 1005 - 00	SD7 - Innisvale	02-Apr-09	Mar-09	ALS	1025	50	1.8		2.2	4.0	1.2	Insects
2600 1016 - 00	SD7 - Innisvale	04-May-09	Apr-09	ALS	1215	300	1.0		2.0	4.0	1.2	
2600 1035 - 01	SD7 - Innisvale	03-Jun-09	May-09	ALS	1305	800	1.1		1.8	4.0	0.8	
2606 1040 - 02	SD7 - Innisvale	06-Jul-09	Jun-09	ALS	1405	750	1.0		1.7	4.0	0.7	Insects, Plant Material
2605 1052 - 01	SD7 - Innisvale	03-Aug-09	Jul-09	ALS	1625	350	0.7		1.6	4.0	0.2	
2600 1063 - 00	SD7 - Innisvale	01-Sep-09	Aug-09	ALS	0815	20	0.8		1.5	4.0	0.5	Insects, Plant Material
2600 1063 - 00	SD7 - Innisvale	30-Sep-09	Sep-09	ALS	1126	1000	6.9		2.0	4.0	5.7	Insects, Plant Material
2600 1129 - 00	SD7 - Innisvale	04-Nov-09	Oct-09	ALS	1155	400	2.3		2.1	4.0	1.7	Plant Material
2600 1204 - 116	SD7 - Innisvale	02-Dec-09	Nov-09	ALS	0910	10	1.5		2.0	4.0	1.1	Insects, Plant Material
2600 1222 - 116	SD7 - Innisvale	31-Dec-09	Dec-09	ALS	8:05	2000	1.0	1	1.9	4.0	0.8	Insects
2600 1234 - 000	SD7 - Innisvale	02-Feb-10	Jan-10	ALS	11:15	2200	1.6	1.3	1.9	4.0	0.8	Insects, Plant Material
2605 1247 - 000	SD7 - Innisvale	04-Mar-10	Feb-10	ALS	11:30	1200	0.7	1.1	1.8	4.0	0.5	Insects
2600 1260 - 000	SD7 - Innisvale	01-Apr-10	Mar-10	ALS	905	800	2.5	1.5	1.9	4.0	1.7	Bird Droppings, Plant Material
2600 1268 - 000	SD7 - Innisvale	29-Apr-10	Apr-10	ALS	1105	75	0.6	1.3	1.8	4.0	0.3	Insects, Plant Material
2600 1277 - 000	SD7 - Innisvale	27-May-10	May-10	ALS	1235	50	0.6	1.2	1.7	4.0	0.5	Insects
2600 1288 - 778	SD7 - Innisvale	24-Jun-10	Jun-10	ALS	1420	300	0.4	1.1	1.7	4.0	0.2	Insects, Plant Material
26001289-879	SD7 - Innisvale	22-Jul-10	Jul-10	ALS	15:20	700	0.5	1.0	1.6	4.0	0.3	Plant Material
2600-1309-912	SD7 - Innisvale	23-Aug-10	Aug-10	ALS	13:00	1800	1.1	1.0	1.6	4.0	1.1	Plant Material
2600-1319	SD7 - Innisvale	22-Sep-10	Sep-10	ALS	13:00	800	1.8	1.1	1.6	4.0	1.3	Insects, Plant Material
2600-1340-17	SD7 - Innisvale	22-Oct-10	Oct-10	ALS	13:05	2500	0.5	1.0	1.5	4.0	0.5	N/A
1002974-006	SD7 - Innisvale	23-Nov-10	Nov-10	ALS	13:05	2500	1.9	1.1	1.6	4.0	1.2	N/A
1003112-006	SD7 - Innisvale	23-Dec-10	Dec-10	ALS	8:35	?	4.8	0.5	1.7	4.0	2.7	No field observations
1100198-006	SD7 - Innisvale	24-Jan-11	Jan-11	ALS	12:45	1000	6.1	5.5	1.9	4.0	3.9	Insects, plant material-Two dead frogs
1100461-006	SD7 - Innisvale	23-Feb-11	Feb-11	ALS	14:10	?	0.8	3.9	1.8	4.0	0.7	No field observations
1100716-006	SD7 - Innisvale	25-Mar-11	Mar-11	ALS	13:40	600	0.7	3.1	1.8	4.0	0.7	Insects, plant material
1100964-006	SD7 - Innisvale	21-Apr-11	Apr-11	ALS	14:50	600	2.1	2.9	1.8	4.0	1.6	Insects, plant material
1101206-006	SD7 - Innisvale	23-May-11	May-11	ALS	14:00	200	0.7	2.5	1.7	4.0	0.6	No field observations
1101487-006	SD7 - Innisvale	23-Jun-11	Jun-11	ALS	12:20	400	1.6	2.4	1.7	4.0	1.5	Plant material
1101835-006	SD7 - Innisvale	20-Jul-11	Jul-11	ALS	9:25	50	0.7	2.2	1.7	4.0	0.7	Insects, Plant material
EN1102364-006	SD7 - Innisvale	19-Aug-11	Aug-11	ALS	10:45	400	0.8	2.0	1.7	4.0	0.7	Plant material
EN1102817-006	SD7 - Innisvale	20-Sep-11	Sep-11	ALS	10:45	600	0.7	1.9	1.7	4.0	0.6	Insects, Plant material
EN1103134-006	SD7 - Innisvale	18-Oct-11	Oct-11	ALS	12:30	900	0.9	1.8	1.6	4.0	0.5	Insects, Plant material, Spider in bottle
EN1103513-006	SD7 - Innisvale	18-Nov-11	Nov-11	ALS	11:30	800	1.2	1.8	1.6	4.0	0.8	Insects, Plant material


Deposited Dust at SD7 "Innisvale"
Total Insoluble Matter (g/m²/mth)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Dec-08
Jan-09
Feb-09
Mar-09
Apr-09
May-09
Jun-09
Jul-09
Aug-09
Sep-09
Oct-09
Nov-09
Dec-09
Jan-10
Feb-10
Mar-10
Apr-10
May-10
Jun-10
Jul-10
Aug-10
Sep-10
Oct-10
Nov-10
Dec-10
Jan-11
Feb-11
Mar-11
Apr-11
May-11
Jun-11
Jul-11
Aug-11
Sep-11
Oct-11
Nov-11
Total Insoluble Matter g/m²/mth
Ash g/m²/mth
Long Term Average - Total Insoluble Matter
Annual Average Limit
Reporting Period Average - Total Insoluble Matter

Deposited Dust - SD8 "Woodlawn"

Sample Number	Sample Location	Sample Date	Sample Month	Sampler	Time: (d)	Volume Collected (ml)	Total Insoluble Matter g/m²/mth	Reporting Period Average - Total Insoluble Matter	Long Term Average - Total Insoluble Matter	Annual Average Limit	Ash g/m²/mth	Comment
1002974-007	SD8 - Woodlawn	23-Nov-10	Nov-10	ALS	14:05	2500	2	2.0	2.0	4.0	1	No field observations
1003112-007	SD8 - Woodlawn	23-Dec-10	Dec-10	ALS	8:25	N/A	1.4	1.7	1.7	4.0	0.9	No field observations
1100198-007	SD8 - Woodlawn	24-Jan-11	Jan-11	ALS	13:00	800	1	1.5	1.5	4.0	0.5	Insects, plant material
1100461-007	SD8 - Woodlawn	23-Feb-11	Feb-11	ALS	14:20	N/A	1	1.4	1.4	4.0	0.6	No field observations
1100716-007	SD8 - Woodlawn	25-Mar-11	Mar-11	ALS	14:05	N/A	0.5	1.2	1.2	4.0	0.5	Insects, plant material
1100964-007	SD8 - Woodlawn	21-Apr-11	Apr-11	ALS	14:15	300	0.7	1.1	1.1	4.0	0.4	Insects, plant material
1101206-007	SD8 - Woodlawn	23-May-11	May-11	ALS	14:10	400	1.5	1.2	1.2	4.0	1.2	Insects/Plant material
1101487-007	SD8 - Woodlawn	23-Jun-11	Jun-11	ALS	12:30	400	0.5	1.1	1.1	4.0	0.3	Plant material
1101835-007	SD8 - Woodlawn	20-Jul-11	Jul-11	ALS	9:40	100	0.5	1.0	1.0	4.0	0.3	Insects, Plant material
1102364-007	SD8 - Woodlawn	19-Aug-11	Aug-11	ALS	11:00	400	0.5	1.0	1.0	4.0	0.4	Plant material
1102817-007	SD8 - Woodlawn	20-Sep-11	Sep-11	ALS	11:00	600	0.3	0.9	0.9	4.0	0.3	Insects, Plant material
1103134-007	SD8 - Woodlawn	18-Oct-11	Oct-11	ALS	12:45	900	1.1	0.9	0.9	4.0	0.7	Insects, Plant material
1103513-007	SD8 - Woodlawn	18-Nov-11	Nov-11	ALS	12:45	800	0.9	0.9	0.9	4.0	0.5	Insects, Plant material



Appendix 5

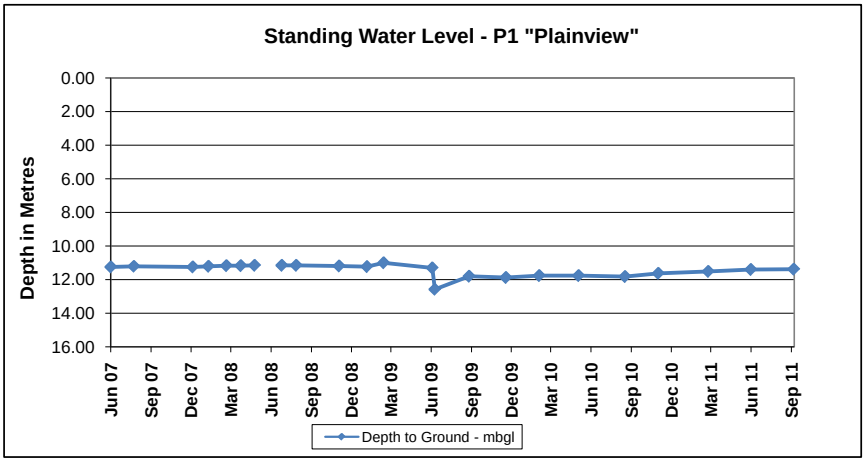
GROUNDWATER MONITORING DATA

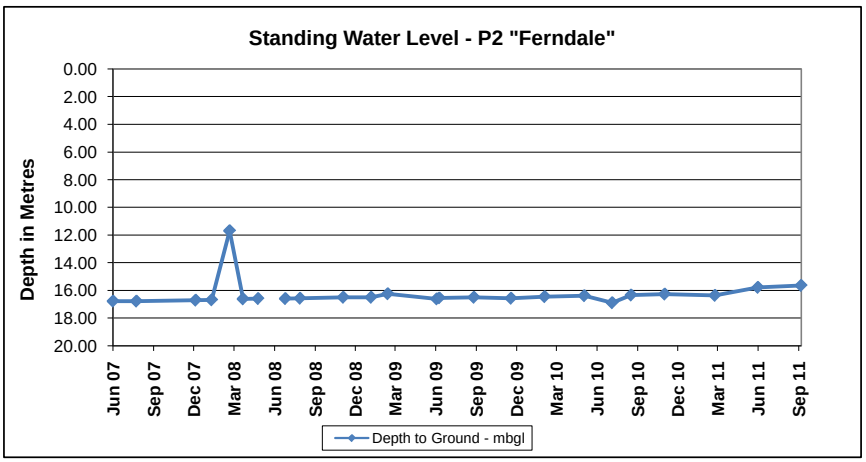
Site ID	Date	Time	Depth to Ground - mbgl	Depth to Stand - mbtoc	Field Parameters			Dissolved Metals																Mercury (Hg) - mg/L	pH - Lab	EC - Lab - µs/cm	Major Cations				Total Cations - meq/L	Major Anions						Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N	Nitrate as N	Nitrite and Nitrate as N (NOX)	Total Dissolved Solids	Comments
					pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) - mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L				Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L		Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L								
ANZECC guideline*								**5**	**0.5**			**0.01**	**1**	**1**	**1**		**0.1**		**1**		**20**	**0.002**			**1000**						**1000**											**4000**	
P1	**15-Jun-07**		11.25	11.51																																					
Registered Number:	**7-Aug-07**	0835	11.20	11.46																																					
GW968386	**19-Dec-07**	1535	11.25	11.51																																					
Licence Number:	**24-Jan-08**	1140	11.21	11.47																																					
90BL253767	**5-Mar-08**	0835	11.17	11.43																																					
	7-Apr-08	1515	11.17	11.43																																					
	8-May-08	1550	11.16	11.42																																					
	3-Jun-08																																								Too Wet to Access
	9-Jul-08	0905	11.16	11.42																																					
	11-Aug-08	0845	11.15	11.41																																					
	17-Nov-08	1655	11.19	11.45																																					
	19-Jan-09	1355	11.22	11.48																																					
	26-Feb-09	1645	11	11.3																																					
	17-Jun-09	1015	11.3	11.6																																					
	23-Jun-09	1000	12.57	12.83	7.1	3790	20.6		0.007	0.04	<0.001	<0.0001	0.006	0.005	0.005	1.11	0.013	0.592	0.047	<0.01	0.274	<0.0001		3610	45	160	585	8	41.1	725	39	<1	<1	1010	1010	41.4	0.4	0.53				2240	
	9-Sep-09	1230	11.8	12.76																																					
	2-Dec-09	1205	11.87	12.83	7.32	4140	32.4	<0.01	0.008				<0.005		<0.001	0.31	<0.001	0.872	0.015		<0.005	<0.0001	7.35	3700	58	195	537	6	42.5	781	39.1	<1	<1	962	962	42	0.48		<0.01	<0.01	<0.01		
	16-Feb-10	1320	11.77	12.73																																					
	17-May-10	1230	11.77	12.73	6.89	6320	21.2	<0.01	0.019				<0.005		<0.001	<0.05	<0.001	0.918	0.027		0.006	<0.0001	7.16	4150	104	226	541	4	47.5	982	81.9	<1	<1	758	758	44.6	3.16		<0.01	0.19			
	31-Aug-10	1030	11.81	12.77	7.27	2136	22.1																																		
	15-Nov-10	1150	11.63	12.59	6.81	2770	23.5																																		
	9-Mar-11	1220	11.52	12.48	7.33	3340	24.6	1	0.004				0.003		0.096	1.98	0.022	1.27	0.013		0.277	<0.0001	8.51	3860	94		443	20	41.8	866	68	<1	116	886	860	43	1.45		0.03	0.36	0.39		
	14-Jun-11	1220	11.40	12.36	7.2	3270	19.5																																		
	20-Sep-11	1120	11.38	12.34	7.2	2960	22.6	0.52	0.006	0.164	<0.001	0.0006	0.002	0.003	0.028	1.15	0.023	1.16	0.011	0.01	0.435	<0.0001	7.49	4200	114	236	416	7	43.4	802	76	<1	<1	835	835	40.9	2.95	1.19	0.29	0.29	0.58	2120	
P2	**15-Jun-07**		16.77	17.61																																					
Registered Number:	**7-Aug-07**	0850	16.77	17.61																																					
GW968387	**19-Dec-07**	1545	16.70	17.54																																					
Licence Number:	**24-Jan-08**	1155	16.69	17.53																																					
90BL253768	**5-Mar-08**	0845	11.69	12.53																																					
	4-Apr-08	1450	16.61	17.45																																					
	8-May-08	1600	16.58	17.42																																					Too wet to access
	3-Jun-08																																								
	9-Jul-08	0916	16.58	17.42																																					
	11-Aug-08	0856	16.56	17.40																																					
	17-Nov-08	1703	16.50	17.34																																					
	19-Jan-09	1404	16.50	17.34																																					
	26-Feb-09	1630	16.25	17.10																																					
	17-Jun-09	0950	16.61	17.45																																					
	23-Jun-09	0900	16.53	17.38	7.4	4650	21.6		0.003	0.087	<0.001	<0.0001	0.032	0.012	0.024	1.96	0.006	0.414	0.154	0.07	0.064	<0.0001		4560	114	320	476	10	53	1030	410	<1	<1	973	973	57	3.62	0.02				3280	
	9-Sep-09	1215	16.49	17.31																																					
	2-Dec-09	1240	16.56	17.38	6.84	4520	31.8	<0.01	0.01				<0.005		0.001	<0.05	<0.001	0.613	0.24		0.01	<0.0001	7.03	4090	145	298	395	9	49.2	855	401	<1	<1	852	852	49.5	0.3		<0.01	3.81	3.81		
	16-Feb-10	1300	16.45	17.27																																					
	17-May-10	1150	16.38	17.20	7	6420	20.1	<0.01	0.002				<0.005		0.008	<0.05	<0.001	0.178	0.015		0.086	<0.0001	7.09	4250	173	281	457	7	51.8	832	444	<1	<1	807	807	48.8	2.93		0.02	5.09			
	19-Jul-10	1226	16.89	17.71																																					
	31-Aug-10	1015	16.33	17.15	7.06	4150	21.4																																		
	15-Nov-10	1220	16.26	17.08	7.01	3580	22.6																																		
	9-Mar-11	1150	16.35	17.17	7	3410	24.7	3.28	0.002				0.023		0.255	8.13	0.038	0.352	0.042		2.64	<0.0001	8.59	3860	161	282	405	10	49.1	839	362	<1	199	842	832	47.8	1.3		0.02	4.41	4.44		
	14-Jun-11	1150	15.77	16.59	7.05	3400	19.6																																		
	20-Sep-11	1150	15.63	16.45	7.05	3240	21.9	0.24	0.003	0.075	<0.001	0.0003	0.003	0.004	0.114	0.77	0.006	0.324	0.013	0.02	0.422	<0.0001	7.45	4550	154	269	409	8	47.8	828	346	<1	<1	767	767	45.9	2.05	0.18	<0.01	6.94	6.94	2560	
P3	**15-Jun-07**		12.50	12.92																																					
Registered Number:	**7-Aug-07**	0945	12.72	13.14																																					
GW968388	**19-Dec-07**	1620	12.99	13.41																																					
Licence Number:	**24-Jan-08**	1235	13.08	13.50																																					
90BL253769	**5-Mar-08**	0925	13.15	13.57																																					
	4-Apr-08	1430	13.20	13.62																																					
	8-May-08	1626	13.25	13.67																																					
	3-Jun-08	0942	13.29	13.71																																					
	9-Jul-08	0958	13.36	13.78																																					
	11-Aug-08	0940	13.41	13.83																																					
	17-Nov-08	1726	13.57	13.99																																					
	19-Jan-09	1308	13.65	14.07																																					
	26-Feb-09	1430	14.10	14.40																																					
	17-Jun-09	0845	14.29	14.71																																					
	23-Jun-09	1045	14.28	14.70	7.1	14200	23.3		<0.001	0.167	<0.001	<0.0001	0.008	0.002	0.008	4.11	0.018	0.376	0.038	<0.01	0.207	<0.0001		6670	160	310	852	40	71.6	2120	90	<1	<1	859	859	78.8	4.82	2.05				4210	
	9-Sep-09	1340	14.46	14.90					<0.001	0.147	<0.001	<0.0001	0.003	0.002	0.007	1.5	0.005	0.408	0.027	<0.01	0.151	<0.0001		7980	189	330	1130	50	86.8	2220	225	<1	<1	882	882	84.9	1.14	1.25				5780	
	2-Dec-09	1415	14.72	15.16	6.57	14040	25.4	<0.01	0.002				<0.005		0.002	0.26	<0.001	0.475	0.011		0.026	<0.0001	6.73	11900	219	521	1840	83	136	4360	549	<1	<1	637	637	147	3.95		0.01	0.16	0.17		
	16-Feb-10	1045	14.33	14.77																																					
	17-May-10	1315	14.15	14.59	6.88	14400	19.9	<0.01	0.002				<0.005		0.007	<0.05	<0.001	0.433	0.018		0.198	<0.0001	6.77	12300	319	532	2000	59	148	4560	717	<1	<1	718	718	158	3.18		<0.01	1.09			
	19-Jul-10	1204	14.37	14.81																																					
	31-Aug-10	1210	14.45	14.89	6.75	12580	23.3																																		
	15-Nov-10	1110	14.52	14.96	6.52	10230	22.6																																		
	8-Mar-11	1100	14.31	14.75	6.56	10350	26.4	0.26	0.001				0.001		0.016	0.42	<0.001	0.32	0.008		0.067	<0.0001	6.6	12400	290	534	2040	87	72.7	4340	502	<1	<1	791	791	149	0.14		<0.01	0.17	0.17		
	21-Jun-11	1030	14.15	14.59	6.60	10540	19.3																																		
	21-Sep-11	950	14.47	14.91	6.80	9650	22.4	0.41	0.002	0.081	<0.001	<0.0001	<0.001	0.008	0.018	0.82	0.00	0.46	0.009	<0.01	0.143	<0.0001	7.14	14100	267	0.459	1960	76	138	4350	494	<1	<1	747	747	148	3.55	<0.10	<0.01	0.57	0.57		
P4	**15-Jun-07**		60.48	60.90																																					
Registered Number:	**7-Aug-07**	0925	60.53	60.95																																					
GW968389	**19-Dec-07**	1645	60.57	60.99																																					
Licence Number:	**24-Jan-08**	1255	60.98	61.40																																					
90BL254686	**5-Mar-08**	0910	60.57	60.99																																					
	7-Apr-08	1540	60.56	60.98																																					
	8-May-08	1700	60.53	60.95																																					
	3-Jun-08	0958	60.98	61.40																																					
	9-Jul-08	1038	60.98	61.40																																					
	11-Aug-08	1000	60.57	60.99																																					
	17-Nov-08	1735	61.23	61.65																																					
	19-Jan-09	1318	65.03	65.45																																					
	26-Feb-09	1505	66.37	66.67																																					
	17-Jun-09	0910	67.74	68.16																																					
	23-Jun-09	1230	67.73	68.15	7.3	3960	20.9		0.006	0.519	<0.001	0.0008	0.001	0.009	0.034	1.07	0.1	0.157	0.077	<0.01	0.434	<0.0001		4300	44	141	622	55	42.2	901	110	<1	<1	950	950	46.7	5	0.74				2270	
	9-Sep-09	1317	67.44	67.88																																					
	21-Dec-09	1545	68.16	68.60	6.58	4850	24.2	<0.01	<0.001				<0.005		0.004	<0.05	<0.001	0.16	0.017		0.161	<0.0001	7.14	4920	7	163	782	54	49.2	1220	14.6	<1	<1	906	906	52.7	3.49		<0.01	0.15	0.15		
	16-Feb-10	1115	67.99	68.43																																					
	17-May-10	1510	67.69	68.13	7.4	4840	22.9	<0.01	<0.001				<0.005		0.016	<0.05	0.001	0.101	0.02		0.442	<0.0001	7.25	3820	97	130	605	38	42.8	816	65.3	<1	<1	852	852	41.4	1.68		<0.01	0.52			
	31-Aug-10	1245	67.31	67.75	7.33	3720	23.6																																		
	15-Nov-10	1010	67.06	67.50	6.92	2850	24.2																																		
	9-Mar-11	1320	67.00	67.44	7.15	3790	24.90	1.57	0.002				0.004		0.511	4.1	0.136	0.223	0.019		1.35	<0.0001	8.64	3550	95	139	537	51	40.8	764	95	<1	178	943	962	42.8	2.33		<0.01	0.67	0.67		
	21-Jun-11	1115	67.07	67.51	7.2	4190	21.40																																		
	21-Sep-11	1020	67.76	68.20																																					
		No longer exists																																							

