



Illawarra Coal



Bulli Seam Operation Noise Management Plan





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VERSION HISTORY

VERSION	DESCRIPTION OF CHANGES	DATE
1.0	Original document	September 2012
2.0	Revised to reflect EPA feedback on V1.0	December 2012
3.0	Update following Triennial Independent Environmental Audit	May 2014
4.0	Updated to include Vent Shaft 6 and Change from BHPBilliton to South32. Review and rationalisation of noise monitoring sites and frequency.	May 2017

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1 INTRODUCTION

The Bulli Seam Operations (BSO) incorporates the underground and surface operations associated with the Appin and West Cliff coal operations.

The Appin and West Cliff mine sites are located approximately 25 kilometers (km) north-west of Wollongong in New South Wales - See Plan No. 1. The mines are owned and operated by Illawarra Coal Holdings Pty Ltd (ICHPL), a wholly owned subsidiary of South32.

ICHPL received Project Approval from the NSW Department of Planning and Infrastructure (DOPI) on the 22nd December 2011 for current and proposed mining of the Bulli Seam Operations for the next 30 years and production of up to 10.5 Mt pa of Run-of-Mine (ROM) coal. The approval incorporates environmental and other performance criteria for the project.

This Noise Management Plan (NMP) has been prepared to detail the relevant noise impact assessment criteria, compliance procedures and controls relating to the mining operations. This plan has been prepared to satisfy Schedule 4, Condition 5 of the BSO approval.

1.1 Objectives

The objectives of this plan are to:

- Provide the frame work for the responsible management of noise emissions associated with the project;
- Describe the control measures for management of noise emissions;
- Prevent adverse noise impacts on the amenity of local communities and environment;
- Describe compliance criteria for noise for the project;
- Describe compliance criteria exceedance assessment protocols;
- Describe the noise monitoring program;
- Comply with the relevant requirements of Environment Protection Licence (EPL) No. 2504 and the BSO Project approval;
- Describe measures for the reduction of noise emissions; and
- Comply with South32 and other relevant standards and requirements.

1.2 Scope

The scope of the NMP applies to all existing and future activities related to the BSO Project including operational, construction and traffic noise.

ICHPL maintains a certified Environmental Management System (EMS) to ISO14001 and this NMP is a component of the EMS.

1.3 Consultation

As required by the Project Approval (Condition 5, Schedule 4) Version 1 of this NMP was prepared in consultation with the Office of Environment and Heritage (OEH) and Wollondilly Shire Council (WSC). The Environment Protection Authority (EPA) were also consulted on the original draft of this Plan.

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2 ROLES AND RESPONSIBILITIES

Roles and responsibilities associated with environmental management at the BSO are defined in the Bulli Seam Project 'Environmental Management Strategy'. The roles and responsibilities specific to the development, implementation and review of this plan are outlined in Table 1.

Table 1: Roles and Responsibilities

Responsibilities	Role
Implementation and periodic review of this Management Plan.	Environmental Officer
Meeting the commitments contained within this management plan for the operational areas, including periodic noise monitoring and inspections	Environment Supervisor
Meeting the commitments contained within this management plan for stakeholder engagement.	Manager Stakeholder Relations
Provide the necessary resources and systems to ensure that requirements of this Management Plan are met	HSE Lead Environment Supervisor Projects and Development General Manager <Site>
Operate and maintain Noise management controls and equipment in a competent, efficient and reliable manner	Maintenance Technicians <site> Operations Personnel <site>

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3 LEGISLATION AND PLANNING

3.1 Project Approval and Statement of Commitments

Potential noise and vibration impacts generated by the existing and future BSO were modelled during the preparation of the BSOP Environmental Assessment 2009 (EA). The results from the modelling were assessed under the Environmental Planning and Assessment Act 1979 (EP&A Act) and Regulations.

All activities carried out as part of the BSOP will be in accordance with Project Approval (08_0150) and with the EA.

Appendix 'A' outlines the noise management requirements of the project approval and the section of this Plan where the requirement has been addressed.

Appendix 'B' summarises the requirements of the commitments in the EA and the section of this Plan where the commitment has been addressed.