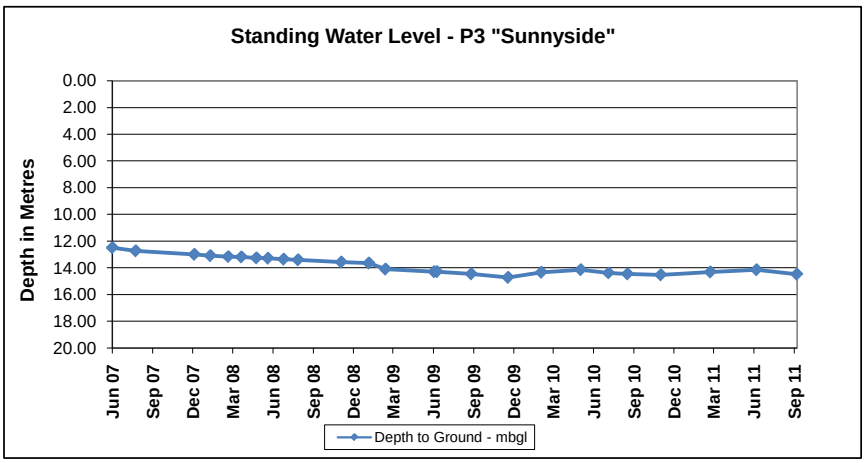
Site ID	Date	Time	Depth to Ground - mbgl	Depth to Stand - mbtoc	Field Parameters			Dissolved Metals																Mercury (Hg) - mg/L	pH - Lab	EC - Lab - µS/cm	Major Cations				Total Cations - meq/L	Major Anions						Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N	Nitrate as N	Nitrite and Nitrate as N (NOX)	Total Dissolved Solids	Comments
					pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) - mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L				Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L		Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L									
ANZECC guideline*								**5**	**0.5**			**0.01**	**1**	**1**	**1**		**0.1**		**1**		**20**	**0.002**			**1000**						**1000**											**4000**	
P5	**15-Jun-07**		40.25	40.75																																					
Registered Number:	**7-Aug-07**	0915	39.69	40.19																																					
GW968390	**19-Dec-07**	1635	40.42	40.92																																					
Licence Number:	**24-Jan-08**	1250	40.40	40.90																																					
90BL254687	**5-Mar-08**	0905	40.49	40.99																																					
	7-Apr-08	1530	40.51	41.01																																					
	8-May-08	1644	40.52	41.02																																					
	3-Jun-08	0953	40.52	41.02																																					
	9-Jul-08	1034	40.59	41.09																																					
	11-Aug-08	0955	40.52	41.02																																					
	17-Nov-08	1731	40.90	41.40																																					
	19-Jan-09	1314	41.50	42.00																																					
	27-Feb-09	1500	41.50	42.00																																					
	17-Jun-09	0900	47.11	47.61																																					
	23-Jun-09	1140	47.16	47.62	7.5	4480	24.1		0.001	1.65	<0.001	0.0004	0.026	0.006	0.024	13.2	0.028	0.277	0.095	0.02	0.075	<0.0001		4200	24	58	854	27	43.8	1080	<10	<1	<1	893	893	48.2	4.89	1.67				2240	
	9-Sep-09	1315	48.77	49.28																																					
	2-Dec-09	1510	49.96	50.47	7.69	4440	25.4	<0.01	<0.001				<0.005		0.002	0.2	<0.001	0.052	0.016		0.049	<0.0001	7.53	4400	12	44	870	23	42.7	985	1.62	<1	<1	907	907	46	3.76		<0.01	0.04	0.04		
	16-Feb-10	1055	51.12	51.63																																					
	17-May-10	1420	52.50	53.01	7.38	6520	20.8	<0.01	0.001				<0.005		<0.001	<0.05	<0.001	0.06	0.004		<0.005	<0.0001	7.49	4270	32	40	979	16	47.9	928	1.73	<1	<1	894	894	44.1	4.13		<0.01	0.05			
		No longer exists																																								
P6	**15-Jun-07**		16.70	17.20																																					
Registered Number:	**7-Aug-07**	1000	17.79	18.29																																					
GW968391	**19-Dec-07**	1605	17.79	18.29																																					
Licence Number:	**24-Jan-08**	1225	17.81	18.31																																					
90BL254688	**5-Mar-08**	950	17.83	18.33																																					
	4-Apr-08	1445	17.75	18.25																																					
	8-May-08	1618	17.76	18.26																																					
	3-Jun-08	0913	17.76	18.26																																					
	9-Jul-08	0948	17.78	18.28																																					
	11-Aug-08	0928	17.78	18.28																																					
	17-Nov-08	1719	17.78	18.28																																					
	19-Jan-09	1256	17.83	18.33																																					
	2-Mar-09	1230	17.79	18.29																																					
		Destroyed by mining																																								
P7	**15-Jun-07**		12.77	13.04																																					
Registered Number:	**7-Aug-07**	0905	12.75	13.02																																					
GW968392	**20-Dec-07**	1050	12.73	13.00																																					
Licence Number:	**24-Jan-08**	1345	12.72	12.99																																					
90BL254689	**5-Mar-08**	0855	12.74	13.01																																					
	7-Apr-08	1520	12.70	12.97																																					
	8-May-08	1712	12.71	12.98																																					
	3-Jun-08	1006	12.72	12.99																																					
	9-Jul-08	1045	12.73	13.00																																					
	11-Aug-08	1013	12.72	12.99																																					
	17-Nov-08	1750	12.70	12.97																																					
	19-Jan-09	1343	13.70	13.97																																					
	26-Feb-09	1410	12.65	12.90																																					
	17-Jun-09	0925	11.13	11.40																																					
	23-Jun-09	1315	11.36	11.61	6.8	7590	22.7		<0.001	0.103	<0.001	0.0027	<0.001	<0.001	0.002	<0.05	<0.001	0.029	0.002	<0.01	<0.005	<0.0001		7140	171	413	826	23	79.1	2370	231	<1	<1	782	782	87.4	4.98	0.04				4170	
	9-Sep-09	1333	10.68	10.94																																					
	2-Dec-09	1610	11.24	11.50	6.85	7900	23.3	<0.01	<0.001	<0.005			0.002			<0.05	<0.001	0.024	0.002		0.006	<0.0001	7	6940	148	420	779	24	76.5	2190	290	<1	<1	654	654	80.9	2.83		<0.01	5.9	5.9		
	16-Feb-10	1145	9.89	10.15																																					
	17-May-10	1530	10.64	10.90	7.09	8500	20.2	<0.01	<0.001				<0.005		0.002	<0.05	<0.001	0.009	0.003		0.015	<0.0001	7	7180	218	456	876	18	87	2220	349	<1	<1	681	681	83.6	2		<0.01	6.29			
	31-Aug-10	1330	9.73	9.99	6.95	7700	22.5																																			
	15-Nov-10	1040	9.60	9.86	6.82	6190	23.1																																			
	8-Mar-11	1330	8.72	8.98	6.83	4760	26.5	2.34	<0.001				0.003		0.021	2.52	0.002	0.046	0.004		0.081	<0.0001	6.91	6330	172	365	769	24	72.7	1630	352	<1	<1	708	708	67.4	3.76		<0.01	4.31	4.31		
	21-Jun-11	1210	9.17	9.43	6.85	4810	21.2																																			
	21-Sep-11	1120	10.51	10.77	6.85	2380	24.2	3.25	0.002	0.107	<0.001	<0.0001	<0.001	0.005	0.046	5.24	0.009	0.423	0.024	0.02	0.256	<0.0001	7.34	3200	35	49	127	49		306	<1	<1	<1	974	974	28.1		224	<0.01	0.16	0.16		
P8	**15-Jun-07**		15.63	15.63																																					
Registered Number:	**7-Aug-07**	0910	15.70	15.70																																					
GW968393	**19-Dec-07**	1630	21.25	21.25																																					
Licence Number:	**24-Jan-08**	1240	21.30	21.30																																					
90BL254690	**5-Mar-08**	0900	19.25	19.25																																					
	7-Apr-08	1525	20.13	20.13																																					
	8-May-08	1710	20.49	20.49																																					
	3-Jun-08	1003	18.79	18.79																																					
	9-Jul-08	1043	19.12	19.12																																					
	11-Aug-08	1010	19.72	19.72																																					Windmill pumping
	17-Nov-08	1747	16.74	16.74																																					
	2-Mar-09	1300	15.85	15.95																																					Windmill pumping
	17-Jun-09	0920	16.90	16.90																																					
	23-Jun-09	1245	16.59	16.69	6.9	6460	21.8		<0.001	0.068	<0.001	0.0022	<0.001	<0.001	0.004	0.35	0.002	0.023	0.01	<0.01	0.046	<0.0001		6220	158	306	771	24	79.1	1930	245	<1	<1	710	710	73.6	4.54	<0.01				3600	
	9-Sep-09	1330	16.58	16.71																																					Windmill pumping
	2-Dec-09	1555	17.67	17.80	6.96	6440	23.8	<0.01	<0.001				<0.005		0.014	<0.05	<0.001	0.004	0.022		0.063	<0.0001	7.05	6000	119	308	723	24	63.3	1830	238	<1	<1	601	601	68.7	4.08		<0.01	8.64	8.64		Bore equipped
	16-Feb-10	1140	16.94	17.07																																					
	17-May-10	1550	16.94	17.07	7.41	4380	20.6	<0.01	<0.001				<0.005		0.002	<0.05	<0.001	0.003	0.003		0.02	<0.0001	7.02	6000	185	320	793	18	70.5	1730	259	<1	<1	690	690	68.1	1.77		<0.01	8.99			Bore equipped
	31-Aug-10	1330	16.96	17.09	6.87	6220	22.9																																			Bore equipped
	15-Nov-10	1030	16.88	17.01	6.67	5400	23.5																																			
	8-Mar-11	1250	17.02	17.15	6.82	4790	26.1	0.18	<0.001				0.002		0.0034	1	0.004	0.053	0.004		0.171	<0.0001	6.98	6280	194	337	760	18	71.2	1660	50	<1	23	144	765	66.4	3.48		0.03	0.57	0.6		
	21-Jun-11	1150	16.79	16.92	6.8	4920	21.1																																			
	21-Sep-11	1100	16.91	17.04	6.75	5040	24.2	1.53	<0.001	0.084	<0.001	<0.0001	<0.001	0.005	0.012	3.64	0.002	0.062	0.008	<0.01	0.036	<0.0001	7.31	7180	198	330	786	23	71.8	1710	261	<1	<1	660	660	66.9	3.57	0.86	0.02	3.71	3.73		
27356	**7-Aug-07**	1005																																							
Registered Number:	**19-Dec-07**	1555																																							
GW027356	**24-Jan-08**	1220	14.30	14.61																																					
Licence Number:	**5-Mar-08**	1000	14.25	14.56																																					
90BL020042	**4-Apr-08**	1447	14.11	14.42																																					
	8-May-08	1605	15.30	15.61																																					
	3-Jun-08	0852	17.61	17.92																																					
	9-Jul-08	0925	14.12	14.43																																					No access
	11-Aug-08	0908	16.05	16.36																																					No access
	17-Nov-08	1710	13.92	14.23																																					
	19-Jan-09	1250	14.45	14.76																																					
	26-Feb-09	1400	14.50	14.80																																					
	9-Sep-09	1255			7.47	4350	20.2		<0.001	0.182	<0.001	<0.0001	<0.001	0.003	0.035	0.47	<0.001	0.08	0.003	<0.01	0.031	<0.0001		4260	143	247	446	17	47.3	946	164	<1	<1	745	745	45	2.5	0.15				2910	
	2-Dec-09	1340			7.07	4620	26.2	<0.01	<0.001				<0.005		0.021	<0.05	<0.001	0.074	0.002		0.018	<0.0001	7.24	4160	77	245	433	18	73.3	1070	196	<1	<1	654	654	47.2	4.33		<0.01	1.57	1.57		
	16-Feb-10	1205	13.41	13.71																																					
	17-May-10	1600			8.26	5400	23.5	<0.01	0.002				<0.005		0.015	0.06	<0.001	0.056	0.002		0.013	<0.0001	7.78	4810	172	306	538	14	57.6	1280	268	<1	<1	680	680	55.2	2.1		<0.01	0.28			Bore Covered
	31-Aug-10	1100			7.8	4610	17.3																																			Bore Covered
	15-Nov-10	1320			7.65	4100	23.2																																			Bore Covered

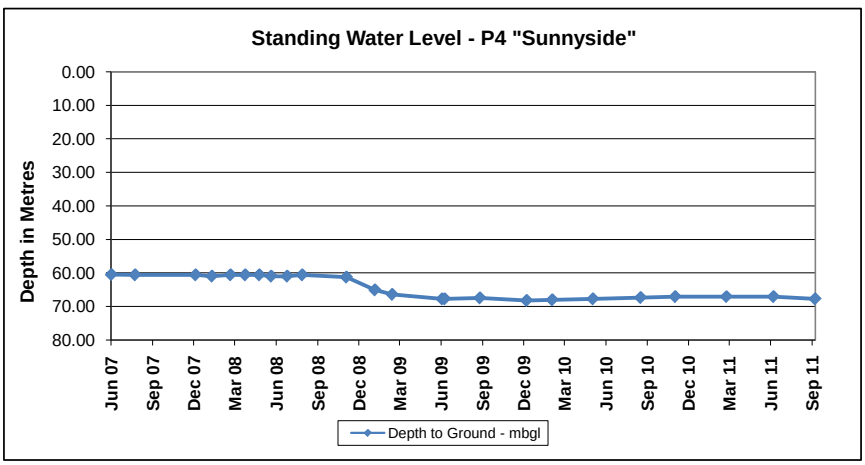
Site ID	Date	Time	Depth to Ground - mbgl	Depth to Stand - mbtoc	Field Parameters			Dissolved Metals															Mercury (Hg) - mg/L	pH - Lab	EC - Lab - µS/cm	Major Cations					Major Anions								Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N	Nitrate as N	Nitrite and Nitrate as N (NOX)	Total Dissolved Solids	Comments
					pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) - mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L				Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Total Cations - meq/L	Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L								
ANZECC guideline*								**5**	**0.5**			**0.01**	**1**	**1**	**1**		**0.1**		**1**		**20**	**0.002**			**1000**					**1000**												**4000**	
	9-Mar-11	1350			7.35	4700	25.4	0.02	0.003				<0.001		0.021	1.34	0.002	0.142	0.006		0.1	<0.0001	7.54	5520	173	366	573	24	64.3	1840	198	<1	<1	636	636	68.7	3.34		<0.01	0.7	0.7		Bore Covered
	14-Jun-11	1020			7.4	4141	15.3																																			Bore Covered
	21-Sep-11	1150			7.55	3900	18.4	0.05	<0.001	0.368	<0.001	<0.0001	<0.001	0.002	0.049	1.09	0.001	0.036	0.003	<0.01	0.104	<0.0001	7.84	5650	170	330	474	19	56.8	1350	139	<1	<1	694	694	54.8	1.7	0.03	0.03	1.93	1.96		Bore Covered
45098	**7-Aug-07**	0935	10.58	10.92																																						
Registered Number:	**19-Dec-07**	1615	10.69	11.03																																						
GW045098	**24-Jan-08**	1230	10.76	11.10																																						Insufficient water
Licence Number:	**5-Mar-08**	0920	10.82	11.16																																						
90BL105097	**4-Apr-08**	1440	10.87	11.21																																						Bore covered
	8-May-08	1622	10.89	11.23																																						Bore covered
	3-Jun-08	0919	10.91	11.25																																						
	9-Jul-08	0952	10.96	11.30																																						
	11-Aug-08	0933	11.00	11.34																																						
	17-Nov-08	1723	11.19	11.53																																						
	19-Jan-09	1300	11.49	11.83																																						
	26-Feb-09	1330																																								
	17-Jun-09	0830																																								
	23-Jun-09	1205	12.12	12.52	6.9	7090	22.5		<0.001	0.07	<0.001	0.0014	<0.001	0.004	0.012	4.37	0.003	0.406	0.004	<0.01	0.573	<0.0001		6660	149	345	807	42	72	2100	201	<1	<1	808	808	79.6	4.99	0.03				3950	
	9-Sep-09	1310	12.36	12.78																																						
	2-Dec-09	1440	12.62	13.04	7.1	7120	23.5	<0.01	<0.001				<0.005		0.014	<0.05	<0.001	0.365	0.013		0.406	<0.0001	7.21	6100	48	340	756	45	64.5	1920	170	<1	<1	675	675	71.2	5.01		0.02	0.1	0.12		Bore covered
	16-Feb-10	1050	12.17	12.59																																						Bore covered, tank empty
	17-May-10	1405	11.93	12.35	7.39	6930	19.8	<0.01	<0.001				<0.005		0.002	<0.05	<0.001	0.257	0.003		0.23	<0.0001	7.08	6180	170	358	814	34	74.3	1880	190	<1	<1	748	748	71.9	1.6		0.03	0.19			Bore covered
			No longer exists																																							Bore covered, tank empty
901460	**10-Dec-08**	0900	15.38	15.80																																						Bore covered
Registered Number:	**19-Jan-09**	1414	15.53	15.95																																						Bore covered
GW901460	**2-Mar-09**	1320	19.73	20.15																																						Bore covered
	8-Apr-11	1410	15.18	15.60																																						Bore covered
	14-Jun-11	1120	15.03	15.45																																						Windmill over bore
	20-Sep-11	1230	14.97	15.39																																						Windmill over bore
No 5 Bore	**19-Jan-09**	1335		48.45																																						
	26-Feb-09	1630		49.37																																						
	9-Sep-09	1320			8.5	2810	19.2		<0.001	0.097	<0.001	<0.0001	0.001	<0.001	0.002	0.46	<0.001	0.10	0.002	<0.01	0.024	<0.0001		2720	43	108	386	20	28.4	570	104	<1	54	403	457	27.4	1.78	<0.01				1580	
	2-Dec-09	1537																																								
	16-Feb-10	1130	47.11	47.63																																							
	17-May-10	1520			8.29	388	18.7	0.04	<0.001				<0.001		0.002	<0.05	<0.001	<0.001	0.001		<0.005	<0.0001	8.9	349	16	11	32	7	3.31	23.9	4.39	<1	13	117	130	3.36	0.82		<0.01	0.02			
	31-Aug-10	1324			9.86	238	22.1																																			
	15-Nov-10	1020	46.42	46.94	8.67	210	24.1																																			
	8-Mar-11	1140			8.54	1020	27.5	0.88	0.002				0.001		0.003	0.67	<0.001	<0.001	0.068		<0.005	<0.0001	8.84	792	23	29	114	18	8.99	161	50	<1	23	144	167	8.93	0.32		<0.01	0.01	0.01		Pump over bore
	21-Jun-11	1130	Dry																																							
	21-Sep-11	1040	Dry																																								
6249	**9-Sep-09**	1500	10.10		7.75	2340	19.6		0.002	0.346	<0.001	0.0001	0.002	0.005	0.062	9.15	0.012	0.798	0.018	<0.01	1.01	<0.0001		2300	70	94	281	13	23.7	596	16.9	<1	<1	272	272	22.6	2.41	2.47					
	2-Dec-09	1100	10.22	9.89	7.5	3480	23.7	<0.01	<0.001				<0.005		0.001	<0.05	<0.001	1.14	0.004		0.101	<0.0001	7.48	3370	67	135	361	12	30.5	980	11	<1	<1	289	289	33.6	4.98		<0.01	0.93	0.93		
	16-Feb-10	1000	9.87	10.20																																					1770	
	17-May-10	1025	9.96	10.29	7.1	5930	20.8	<0.01	<0.001				<0.005		<0.001	<0.05	<0.001	1.80	0.003		0.122	<0.0001	7.53	3890	106	198	480	4	42.5	1070	71.6	<1	<1	372	372	39.1	4.14		<0.01	1.31			
	31-Aug-10	0820	9.91	10.24	7.9	3260	17.3																																			
	23-Nov-10	1330	9.86	10.19	7.4	2430	24.5																																			
	9-Mar-11	1040	10.02	10.35	7.6	2230	23.5	0.22	0.001				0.001		0.079	2.29	0.01	0.51	0.007		0.768	<0.0001	7.84	2420	69	125	283	8	26.3	700	44	<1	<1	284	284	26.3	0.12		0.26	2.36	2.63		
	14-Jun-11	950	9.62	9.95	7.6	2420	18.7																																			
	20-Sep-11	1010	9.65	9.98	7.7	2520	22.3	0.06	0.003	0.324	<0.001	0.0001	0.002	<0.001	0.035	0.96	0.00	0.67	0.007	<0.01	0.264	<0.0001	7.86	3470	80	155	369	7	33	868	44	<1	<1	278	278	31	3.16	0.32	<0.01	10.9	10.9	1640	
44884	**9-Sep-09**	1155			7.50	3050	20.2		0.007	0.624	<0.001	0.0005	<0.001	0.004	0.004	5.32	0.002	0.787	0.001	<0.01	0.223	<0.0001		2950	45	102	527	5	33.7	442	16.2	<1	<1	1040	1040	33.7	0.02	0.14					
	2-Dec-09	1145			7.4	3700	25	<0.01	0.002				<0.005		<0.001	<0.05	<0.001	0.89	0.002		0.076	<0.0001	7.47	3340	30	149	504	5	35.8	655	25	<1	<1	933	933	37.6	2.51		<0.01	<0.01	<0.01		
	16-Feb-10	1010																																								
	17-May-10	1135																																								
	31-Aug-10	0945			8.5	2720	17																																			
	15-Nov-10	1130																																								
	9-Mar-11	1100	13.10	13.57	7.9	1385	24	1.04	0.005				0.003		0.226	14.5	0.165	1.05	0.008		3.63	<0.0001	8.76	1280	23	36	279	15	16.6	203	9	<1	109	552	547	16.8	0.72		<0.01	0.06	0.06		
	14-Jun-11	1000	27.79	28.26	7.7	2080	18																																			
	20-Sep-11	1050	30.78	31.25	7.9	2460	17.3	<0.01	0.005	0.592	<0.001	0.0001	0.002	0.004	0.008	2.29	0.004	0.738	0.001	<0.01	0.795	<0.0001	8.01	3330	47	104	558	4	35.3	530	21	<1	<1	931	931	34	1.82	0.04	<0.01	0.04	0.04	1740	
Werona Bore	**9-Sep-09**	1245			7.68	5150	19.3		<0.001	0.325	<0.001	<0.0001	0.001	<0.001	0.001	<0.05	<0.001	0.014	<0.001	<0.01	0.01	<0.0001		5210	152	257	572	10	53.9	1390	108	<1	<1	501	501	51.4	2.3	0.1					
(bore equipped)	**2-Dec-09**	1405			8.0	5770	25.9	<0.01	<0.001				<0.005		0.01	<0.05	<0.001	0.00	<0.001		<0.005	<0.0001	8.16	5220	48	280	624	11	52.9	16580	120	<1	<1	354	354	56.1	2.98		0.07	1.83	1.9		
	16-Feb-10	1235	16.73	17.36																																						
	17-May-10	1255			7.8	5510	16.8	<0.01	<0.001				<0.005		0.001	<0.05	<0.001	0.01	<0.001		<0.005	<0.0001	7.74	5100	157	288	656	7	60.2	1520	141	<1	<1	497	497	55.7	3.94		0.02	1.31			
	31-Aug-10	1200			8.4	4410	19.9																																			
	15-Nov-10	1245																																								No access
	8-Mar-11	1020			7.76	4200	25	0.18	<0.001				<0.001		0.002	0.29	<0.001	0.01	0.001		0.006	<0.0001	7.96	5060	136	262	601	11	54.8	1380	117	<1	<1	514	514	51.5	3.08		0.02	1.06	1.08		Bore covered by pump
	14-Jun-11	1100			7.85	3870	17.5																																			Bore covered by pump
	21-Sep-11	910			8.05	3200	19.7	0.08	<0.001	0.172	<0.001	<0.0001	<0.001	<0.001	0.002	0.07	<0.001	0.02	0.002	<0.01	0.018	<0.0001	8.03	4410	122	208	486	8	44.6	1070	92	<1	<1	512	512	42.3	2.55	0.03	0.02	1.09	1.11		Bore covered by pump
22497	**21-Dec-09**	1520	15.31	15.31	5.59	3600	25.4	<0.01	<0.001				<0.001		0.004	<0.05	<0.001	0.180	0.006		0.261	<0.0001	7.41	3600	12	155	770	54	48.2	1140	12	<1	<1	246	246	37.4	12.5		<0.01	0.05	0.05		
	16-Feb-10	0950	15.19	15.19																																						
	17-May-10	1010	15.36	15.36	7.3	5400	19.3	<0.01	<0.001				<0.005		0.001	<0.05	<0.001	0.236	0.004		0.214	<0.0001	7.69	3460	69	201	350	14	35.6	1010	8.29	<1	<1	233	233	33.2	3.43		<0.01	0.09			
	31-Aug-10	0920	15.47	15.47	7.8	3770	19.2																																			
	23-Nov-10	1410	15.46	15.46	7.3	2730	24.4																																			
	9-Mar-11	950	15.05	15.35	7.73	2210	23.1	0.2	<0.001				<0.001		0.147	9.89	0.016	0.24	0.001		0.946	<0.0001	8.21	2190	49	127	211	24	22.7	665	5	<1	<1	232	232	23.5	1.66		0.31	1.16	1.47		
	14-Jun-11	930	15.02	15.32	7.75	2880	19.4																																			
	20-Sep-11	940	15.18	15.48	7.8	2450	23.1	0.02	0.001	0.217	<0.001	<0.0001	<0.001	<0.001	0.017			0.22	0.002	0.178	6.89	<0.0001	7.79	3500	58	171	303	23	30.7	898	<1	<1	<1	251	251	30.4	0.63	16.4	0.07	0.07	0.14	1530	

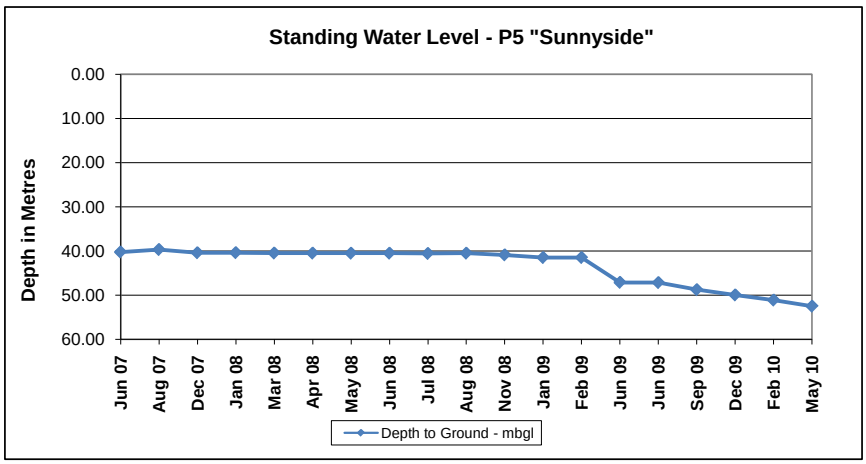
* ANZECC guideline - stock drinking water (cattle)

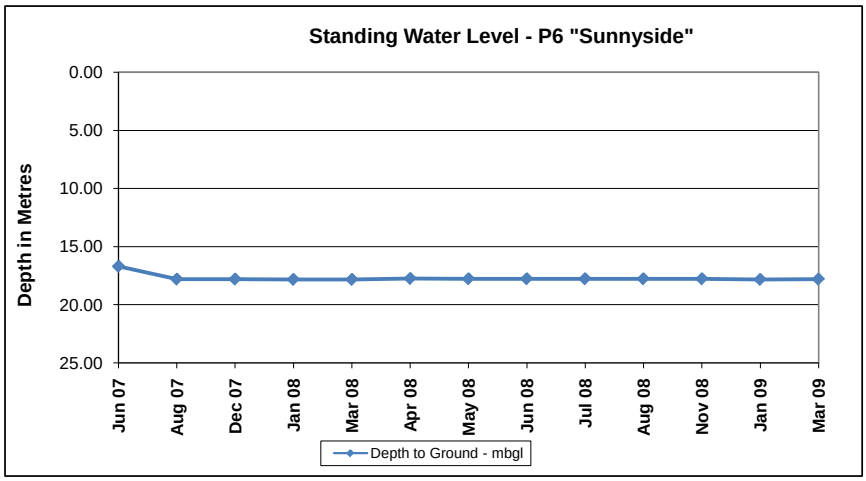

Standing Water Level - P1 "Plainview"
Depth in Metres
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
Jun 07
Sep 07
Dec 07
Mar 08
Jun 08
Sep 08
Dec 08
Mar 09
Jun 09
Sep 09
Dec 09
Mar 10
Jun 10
Sep 10
Dec 10
Mar 11
Jun 11
Sep 11
Depth to Ground - mbgl

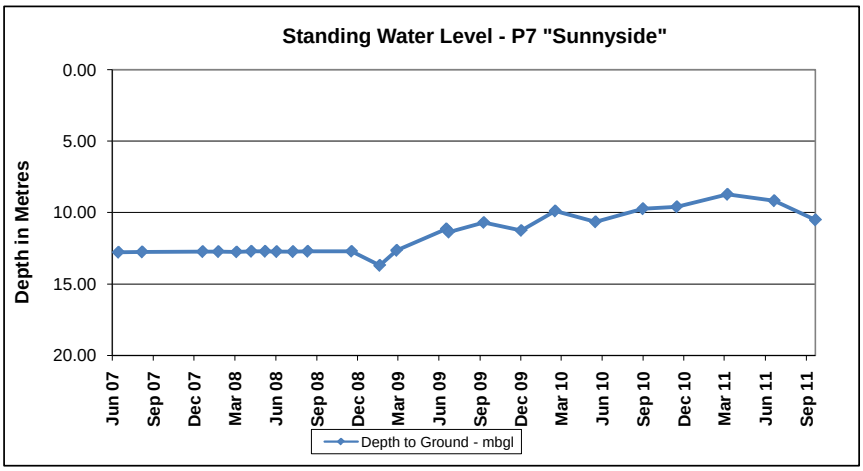

Standing Water Level - P2 "Ferndale"
Depth in Metres
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Jun 07
Sep 07
Dec 07
Mar 08
Jun 08
Sep 08
Dec 08
Mar 09
Jun 09
Sep 09
Dec 09
Mar 10
Jun 10
Sep 10
Dec 10
Mar 11
Jun 11
Sep 11
Depth to Ground - mbgl

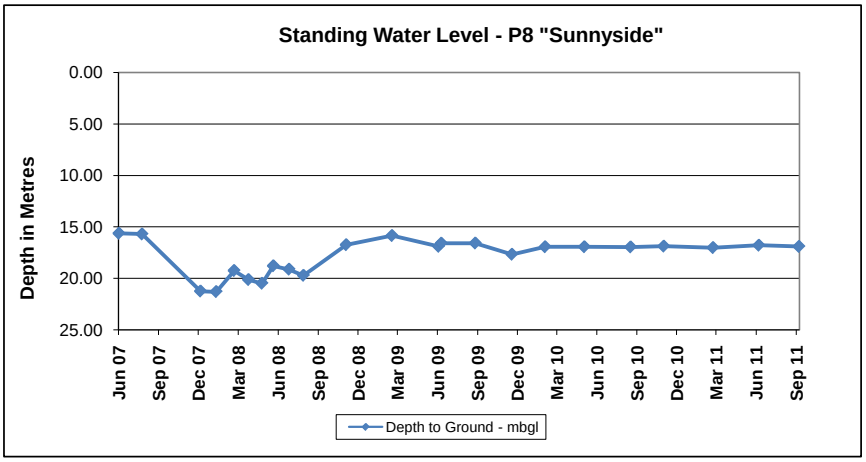

Standing Water Level - P3 "Sunnyside"
Depth in Metres
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
18.00
20.00
Jun 07
Sep 07
Dec 07
Mar 08
Jun 08
Sep 08
Dec 08
Mar 09
Jun 09
Sep 09
Dec 09
Mar 10
Jun 10
Sep 10
Dec 10
Mar 11
Jun 11
Sep 11
Depth to Ground - mbgl

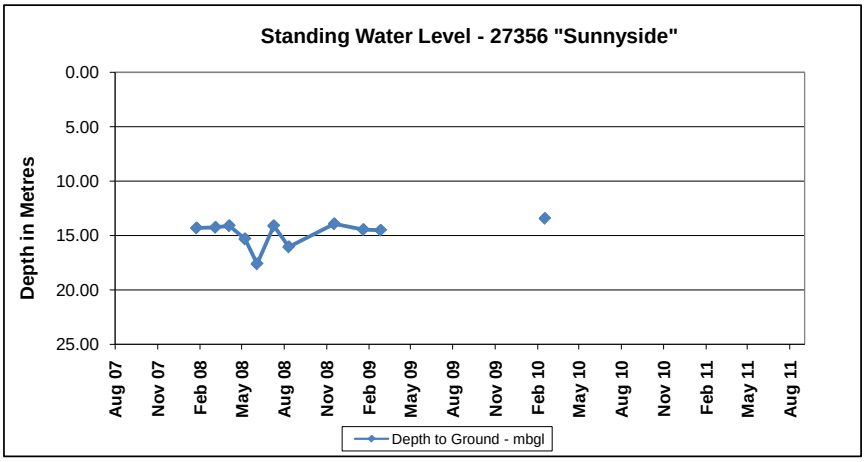

Standing Water Level - P4 "Sunnyside"
Depth in Metres
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
Jun 07
Sep 07
Dec 07
Mar 08
Jun 08
Sep 08
Dec 08
Mar 09
Jun 09
Sep 09
Dec 09
Mar 10
Jun 10
Sep 10
Dec 10
Mar 11
Jun 11
Sep 11
Depth to Ground - mbgl