3.2 Environment Protection Licence Requirements

Environment Protection Licence No. 2504 (EPL 2504) applies to the Bulli Seam Operations and associated activities. A copy of the licence can be accessed at the EPA website:

<http://www.epa.nsw.gov.au/prpoeoapp/>

3.3 Relevant Guidelines and Standards

The following guidelines are relevant:

- NSW Industrial Noise Policy (1999);
- NSW Road Noise Policy (DECCW, 2011) (replacing the Environmental Criteria for Road Traffic Noise; EPA, 1999);
- Interim Construction Noise Guideline; DECC, 2009);
- Assessing Vibration: A Technical Guideline (DEC, 2006);
- AS 1055.1, AS 1055.2 and 1055.3 Acoustics - Description and measurement of environmental noise;
- AS 2659.1 - Guide to the use of sound measuring equipment;
- AS 2659 - Sound level meters;
- ISO 14001– Environmental Management Systems.

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4 BASELINE ASSESSMENT

A baseline assessment was undertaken as part of the Environmental Assessment (EA) process for the BSO Project Approval. An extensive review of the noise levels monitored around the operations is presented in Appendix I of the Bulli Seam Operations Project Environmental Assessment (Wilkinson Murray, July 2009).

The EA is available via the South32 regulatory website link below:

<http://www.south32.net/our-operations/australia/illawarra-coal/regulatory-document>

The BSO Noise Impact Assessment, which formed part of the EA, identified that that existing noise levels at the nearest residences were typical of suburban and semi-rural areas. Short term attended monitoring at the times of deployment and retrieval of the loggers indicated no significant contribution from industrial sources, with the exception of the colliery cottages located on site at the Appin (East) Pit Top whereby operations at the pit top were audible. The colliery cottages are owned by South32 Illawarra Coal.

Table 1 outlines the Rating Background Levels from noise loggers at the nearest residential receivers.

Table 1: Rating background levels from noise loggers

Location (& logger ID from EA – refer to Figure I3-1)	Day	Evening	Night
	L _{Aeq} (15 min)	L _{Aeq} (15 min)	L _{Aeq} (15 min)
286 Douglas Park Drive (L01)	37.6	38.2	40.9
100 Ashwood Road (L02)	34.0	35.4	37.0
St Mary's Towers (L03)	37.5	39.2	39.8
Appin Mine Cottages (L04)	40.7	40.5	40.5
44-50 Church Street (L05)	37.1	40.5	36.5
Cataract Scout Park (L06)	32.0	33.0	29.0
Andoran Stud Estate, Darkes Forest Road (L07)	30.5	33.8	31.3

Note: Logger ID locality ID L07 is the nearest residential receiver to the inactive and decommissioned North Cliff site.

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5 NOISE MANAGEMENT AND MITIGATION

There are three main strategies for controlling noise as described by the Industrial Noise Policy (INP):

- Controlling noise at the source via Best Management Practice (BMP) and/or Best Available Technology Economically Achievable (BATEA);
- Controlling transmission of noise by attenuating the noise between the source and receiver through the use of barriers and/or land-use controls; and
- Controlling noise at the receiver, for example through double glazing windows, air conditioning or insulation.

Each of these has been considered in the site specific noise management strategies outlined below.

The Project Approval requires all feasible and reasonable noise mitigation measures to be applied in order to minimise the construction, operational and road noise generated by the project. The following sub-sections provide details of the noise management measures that have been implemented across the Bulli Seam operations.

5.1 Appin Mine – East Pit Top

Noise control measures currently in place at the Appin East pit top (incorporating coal handling and stockpile activities) include:

- engineering control systems on the surface coal bin to ensure that the bin contains a minimum of 10% coal by volume at all times to dampen the noise of coal filling the bin;
- noise dampening material on the coal deflection striker plates (e.g. at conveyor transfer points);
- concrete noise barrier at the coal truck loading point under the bin and acoustical skirting on the coal discharge chutes to coal trucks hoppers;
- cladding and noise dampening doors on the conveyor drive-house;
- use of low tone reversing alarms on mobile plant;
- replacement of metal clips on the surface conveyor belt joints with vulcanised joints to eliminate noise from the metal clips striking the rollers;
- modifications to the elevator conveyor rollers and Appin winder haulage rope rollers to reduce rattling/vibration of roller sets;
- heavy maintenance activities undertaken within enclosed workshops; and
- no coal processing activities.

In addition to the above, surface activities will be modified (where necessary) to reduce potential for adverse noise impacts on the local residential community. Details of these modifications will be incorporated into future revisions of this plan.

5.2 Appin Mine – West Pit Top

Noise measures currently in place at the Appin West pit top and site characteristics include:

- use of low tone reversing alarms on mobile plant;
- no coal handling activities on site;
- limited heavy equipment movements;
- relatively light maintenance activities undertaken at this site; and
- relatively remote from residential receivers.