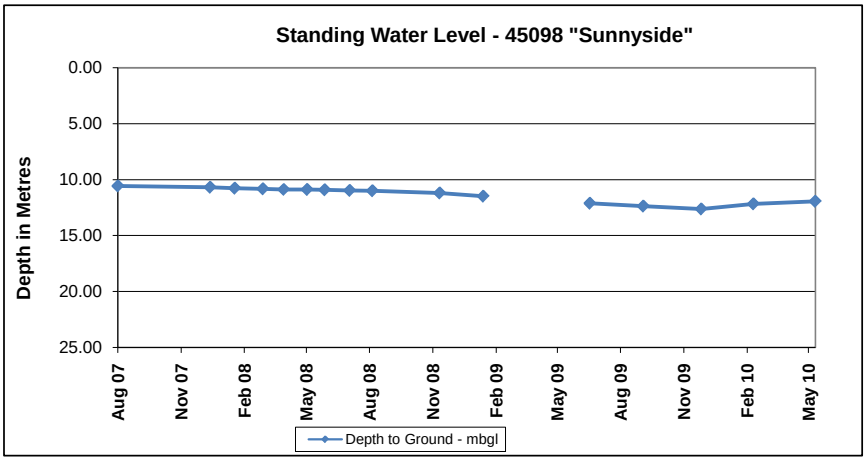

Standing Water Level - P5 "Sunnyside"
Depth in Metres
0.00
10.00
20.00
30.00
40.00
50.00
60.00
Jun 07
Aug 07
Dec 07
Jan 08
Mar 08
Apr 08
May 08
Jun 08
Jul 08
Aug 08
Nov 08
Jan 09
Feb 09
Jun 09
Jun 09
Sep 09
Dec 09
Feb 10
May 10
Depth to Ground - mbgl

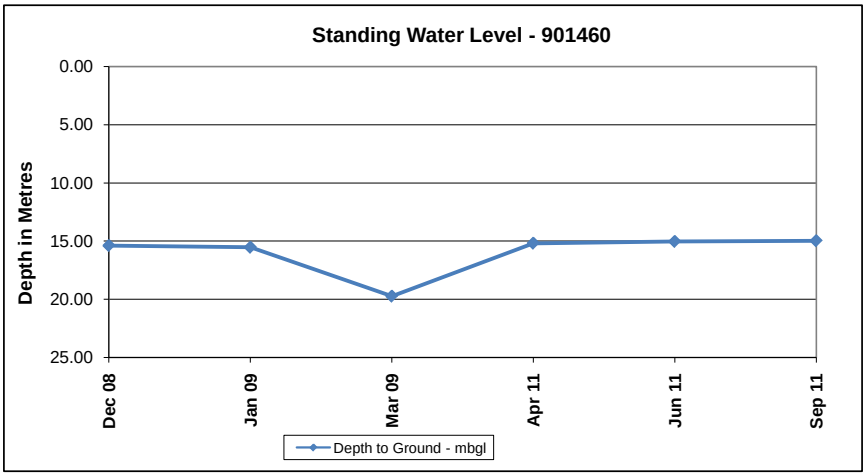

Standing Water Level - P6 "Sunnyside"
Depth in Metres
0.00
5.00
10.00
15.00
20.00
25.00
Jun 07
Aug 07
Dec 07
Jan 08
Mar 08
Apr 08
May 08
Jun 08
Jul 08
Aug 08
Nov 08
Jan 09
Mar 09
Depth to Ground - mbgl

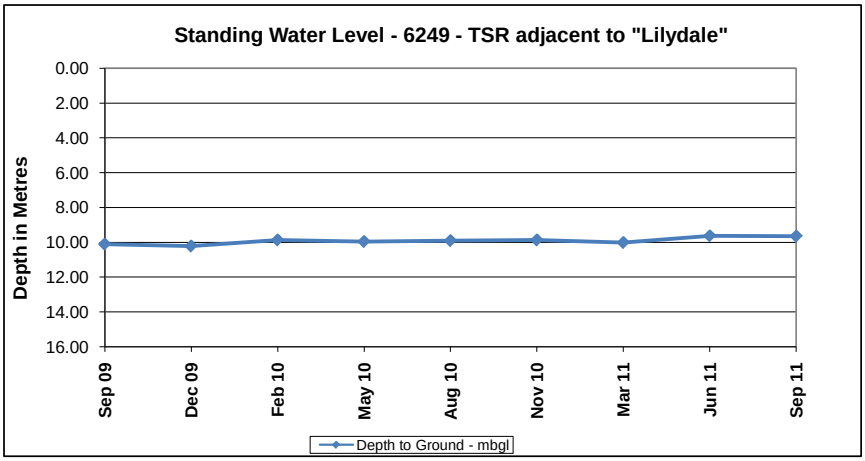

Standing Water Level - P7 "Sunnyside"
Depth in Metres
0.00
5.00
10.00
15.00
20.00
Jun 07
Sep 07
Dec 07
Mar 08
Jun 08
Sep 08
Dec 08
Mar 09
Jun 09
Sep 09
Dec 09
Mar 10
Jun 10
Sep 10
Dec 10
Mar 11
Jun 11
Sep 11
Depth to Ground - mbgl

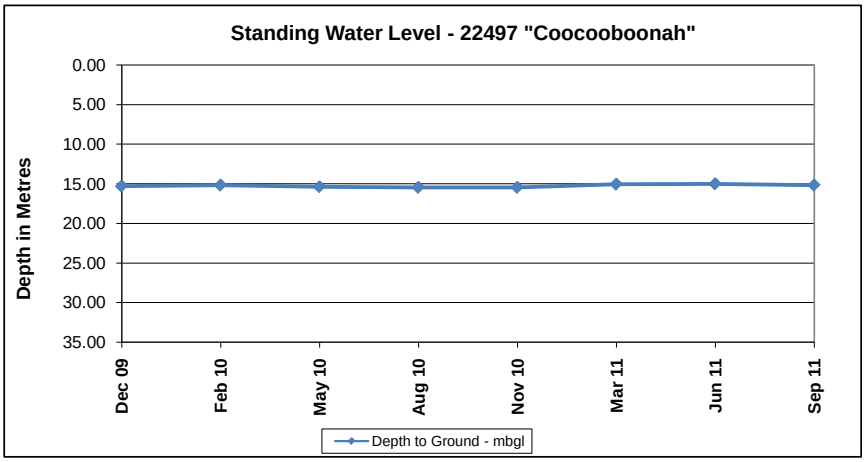

Standing Water Level - P8 "Sunnyside"
Depth in Metres
0.00
5.00
10.00
15.00
20.00
25.00
Jun 07
Sep 07
Dec 07
Mar 08
Jun 08
Sep 08
Dec 08
Mar 09
Jun 09
Sep 09
Dec 09
Mar 10
Jun 10
Sep 10
Dec 10
Mar 11
Jun 11
Sep 11
Depth to Ground - mbgl

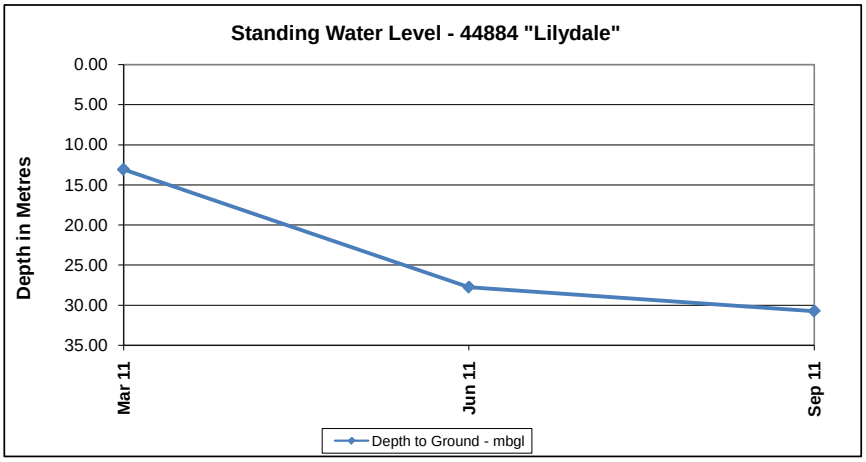

Standing Water Level - 27356 "Sunnyside"
Depth in Metres
0.00
5.00
10.00
15.00
20.00
25.00
Aug 07
Nov 07
Feb 08
May 08
Aug 08
Nov 08
Feb 09
May 09
Aug 09
Nov 09
Feb 10
May 10
Aug 10
Nov 10
Feb 11
May 11
Aug 11
Depth to Ground - mbgl


Standing Water Level - 45098 "Sunnyside"
Depth in Metres
0.00
5.00
10.00
15.00
20.00
25.00
Aug 07
Nov 07
Feb 08
May 08
Aug 08
Nov 08
Feb 09
May 09
Aug 09
Nov 09
Feb 10
May 10
Depth to Ground - mbgl


Standing Water Level - 901460
Depth in Metres
0.00
5.00
10.00
15.00
20.00
25.00
Dec 08
Jan 09
Mar 09
Apr 11
Jun 11
Sep 11
Depth to Ground - mbgl


Standing Water Level - 6249 - TSR adjacent to "Lilydale"
Depth in Metres
0.00
2.00
4.00
6.00
8.00
10.00
12.00
14.00
16.00
Sep 09
Dec 09
Feb 10
May 10
Aug 10
Nov 10
Mar 11
Jun 11
Sep 11
Depth to Ground - mbgl


Standing Water Level - 22497 "Coocooboonah"
Depth in Metres
0.00
5.00
10.00
15.00
20.00
25.00
30.00
35.00
Dec 09
Feb 10
May 10
Aug 10
Nov 10
Mar 11
Jun 11
Sep 11
Depth to Ground - mbgl


Standing Water Level - 44884 "Lilydale"
Depth in Metres
0.00
5.00
10.00
15.00
20.00
25.00
30.00
35.00
Mar 11
Jun 11
Sep 11
Depth to Ground - mbgl

Appendix 6

BLAST MONITORING RESULTS

Sunnyside Coal Mine
Environmental Blast Monitoring

Consent Criteria = 5mm/s and 115 dbL

SHOT NO.	DATE	MONITOR LOCATION	PEAK GROUND PRESSURE (mm/s)	PEAK OVERPRESSURE (dBL)	TIME
1	18/Nov/08	Ivanhoe	0.91	110.7	1:44:48 PM
1	18/Nov/08	Plain View	0.86	107.8	1:44:58 PM
1	18/Nov/08	Illilli	0.56	107.4	1:42:25 PM
2	25/Nov/08	Innisvale	0.40	103.2	3:10:59 PM
2	25/Nov/08	Plain View	DNT	DNT	DNT
2	25/Nov/08	Illilli	0.61	105.5	3:10:48 PM
3	28/Nov/08	Ivanhoe	0.65	96.7	9:59:16 AM
3	28/Nov/08	Plain View	0.50	112.3	9:59:16 AM
3	28/Nov/08	Illilli	1.24	100.9	9:59:07 AM
4	28/Jan/09	Illilli	0.10	112.0	9:59:26 AM
4	28/Jan/09	Ivanhoe	DNT	DNT	DNT
4	28/Jan/09	Plain View	DNT	DNT	DNT
5	09/Mar/09	Ivanhoe	0.28	109.4	2:04:23 PM
5	09/Mar/09	Innisvale	0.33	109.7	2:04:29 PM
6	06/Apr/09	Illilli	0.35	97.4	1:53:19 PM
6	06/Apt/09	Ivanhoe	DNT	DNT	DNT
6	06/Apr/09	Plain View	DNT	DNT	DNT
7	11/Jun/09	Innisvale	0.30	97.0	12:21:02 PM
7	11/Jun/09	Ivanhoe	0.53	99.6	12:20:57 PM
7	11/Jun/09	Plain View	0.53	109.3	12:12:21 AM
8	18/Jun/09	Illili	0.35	106.7	2:58:16 PM
8	18/Jun/09	Ivanhoe	0.37	96.4	2:57:20 PM
8	18/Jun/09	Plain View	DNT	DNT	DNT
9/10	21/Aug/09	Innisvale	0.61	111.0	10:06:36 AM
9/10	21/Aug/09	Ivanhoe	0.97	111.8	10:07:46 AM
9/10	21/Aug/09	Plain View	0.51	111.5	10:06:49 AM
11	24/Nov/09	Innisvale	DNT	DNT	DNT
11	24/Nov/09	Ivanhoe	DNT	DNT	DNT
11	24/Nov/09	Plain View	DNT	DNT	DNT
11	24/Nov/09	Illili	0.43	109.6	12:11:41 PM
12	18/Dec/09	Innisvale	1.09	101.9	12:07:40 PM
12	18/Dec/09	Ivanhoe	1.70	107.0	12:05:20 PM
12	18/Dec/09	Plain View	1.16	101.9	12:05:34 PM
12	18/Dec/09	Illili	0.05*	114.1	12:05:50 PM
13	11/Feb/10	Innisvale	DNT	DNT	DNT
13	11/Feb/10	Ivanhoe	DNT	DNT	DNT
13	11/Feb/10	Plain View	0.91	107.4	12:06:42 PM
13	11/Feb/10	Illili	0.41	106.5	12:05:52 PM
14	17/Apr/10	Innisvale	0.96	108.6	12:01:29 PM
14	17/Apr/10	Ivanhoe	2.04	110.1	11:57:36 AM
14	17/Apr/10	Plain View	2.39	96.3	12:03:38 PM
14	17/Apr/10	Illili	0.61	114.8	11:59:07 AM
15	23/Jun/10	Innisvale	1.10	102.4	12:13:47 PM
15	23/Jun/10	Ivanhoe	1.54	114.1	12:13:59 PM
15	23/Jun/10	Plain View	DNT	DNT	DNT
15	23/Jun/10	Illili	0.09	114.8	12:15:17 PM
16	09/Jul/10	Innisvale	0.42	100.8	10:04:11 AM
16	09/Jul/10	Ivanhoe	DNT	DNT	DNT
16	09/Jul/10	Plain View	1.11	103.2	10:04:27 AM
16	08/Jul/10	Illili	1.60	99.1	10:04:29 AM
17	12/Aug/10	Innisvale	DNT	DNT	DNT
17	12/Aug/10	Ivanhoe	DNT	DNT	DNT
17	12/Aug/10	Plain View	0.18	110.3	11:57:01 AM
17	12/Aug/10	Illili	0.52	108.0	11:56:56 AM
18	01/Sep/10	Innisvale	0.52	101.4	11:59:00 AM
18	01/Sep/10	Ivanhoe	0.53	103.6	12:02:42 PM
18	01/Sep/10	Plain View	DNT	DNT	DNT
18	01/Sep/10	Illili	DNT	DNT	DNT
20	30/Sep/10	Innisvale	0.58	105.6	12:00:08 PM
20	30/Sep/10	Ivanhoe	0.83	86.6	12:04:38 PM
20	30/Sep/10	Plain View	1.20	92.5	12:00:53 PM
20	30/Sep/10	Illili	0.47	87.5	11:58:03 AM
21	22/Nov/10	Inisvale	0.66	108.4	15:04:15 PM
21	22/Nov/10	Ivanhoe	No access to property - monitor not set		
21	22/Nov/10	Plain View	DNT	DNT	DNT
21	22/Nov/10	Illili	0.45	107.9	15:05:12 PM
22	24/Nov/10	Inisvale	DNT	DNT	DNT
22	24/Nov/10	Plain View	0.76	100.2	12:14:40 PM
22	24/Nov/10	Illili	DNT	DNT	DNT
22	24/Nov/10	Ivanhoe	DNT	DNT	DNT
23	21/Jan/11	Innisvale	0.49	83.70	0.52
23	21/Jan/11	Plain View	0.55	110.1	12:24:14 PM
23	21/Jan/11	Illili	0.24	100.20	0.52
23	21/Jan/11	Ivanhoe	0.56	80.70	0.52
24	16/Feb/11	Innisvale	0.57	104.50	0.51
24	16/Feb/11	Plain View	DNT	DNT	12:13:00 PM
24	16/Feb/11	Illili	1.45	106.10	0.51
24	16/Feb/11	Ivanhoe	DNT	DNT	0.51

SHOT NO.	DATE	MONITOR LOCATION	PEAK GROUND PRESSURE (mm/s)	PEAK OVERPRESSURE (dBL)	TIME
25	21/Feb/11	Innisvale	DNT	DNT	0.51
25	21/Feb/11	Plain View	1.73	97.7	12:09:27 PM
25	21/Feb/11	Illili	0.26	109.00	0.51
25	21/Feb/11	Ivanhoe	DNT	DNT	0.51
26	16/Mar/11	Innisvale	0.49	108.30	0.50
26	16/Mar/11	Plain View	DNT	DNT	12:02:00 PM
26	16/Mar/11	Illili	DNT	DNT	0.50
26	16/Mar/11	Ivanhoe	DNT	DNT	0.50
27	09/Apr/11	Innisvale	0.99	105.30	0.45
27	09/Apr/11	Plain View	DNT	DNT	10:51:00 AM
27	09/Apr/11	Illili	DNT	DNT	0.45
27	09/Apr/11	Ivanhoe	No data	No data	No data
28	03/May/11	Innisvale	0.52	128.80	0.46
28	03/May/11	Plain View	0.40	120.6	11:02:59 AM
28	03/May/11	Ferndale	0.10	124.0	11:03:05 AM
28	03/May/11	Illili	0.13	120.30	0.46
28	03/May/11	Ivanhoe	No Data	No Data	No Data
29	18/May/11	Innisvale	0.47	104.50	0.50
29	18/May/11	Plain View	0.78	106.9	12:01:42 PM
29	18/May/11	Ferndale	No monitor available	No monitor available	
29	18/May/11	Illili	DNT	DNT	0.50
29	18/May/11	Ivanhoe	0.42	103.30	0.50
30	31/May/11	Innisvale	DNT	DNT	0.50
30	31/May/11	Plain View	DNT	DNT	12:01:00 PM
30	31/May/11	Ferndale	DNT	DNT	12:01:00 PM
30	31/May/11	Illili	DNT	DNT	0.50
30	31/May/11	Ivanhoe	DNT	DNT	0.50
31	25/Jun/11	Innisvale	0.44	104.30	0.56
31	25/Jun/11	Plain View	0.50	115.9	1:27:00 PM
31	25/Jun/11	Ferndale	0.72	104.8	1:27:21 PM
31	25/Jun/11	Illili	1.92	99.10	0.56
31	25/Jun/11	Ivanhoe	0.69	90.50	0.56
32	15/Jul/11	Innisvale	0.12	113.40	0.43
32	15/Jul/11	Plain View	0.70	113.3	10:13:25 AM
32	15/Jul/11	Ferndale	No monitor available	No monitor available	
32	15/Jul/11	Illili	DNT	DNT	0.43
32	15/Jul/11	Ivanhoe	0.11	112.80	0.43
33	01/Aug/11	Innisvale	DNT	DNT	0.47
33	01/Aug/11	Plain View	DNT	DNT	11:11:00 AM
33	01/Aug/11	Ferndale	No monitor available	No monitor available	
33	01/Aug/11	Illili	DNT	DNT	0.47
33	01/Aug/11	Ivanhoe	DNT	DNT	0.47
34	11/Aug/11	Innisvale	DNT	DNT	0.63
34	11/Aug/11	Plain View	0.70	105.9	3:03:25 PM
34	11/Aug/11	Ferndale	No monitor available	No monitor available	
34	11/Aug/11	Illili	DNT	DNT	0.63
34	11/Aug/11	Ivanhoe	0.58	81.02	0.63
35	29/Aug/11	Innisvale	0.72	109.70	0.42
35	29/Aug/11	Plain View	0.54	113.5	10:10:58 AM
35	29/Aug/11	Ferndale	0.38	110.20	10:11:21 AM
35	29/Aug/11	Illili	0.1	113.40	0.42
35	29/Aug/11	Ivanhoe	0.91	84.51	0.42
36	31/Aug/11	Innisvale	DNT	DNT	0.51
36	31/Aug/11	Plain View	DNT	DNT	12:12:00 PM
36	31/Aug/11	Ferndale	DNT	DNT	12:12:00 PM
36	31/Aug/11	Illili	DNT	DNT	0.51
36	31/Aug/11	Ivanhoe	DNT	DNT	0.51
37	14/Sep/11	Innisvale	0.58	112.00	0.50
37	14/Sep/11	Plain View	DNT	DNT	12:03:00 PM
37	14/Sep/11	Ferndale	DNT	DNT	12:03:00 PM
37	14/Sep/11	Illili	DNT	DNT	0.50
37	14/Sep/11	Ivanhoe	DNT	DNT	0.50
38	25/Oct/11	Innisvale	DNT	DNT	0.50
38	25/Oct/11	Plain View	1.31	115.1	11:59:20 AM
38	25/Oct/11	Ferndale	0.52	88.80	11:59:23 AM
38	25/Oct/11	Illili	0.41	102.60	40841.50
38	25/Oct/11	Ivanhoe	1.37	110.80	0.50
39	28/Oct/11	Innisvale	DNT	DNT	0.50
39	28/Oct/11	Plain View	DNT	DNT	12:01:00 PM
39	28/Oct/11	Ferndale	DNT	DNT	12:01:00 PM
39	28/Oct/11	Illili	DNT	DNT	0.50
39	28/Oct/11	Ivanhoe	DNT	DNT	0.50
40	10/Nov/11	Innisvale	DNT	DNT	0.56
40	10/Nov/11	Plain View	DNT	DNT	1:20:00 PM
40	10/Nov/11	Ferndale	DNT	DNT	1:20:00 PM
40	10/Nov/11	Illili	DNT	DNT	0.56
40	10/Nov/11	Ivanhoe	DNT	DNT	0.56

* Orica believes the monitor was triggered by something other than the blast. This assumption is based on the high overpressure and very low ground pressure

Appendix 7

NOISE MONITORING DATA

February 10 2011

Ref: 06248/3869

Mr Danny Young
Whitehaven Coal Pty Ltd
PO Box 600
GUNNEDAH NSW 2380

RE: FEBRUARY 2011 ATTENDED NOISE MONITORING RESULTS – SUNNYSIDE MINE

This letter report presents the results of attended noise compliance monitoring conducted for the Sunnyside Coal Mine (SCM) on Tuesday 8th and Wednesday 9th February 2011. Noise monitoring was carried out in accordance with the conditions of the SCM Noise Monitoring Programme (NMP) as detailed below.

NOISE CRITERIA

The following is an extract from the Sunnyside NMP:

Impact Assessment Criteria

7. Ensure that the noise generated by the Project does not exceed the noise impact assessment criteria set out in Table 1 at any residence on privately-owned land, or on more than 25 percent of any privately-owned land.

Location	Day $L_{Aeq(15\ minute)}$	Evening $L_{Aeq(15\ minute)}$
All privately owned residences	35	35

Table 1: Impact assessment criteria dB(A)

If a written negotiated noise agreement with any landowner has been reached 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 in accordance with the negotiated noise agreement.

Notes:

- *To determine compliance with the $L_{Aeq(15\ minute)}$ noise limits, noise from the Project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the Department and DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*

- *These limits apply under the relevant meteorological conditions outlined in the assessment procedures in Chapter 5 of the NSW Industrial Noise Policy.*
- *To determine compliance with the $L_{A1(1\ minute)}$ noise limits, noise from the Project is to be measured at 1 metre from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the Department and DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).*

NOISE MONITORING LOCATIONS

Noise measurement locations for the attended noise survey are listed below (and shown in the attached figure):

Location R2: Ivanhoe[1]
Location R4: Illili
Location R5: Ferndale
Location R6: Plain View
Location R9: Lilydale

[1] Gates at the entrance to Ivanhoe were locked and access was not possible. No monitoring was, therefore, undertaken at this residence.

NOISE MEASUREMENTS

Noise emission levels were measured with a Brüel & Kjær Type 2260 or 2250 Precision Sound Analyser. These instruments have Type 1 characteristics as defined in AS1259-1982 "Sound Level Meters". Calibration of the instrument was confirmed with a Brüel & Kjær Type 4231 Sound Level Calibrator prior to and at the completion of measurements.

Meteorological data used in this report was obtained from a hand held weather station with measurements made at approximately 2m above ground level.

Noise levels were measured over two monitoring surveys, one during the evening of 8th February and a second during the morning of 9th February, 2011.

RESULTS

The measured noise levels, over 1 second intervals, were analysed using Brüel & Kjær "*Evaluator*" software. The software enables the contributions of the mine and other significant noise sources to the overall to be quantified.

In keeping with requirements of the SCM Noise Monitoring Programme noise levels were recorded for each of the Leq (15 min), Lmax, L1, L10, L90 and Lmin percentiles. As shown in Table 1, the noise criterion for the operational phase of the SCM project is **35 dB(A) $L_{eq\ (15\ min)}$** for all operating times.

The results shown in **Tables 2** and **3**, below, represent the total 15 minute Leq noise level for all noise sources and the relative contributions of each. This is the compliance criterion for the operation of the mine. Levels for the other percentiles are not shown as they have no compliance criteria for

comparison but are available on request. Note that the mine does not operate at night (i.e. between 10 pm and 7 am) and, therefore, the L1 (1 min) (which is the standard measure of sleep disturbance) does not apply.

Noise from SCM is shown in bold type. Where noise from SCM is listed as inaudible, this means the maximum levels from the mine were at least 10 dB below the minimum level during the measurement and not measurable.

Table 2
SCM Noise Monitoring Results – 8 February 2011 (Evening)

Location	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
Illili	8:23 pm	52	5m/s ESE	Birds & insects (52), wind in trees (48), SCM (est. <30)
Ferndale	9:05 pm	52	3.5m/s ESE	Birds & insects (52), wind (40), SCM (30)
Plain View	8:03 pm	50	4m/s SE	Birds & insects (50), wind in trees (40), SCM inaudible
Lilydale	7:45 pm	45	4m/s SE	Birds & insects (42), wind in trees (40), traffic (38), SCM inaudible

Table 3
SCM Noise Monitoring Results – 9 February 2011 (Day)

Location	Time	dB(A),Leq	Wind speed/ direction	Identified Noise Sources
Illili	9:45 am	45	3m/s E	Birds (45), traffic (35), SCM (<30)
Ferndale	10:03 am	55	3m/s E	Traffic (55), birds & insects (41), SCM inaudible
Plain View	10:22 am	47	2.5m/s E	Birds (47), traffic (35), SCM inaudible
Lilydale	10:40 am	43	2.5m/s E	Traffic (40), birds & insects (39), wind (30), SCM inaudible

The results shown in Tables 2 and 3 indicate that, under the operational and atmospheric conditions at the time, noise emissions from the operations at SCM did not exceed the noise criterion of 35 dB(A) Leq (15 min) at any monitoring location at any time.

Data for the 15 minute Leq noise levels were analysed using the *"Evaluator"* software. These analyses showed the noise did not contain any tonal, impulsive or low frequency components as per definitions in the NSW Industrial Noise Policy.

The product coal from the Sunnyside mine is transported by road trucks to the Whitehaven CPP, near Gunnedah.

In addition to the site noise monitoring, traffic noise was measured at the "Roslyn" property on Torrens Lane, near the CPP. The transport of coal from Sunnyside is carried out on a relatively sporadic basis, and trucks using this route do not travel at the regular intervals that are associated with other Whitehaven projects in the area.

The sound level meter was set up in the paddock adjacent to "Roslyn", at the same distance from the road as the façade of the residence. The monitoring was carried out over a one hour period from 11.05 am on Wednesday 9th February. A total of 19 heavy vehicles travelled along Torrens Lane during the monitoring period. These consisted of 7 full and 7 empty coal haulage trucks and 5 other heavy vehicles entering and leaving the CPP site.

The measured Leq noise level from all vehicles on Torrens Lane was of **54 dB(A) Leq (1 hour)**. This is in compliance with the noise criterion for a local road of 55 dB(A) Leq (1 hour).

We trust this report fulfils your requirements at this time, however, should you require additional information or assistance please contact the undersigned on 4954 2276.

Yours faithfully,
SPECTRUM ACOUSTICS PTY LIMITED

Author:

Ross Hodge
Acoustical Consultant

Review:

Neil Pennington
Acoustical Consultant

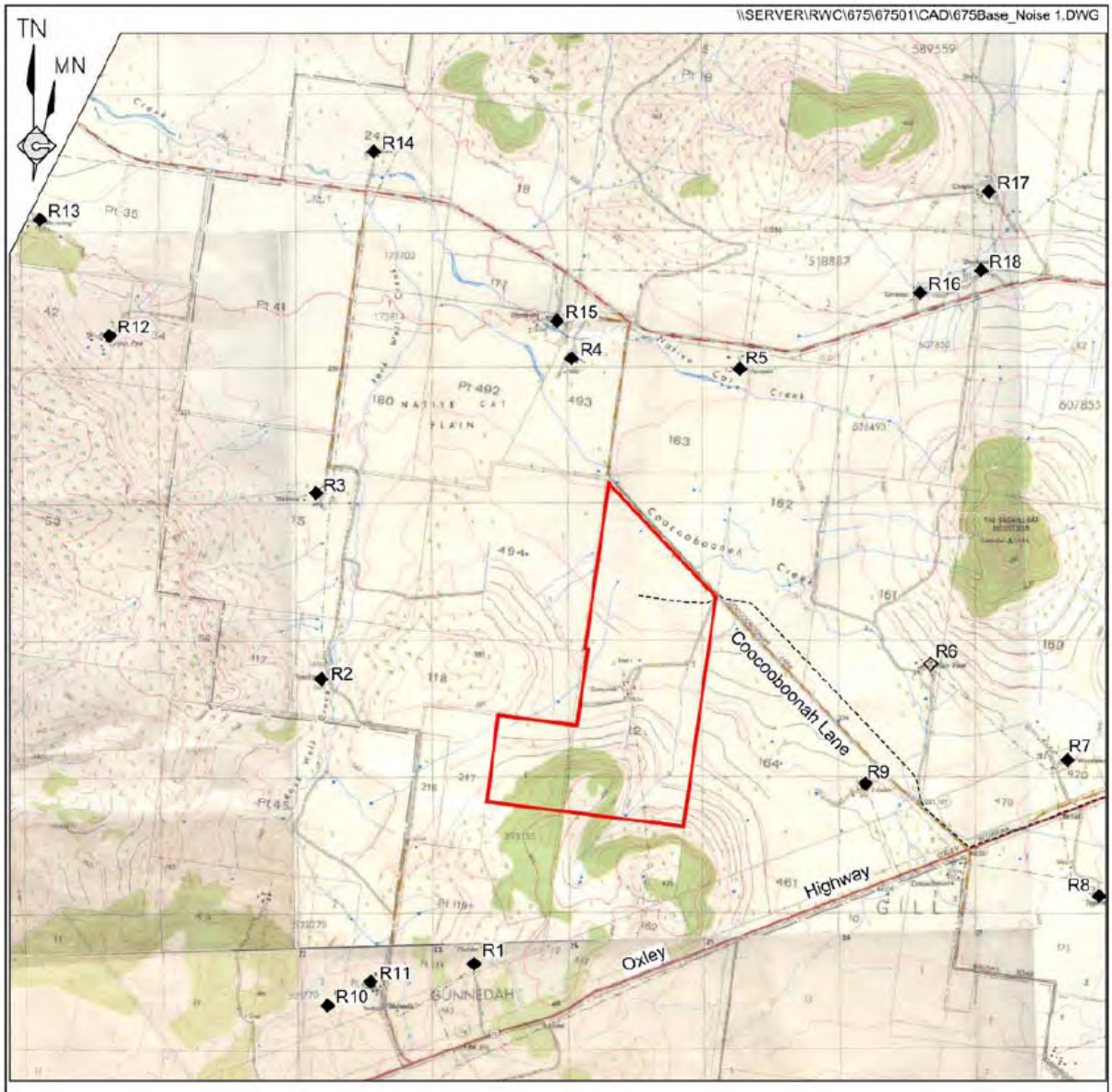


Figure 1
PROJECT SITE AND NOISE RECEIVER LOCATIONS

Figure Prepared by R.W. Corkery & Co. Pty Ltd

10 February 2011

Ref: 06248/3870

Mr Danny Young
Whitehaven Coal Pty Ltd
PO Box 600
GUNNEDAH NSW 2380

RE: FEBRUARY ATTENDED NOISE MONITORING RESULTS – SUNNYSIDE MINE – "GLENDOWER"

This letter report presents the results of attended noise compliance monitoring conducted at the "Glendower" property on behalf of Sunnyside Coal Mine (SCM) on Wednesday 8th and Thursday 9th February 2011. Noise monitoring was carried out in accordance with the conditions of the SCM Noise Monitoring Programme (NMP) as detailed below.

NOISE CRITERIA

The following is an extract from the Sunnyside NMP:

Impact Assessment Criteria

7. Ensure that the noise generated by the Project does not exceed the noise impact assessment criteria set out in Table 1 at any residence on privately-owned land, or on more than 25 percent of any privately-owned land.

Location	Day $L_{Aeq(15\ minute)}$	Evening $L_{Aeq(15\ minute)}$
All privately owned residences	35	35

Table 1: Impact assessment criteria dB(A)

If a written negotiated noise agreement with any landowner has been reached 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 in accordance with the negotiated noise agreement.

Notes:

- *To determine compliance with the $L_{Aeq(15\ minute)}$ noise limits, noise from the Project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the Department and DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*

- *These limits apply under the relevant meteorological conditions outlined in the assessment procedures in Chapter 5 of the NSW Industrial Noise Policy.*
- *To determine compliance with the $L_{A1(1\ minute)}$ noise limits, noise from the Project is to be measured at 1 metre from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the Department and DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).*

NOISE MONITORING LOCATIONS

The noise measurement location for the attended noise survey is listed below (and shown in the attached figure):

Location R15: Glendower

NOISE MEASUREMENTS

Noise emission levels were measured with a Brüel & Kjær Type 2260 or 2250 Precision Sound Analyser. These instruments have Type 1 characteristics as defined in AS1259-1982 "Sound Level Meters". Calibration of the instrument was confirmed with a Brüel & Kjær Type 4231 Sound Level Calibrator prior to and at the completion of measurements.

Meteorological data used in this report was obtained from a hand held weather station with measurements made at approximately 2m above ground level.

Noise levels were measured over two monitoring surveys, one during the evening of 8th February and a second during the day of 9th February, 2011.

RESULTS

The measured noise levels, over 1 second intervals, were analysed using Brüel & Kjær "*Evaluator*" software. The software enables the contributions of the mine and other significant noise sources to the overall to be quantified.

In keeping with requirements of the SCM Noise Monitoring Programme noise levels were recorded for each of the Leq (15 min), Lmax, L1, L10, L90 and Lmin percentiles. As shown in Table 1, the noise criterion for the operational phase of the SCM project is **35 dB(A) $L_{eq\ (15\ min)}$** for all operating times.

The results shown in **Table 2**, below, represent the total 15 minute Leq noise level for all noise sources and the relative contributions of each. This is the compliance criterion for the operation of the mine. Levels for the other percentiles are not shown as they have no compliance criteria for comparison, but are available on request. Note that the mine does not operate at night (i.e. between 10 pm and 7 am) and, therefore, the L1 (1 min) (which is the standard measure of sleep disturbance) does not apply.

Noise from SCM is shown in bold type. Where noise from SCM is listed as inaudible, this means the maximum levels from the mine were at least 10 dB below the minimum level during the measurement and not measurable.

Table 2
SCM Noise Monitoring Results – 8 & 9 February 2011 - Glendower

Date	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
8 February	8:45 pm	46	3.5m/s ESE	Birds & insects (44), wind (40), SCM (34), traffic (30)
9 February	9:20 am	46	3m/s E	Birds (45), traffic (40), SCM (<30)

The results shown in Table 2 indicate that, under the operational and atmospheric conditions at the time of both monitoring periods, noise emissions from the operations at SCM did not exceed the noise criterion of 35 dB(A) at the monitoring location at Glendower.

Data for the 15 minute Leq noise levels were analysed using the *"Evaluator"* software. These analyses showed the noise did not contain any tonal, impulsive or low frequency components as per definitions in the NSW Industrial Noise Policy.

We trust this report fulfils your requirements at this time, however, should you require additional information or assistance please contact the undersigned on 4954 2276.

Yours faithfully,
SPECTRUM ACOUSTICS PTY LIMITED

Author:

Ross Hodge
Acoustical Consultant

Review:

Neil Pennington
Acoustical Consultant

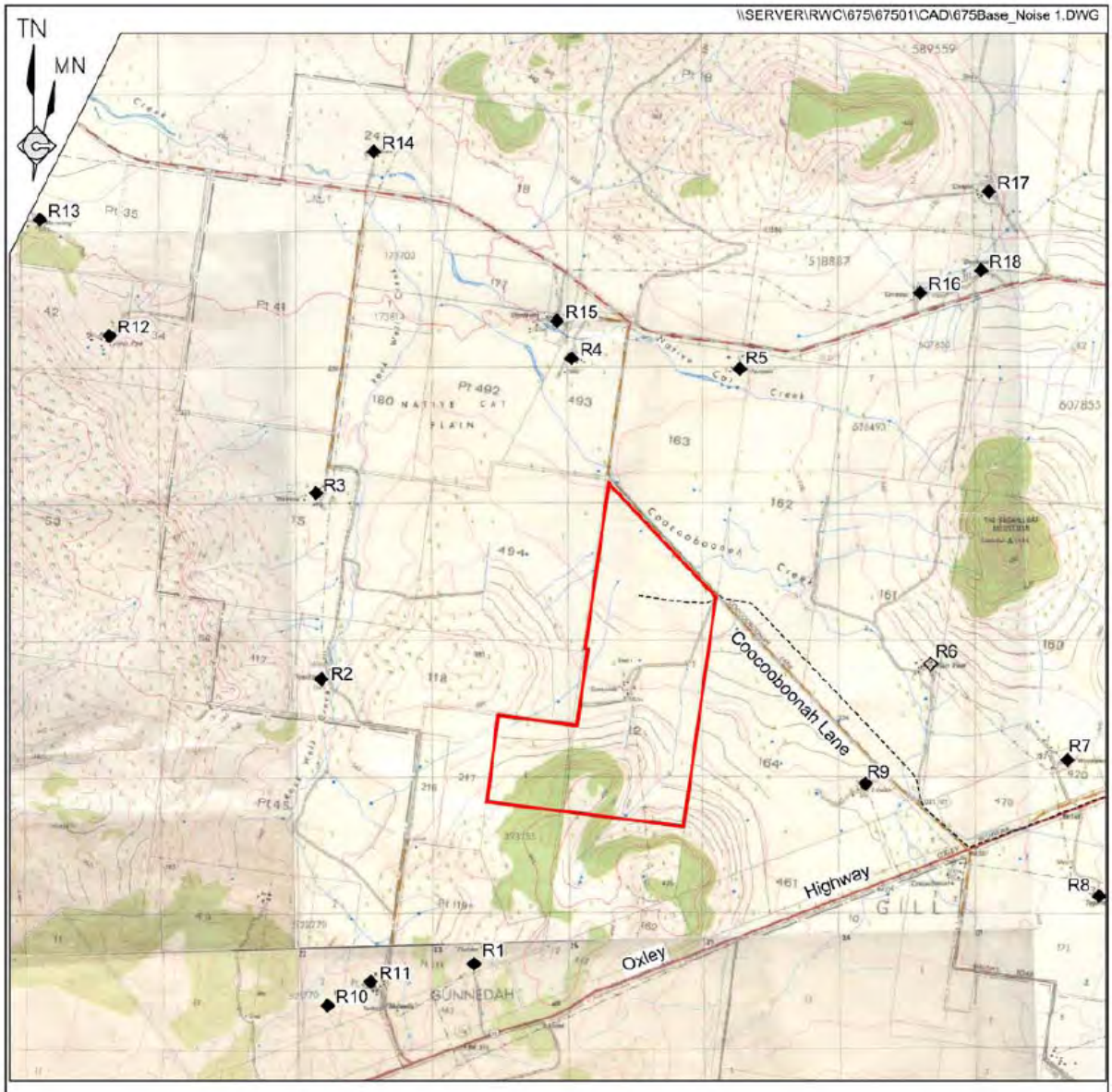


Figure 1
PROJECT SITE AND NOISE RECEIVER LOCATIONS

Figure Prepared by R.W. Corkery & Co. Pty Ltd

May 20 2011

Ref: 06248/3979

Mr Danny Young
Whitehaven Coal Pty Ltd
PO Box 600
GUNNEDAH NSW 2380

RE: MAY 2011 ATTENDED NOISE MONITORING RESULTS – SUNNYSIDE MINE

This letter report presents the results of attended noise compliance monitoring conducted for the Sunnyside Coal Mine (SCM) on Thursday 19th May 2011. Noise monitoring was carried out in accordance with the conditions of the SCM Noise Monitoring Programme (NMP) as detailed below.

NOISE CRITERIA

The following is an extract from the Sunnyside NMP:

Impact Assessment Criteria

7. Ensure that the noise generated by the Project does not exceed the noise impact assessment criteria set out in Table 1 at any residence on privately-owned land, or on more than 25 percent of any privately-owned land.

Location	Day $L_{Aeq(15\ minute)}$	Evening $L_{Aeq(15\ minute)}$
All privately owned residences	35	35

Table 1: Impact assessment criteria dB(A)

If a written negotiated noise agreement with any landowner has been reached 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 in accordance with the negotiated noise agreement.

Notes:

- *To determine compliance with the $L_{Aeq(15\ minute)}$ noise limits, noise from the Project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the Department and DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*

- *These limits apply under the relevant meteorological conditions outlined in the assessment procedures in Chapter 5 of the NSW Industrial Noise Policy.*
- *To determine compliance with the $L_{A1(1\ minute)}$ noise limits, noise from the Project is to be measured at 1 metre from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the Department and DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).*

NOISE MONITORING LOCATIONS

Noise measurement locations for the attended noise survey are listed below (and shown in the attached figure):

Location R2: Ivanhoe[1]
Location R4: Illili
Location R5: Ferndale
Location R6: Plain View
Location R9: Lilydale

[1] Gates at the entrance to Ivanhoe were locked and access was not possible. No monitoring was, therefore, undertaken at this residence.

NOISE MEASUREMENTS

Noise emission levels were measured with a Brüel & Kjær Type 2260 or 2250 Precision Sound Analyser. These instruments have Type 1 characteristics as defined in AS1259-1982 "Sound Level Meters". Calibration of the instrument was confirmed with a Brüel & Kjær Type 4231 Sound Level Calibrator prior to and at the completion of measurements.

Meteorological data used in this report was obtained from a hand held weather station with measurements made at approximately 2m above ground level.

Noise levels were measured over two monitoring surveys, one during the afternoon and one during the evening of 19th May, 2011.

RESULTS

The measured noise levels, over 1 second intervals, were analysed using Brüel & Kjær "*Evaluator*" software. The software enables the contributions of the mine and other significant noise sources to the overall to be quantified.

In keeping with requirements of the SCM Noise Monitoring Programme noise levels were recorded for each of the Leq (15 min), Lmax, L1, L10, L90 and Lmin percentiles. As shown in Table 1, the noise criterion for the operational phase of the SCM project is **35 dB(A) $L_{eq\ (15\ min)}$** for all operating times.

The results shown in **Tables 2** and **3**, below, represent the total 15 minute Leq noise level for all noise sources and the relative contributions of each. This is the compliance criterion for the operation of the mine. Levels for the other percentiles are not shown as they have no compliance criteria for

comparison but are available on request. Note that the mine does not operate at night (i.e. between 10 pm and 7 am) and, therefore, the L1 (1 min) (which is the standard measure of sleep disturbance) does not apply. Noise from SCM is shown in bold type. Where noise from SCM is listed as inaudible, this means the maximum levels from the mine were at least 10 dB below the background level during the measurement and not measurable.

Table 2
SCM Noise Monitoring Results – 19 May 2011 (Day)

Location	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
Illili	4:19 pm	41	1.2m/s S	Birds & insects (40), SCM (33)
Ferndale	4:55 pm	43	1m/s S	Birds & insects (40), traffic (39), SCM (30)
Plain View	4:00 pm	40	2m/s SSW	Birds & insects (38), traffic (36), SCM inaudible
Lilydale	3:40 pm	40	2m/s SSW	Traffic (39), birds (32), SCM inaudible

Table 3
SCM Noise Monitoring Results – 19 May 2011 (Evening)

Location	Time	dB(A),Leq	Wind speed/ direction	Identified Noise Sources
Illili	8:24 pm	34	0.3m/s S	Birds (30), SCM (29), traffic (28)
Ferndale	9:05 pm	32	Calm	SCM (32), insects (23)
Plain View	7:58 pm	35	0.8m/s S	Traffic (33), insects (30), SCM (<25)
Lilydale	7:40 pm	26	0.8m/s S	Insects (26), SCM inaudible

The results shown in Tables 2 and 3 indicate that, under the operational and atmospheric conditions at the time, noise emissions from the operations at SCM did not exceed the noise criterion of 35 dB(A) Leq (15 min) at any monitoring location at any time. Data for the 15 minute Leq noise levels were analysed using the *"Evaluator"* software. These analyses showed the noise did not contain any tonal, impulsive or low frequency components as per definitions in the NSW Industrial Noise Policy.

The product coal from the Sunnyside mine is transported by road trucks to the Whitehaven CPP, near Gunnedah. The transport of coal is on a campaign type basis. There was no coal transport carried out on 19 or 20 May, 2011.

We trust this report fulfils your requirements at this time, however, should you require additional information or assistance please contact the undersigned on 4954 2276.

Yours faithfully,
SPECTRUM ACOUSTICS PTY LIMITED

Author: Review:

Ross Hodge

Neil Pennington

Acoustical Consultant

Acoustical Consultant

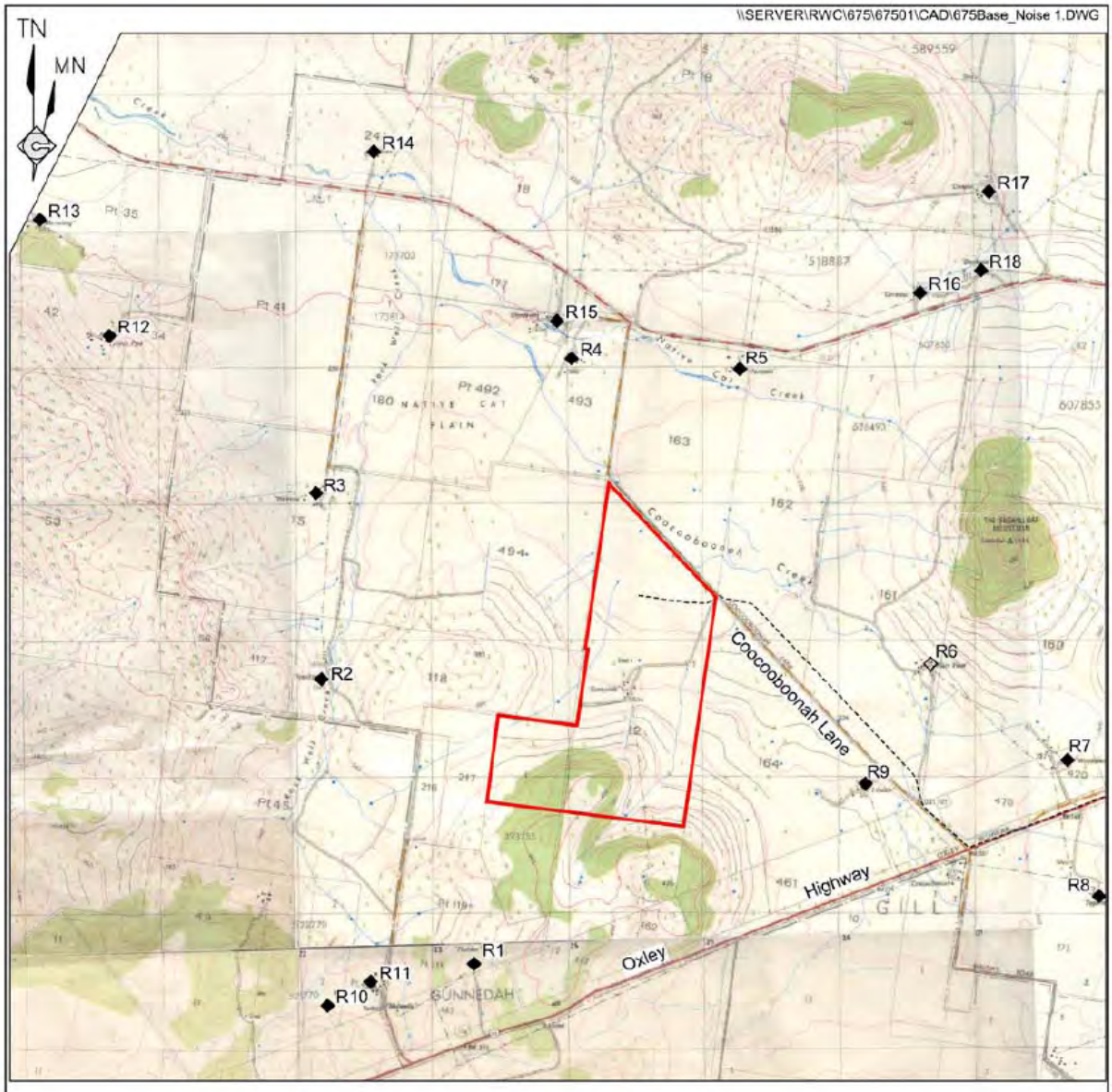


Figure 1
PROJECT SITE AND NOISE RECEIVER LOCATIONS

Figure Prepared by R.W. Corkery & Co. Pty Ltd

20 May 2011

Ref: 06248/3980

Mr Danny Young
Whitehaven Coal Pty Ltd
PO Box 600
GUNNEDAH NSW 2380

RE: MAY ATTENDED NOISE MONITORING RESULTS – SUNNYSIDE MINE – "GLENDOWER"

This letter report presents the results of attended noise compliance monitoring conducted at the "Glendower" property on behalf of Sunnyside Coal Mine (SCM) on Thursday 19th May 2011. Noise monitoring was carried out in accordance with the conditions of the SCM Noise Monitoring Programme (NMP) as detailed below.

NOISE CRITERIA

The following is an extract from the Sunnyside NMP:

Impact Assessment Criteria

7. Ensure that the noise generated by the Project does not exceed the noise impact assessment criteria set out in Table 1 at any residence on privately-owned land, or on more than 25 percent of any privately-owned land.

Location	Day $L_{Aeq(15\ minute)}$	Evening $L_{Aeq(15\ minute)}$
All privately owned residences	35	35

Table 1: Impact assessment criteria dB(A)

If a written negotiated noise agreement with any landowner has been reached 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 in accordance with the negotiated noise agreement.

Notes:

- *To determine compliance with the $L_{Aeq(15\ minute)}$ noise limits, noise from the Project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the Department and DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*

- *These limits apply under the relevant meteorological conditions outlined in the assessment procedures in Chapter 5 of the NSW Industrial Noise Policy.*
- *To determine compliance with the $L_{A1(1\ minute)}$ noise limits, noise from the Project is to be measured at 1 metre from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the Department and DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).*

NOISE MONITORING LOCATIONS

The noise measurement location for the attended noise survey is listed below (and shown in the attached figure):

Location R15: Glendower

NOISE MEASUREMENTS

Noise emission levels were measured with a Brüel & Kjær Type 2260 or 2250 Precision Sound Analyser. These instruments have Type 1 characteristics as defined in AS1259-1982 "Sound Level Meters". Calibration of the instrument was confirmed with a Brüel & Kjær Type 4231 Sound Level Calibrator prior to and at the completion of measurements.

Meteorological data used in this report was obtained from a hand held weather station with measurements made at approximately 2m above ground level.

Noise levels were measured over two monitoring surveys, one during the afternoon and one during the evening of 19th May, 2011.

RESULTS

The measured noise levels, over 1 second intervals, were analysed using Brüel & Kjær "*Evaluator*" software. The software enables the contributions of the mine and other significant noise sources to the overall to be quantified.

In keeping with requirements of the SCM Noise Monitoring Programme noise levels were recorded for each of the Leq (15 min), Lmax, L1, L10, L90 and Lmin percentiles. As shown in Table 1, the noise criterion for the operational phase of the SCM project is **35 dB(A) $L_{eq\ (15\ min)}$** for all operating times.

The results shown in **Table 2**, below, represent the total 15 minute Leq noise level for all noise sources and the relative contributions of each. This is the compliance criterion for the operation of the mine. Levels for the other percentiles are not shown as they have no compliance criteria for comparison, but are available on request. Note that the mine does not operate at night (i.e. between 10 pm and 7 am) and, therefore, the L1 (1 min) (which is the standard measure of sleep disturbance) does not apply.

Noise from SCM is shown in bold type. Where noise from SCM is listed as inaudible, this means the maximum levels from the mine were at least 10 dB below the background level during the measurement and not measurable.

Table 2
SCM Noise Monitoring Results – 19 May 2011 - Glendower

Date	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
19 May	4:38 pm	46	1.2m/s S	Birds & insects (45), traffic (38), SCM (31)
19 May	8:44 pm	33	Calm	SCM (31), traffic (26), birds (26)

The results shown in Table 2 indicate that, under the operational and atmospheric conditions at the time of both monitoring periods, noise emissions from the operations at SCM did not exceed the noise criterion of 35 dB(A) at the monitoring location at Glendower.

Data for the 15 minute Leq noise levels were analysed using the *"Evaluator"* software. These analyses showed the noise did not contain any tonal, impulsive or low frequency components as per definitions in the NSW Industrial Noise Policy.

We trust this report fulfils your requirements at this time, however, should you require additional information or assistance please contact the undersigned on 4954 2276.

Yours faithfully,
SPECTRUM ACOUSTICS PTY LIMITED

Author:

Ross Hodge
Acoustical Consultant

Review:

Neil Pennington
Acoustical Consultant

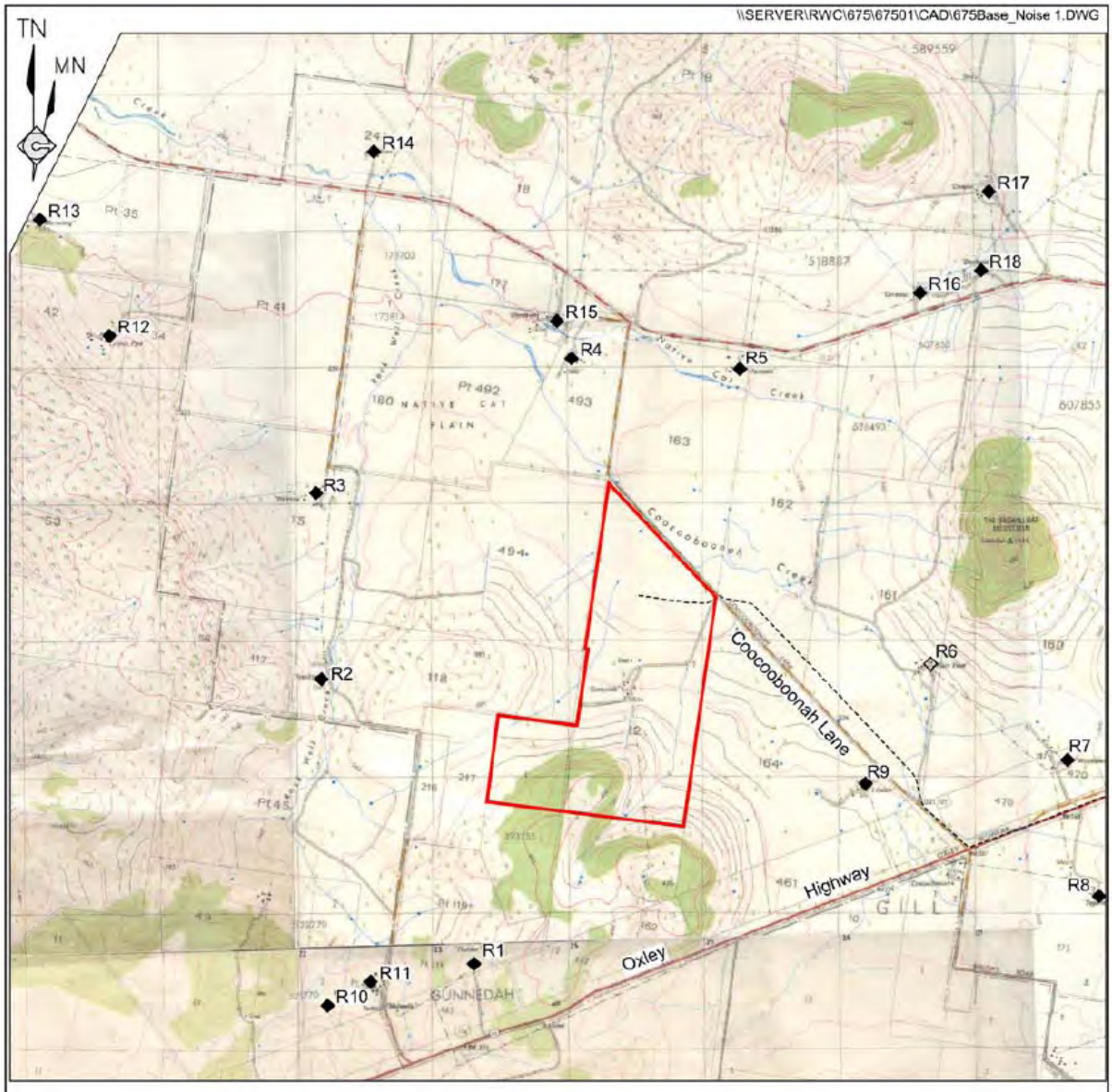


Figure 1
PROJECT SITE AND NOISE RECEIVER LOCATIONS

Figure Prepared by R.W. Corkery & Co. Pty Ltd

August 5 2011

Ref: 06248/4069

Mr Danny Young
Whitehaven Coal Pty Ltd
PO Box 600
GUNNEDAH NSW 2380

RE: AUGUST 2011 ATTENDED NOISE MONITORING RESULTS – SUNNYSIDE MINE

This letter report presents the results of attended noise compliance monitoring conducted for the Sunnyside Coal Mine (SCM) on Thursday 4th and Friday 5th August 2011. Noise monitoring was carried out in accordance with the conditions of the SCM Noise Monitoring Programme (NMP) as detailed below.

NOISE CRITERIA

The following is an extract from the Sunnyside NMP:

Impact Assessment Criteria

7. Ensure that the noise generated by the Project does not exceed the noise impact assessment criteria set out in Table 1 at any residence on privately-owned land, or on more than 25 percent of any privately-owned land.

Location	Day $L_{Aeq(15\ minute)}$	Evening $L_{Aeq(15\ minute)}$
All privately owned residences	35	35

Table 1: Impact assessment criteria dB(A)

If a written negotiated noise agreement with any landowner has been reached 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 in accordance with the negotiated noise agreement.

Notes:

- *To determine compliance with the $L_{Aeq(15\ minute)}$ noise limits, noise from the Project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the Department and DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*

- *These limits apply under the relevant meteorological conditions outlined in the assessment procedures in Chapter 5 of the NSW Industrial Noise Policy.*
- *To determine compliance with the $L_{A1(1\ minute)}$ noise limits, noise from the Project is to be measured at 1 metre from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the Department and DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).*

NOISE MONITORING LOCATIONS

Noise measurement locations for the attended noise survey are listed below (and shown in the attached figure):

Location R2: Ivanhoe[1]
Location R4: Illili
Location R5: Ferndale
Location R6: Plain View
Location R9: Lilydale

[1] Gates at the entrance to Ivanhoe were locked and access was not possible. No monitoring was, therefore, undertaken at this residence.

NOISE MEASUREMENTS

Noise emission levels were measured with a Brüel & Kjær Type 2260 or 2250 Precision Sound Analyser. These instruments have Type 1 characteristics as defined in AS1259-1982 "Sound Level Meters". Calibration of the instrument was confirmed with a Brüel & Kjær Type 4231 Sound Level Calibrator prior to and at the completion of measurements.

Meteorological data used in this report was obtained from a hand held weather station with measurements made at approximately 2m above ground level.

Mine noise levels were measured over two monitoring surveys, one during the afternoon and one during the evening of 4th August, 2011. Traffic noise monitoring was undertaken during the morning of 5th August.

RESULTS

The measured noise levels, over 1 second intervals, were analysed using Brüel & Kjær "*Evaluator*" software. The software enables the contributions of the mine and other significant noise sources to the overall to be quantified.

In keeping with requirements of the SCM Noise Monitoring Programme noise levels were recorded for each of the Leq (15 min), Lmax, L1, L10, L90 and Lmin percentiles. As shown in Table 1, the noise criterion for the operational phase of the SCM project is **35 dB(A) $L_{eq\ (15\ min)}$** for all operating times.

The results shown in **Tables 2** and **3**, below, represent the total 15 minute Leq noise level for all noise sources and the relative contributions of each. This is the compliance criterion for the operation of the

mine. Levels for the other percentiles are not shown as they have no compliance criteria for comparison but are available on request. Note that the mine does not operate at night (i.e. between 10 pm and 7 am) and, therefore, the L1 (1 min) (which is the standard measure of sleep disturbance) does not apply. Noise from SCM is shown in bold type. Where noise from SCM is listed as inaudible, this means the maximum levels from the mine were at least 10 dB below the background level during the measurement and not measurable.

Table 2
SCM Noise Monitoring Results – 4 August 2011 (Day)

Location	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
Illili	3:35 pm	37	0.5m/s SE	Birds (37), traffic (39), SCM (25)
Ferndale	4:17 pm	45	1m/s SE	Traffic (45), birds (35), SCM (<20)
Plain View	3:13 pm	33	1m/s SE	Birds (32), SCM (25)
Lilydale	2:55 pm	54	2m/s SE	Birds (54), SCM (30)

Table 3
SCM Noise Monitoring Results – 4 August 2011 (Evening)

Location	Time	dB(A),Leq	Wind speed/ direction	Identified Noise Sources
Illili	8:23 pm	29	0.4m/s SE	SCM (29)
Ferndale	9:02 pm	30	1.2m/s S	SCM (30)
Plain View	8:00 pm	42	0.5m/s SE	Plane (40), SCM (37), traffic (30)
Lilydale	7:38 pm	39	0.5m/s SE	Traffic (36), SCM (36)

The results shown in Tables 2 and 3 indicate that, under the operational and atmospheric conditions at the time, noise emissions from the operations at SCM exceeded the noise criterion of 35 dB(A) Leq (15 min) at the Plain View and Lilydale monitoring locations during the evening. Lilydale is now a mine owned residence.

The mine noise at both Lilydale and Plain View consisted of haul truck engine revs, dozer engine and track noise and general mine hum. Lights from mining activities were visible from both monitoring locations.

Data for the 15 minute Leq noise levels were analysed using the *"Evaluator"* software. These analyses showed the noise did not contain any tonal, impulsive or low frequency components as per definitions in the NSW Industrial Noise Policy.

The transport of coal from Sunnyside is carried out on a relatively sporadic basis, and trucks using this route do not travel at the regular intervals that are associated with other Whitehaven projects in the area.

The sound level meter was set up in the paddock adjacent to "Roslyn", at the same distance from the road as the façade of the residence. The monitoring was carried out over a one hour period from 8.05 am on Friday 5th August. A total of 8 heavy vehicles travelled along Torrens Lane during the monitoring period. These consisted of 4 full and 4 empty coal haulage trucks entering and leaving the CPP site.

The measured Leq noise level from all vehicles on Torrens Lane was of **51.6 dB(A) Leq (1 hour)**. This is in compliance with the noise criterion for a local road of 55 dB(A) Leq (1 hour).

We trust this report fulfils your requirements at this time, however, should you require additional information or assistance please contact the undersigned on 4954 2276.

Yours faithfully,
SPECTRUM ACOUSTICS PTY LIMITED

Author:

Ross Hodge
Acoustical Consultant

Review:

Neil Pennington
Acoustical Consultant

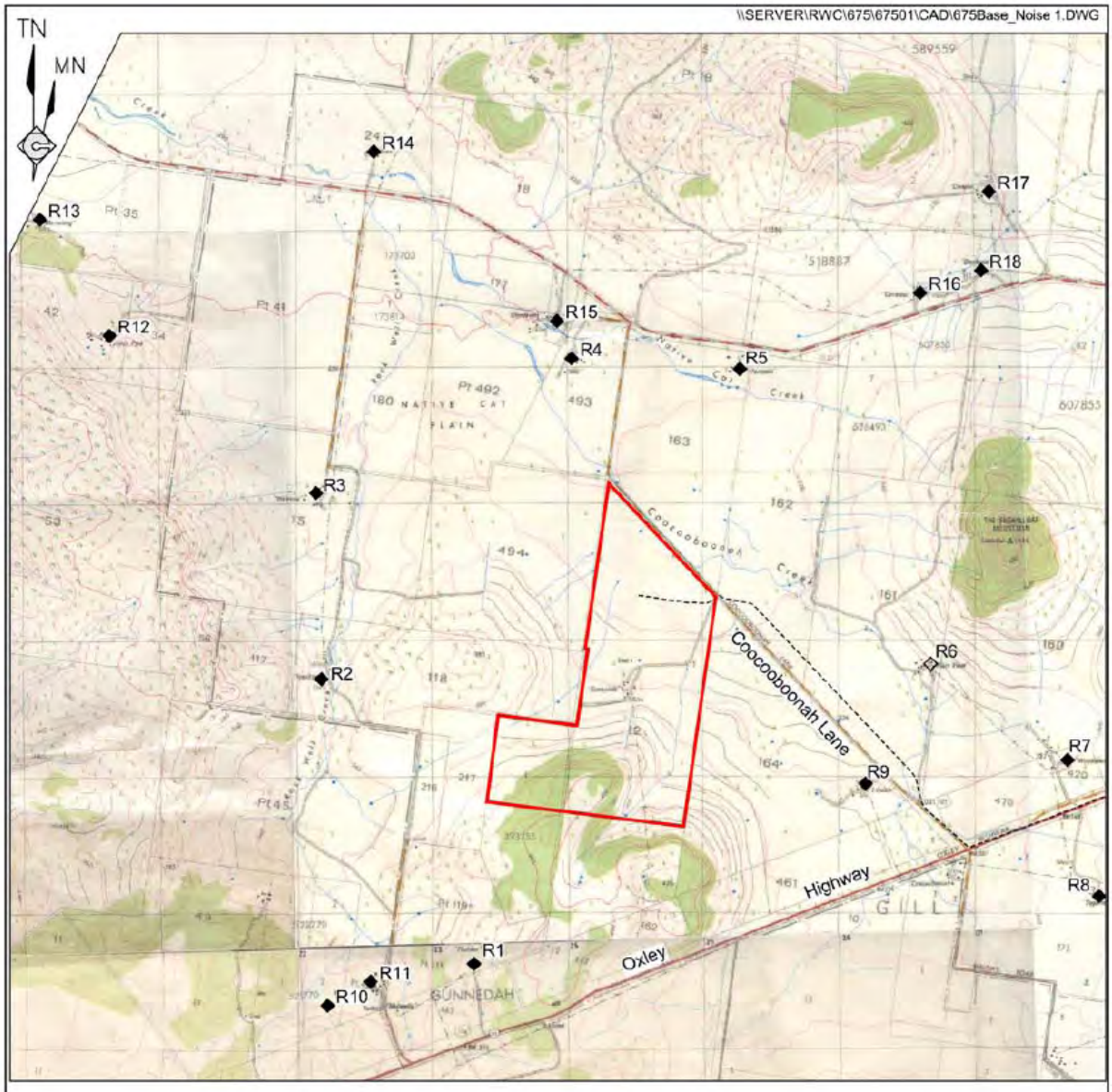


Figure 1
PROJECT SITE AND NOISE RECEIVER LOCATIONS

Figure Prepared by R.W. Corkery & Co. Pty Ltd

5 August 2011

Ref: 06248/4070

Mr Danny Young
Whitehaven Coal Pty Ltd
PO Box 600
GUNNEDAH NSW 2380

RE: AUGUST ATTENDED NOISE MONITORING RESULTS – SUNNYSIDE MINE – "GLENDOWER"

This letter report presents the results of attended noise compliance monitoring conducted at the "Glendower" property on behalf of Sunnyside Coal Mine (SCM) on Thursday 4th August, 2011. Noise monitoring was carried out in accordance with the conditions of the SCM Noise Monitoring Programme (NMP) as detailed below.

NOISE CRITERIA

The following is an extract from the Sunnyside NMP:

Impact Assessment Criteria

7. Ensure that the noise generated by the Project does not exceed the noise impact assessment criteria set out in Table 1 at any residence on privately-owned land, or on more than 25 percent of any privately-owned land.

Location	Day $L_{Aeq(15\ minute)}$	Evening $L_{Aeq(15\ minute)}$
All privately owned residences	35	35

Table 1: Impact assessment criteria dB(A)

If a written negotiated noise agreement with any landowner has been reached 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 in accordance with the negotiated noise agreement.

Notes:

- *To determine compliance with the $L_{Aeq(15\ minute)}$ noise limits, noise from the Project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the Department and DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*

- *These limits apply under the relevant meteorological conditions outlined in the assessment procedures in Chapter 5 of the NSW Industrial Noise Policy.*
- *To determine compliance with the $L_{A1(1\ minute)}$ noise limits, noise from the Project is to be measured at 1 metre from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the Department and DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).*

NOISE MONITORING LOCATIONS

The noise measurement location for the attended noise survey is listed below (and shown in the attached figure):

Location R15: Glendower

NOISE MEASUREMENTS

Noise emission levels were measured with a Brüel & Kjær Type 2260 or 2250 Precision Sound Analyser. These instruments have Type 1 characteristics as defined in AS1259-1982 "Sound Level Meters". Calibration of the instrument was confirmed with a Brüel & Kjær Type 4231 Sound Level Calibrator prior to and at the completion of measurements.

Meteorological data used in this report was obtained from a hand held weather station with measurements made at approximately 2m above ground level.

Noise levels were measured over two monitoring surveys, one during the afternoon and one during the evening of 4th August, 2011.

RESULTS

The measured noise levels, over 1 second intervals, were analysed using Brüel & Kjær "*Evaluator*" software. The software enables the contributions of the mine and other significant noise sources to the overall to be quantified.

In keeping with requirements of the SCM Noise Monitoring Programme noise levels were recorded for each of the Leq (15 min), Lmax, L1, L10, L90 and Lmin percentiles. As shown in Table 1, the noise criterion for the operational phase of the SCM project is **35 dB(A) $L_{eq\ (15\ min)}$** for all operating times.

The results shown in **Table 2**, below, represent the total 15 minute Leq noise level for all noise sources and the relative contributions of each. This is the compliance criterion for the operation of the mine. Levels for the other percentiles are not shown as they have no compliance criteria for comparison, but are available on request. Note that the mine does not operate at night (i.e. between 10 pm and 7 am) and, therefore, the L1 (1 min) (which is the standard measure of sleep disturbance) does not apply.

Noise from SCM is shown in bold type. Where noise from SCM is listed as inaudible, this means the maximum levels from the mine were at least 10 dB below the background level during the measurement and not measurable.

Table 2
SCM Noise Monitoring Results – 4 August 2011 - Glendower

Date	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
4 August	3:55 pm	42	0.6m/s SE	Birds (42), traffic (30), SCM (<20)
4 August	8:41 pm	28	Calm	Dog (27), SCM (22)

The results shown in Table 2 indicate that, under the operational and atmospheric conditions at the time of both monitoring periods, noise emissions from the operations at SCM did not exceed the noise criterion of 35 dB(A) at the monitoring location at Glendower.

Data for the 15 minute Leq noise levels were analysed using the *"Evaluator"* software. These analyses showed the noise did not contain any tonal, impulsive or low frequency components as per definitions in the NSW Industrial Noise Policy.

We trust this report fulfils your requirements at this time, however, should you require additional information or assistance please contact the undersigned on 4954 2276.

Yours faithfully,
SPECTRUM ACOUSTICS PTY LIMITED

Author:

Ross Hodge
Acoustical Consultant

Review:

Neil Pennington
Acoustical Consultant

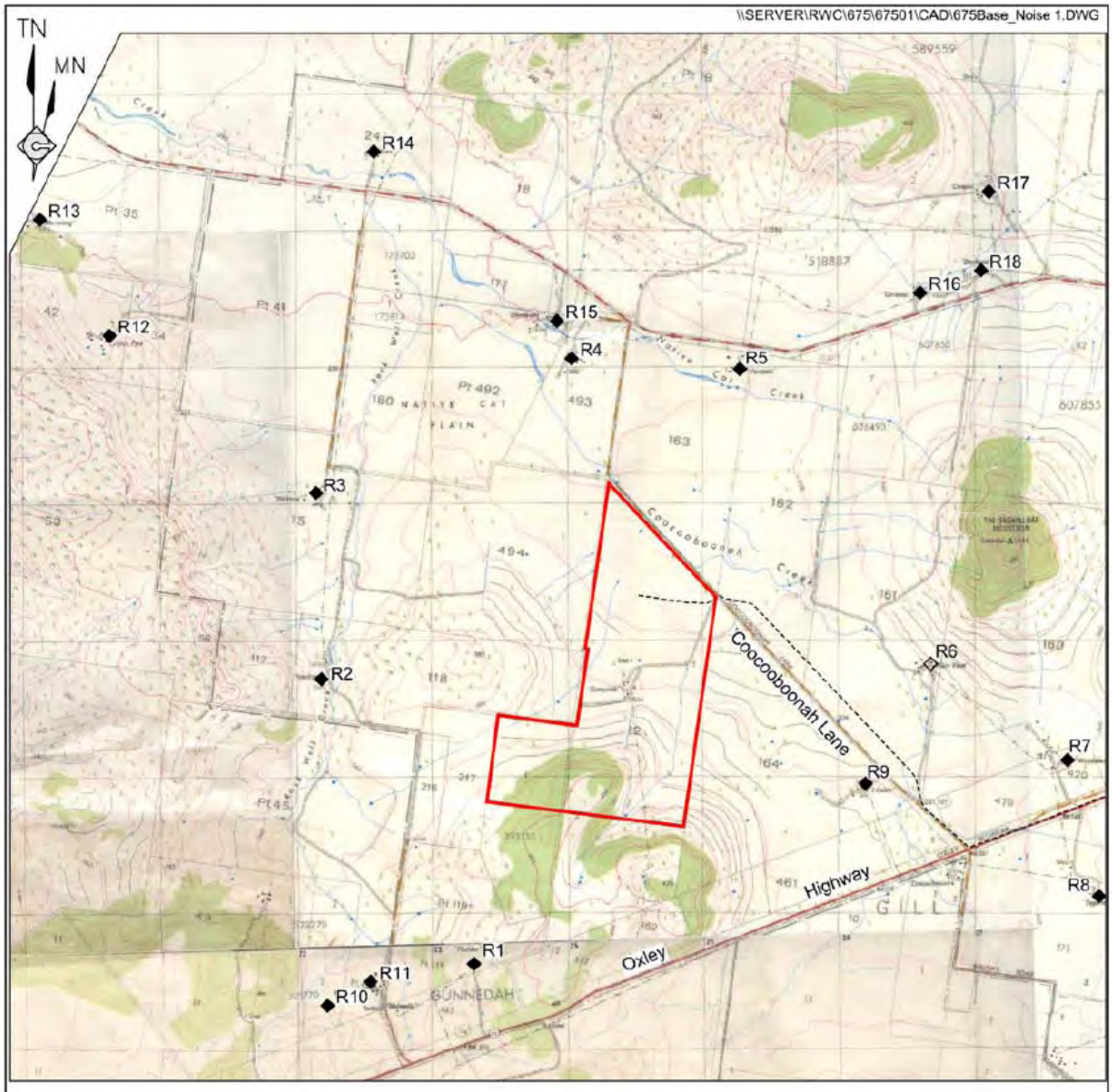


Figure 1
PROJECT SITE AND NOISE RECEIVER LOCATIONS

Figure Prepared by R.W. Corkery & Co. Pty Ltd

November 9 2011

Ref: 06248/4177

Mr Danny Young
Whitehaven Coal Pty Ltd
PO Box 600
GUNNEDAH NSW 2380

RE: NOVEMBER 2011 ATTENDED NOISE MONITORING RESULTS – SUNNYSIDE MINE

This letter report presents the results of attended noise compliance monitoring conducted for the Sunnyside Coal Mine (SCM) on Monday 7th November 2011. Noise monitoring was carried out in accordance with the conditions of the SCM Noise Monitoring Programme (NMP) as detailed below.

NOISE CRITERIA

The following is an extract from the Sunnyside NMP:

Impact Assessment Criteria

7. Ensure that the noise generated by the Project does not exceed the noise impact assessment criteria set out in Table 1 at any residence on privately-owned land, or on more than 25 percent of any privately-owned land.

Location	Day $L_{Aeq(15\ minute)}$	Evening $L_{Aeq(15\ minute)}$
All privately owned residences	35	35

Table 1: Impact assessment criteria dB(A)

If a written negotiated noise agreement with any landowner has been reached 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 in accordance with the negotiated noise agreement.

Notes:

- *To determine compliance with the $L_{Aeq(15\ minute)}$ noise limits, noise from the Project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the Department and DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*

- *These limits apply under the relevant meteorological conditions outlined in the assessment procedures in Chapter 5 of the NSW Industrial Noise Policy.*
- *To determine compliance with the $L_{A1(1\ minute)}$ noise limits, noise from the Project is to be measured at 1 metre from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the Department and DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).*

NOISE MONITORING LOCATIONS

Noise measurement locations for the attended noise survey are listed below (and shown in the attached figure):

Location R2: Ivanhoe[1]
Location R4: Illili
Location R5: Ferndale
Location R6: Plain View
Location R9: Lilydale

[1] Gates at the entrance to Ivanhoe were locked and access was not possible. No monitoring was, therefore, undertaken at this residence.

NOISE MEASUREMENTS

Noise emission levels were measured with a Brüel & Kjær Type 2260 or 2250 Precision Sound Analyser. These instruments have Type 1 characteristics as defined in AS1259-1982 "Sound Level Meters". Calibration of the instrument was confirmed with a Brüel & Kjær Type 4231 Sound Level Calibrator prior to and at the completion of measurements.

Meteorological data used in this report was obtained from a hand held weather station with measurements made at approximately 2m above ground level.

Mine noise levels were measured over two monitoring surveys, one during the afternoon and one during the evening of 7th November, 2011. Traffic noise monitoring was undertaken during the afternoon of 7th November.

RESULTS

The measured noise levels, over 1 second intervals, were analysed using Brüel & Kjær "*Evaluator*" software. The software enables the contributions of the mine and other significant noise sources to the overall to be quantified.

In keeping with requirements of the SCM Noise Monitoring Programme noise levels were recorded for each of the Leq (15 min), Lmax, L1, L10, L90 and Lmin percentiles. As shown in Table 1, the noise criterion for the operational phase of the SCM project is **35 dB(A) $L_{eq\ (15\ min)}$** for all operating times.

The results shown in **Tables 2** and **3**, below, represent the total 15 minute Leq noise level for all noise sources and the relative contributions of each. This is the compliance criterion for the operation of the

mine. Levels for the other percentiles are not shown as they have no compliance criteria for comparison but are available on request. Note that the mine does not operate at night (i.e. between 10 pm and 7 am) and, therefore, the L1 (1 min) (which is the standard measure of sleep disturbance) does not apply. Noise from SCM is shown in bold type. Where noise from SCM is listed as inaudible, this means the maximum levels from the mine were at least 10 dB below the ambient level during the measurement and not measurable.

Table 2
SCM Noise Monitoring Results – 7 November 2011 (Day)

Location	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
Illili	4:00 pm	37	2m/s NW	Birds (37), SCM inaudible
Ferndale	4:38 pm	39	2.5m/s NW	Birds & insects (37), SCM inaudible
Plain View	3:43 pm	39	2m/s NW	Birds & insects (36), traffic (36), SCM (25)
Lilydale	3:25 pm	43	2m/s NW	Traffic (41), SCM (34), birds & insects (33)

Table 3
SCM Noise Monitoring Results – 7 November 2011 (Evening)

Location	Time	dB(A),Leq	Wind speed/ direction	Identified Noise Sources
Illili	7:39 pm	44	0.5m/s NW	Birds & insects (44), SCM inaudible
Ferndale	7:21 pm	46	0.5m/s NW	Birds & sheep (46), SCM inaudible
Plain View	8:02 pm	45	0.5m/s NW	Birds & insects (45), SCM (25)
Lilydale	8:19 pm	41	0.5m/s NW	Birds & insects (39), traffic (38), SCM (30)

The results shown in Tables 2 and 3 indicate that, under the operational and atmospheric conditions at the time, noise emissions from the operations at SCM did not exceed the noise criterion of 35 dB(A) Leq (15 min) at any monitoring location at any time.

Data for the 15 minute Leq noise levels were analysed using the *"Evaluator"* software. These analyses showed the noise did not contain any tonal, impulsive or low frequency components as per definitions in the NSW Industrial Noise Policy.

The transport of coal from Sunnyside is carried out on a relatively sporadic basis, and trucks using this route do not travel at the regular intervals that are associated with other Whitehaven projects in the area.

The sound level meter was set up in the yard at "Roslyn" on Torrens Lane, at the same distance from the road as the façade of the residence. The monitoring was carried out over a one hour period from 5.00 pm on Monday 7th November.

A total of 6 heavy vehicles travelled along Torrens Lane during the monitoring period. These consisted of 4 full and 1 empty coal haulage trucks entering and leaving the CPP site and 1 fuel truck leaving the site.

The measured Leq noise level from all vehicles on Torrens Lane was of **50.7 dB(A) Leq (1 hour)**. This is in compliance with the noise criterion for a local road of 55 dB(A) Leq (1 hour).

We trust this report fulfils your requirements at this time, however, should you require additional information or assistance please contact the undersigned on 4954 2276.

Yours faithfully,

SPECTRUM ACOUSTICS PTY LIMITED

Author:

Ross Hodge
Acoustical Consultant

Review:

Neil Pennington
Acoustical Consultant

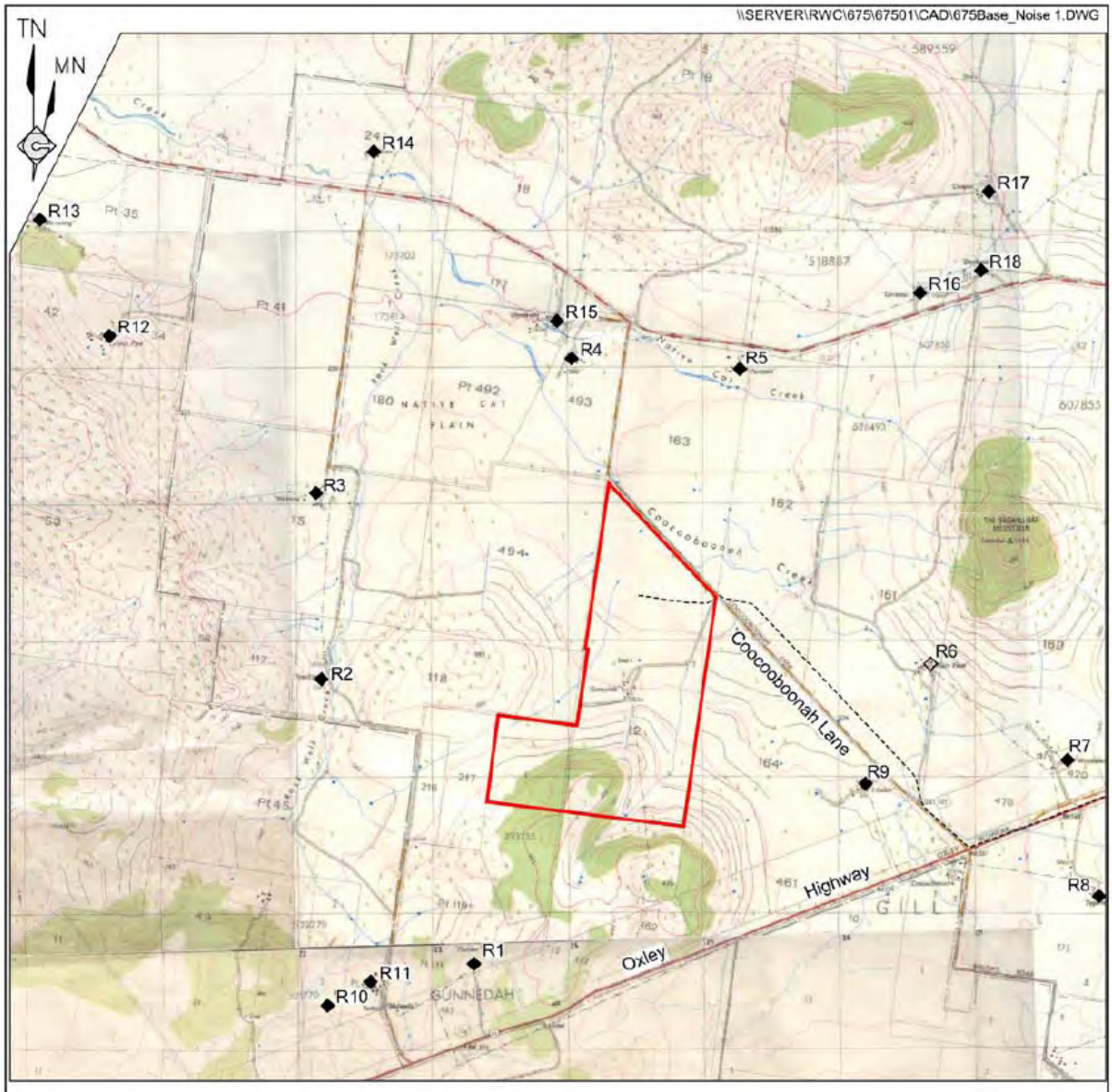


Figure 1
PROJECT SITE AND NOISE RECEIVER LOCATIONS

Figure Prepared by R.W. Corkery & Co. Pty Ltd

5 August 2011

Ref: 06248/4178

Mr Danny Young
Whitehaven Coal Pty Ltd
PO Box 600
GUNNEDAH NSW 2380

RE: NOVEMBER ATTENDED NOISE MONITORING RESULTS – SUNNYSIDE MINE – "GLENDOWER"

This letter report presents the results of attended noise compliance monitoring conducted at the "Glendower" property on behalf of Sunnyside Coal Mine (SCM) on Monday 7th November, 2011. Noise monitoring was carried out in accordance with the conditions of the SCM Noise Monitoring Programme (NMP) as detailed below.

NOISE CRITERIA

The following is an extract from the Sunnyside NMP:

Impact Assessment Criteria

7. Ensure that the noise generated by the Project does not exceed the noise impact assessment criteria set out in Table 1 at any residence on privately-owned land, or on more than 25 percent of any privately-owned land.

Location	Day $L_{Aeq(15\ minute)}$	Evening $L_{Aeq(15\ minute)}$
All privately owned residences	35	35

Table 1: Impact assessment criteria dB(A)

If a written negotiated noise agreement with any landowner has been reached 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 in accordance with the negotiated noise agreement.

Notes:

- *To determine compliance with the $L_{Aeq(15\ minute)}$ noise limits, noise from the Project is to be measured at the most affected point within the residential boundary, or at the most affected point within 30 metres of a dwelling (rural situations) where the dwelling is more than 30 metres from the boundary. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the Department and DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable.*

- *These limits apply under the relevant meteorological conditions outlined in the assessment procedures in Chapter 5 of the NSW Industrial Noise Policy.*
- *To determine compliance with the $L_{A1(1\ minute)}$ noise limits, noise from the Project is to be measured at 1 metre from the dwelling façade. Where it can be demonstrated that direct measurement of noise from the Project is impractical, the Department and DECC may accept alternative means of determining compliance (see Chapter 11 of the NSW Industrial Noise Policy).*

NOISE MONITORING LOCATIONS

The noise measurement location for the attended noise survey is listed below (and shown in the attached figure):

Location R15: Glendower

NOISE MEASUREMENTS

Noise emission levels were measured with a Brüel & Kjær Type 2260 or 2250 Precision Sound Analyser. These instruments have Type 1 characteristics as defined in AS1259-1982 "Sound Level Meters". Calibration of the instrument was confirmed with a Brüel & Kjær Type 4231 Sound Level Calibrator prior to and at the completion of measurements.

Meteorological data used in this report was obtained from a hand held weather station with measurements made at approximately 2m above ground level.

Noise levels were measured over two monitoring surveys, one during the afternoon and one during the evening of 7th November, 2011.

RESULTS

The measured noise levels, over 1 second intervals, were analysed using Brüel & Kjær "*Evaluator*" software. The software enables the contributions of the mine and other significant noise sources to the overall to be quantified.

In keeping with requirements of the SCM Noise Monitoring Programme noise levels were recorded for each of the Leq (15 min), Lmax, L1, L10, L90 and Lmin percentiles. As shown in Table 1, the noise criterion for the operational phase of the SCM project is **35 dB(A) $L_{eq\ (15\ min)}$** for all operating times.

The results shown in **Table 2**, below, represent the total 15 minute Leq noise level for all noise sources and the relative contributions of each. This is the compliance criterion for the operation of the mine. Levels for the other percentiles are not shown as they have no compliance criteria for comparison, but are available on request. Note that the mine does not operate at night (i.e. between 10 pm and 7 am) and, therefore, the L1 (1 min) (which is the standard measure of sleep disturbance) does not apply.

Noise from SCM is shown in bold type. Where noise from SCM is listed as inaudible, this means the maximum levels from the mine were at least 10 dB below the background level during the measurement and not measurable.

Table 2
SCM Noise Monitoring Results – 7 November 2011 - Glendower

Date	Time	dB(A),Leq (15 min)	Wind speed/ direction	Identified Noise Sources as dB(A) Leq (15 min)
7 November	4:17 pm	41	2m/s NW	Birds (41), traffic (31), **SCM inaudible**
7 November	8:47 pm	37	0.5m/s NW	Insects (37), **SCM inaudible**

The results shown in Table 2 indicate that, under the operational and atmospheric conditions at the time of both monitoring periods, noise emissions from the operations at SCM did not exceed the noise criterion of 35 dB(A) at the monitoring location at Glendower.

Data for the 15 minute Leq noise levels were analysed using the *"Evaluator"* software. These analyses showed the noise did not contain any tonal, impulsive or low frequency components as per definitions in the NSW Industrial Noise Policy.

We trust this report fulfils your requirements at this time, however, should you require additional information or assistance please contact the undersigned on 4954 2276.

Yours faithfully,
SPECTRUM ACOUSTICS PTY LIMITED

Author:

Ross Hodge
Acoustical Consultant

Review:

Neil Pennington
Acoustical Consultant

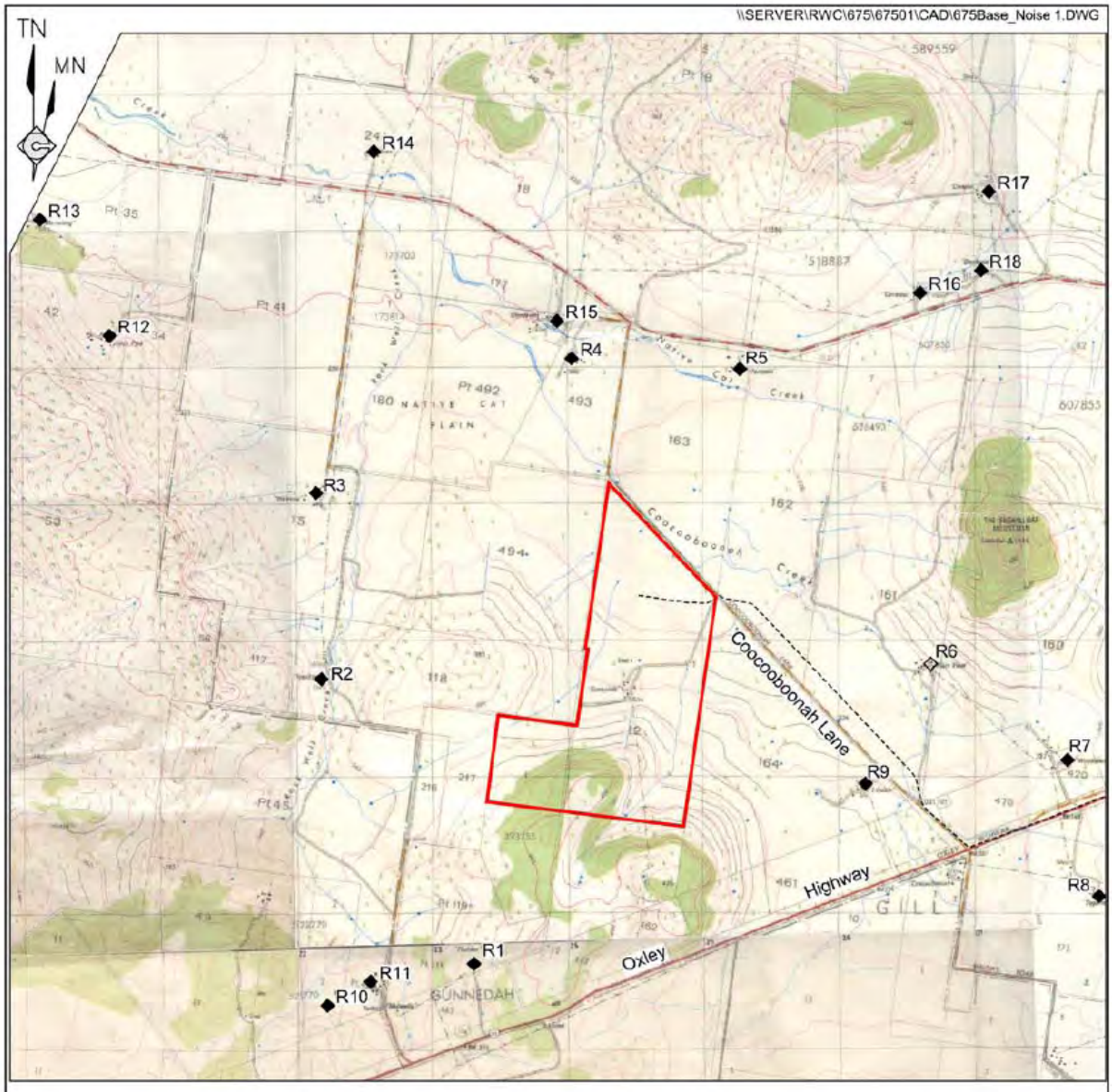


Figure 1
PROJECT SITE AND NOISE RECEIVER LOCATIONS

Figure Prepared by R.W. Corkery & Co. Pty Ltd

Appendix 8

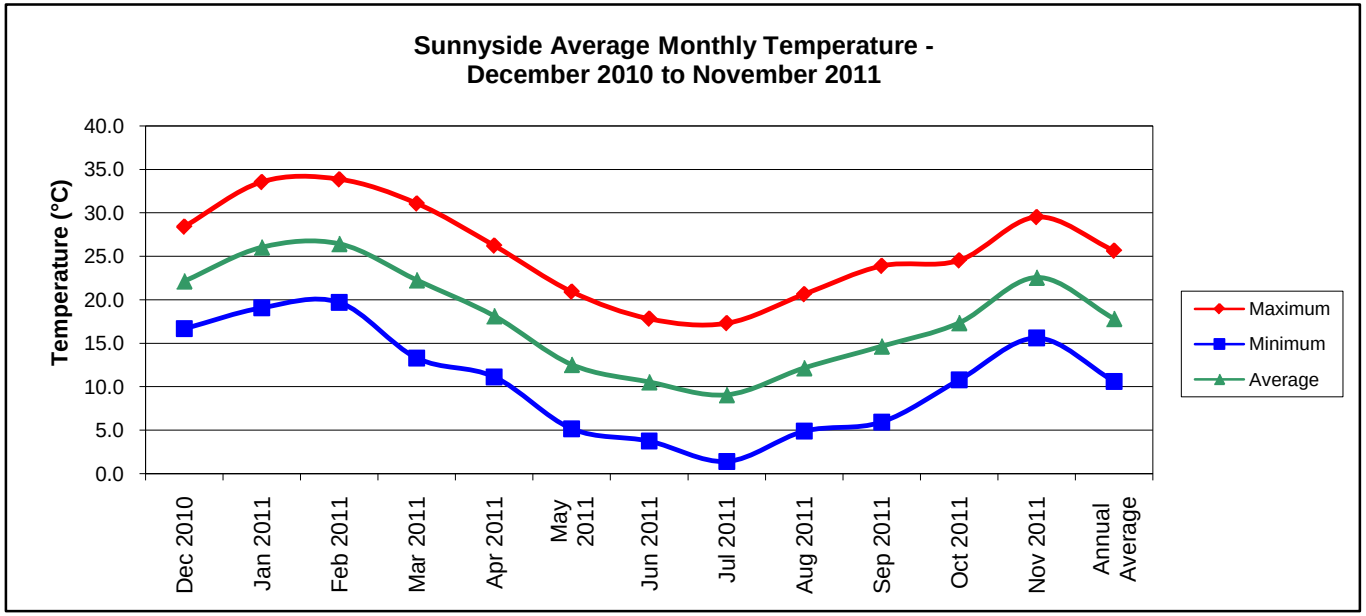
METEOROLOGICAL DATA

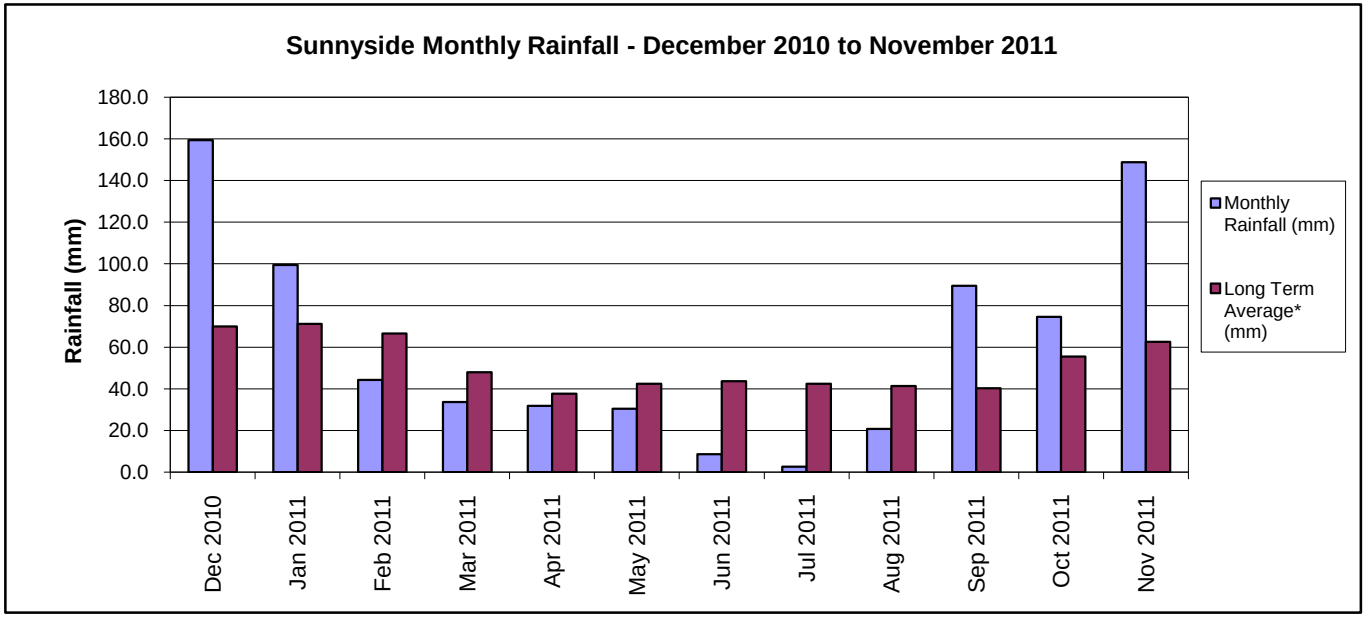
Sunnyside Coal Mine Average Monthly Results

Month	Minimum Air Temp (°C)	Average Air Temp(°C)	Maximum Air Temp (°C)	Minimum Relative Humidity (%)	Average Relative Humidity(%)	Maximum Relative Humidity (%)	Minimum Wind Speed (m/s)	Average Wind Speed (m/s)	Maximum Wind Speed (m/s)
Dec 2010	16.7	22.2	28.4	49	71	89	0.1	1.5	5.2
Jan 2011	19.1	26.1	33.6	39	62	85	0.1	2.0	5.4
Feb 2011	19.7	26.5	33.9	37	59	79	0.3	2.4	6.0
Mar 2011	13.3	22.3	31.1	32	13	16	0.0	1.6	5.8
Apr 2011	11.1	18.2	26.3	37	64	87	0.0	2.0	5.2
May 2011	5.2	12.6	20.9	40	64	87	0.0	1.0	4.1
Jun 2011	3.7	10.6	17.8	47	72	90	0.2	1.8	5.0
Jul 2011	1.4	9.1	17.3	43	68	89	0.0	1.1	4.2
Aug 2011	4.9	12.2	20.7	41	68	88	0.0	1.3	4.2
Sep 2011	5.9	14.7	23.9	33	59	84	0.1	1.8	5.9
Oct 2011	10.8	17.4	24.5	43	66	86	0.2	1.8	5.1
Nov 2011	15.6	22.6	29.5	42	64	87	0.0	1.9	6.0
Annual Average	**10.6**	**17.8**	**25.7**	**40**	**61**	**81**	**0.1**	**1.7**	**5.2**
Minimum	**1.4**	**9.1**	**17.3**	**32**	**13**	**16**	**0.0**	**1.0**	**4.1**
Maximum	**19.7**	**26.5**	**33.9**	**49**	**72**	**90**	**0.3**	**2.4**	**6.0**

Month	Monthly Rainfall (mm)	Long Term Average* (mm)	Cumulative Rainfall (mm)	Number of Rain Days
Dec 2010	159.4	70	159.4	11
Jan 2011	99.4	71.1	258.8	6
Feb 2011	44.2	66.5	303.0	5
Mar 2011	33.6	47.9	336.6	7
Apr 2011	31.8	37.6	368.4	6
May 2011	30.4	42.5	398.8	4
Jun 2011	8.6	43.6	407.4	5
Jul 2011	2.6	42.4	410.0	1
Aug 2011	20.8	41.4	430.8	6
Sep 2011	89.4	40.3	520.2	5
Oct 2011	74.6	55.5	594.8	7
Nov 2011	148.8	62.5	743.6	7
Total	**743.6**	**551.3**	**743.6**	**70**

* Long term average is from Gunnedah Pool (Station 055023) 1877 - 2011


Sunnyside Average Monthly Temperature - December 2010 to November 2011
Temperature (°C)
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Dec 2010
Jan 2011
Feb 2011
Mar 2011
Apr 2011
May 2011
Jun 2011
Jul 2011
Aug 2011
Sep 2011
Oct 2011
Nov 2011
Annual Average
Maximum
Minimum
Average


Sunnyside Monthly Rainfall - December 2010 to November 2011
Rainfall (mm)
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
Dec 2010
Jan 2011
Feb 2011
Mar 2011
Apr 2011
May 2011
Jun 2011
Jul 2011
Aug 2011
Sep 2011
Oct 2011
Nov 2011
Monthly Rainfall (mm)
Long Term Average* (mm)

Daily Summary December 2010 Sunnyside Weather Station

Date	Min Temp (°C)	Ave Temp (°C)	Max Temp (°C)	Min RH (%)	Ave RH (%)	Max RH (%)	Rain (mm)	Min WS (m/s)	Ave WS (m/s)	Max WS (m/s)
01/Dec/10	17.6	18.6	20.3	83	89	91	17.4	0.0	1.4	5.4
02/Dec/10	17.8	22.1	28.0	59	76	89	0.0	0.0	1.4	6.7
03/Dec/10	18.3	21.6	26.2	63	81	92	20.6	0.0	0.8	3.1
04/Dec/10	18.7	20.7	25.3	64	84	92	10.0	0.0	0.8	4.0
05/Dec/10	18.8	22.8	28.9	47	75	92	4.6	0.0	0.8	6.3
06/Dec/10	18.8	22.5	29.3	50	75	90	0.4	0.0	1.2	4.9
07/Dec/10	17.5	24.1	30.3	46	63	79	0.0	0.0	1.4	3.6
08/Dec/10	19.4	25.2	30.9	50	65	80	0.0	0.0	1.9	4.5
09/Dec/10	21.1	25.7	31.2	54	71	90	3.2	0.0	2.8	8.0
10/Dec/10	19.8	21.6	24.1	85	91	94	64.8	0.0	1.0	6.7
11/Dec/10	16.0	21.3	26.8	50	77	94	0.0	0.0	0.7	3.6
12/Dec/10	14.3	22.2	29.6	37	67	93	0.2	0.0	1.6	4.9
13/Dec/10	13.2	22.8	31.6	31	61	90	0.0	0.0	0.7	3.6
14/Dec/10	17.3	23.7	31.2	36	63	82	3.4	0.0	1.6	5.8
15/Dec/10	16.4	24.4	32.1	40	66	88	0.0	0.0	1.0	6.3
16/Dec/10	17.6	22.2	29.2	57	78	90	14.2	0.0	1.3	7.2
17/Dec/10	16.0	20.2	24.4	50	77	91	0.0	0.0	1.2	8.9
18/Dec/10	13.7	17.2	21.0	66	84	93	2.4	0.0	1.5	5.4
19/Dec/10	15.8	18.2	21.6	71	83	92	0.0	0.0	3.1	8.0
20/Dec/10	9.0	14.9	21.2	38	62	89	16.6	0.0	4.3	8.9
21/Dec/10	7.0	17.6	28.7	31	63	91	0.0	0.0	0.5	1.8
22/Dec/10	11.9	20.9	29.3	34	61	86	0.0	0.0	0.5	1.8
23/Dec/10	17.3	23.0	29.5	39	62	82	0.0	0.0	0.9	2.7
24/Dec/10	18.9	23.5	29.0	52	64	83	0.0	0.0	3.6	5.4
25/Dec/10	18.8	24.0	31.4	50	70	90	1.2	0.0	1.0	5.8
26/Dec/10	19.4	23.2	29.3	56	79	93	0.2	0.0	1.1	4.0
27/Dec/10	18.2	23.9	30.2	36	69	92	0.2	0.0	2.2	7.2
28/Dec/10	15.8	22.1	29.8	45	65	81	0.0	1.8	4.1	6.3
29/Dec/10	15.2	23.5	31.8	41	63	85	0.0	0.0	1.0	3.1
30/Dec/10	17.4	26.2	34.3	37	63	89	0.0	0.0	0.8	3.1
31/Dec/10	19.7	27.3	34.9	33	58	84	0.0	0.0	1.4	4.0
Average	**16.7**	**22.2**	**28.4**	**49**	**71**	**89**		**0.1**	**1.5**	**5.2**
Maximum	**21.1**	**27.3**	**34.9**	**85**	**91**	**94**	**64.8**	**1.8**	**4.3**	**8.9**
Minimum	**7.0**	**14.9**	**20.3**	**31**	**58**	**79**	**0.0**	**0.0**	**0.5**	**1.8**
Total							**159.4**			

Daily Summary **January 2011** **Sunnyside Weather Station**

Date	Min Temp (°C)	Ave Temp (°C)	Max Temp (°C)	Min RH (%)	Ave RH (%)	Max RH (%)	Rain (mm)	Min WS (m/s)	Ave WS (m/s)	Max WS (m/s)
01/Jan/11	17.7	27.7	36.1	32	56	88	0.0	0.0	0.7	2.7
02/Jan/11	19.1	27.6	37.1	31	62	89	0.0	0.0	1.0	5.4
03/Jan/11	19.6	25.2	35.8	39	72	90	26.2	0.0	1.5	11.6
04/Jan/11	18.6	24.1	31.6	45	69	88	0.0	0.4	2.8	6.3
05/Jan/11	17.2	20.4	24.8	67	81	92	53.2	0.0	1.3	7.6
06/Jan/11	15.4	21.0	26.4	53	72	92	0.0	0.0	2.9	6.7
07/Jan/11	17.0	23.3	28.8	52	66	81	0.2	0.0	2.8	5.8
08/Jan/11	16.9	24.9	30.8	42	62	85	0.0	0.0	2.9	6.3
09/Jan/11	20.4	26.7	32.1	41	59	84	0.0	0.0	3.6	5.8
10/Jan/11	21.3	23.5	27.9	62	76	89	7.0	1.8	4.4	6.3
11/Jan/11	20.8	24.1	28.6	61	78	90	4.0	0.0	3.3	5.8
12/Jan/11	21.5	27.0	31.7	50	68	87	0.2	0.0	1.3	3.6
13/Jan/11	22.7	26.9	31.3	49	63	84	1.0	1.3	3.1	5.4
14/Jan/11	20.2	25.2	32.0	42	62	85	0.0	0.0	1.6	4.0
15/Jan/11	18.7	25.4	31.4	48	68	90	0.0	0.0	1.2	4.5
16/Jan/11	23.7	27.1	31.7	49	66	77	0.0	0.0	2.6	5.4
17/Jan/11	18.9	27.9	36.3	34	59	86	0.0	0.0	1.2	4.0
18/Jan/11	16.2	26.8	35.7	23	53	90	0.0	0.0	1.3	4.5
19/Jan/11	18.4	26.5	33.9	29	59	87	0.4	0.0	1.8	5.8
20/Jan/11	20.2	25.8	33.5	35	59	79	0.0	0.0	2.4	6.7
21/Jan/11	17.8	25.3	33.3	32	54	79	0.0	0.0	1.3	4.0
22/Jan/11	17.7	25.6	32.8	26	52	83	0.0	0.0	1.6	4.9
23/Jan/11	17.6	23.8	32.6	35	64	89	7.2	0.0	0.9	4.0
24/Jan/11	17.7	25.4	33.7	40	66	90	0.0	0.0	2.0	5.4
25/Jan/11	19.2	29.7	41.8	27	57	88	0.0	0.0	1.1	7.2
26/Jan/11	21.0	31.9	43.8	26	52	81	0.0	0.0	0.6	3.1
27/Jan/11	24.2	33.4	41.9	28	47	76	0.0	0.0	2.3	4.9
28/Jan/11	21.8	28.5	35.2	36	57	82	0.0	0.0	4.5	7.6
29/Jan/11	17.8	25.0	32.5	29	51	74	0.0	0.0	3.2	4.9
30/Jan/11	17.1	25.8	36.4	20	48	76	0.0	0.0	0.8	2.2
31/Jan/11	15.2	26.7	39.2	25	53	80	0.0	0.0	0.6	3.6
Average	**19.1**	**26.1**	**33.6**	**39**	**62**	**85**		**0.1**	**2.0**	**5.4**
Maximum	**24.2**	**33.4**	**43.8**	**67**	**81**	**92**	**53.2**	**1.8**	**4.5**	**11.6**
Minimum	**15.2**	**20.4**	**24.8**	**20**	**47**	**74**	**0.0**	**0.0**	**0.6**	**2.2**
Total							**99.4**			

Daily Summary **February 2011** **Sunnyside Weather Station**

Date	Min Temp (°C)	Ave Temp (°C)	Max Temp (°C)	Min RH (%)	Ave RH (%)	Max RH (%)	Rain (mm)	Min WS (m/s)	Ave WS (m/s)	Max WS (m/s)
01/Feb/11	18.5	29.0	38.7	27	53	82	0.0	0.0	1.7	4.9
02/Feb/11	23.6	31.1	39.7	32	56	78	0.0	0.0	0.6	3.6
03/Feb/11	24.9	31.5	39.6	32	53	71	0.0	0.0	2.8	7.2
04/Feb/11	21.3	30.9	40.8	31	55	77	0.0	0.0	0.8	4.5
05/Feb/11	22.8	31.3	38.5	29	49	72	0.0	0.0	2.9	7.2
06/Feb/11	24.6	30.7	36.2	43	57	71	0.0	0.0	4.4	8.5
07/Feb/11	18.3	23.4	29.1	53	70	84	4.0	0.0	3.3	7.2
08/Feb/11	18.9	25.0	32.3	42	60	83	0.4	0.0	2.9	6.3
09/Feb/11	17.6	19.3	21.0	63	66	69	0.0	0.4	2.7	4.0
10/Feb/11	-	-	-	-	-	-	-	-	-	-
11/Feb/11	22.5	28.7	33.1	28	39	55	0.0	0.9	3.3	5.8
12/Feb/11	18.6	25.6	34.9	28	51	70	0.0	0.0	1.4	4.0
13/Feb/11	16.9	26.7	35.3	32	55	85	0.0	0.0	1.3	4.5
14/Feb/11	18.7	28.0	38.3	30	54	77	0.0	0.0	1.9	6.7
15/Feb/11	21.8	26.2	35.4	39	69	90	18.4	0.0	2.3	9.4
16/Feb/11	19.8	21.9	25.8	61	73	81	0.0	2.7	5.5	7.2
17/Feb/11	18.9	21.7	26.9	54	70	85	1.4	0.4	4.2	6.3
18/Feb/11	19.4	25.3	32.6	43	64	82	0.0	0.0	1.1	5.4
19/Feb/11	19.9	27.0	34.2	40	64	89	0.0	0.0	0.4	3.6
20/Feb/11	20.4	28.3	35.8	39	60	85	0.0	0.0	0.8	4.5
21/Feb/11	19.9	29.2	37.0	36	57	86	0.0	0.0	1.5	4.9
22/Feb/11	22.2	28.8	38.0	35	62	89	17.2	0.0	2.0	10.7
23/Feb/11	19.4	26.4	34.2	24	60	91	2.4	0.0	2.5	6.3
24/Feb/11	17.3	22.4	28.4	42	59	77	0.4	2.2	5.4	7.2
25/Feb/11	14.3	21.2	28.7	37	55	71	0.0	0.0	3.2	5.4
26/Feb/11	12.1	22.0	32.5	25	55	86	0.0	0.0	1.0	4.9
27/Feb/11	13.4	24.7	34.2	27	54	88	0.0	0.0	0.8	3.6
28/Feb/11	18.8	26.6	34.4	31	49	67	0.0	0.0	0.5	2.2
Average	**19.7**	**26.5**	**33.9**	**37**	**59**	**79**		**0.3**	**2.4**	**6.0**
Maximum	**24.9**	**31.5**	**40.8**	**63**	**73**	**91**	**18.4**	**2.7**	**5.5**	**10.7**
Minimum	**12.1**	**19.3**	**21.0**	**24**	**39**	**55**	**0.0**	**0.0**	**0.4**	**3.6**
Total							**44.2**			

Daily Summary **March 2011** **Sunnyside Weather Station**

Date	Min Temp (°C)	Ave Temp (°C)	Max Temp (°C)	Min RH (%)	Ave RH (%)	Max RH (%)	Rain (mm)	Min WS (m/s)	Ave WS (m/s)	Max WS (m/s)
01/Mar/11	16.3	26.3	36.3	29	56	87	0.0	0.0	1.4	5.4
02/Mar/11	19.2	23.6	30.6	50	70	86	3.4	0.0	1.9	8.9
03/Mar/11	19.6	23.8	30.2	53	75	92	7.0	0.0	1.2	4.9
04/Mar/11	17.5	23.4	32.1	28	63	84	0.0	0.0	0.4	3.6
05/Mar/11	17.7	22.8	29.8	42	61	84	0.0	0.0	4.9	7.6
06/Mar/11	13.6	20.7	28.4	34	52	73	0.0	0.4	3.7	6.7
07/Mar/11	12.7	20.9	28.3	36	56	80	0.0	0.0	2.2	4.5
08/Mar/11	15.2	23.1	32.3	31	55	78	0.0	0.0	1.8	4.0
09/Mar/11	17.7	22.2	27.1	46	63	82	0.0	0.0	0.1	1.8
10/Mar/11	17.6	22.5	27.8	48	66	85	0.0	0.0	0.7	4.5
11/Mar/11	20.1	23.7	28.5	50	67	83	0.8	0.0	0.7	4.5
12/Mar/11	17.8	25.0	32.7	35	62	88	0.0	0.0	1.0	4.0
13/Mar/11	16.9	25.7	33.4	37	59	88	0.0	0.0	0.9	3.6
14/Mar/11	16.8	25.4	35.3	33	61	87	0.2	0.0	1.9	10.3
15/Mar/11	17.8	25.5	34.0	38	62	87	0.0	0.0	1.9	7.6
16/Mar/11	20.2	25.4	33.6	39	65	86	0.0	0.0	0.6	2.7
17/Mar/11	19.6	23.4	29.7	53	75	89	17.0	0.0	0.7	4.9
18/Mar/11	19.1	22.4	27.7	61	82	93	3.6	0.0	0.4	2.2
19/Mar/11	19.2	22.0	26.0	63	77	89	0.2	0.0	1.6	4.0
20/Mar/11	17.8	23.7	30.2	46	66	86	0.2	0.0	1.6	4.0
21/Mar/11	20.3	23.9	29.2	57	72	92	0.4	0.0	1.2	5.8
22/Mar/11	18.2	23.7	31.3	39	73	93	0.4	0.0	1.4	6.3
23/Mar/11	15.5	21.5	29.3	40	68	93	0.4	0.0	1.6	5.8
24/Mar/11	10.0	18.9	26.6	39	61	92	0.0	0.0	2.4	6.7
25/Mar/11	10.5	18.1	25.8	36	63	90	0.0	0.0	2.2	5.4
26/Mar/11	8.6	18.7	27.5	37	63	92	0.0	0.0	2.7	6.3
27/Mar/11	15.4	20.4	27.9	36	58	75	0.0	0.4	4.2	6.7
28/Mar/11	14.7	21.4	28.9	36	56	74	0.0	0.0	2.8	4.5
29/Mar/11	13.4	21.0	28.6	41	64	89	0.0	0.0	1.0	4.9
30/Mar/11	13.9	23.2	31.3	33	57	90	0.0	0.0	0.7	4.0
31/Mar/11	13.2	22.0	31.6	32	61	87	0.0	0.0	1.6	5.8
Average	**13.3**	**22.3**	**31.1**	**32**	**13**	**16**		**0.0**	**1.6**	**5.8**
Maximum	**20.3**	**26.3**	**36.3**	**63**	**82**	**93**	**17.0**	**0.4**	**4.9**	**10.3**
Minimum	**8.6**	**18.1**	**25.8**	**28**	**52**	**73**	**0.0**	**0.0**	**0.1**	**1.8**
Total							**33.6**			

Daily Summary **April 2011** **Sunnyside Weather Station**

Date	Min Temp (°C)	Ave Temp (°C)	Max Temp (°C)	Min RH (%)	Ave RH (%)	Max RH (%)	Rain (mm)	Min WS (m/s)	Ave WS (m/s)	Max WS (m/s)
01/Apr/11	15.0	22.6	31.6	32	59	86	4.4	0.0	0.8	3.1
02/Apr/11	15.4	20.6	29.2	43	76	92	4.4	0.0	1.4	6.7
03/Apr/11	14.7	21.0	29.8	28	60	83	0.0	0	1.8	5.8
04/Apr/11	11.8	20.4	27.6	33	56	85	0.0	0.0	2.3	6.7
05/Apr/11	14.4	19.4	25.9	39	61	80	0.0	0.4	4.6	6.7
06/Apr/11	13.6	19.1	26.1	37	62	84	0.0	0.0	3.7	6.7
07/Apr/11	14.7	19.4	25.9	44	64	78	0.0	0.0	4.3	6.3
08/Apr/11	13.1	20.0	27.8	36	60	83	0.0	0.0	2.1	4.5
09/Apr/11	11.7	19.1	28.8	31	61	83	0.0	0.0	0.7	2.2
10/Apr/11	9.1	18.1	29.1	33	72	92	15.6	0.0	2.4	8.5
11/Apr/11	8.2	14.9	21.1	41	72	91	1.2	0.0	1.3	5.4
12/Apr/11	5.1	12.9	21.9	37	69	92	0.0	0.0	1.3	6.3
13/Apr/11	5.1	14.4	24.7	31	65	92	0.2	0.0	1.0	4.5
14/Apr/11	6.2	16.3	26.4	28	58	90	0.0	0.0	0.7	3.6
15/Apr/11	6.5	15.5	23.7	34	68	90	1.6	0.0	0.2	3.1
16/Apr/11	13.3	15.7	19.4	65	82	91	4.0	0.0	1.7	4.9
17/Apr/11	15.0	18.5	23.7	52	67	84	0.0	0.9	4.4	8.0
18/Apr/11	10.3	18.0	27.6	37	63	87	0.0	0.0	1.1	4.0
19/Apr/11	11.8	18.9	28.6	30	62	88	0.0	0.0	1.0	2.7
20/Apr/11	10.8	18.8	27.7	40	66	87	0.0	0.0	0.5	3.6
21/Apr/11	12.0	18.1	26.6	39	67	87	0.4	0.0	0.2	2.7
22/Apr/11	8.4	18.2	28.8	31	59	91	0.0	0.0	2.7	7.2
23/Apr/11	5.8	17.2	26.6	30	57	90	0.0	0.0	1.1	4.0
24/Apr/11	12.1	19.0	29.5	26	60	86	0.0	0.0	0.7	3.1
25/Apr/11	12.4	19.4	27.5	37	64	89	0.0	0.0	1.8	5.8
26/Apr/11	14.3	18.7	25.3	43	63	86	0.0	0.0	4.2	7.6
27/Apr/11	12.8	17.9	23.2	43	58	76	0.0	0.0	4.6	6.7
28/Apr/11	7.4	16.6	24.1	38	64	91	0.0	0.0	2.3	5.4
29/Apr/11	11.0	17.3	23.9	45	66	87	0.0	0.0	3.1	5.4
30/Apr/11	12.1	18.7	25.4	40	66	90	0.0	0.0	2.9	5.4
Average	**11.1**	**18.2**	**26.3**	**37**	**64**	**87**		**0.0**	**2.0**	**5.2**
Maximum	**15.4**	**22.6**	**31.6**	**65**	**82**	**92**	**15.6**	**0.9**	**4.6**	**8.5**
Minimum	**5.1**	**12.9**	**19.4**	**26**	**56**	**76**	**0.0**	**0.0**	**0.2**	**2.2**
Total							**31.8**			

Daily Summary May 2011 Sunnyside Weather Station

Date	Min Temp (°C)	Ave Temp (°C)	Max Temp (°C)	Min RH (%)	Ave RH (%)	Max RH (%)	Rain (mm)	Min WS (m/s)	Ave WS (m/s)	Max WS (m/s)
01/May/11	11.2	17.1	24.9	38	63	83	0.0	0.0	1.5	4.5
02/May/11	8.2	15.4	23.4	43	67	91	0.0	0.0	0.4	2.7
03/May/11	9.4	14.8	21.7	44	67	84	0.0	0.0	0.0	0.9
04/May/11	6.8	14.8	23.9	34	64	93	0.0	0.0	0.8	3.6
05/May/11	5.3	14.6	22.3	36	61	92	0.0	0.0	1.9	4.9
06/May/11	5.9	14.0	21.7	38	57	83	0.0	0.0	0.9	3.6
07/May/11	2.8	12.2	24.1	25	56	92	0.0	0.0	0.1	2.2
08/May/11	3.6	13.0	24.7	26	51	78	0.0	0.0	0.8	4.9
09/May/11	3.6	13.9	23.3	30	55	85	0.0	0.0	1.5	7.2
10/May/11	5.6	12.7	20.6	34	58	81	0.0	0.0	1.5	4.0
11/May/11	-0.3	9.6	18.8	31	57	85	0.0	0.0	2.3	8.0
12/May/11	1.1	9.7	16.6	34	62	85	0.0	0.0	3.0	8.0
13/May/11	4.7	11.3	18.3	47	68	85	0.0	0.0	1.2	5.4
14/May/11	3.6	10.6	17.5	28	58	92	0.0	0.0	2.2	6.7
15/May/11	-2.8	8.1	20.5	28	54	87	0.0	0.0	0.5	2.2
16/May/11	-2.6	8.5	23.7	18	51	84	0.0	0.0	0.4	2.2
17/May/11	-1.7	9.6	23.9	21	49	84	0.0	0.0	0.5	2.7
18/May/11	3.7	12.8	25.0	22	53	86	0.0	0.0	0.5	2.7
19/May/11	9.1	14.9	25.2	34	62	81	0.0	0.0	0.4	2.2
20/May/11	9.3	15.8	23.4	38	58	75	0.0	0.0	0.5	2.2
21/May/11	9.7	16.2	24.4	40	57	78	0.0	0.0	0.5	2.7
22/May/11	9.1	17.5	25.2	37	57	77	0.0	0.0	0.8	4.9
23/May/11	9.3	15.1	20.8	49	79	93	6.2	0.0	2.0	8.5
24/May/11	6.3	10.1	14.1	73	88	93	4.8	0.0	1.0	5.4
25/May/11	6.9	11.5	17.3	51	76	90	0.0	0.0	1.5	6.3
26/May/11	3.3	10.4	17.8	49	73	91	0.2	0.0	0.4	3.6
27/May/11	2.1	10.4	19.2	42	67	92	0.0	0.0	1.0	3.1
28/May/11	0.5	9.5	18.6	43	70	92	0.0	0.0	0.4	2.2
29/May/11	8.1	13.0	18.8	54	71	89	0.8	0.0	0.6	3.1
30/May/11	9.3	10.6	11.7	82	89	92	10.8	0.0	0.7	2.7
31/May/11	9.1	11.5	17.9	59	85	93	7.6	0.0	0.6	3.6
Average	**5.2**	**12.6**	**20.9**	**40**	**64**	**87**		**0.0**	**1.0**	**4.1**
Maximum	**11.2**	**17.5**	**25.2**	**82**	**89**	**93**	**10.8**	**0.0**	**3.0**	**8.5**
Minimum	**-2.8**	**8.1**	**11.7**	**18**	**49**	**75**	**0.0**	**0.0**	**0.0**	**0.9**
Total							**30.4**			

Daily Summary June 2011 Sunnyside Weather Station

Date	Min Temp (°C)	Ave Temp (°C)	Max Temp (°C)	Min RH (%)	Ave RH (%)	Max RH (%)	Rain (mm)	Min WS (m/s)	Ave WS (m/s)	Max WS (m/s)
01/Jun/11	9.7	15.5	19.8	56	71	90	0.4	0.0	4.4	8.9
02/Jun/11	10.5	15.6	20.3	51	70	86	0.0	0.4	3.1	4.9
03/Jun/11	4.2	12.4	20.8	46	75	92	0.0	0.0	0.3	2.2
04/Jun/11	3.4	11.4	21.3	43	75	93	0.0	0.0	0.4	3.1
05/Jun/11	6.3	13.5	20.3	47	71	92	0.0	0.0	1.0	5.4
06/Jun/11	2.8	10.6	18.3	41	71	92	1.0	0.0	0.8	3.6
07/Jun/11	1.3	8.5	17.2	43	74	93	0.0	0.0	1.0	5.8
08/Jun/11	-0.6	6.9	14.1	34	67	91	0.0	0.0	1.4	5.8
09/Jun/11	-4.5	5.1	14.8	43	71	91	0.0	0.0	1.2	5.8
10/Jun/11	-0.8	7.5	16.8	41	72	92	0.0	0.0	0.4	2.7
11/Jun/11	1.3	10.0	15.5	61	75	92	0.6	0.0	2.9	5.4
12/Jun/11	10.6	12.3	14.7	68	80	87	1.0	1.3	3.8	7.2
13/Jun/11	11.2	13.5	16.6	57	72	85	1.2	2.2	5.2	8.9
14/Jun/11	11.8	13.4	14.8	67	76	81	0.2	0.9	4.3	7.6
15/Jun/11	11.8	13.8	16.8	64	77	86	2.4	1.8	4.7	8.5
16/Jun/11	4.6	13.2	19.1	46	72	92	0.0	0.0	2.2	5.4
17/Jun/11	3.9	10.7	18.3	38	69	93	0.0	0.0	2.1	8.5
18/Jun/11	2.4	10.0	16.1	47	67	88	0.0	0.0	2.3	7.6
19/Jun/11	1.2	9.7	17.4	43	69	92	0.0	0.0	0.8	3.6
20/Jun/11	0.7	7.5	17.8	45	75	92	0.0	0.0	0.4	4.0
21/Jun/11	1.2	8.9	18.9	40	74	93	1.4	0.0	3.5	8.9
22/Jun/11	-0.2	5.2	13.8	50	82	93	0.2	0.0	0.3	2.2
23/Jun/11	-1.5	6.6	15.0	59	78	93	0.0	0.0	0.2	2.2
24/Jun/11	-1.2	7.4	18.0	44	77	93	0.2	0.0	0.1	2.2
25/Jun/11	-0.7	8.5	20.7	38	72	93	0.0	0.0	0.4	2.2
26/Jun/11	0.9	9.7	21.0	43	73	92	0.0	0.0	0.4	2.7
27/Jun/11	2.1	9.7	19.8	38	74	92	0.0	0.0	0.1	1.8
28/Jun/11	6.2	14.0	19.9	45	61	81	0.0	0.0	2.3	4.0
29/Jun/11	9.7	13.9	19.0	41	66	83	0.0	0.0	2.5	4.5
30/Jun/11	4.0	11.7	18.2	42	67	92	0.0	0.0	1.8	4.5
Average	**3.7**	**10.6**	**17.8**	**47**	**72**	**90**		**0.2**	**1.8**	**5.0**
Maximum	**11.8**	**15.6**	**21.3**	**68**	**82**	**93**	**2.4**	**2.2**	**5.2**	**8.9**
Minimum	**-4.5**	**5.1**	**13.8**	**34**	**61**	**81**	**0.0**	**0.0**	**0.1**	**1.8**
Total							**8.6**			

Daily Summary **July 2011** **Sunnyside Weather Station**

Date	Min Temp (°C)	Ave Temp (°C)	Max Temp (°C)	Min RH (%)	Ave RH (%)	Max RH (%)	Rain (mm)	Min WS (m/s)	Ave WS (m/s)	Max WS (m/s)
01/Jul/11	0.8	9.9	18.3	51	75	92	0.0	0.0	0.5	3.1
02/Jul/11	1.7	9.2	20.1	39	72	93	0.0	0.0	**0.0**	**0.0**
03/Jul/11	2.7	9.7	18.2	52	74	90	0.0	0.0	0.5	4.9
04/Jul/11	3.8	11.4	20.2	50	75	91	0.0	0.0	1.4	6.3
05/Jul/11	0.2	9.4	16.7	37	62	91	0.0	0.0	3.0	**9.4**
06/Jul/11	-0.7	8.2	16.5	38	62	90	0.0	0.0	2.0	6.7
07/Jul/11	-0.8	8.1	17.1	43	67	90	0.0	0.0	2.1	8.5
08/Jul/11	-3.7	5.0	15.3	38	70	**94**	0.2	0.0	0.5	2.2
09/Jul/11	**-5.3**	**4.0**	13.2	44	71	91	0.0	0.0	1.1	5.4
10/Jul/11	0.8	8.3	15.6	42	65	86	0.0	0.0	1.1	5.4
11/Jul/11	3.6	10.0	15.8	41	**58**	**73**	0.0	0.0	1.4	5.4
12/Jul/11	-3.7	6.0	18.9	32	67	90	0.0	0.0	0.2	1.8
13/Jul/11	0.4	7.0	**11.6**	57	77	90	0.6	0.0	0.1	3.6
14/Jul/11	3.1	7.8	13.4	50	75	92	0.2	0.0	0.7	4.0
15/Jul/11	3.2	10.5	16.4	44	59	77	0.0	0.0	2.6	5.4
16/Jul/11	8.8	11.5	16.0	49	66	92	**1.0**	0.0	0.9	2.7
17/Jul/11	5.2	11.3	16.9	**60**	78	91	0.0	0.0	0.3	1.8
18/Jul/11	3.5	9.2	17.2	59	**82**	93	0.2	0.0	0.8	5.8
19/Jul/11	-1.9	6.6	12.9	46	72	92	0.2	0.0	2.7	8.5
20/Jul/11	6.2	12.4	19.9	44	68	88	0.0	0.0	2.2	5.8
21/Jul/11	1.9	11.2	18.4	47	67	91	0.0	0.0	1.3	4.0
22/Jul/11	**9.8**	**12.8**	16.9	52	68	79	0.0	0.9	**3.4**	5.8
23/Jul/11	5.2	10.5	15.7	48	69	86	0.0	0.0	2.4	4.5
24/Jul/11	-1.8	8.4	17.9	38	67	92	0.0	0.0	0.4	2.2
25/Jul/11	-0.3	9.4	17.9	42	66	88	0.0	0.0	1.0	6.3
26/Jul/11	1.5	9.6	18.3	39	67	92	0.2	0.0	0.5	3.1
27/Jul/11	-1.3	7.9	17.2	32	65	91	0.0	0.0	0.4	2.7
28/Jul/11	0.7	8.5	19.7	35	66	91	0.0	0.0	0.4	2.2
29/Jul/11	-0.6	8.7	**22.3**	**27**	63	89	0.0	0.0	**0.0**	**0.0**
30/Jul/11	-0.3	9.1	20.7	33	63	88	0.0	0.0	0.1	2.2
31/Jul/11	0.8	9.7	21.7	34	65	89	0.0	0.0	0.1	1.3
Average	**1.4**	**9.1**	**17.3**	**43**	**68**	**89**		**0.0**	**1.1**	**4.2**
Maximum	**9.8**	**12.8**	**22.3**	**60**	**82**	**94**	**1.0**	**0.9**	**3.4**	**9.4**
Minimum	**-5.3**	**4.0**	**11.6**	**27**	**58**	**73**	**0.0**	**0.0**	**0.0**	**0.0**
Total							**2.6**			

Daily Summary August 2011 Sunnyside Weather Station

Date	Min Temp (°C)	Ave Temp (°C)	Max Temp (°C)	Min RH (%)	Ave RH (%)	Max RH (%)	Rain (mm)	Min WS (m/s)	Ave WS (m/s)	Max WS (m/s)
01/Aug/11	1.3	11.4	24.1	32	62	88	0.0	0.0	0.3	1.8
02/Aug/11	3.1	12.5	25.2	24	58	86	0.0	0.0	0.3	1.8
03/Aug/11	2.4	11.6	24.2	33	60	85	0.0	0.0	0.4	2.2
04/Aug/11	2.6	12.6	24.9	28	58	87	0.0	0.0	0.4	1.8
05/Aug/11	2.9	12.0	22.6	34	62	91	0.0	0.0	1.2	4.0
06/Aug/11	6.6	14.2	22.2	41	64	82	0.0	0.0	2.0	7.2
07/Aug/11	4.9	11.6	16.6	71	85	91	7.2	0.0	1.0	5.4
08/Aug/11	1.6	8.6	16.6	43	74	93	0.2	0.0	1.6	7.2
09/Aug/11	5.6	9.6	15.4	46	72	89	1.0	0.0	1.9	7.2
10/Aug/11	2.2	8.4	14.6	46	73	90	0.0	0.0	1.1	5.4
11/Aug/11	2.8	9.0	16.8	54	82	92	1.0	0.0	0.3	2.7
12/Aug/11	0.9	8.2	16.7	51	78	93	0.0	0.0	0.7	4.0
13/Aug/11	0.9	10.2	19.3	35	67	92	0.0	0.0	0.6	2.7
14/Aug/11	3.8	11.1	20.8	46	72	90	0.0	0.0	0.8	4.9
15/Aug/11	2.4	11.7	20.0	41	67	92	0.0	0.0	0.4	1.8
16/Aug/11	8.9	14.4	22.3	34	57	76	0.0	0.0	0.6	3.1
17/Aug/11	12.1	15.5	20.7	50	64	83	1.2	0.0	2.0	4.9
18/Aug/11	6.2	10.7	15.6	48	74	91	8.4	0.0	3.3	6.7
19/Aug/11	3.9	10.0	16.7	55	78	90	0.2	0.0	1.1	4.0
20/Aug/11	7.4	13.0	18.1	50	70	89	0.0	0.0	3.5	6.3
21/Aug/11	9.9	13.7	19.5	48	67	83	0.0	0.0	3.8	6.3
22/Aug/11	9.5	13.3	18.7	54	70	83	0.0	0.4	4.4	8.0
23/Aug/11	7.9	14.4	21.5	43	65	85	0.0	0.0	2.6	4.9
24/Aug/11	5.9	13.4	21.9	32	64	88	0.0	0.0	1.0	3.1
25/Aug/11	5.5	14.3	25.2	30	60	86	0.0	0.0	0.6	2.7
26/Aug/11	1.9	12.4	24.4	25	58	90	0.0	0.0	0.4	2.2
27/Aug/11	6.6	13.6	18.7	46	72	92	1.2	0.0	0.4	2.2
28/Aug/11	5.6	12.3	22.9	38	78	93	0.4	0.0	0.2	2.2
29/Aug/11	4.0	13.7	25.1	33	66	91	0.0	0.0	1.0	5.4
30/Aug/11	5.7	15.5	24.4	32	62	88	0.0	0.0	0.8	4.5
31/Aug/11	6.4	14.1	24.6	31	64	92	0.0	0.0	0.6	3.1
Average	**4.9**	**12.2**	**20.7**	**41**	**68**	**88**		**0.0**	**1.3**	**4.2**
Maximum	**12.1**	**15.5**	**25.2**	**71**	**85**	**93**	**8.4**	**0.4**	**4.4**	**8.0**
Minimum	**0.9**	**8.2**	**14.6**	**24**	**57**	**76**	**0.0**	**0.0**	**0.2**	**1.8**
Total							**20.8**			

Daily Summary September 2011 Sunnyside Weather Station

Date	Min Temp (°C)	Ave Temp (°C)	Max Temp (°C)	Min RH (%)	Ave RH (%)	Max RH (%)	Rain (mm)	Min WS (m/s)	Ave WS (m/s)	Max WS (m/s)
01/Sep/11	3.9	13.3	25.3	23	59	89	0.0	0	1	3
02/Sep/11	7.7	15.6	22.9	37	60	82	0.0	0	3	6
03/Sep/11	5.8	14.1	23.3	28	53	78	0.0	0	1	3
04/Sep/11	6.7	14.7	24.4	30	56	81	0.0	0	1	3
05/Sep/11	3.9	13.6	24.6	31	58	88	0.0	0	0	2
06/Sep/11	4.9	14.6	24.6	34	57	86	0.0	0	1	5
07/Sep/11	6.2	16.2	25.7	34	55	82	0.0	0	2	7
08/Sep/11	12.8	15.9	20.3	51	73	91	9.4	0	1	5
09/Sep/11	5.5	10.7	14.7	55	81	92	24.2	0	3	8
10/Sep/11	4.2	9.1	14.9	45	66	86	0.0	0	3	9
11/Sep/11	0.3	9.2	15.9	43	67	90	0.0	0	1	5
12/Sep/11	1.7	9.3	18.9	40	72	93	0.0	0	1	5
13/Sep/11	1.3	11.2	22.3	28	61	91	0.2	0	0	3
14/Sep/11	2.2	12.5	24.7	21	56	89	0.0	0	1	5
15/Sep/11	3.1	13.7	25.9	25	54	84	0.0	0	2	8
16/Sep/11	4.2	15.6	28.4	23	54	85	0.0	0	1	6
17/Sep/11	5.8	17.3	29.9	21	50	81	0.0	0	1	5
18/Sep/11	7.7	17.9	29.7	20	53	79	0.0	0	2	6
19/Sep/11	7.1	18.9	29.9	24	47	82	0.0	0	2	8
20/Sep/11	13.0	20.4	27.8	27	38	55	0.0	0	5	11
21/Sep/11	2.7	14.4	24.8	25	45	76	0.0	0	1	5
22/Sep/11	2.3	15.2	27.4	29	55	89	0.0	0	1	3
23/Sep/11	8.1	17.8	29.7	23	55	83	0.0	0	1	5
24/Sep/11	5.7	19.6	30.2	22	48	83	0.0	0	1	5
25/Sep/11	11.0	16.3	23.5	37	67	84	4.0	0	4	9
26/Sep/11	10.5	15.6	21.8	39	61	83	0.0	2	4	6
27/Sep/11	7.8	15.6	25.2	33	55	76	0.0	0	1	4
28/Sep/11	10.7	15.7	20.7	50	72	90	3.6	0	1	9
29/Sep/11	7.6	14.0	20.4	43	76	93	48.0	0	5	11
30/Sep/11	3.7	11.9	19.6	39	67	91	0.0	0	3	8
Average	**5.9**	**14.7**	**23.9**	**33**	**59**	**84**		**0.1**	**1.8**	**5.9**
Maximum	**13.0**	**20.4**	**30.2**	**55**	**81**	**93**	**48.0**	**2.2**	**5.2**	**11.2**
Minimum	**0.3**	**9.1**	**14.7**	**20**	**38**	**55**	**0.0**	**0.0**	**0.4**	**2.2**
Total							**89.4**			

Daily Summary **October 2011** **Sunnyside Weather Station**

Date	Min Temp (°C)	Ave Temp (°C)	Max Temp (°C)	Min RH (%)	Ave RH (%)	Max RH (%)	Rain (mm)	Min WS (m/s)	Ave WS (m/s)	Max WS (m/s)
01/Oct/11	5.6	**8.8**	**14.5**	72	87	92	15.8	0.0	0.9	7.6
02/Oct/11	7.7	11.2	15.6	61	76	89	0.0	0.0	2.7	8
03/Oct/11	8.3	13.1	18.9	45	66	85	0.0	0.0	3.3	6.3
04/Oct/11	5.8	13.7	20.2	43	64	87	0.0	0.0	2.9	5.4
05/Oct/11	9.2	14.1	18.2	56	69	87	0.2	0.0	0.7	3.1
06/Oct/11	11.7	13.9	16.6	**81**	**88**	92	10.2	0.0	0.3	**1.8**
07/Oct/11	11.8	17.1	24.1	50	76	**93**	0.0	0.0	**0.2**	**1.8**
08/Oct/11	12.2	17.5	24.6	42	71	91	1.2	0.0	1.3	5.4
09/Oct/11	8.2	15.9	24.7	37	66	92	0.0	0.0	1.7	7.2
10/Oct/11	9.6	15.7	23.7	34	64	88	0.0	0.0	1.0	6.3
11/Oct/11	7.2	16.3	23.2	30	**51**	84	0.0	0.0	2.0	4.9
12/Oct/11	**3.6**	15.0	24.8	30	58	90	0.0	0.0	0.8	2.7
13/Oct/11	12.6	19.2	27.8	38	62	76	0.0	0.0	2.2	5.8
14/Oct/11	13.3	20.6	27.9	44	63	82	0.2	0.0	1.3	4
15/Oct/11	14.5	19.0	25.4	48	75	91	13.8	0.0	0.9	3.6
16/Oct/11	11.3	18.8	25.3	36	59	92	0.0	0.0	3.1	8
17/Oct/11	13.2	18.1	24.3	37	57	75	0.0	1.3	4.1	6.3
18/Oct/11	10.4	16.2	23.6	33	56	**72**	0.0	0.0	2.6	5.4
19/Oct/11	11	17.9	25.8	30	57	77	0.0	0.0	0.9	2.7
20/Oct/11	9.1	18.6	28.5	**26**	56	85	0.0	0.0	0.5	2.2
21/Oct/11	9.6	19.0	28.4	28	58	87	0.0	0.0	0.6	2.2
22/Oct/11	10.4	20.4	30.5	27	57	83	0.0	0.0	0.6	2.2
23/Oct/11	12.3	20.2	28.9	33	61	84	0.0	0.0	0.6	2.7
24/Oct/11	10.7	20.8	29.7	37	60	88	0.0	0.0	2.2	6.7
25/Oct/11	13.4	20.8	**31.3**	38	68	90	**18.4**	0.0	1.6	7.6
26/Oct/11	14.5	17.7	22.2	60	71	85	0.6	**3.6**	**5.9**	**8.9**
27/Oct/11	13.3	19.2	26.3	49	65	78	0.0	0.0	3.4	5.8
28/Oct/11	13.8	**20.9**	29.3	44	67	87	0.0	0.0	0.7	3.6
29/Oct/11	**15.3**	19.9	24.9	67	83	92	11.8	0.0	0.4	4.9
30/Oct/11	13.7	20.1	25.9	42	71	**93**	2.4	0.0	2.0	7.2
31/Oct/11	10.8	18.7	25.8	33	53	**72**	0.0	0.0	3.3	6.7
Average	**10.8**	**17.4**	**24.5**	**43**	**66**	**86**		**0.2**	**1.8**	**5.1**
Maximum	**15.3**	**20.9**	**31.3**	**81**	**88**	**93**	**18.4**	**3.6**	**5.9**	**8.9**
Minimum	**3.6**	**8.8**	**14.5**	**26**	**51**	**72**	**0.0**	**0.0**	**0.2**	**1.8**
Total							**74.6**			

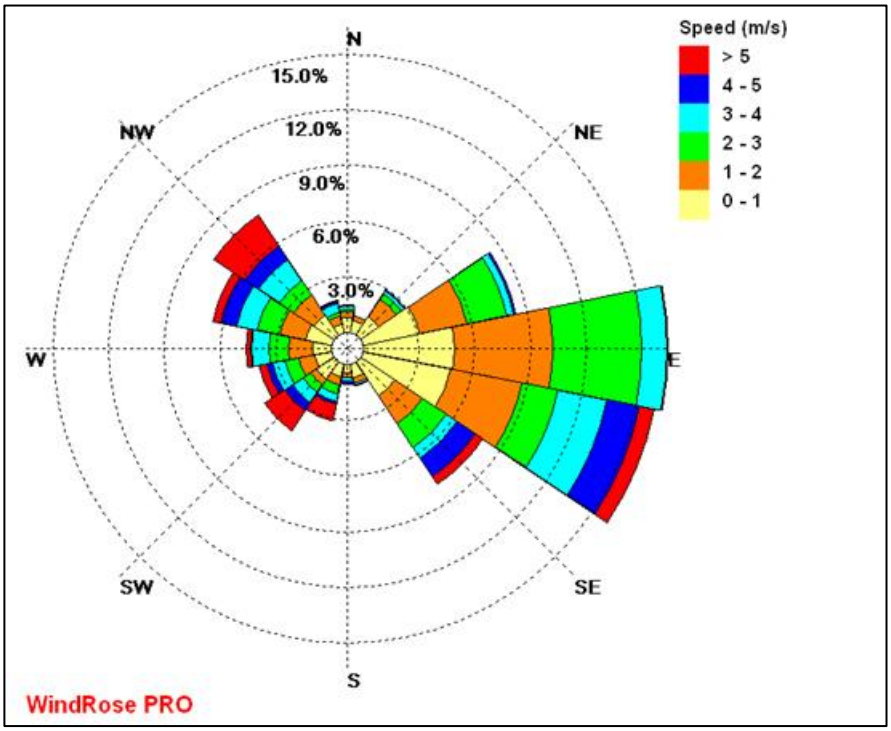
Daily Summary November 2011 Sunnyside Weather Station

Date	Min Temp (°C)	Ave Temp (°C)	Max Temp (°C)	Min RH (%)	Ave RH (%)	Max RH (%)	Rain (mm)	Min WS (m/s)	Ave WS (m/s)	Max WS (m/s)
01/Nov/11	12.8	20.0	27.5	37	58	80	0.0	0	1.1	3.1
02/Nov/11	10.2	21.1	30.3	27	52	89	0.0	0	2.2	7.6
03/Nov/11	9.3	20.0	28.3	33	52	82	0.0	0	1.6	4.9
04/Nov/11	11.4	21.1	29.8	28	57	88	0.0	0.0	1.4	5.4
05/Nov/11	15.6	22.8	31.3	35	59	78	0.0	0.0	1.1	3.6
06/Nov/11	15.9	19.9	25.3	59	79	92	3.2	0.0	1.1	4.5
07/Nov/11	15	23.5	32.1	40	68	93	0.0	0.0	1.1	4.5
08/Nov/11	15.4	25.4	34.1	31	58	88	0.0	0.0	2.9	9.4
09/Nov/11	17.5	26.1	34.2	31	55	85	0.0	0.0	2.2	8
10/Nov/11	18	23.8	30.6	44	57	80	0.0	0.0	2.4	5.8
11/Nov/11	-	-	-	-	-	-	-	-	-	-
12/Nov/11	-	-	-	-	-	-	-	-	-	-
13/Nov/11	-	-	-	-	-	-	-	-	-	-
14/Nov/11	-	-	-	-	-	-	-	-	-	-
15/Nov/11	-	-	-	-	-	-	-	-	-	-
16/Nov/11	-	-	-	-	-	-	-	-	-	-
17/Nov/11	-	-	-	-	-	-	-	-	-	-
18/Nov/11	19.4	25.5	30.1	46	63	86	0.0	0.0	0.3	1.8
19/Nov/11	17.8	25.9	33.7	33	59	89	0.0	0.0	1.8	5.8
20/Nov/11	16	24.3	33.6	34	60	85	0.0	0.0	3.3	8.5
21/Nov/11	19.4	23.1	26.6	53	67	83	0.2	0.0	1.3	6.3
22/Nov/11	17.9	25.1	32.5	35	56	82	1.0	0.0	3.4	8.5
23/Nov/11	15.6	17.7	21.1	76	89	93	52.6	0.0	2.8	8.9
24/Nov/11	15	18.5	23.5	62	77	89	4.4	0.4	3.8	7.2
25/Nov/11	15.9	18.35	20.1	85	90	93	46.0	0.0	2.6	4.9
26/Nov/11	15.2	21.6	28.8	39	75	94	40.4	0.0	2.1	8
27/Nov/11	12.4	22.4	30.9	31	57	91	0.0	0.0	2.1	5.8
28/Nov/11	14.3	24.0	33.2	29	59	87	0.0	0.0	0.8	3.6
29/Nov/11	19.9	26.8	32.9	41	59	82	0.0	0.0	1.0	3.6
30/Nov/11	18.9	22.8	28.8	45	72	89	1.0	0.0	2.0	8.5
Average	**15.6**	**22.6**	**29.5**	**42**	**64**	**87**		**0.0**	**1.9**	**6.0**
Maximum	**19.9**	**26.8**	**34.2**	**85**	**90**	**94**	**52.6**	**0.4**	**3.8**	**9.4**
Minimum	**9.3**	**17.7**	**20.1**	**27**	**52**	**78**	**0.0**	**0.0**	**0.3**	**1.8**
Total							**148.8**			

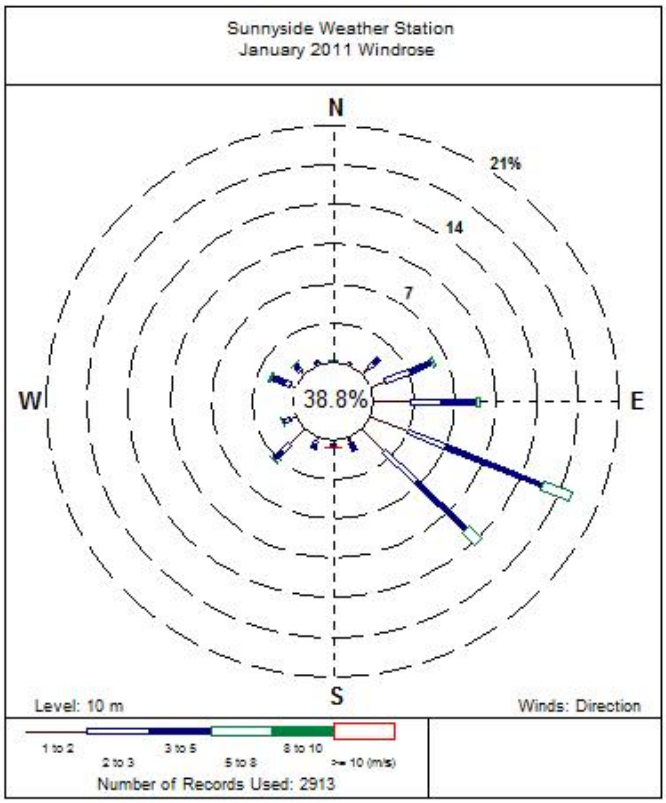
Missing data due to power failure

Sunnyside Windroses

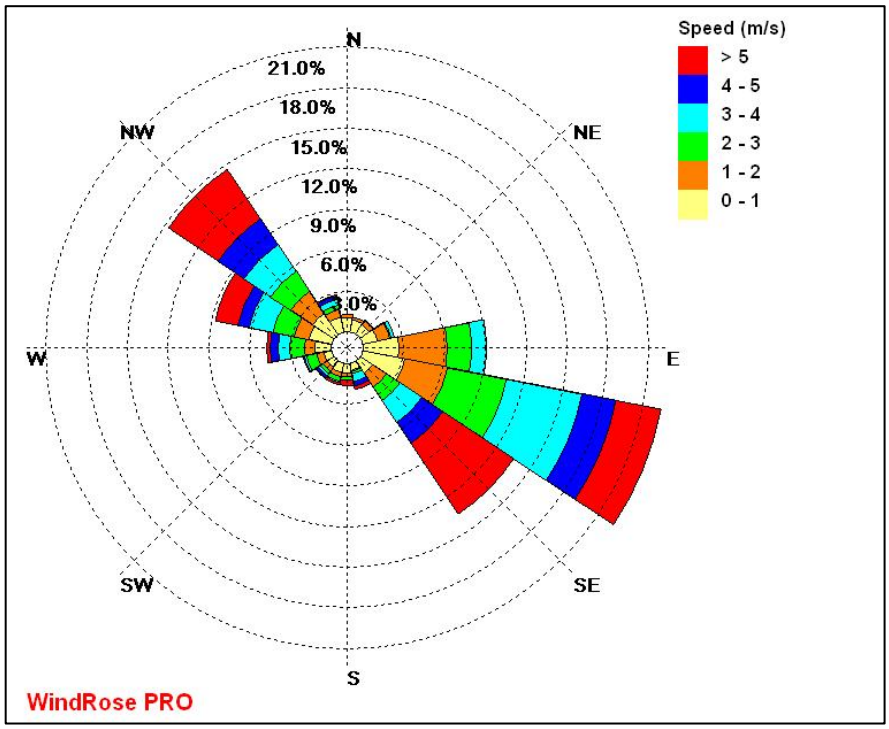
December 2010



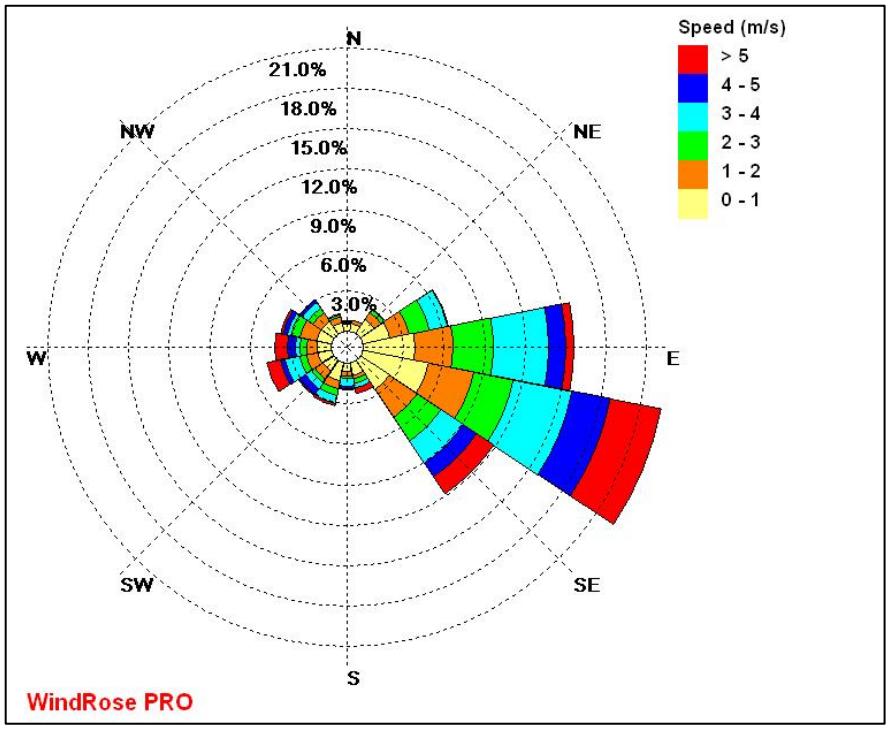
January 2011



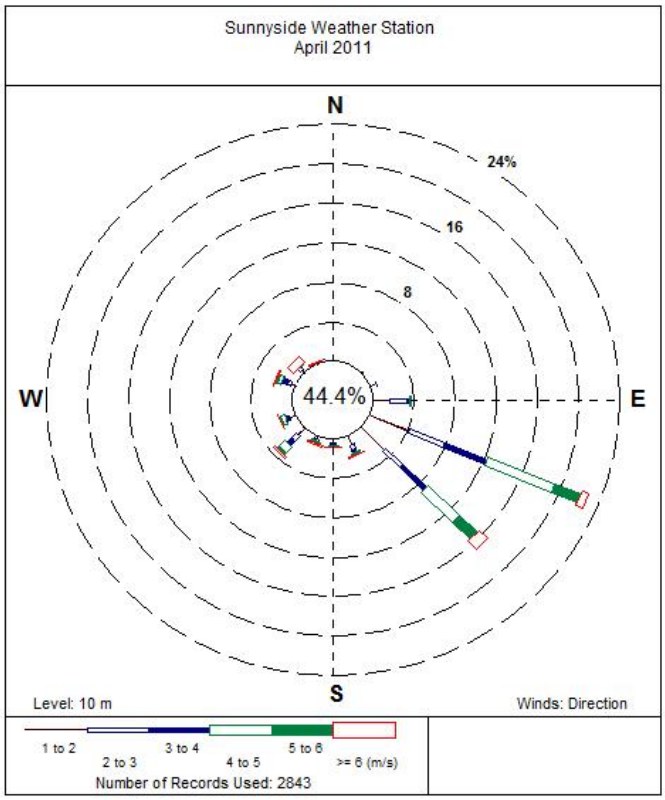
February 2011



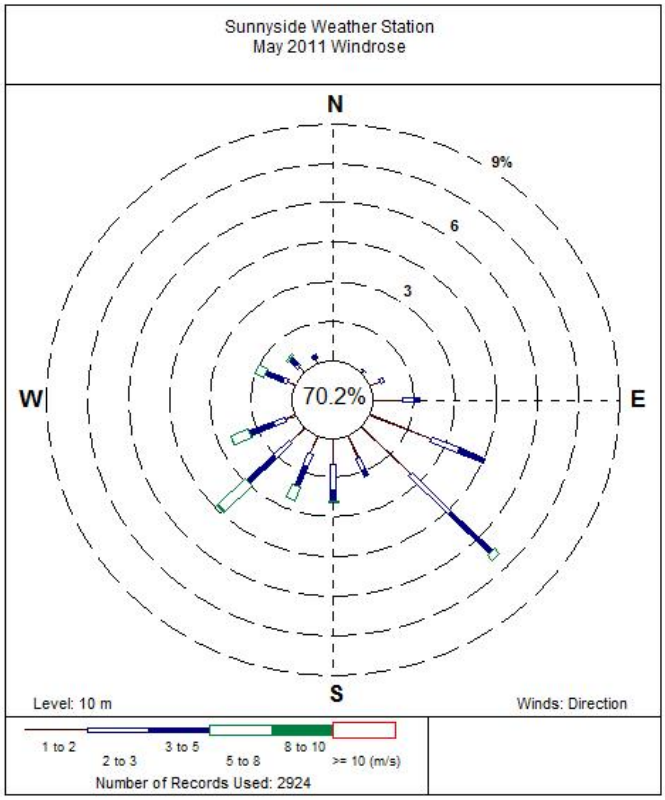
March 2011



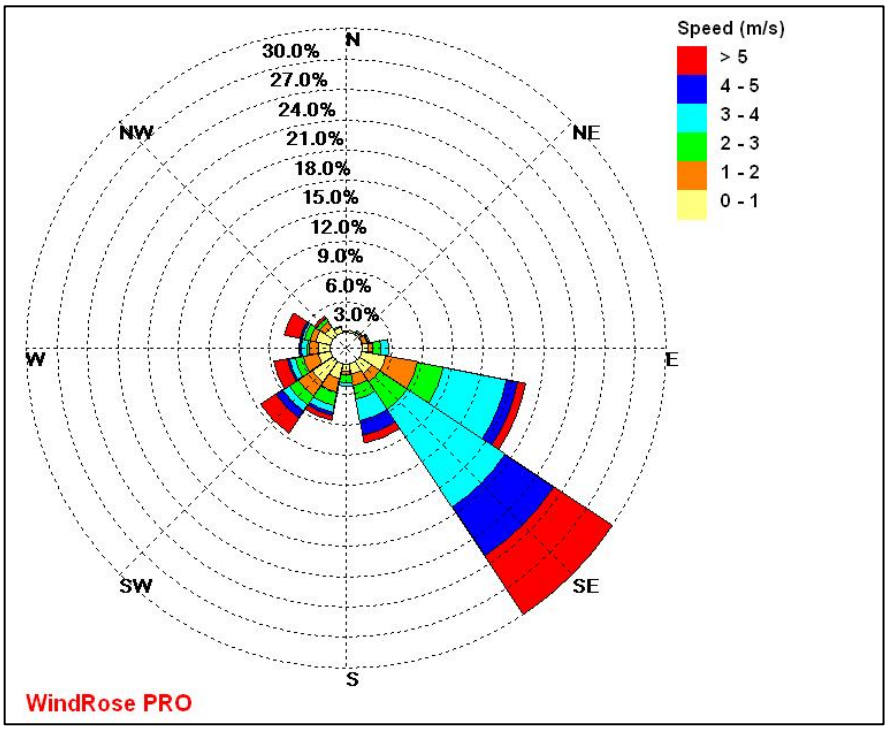
April 2011



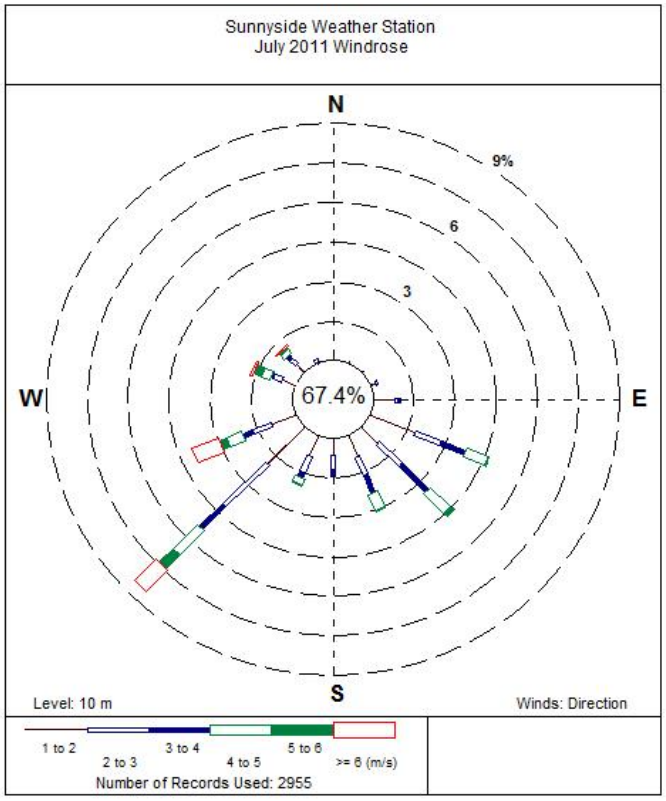
May 2011



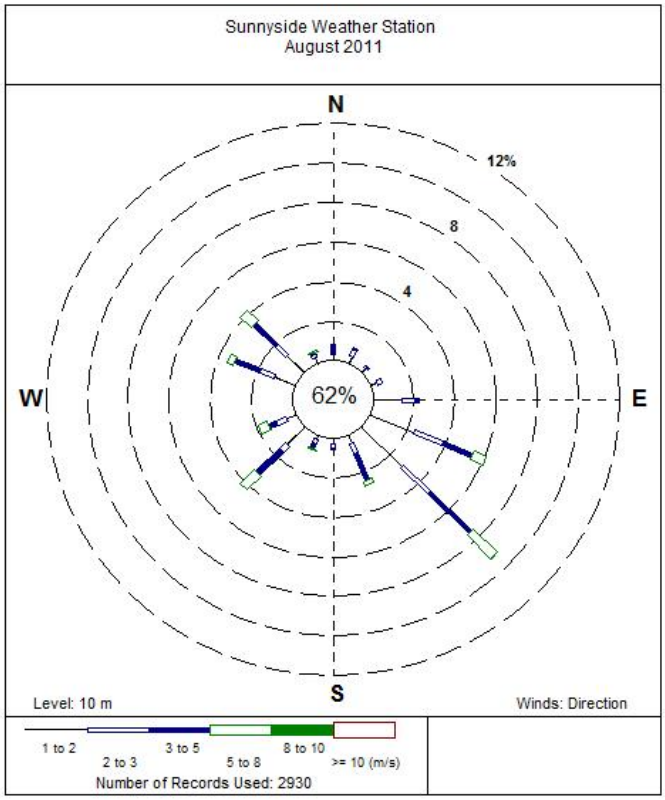
June 2011



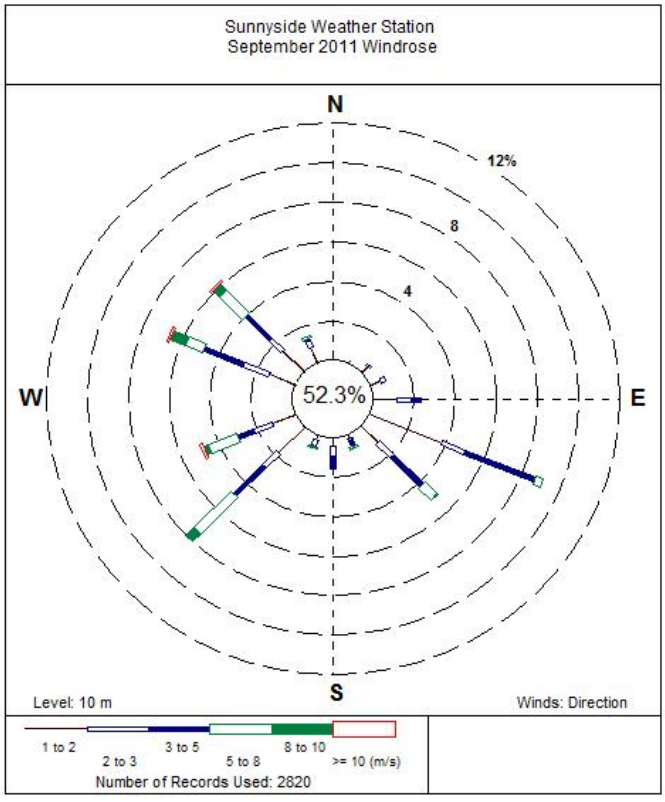
July 2011



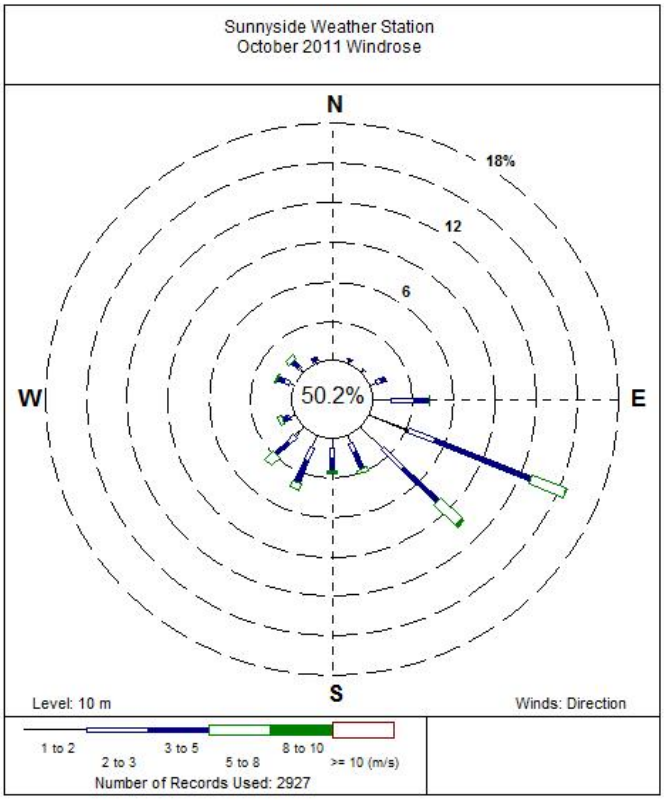
August 2011



September 2011



October 2011



November 2011