In addition to the above, surface activities will be modified where necessary to reduce potential for adverse noise impacts on the local residential community. Details of these modifications will be incorporated into future revisions of this plan.



5.3 Appin Mine – No.2 and No.3 Mine Ventilation Fan Site

Current noise reduction and mitigation measures for the existing fan site installations include:

- routine fan impeller blade cleaning to prevent out-of-balance vibration and noise transmission;
- maintenance and cleaning of fan evase noise attenuators;
- routine fan installation inspections and scheduled noise surveys;
- noise attenuation doors on fan house buildings;
- security of fan installation construction and cladding materials with potential to transmit noise and vibration;
- enclosed motor rooms;
- noise barrier/s; and
- use of earthen and vegetative barriers where practicable.

If the existing fan installations require replacement or upgrade, best practice noise mitigation measures will be adopted for upgraded fan installations and related infrastructure.

For new fan installations and associated infrastructure, best practice noise mitigation measures will be incorporated in the design and construction of the facility.

5.4 Appin Mine – No.6 Mine Ventilation Shaft Site

The Vent Shaft No.6 fan design requirements have included comprehensive noise performance criteria in equipment design, supply and commissioning contracts. Delivery of the defined design criteria has delivered a system compliant with the BSO Environmental Approval Conditions.

5.5 Appin North (West Cliff Mine)

The activities at the Appin North (West Cliff) pit-top with the potential to generate local noise are limited to mine supplies and materials handling, workshop machinery maintenance and mine related traffic. There is no coal handling activities undertaken at this site.

The West Cliff (South Site) is relatively remote from residential receivers with no noise related complaints received in relation to the activities undertaken at this site to date.

Noise mitigation and reduction measures will be addressed in a timely and responsible manner to prevent adverse noise impacts on the local community.

5.6 West Cliff Coal Preparation Plant – North Site

The main activities undertaken at the West Cliff Preparation Plant are coal processing, coal handling and stockpiling, coal products transport and received by road, mine ventilation, mine gas extraction/utilisation/transfer, emplacement area construction and coalwash emplacement.

This site is relatively remote from residential receivers and has limited potential for adverse noise impacts on the local community. No noise related complaints have been received in relation to the activities undertaken at this site to date.

Coalwash emplacement will continue in a northerly direction towards the Appin residential over time. All other activities at site are undertaken at fixed localities. Noise mitigation and reduction measures will be addressed in a timely and responsible manner to prevent adverse noise impacts on the local community.

Current noise reduction measures utilised at the West Cliff Preparation Plant include:

- main fan discharge noise attenuators;
- enclosed coal winding and discharge tower;
- enclosed motor rooms and pump houses;

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- enclosed coal processing plant;
- enclosed or semi-enclosed conveyors;
- conventional materials handling equipment and vehicles;
- no shot-firing (explosives) activities undertaken on the surface of the mine; and
- coal transport (on public roads) by public road registered vehicles.

5.7 Potential Noise Reduction Measures

Potential noise reduction and mitigation measures to be adopted as required include:

- machinery silencing with appropriate technological solutions;
- acoustic dampening and attenuation;
- noise barriers and screening;
- process modification; and
- activity timing adjustments.

5.7.1 Construction Activities

Noise management strategies will be developed for Project construction activities which have the potential for adverse noise impacts.

The noise management strategies will generally address:

- noise management measures;
- construction times and noise limits;
- other construction constraints and limitations;
- traffic management protocols where required; and
- responsibilities for noise monitoring and review.

5.7.2 Gas Drainage Activities

Noise issues and criteria associated with existing gas drainage projects (e.g. Appin Area 9 Gas Drainage Project Area 7 and 9) are managed under separate management plan (i.e. the Gas Drainage Management Plan) in accordance with the project specific approval conditions.

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5.7.3 Traffic noise

The following measures will be employed to minimise road traffic noise generated by Project:

- establishment of heavy vehicle movement times to reduce impact on community amenity (in accordance with the Bulli Seam Operations Traffic Management Plan);
- employee briefings and awareness communications on nuisance noise prevention;
- enforcement of vehicle speed limits;
- workforce communications to reduce traffic movements where possible (e.g. encouragement of car-pooling); and
- addressing other matters that may lead to adverse traffic noise impacts on the local community such as driver behavior, road conditions, project scheduling, worker place-of-work transfer arrangements including appropriate use of buses to transport large number of workers between sites etc.
- In relation to coal haulage on public roads by truck, a commercial agreement is in place with a road haulage company to ensure the main haulage fleet operating on behalf of ICHPL attains and maintains best practices in both equipment and operations.
- Relevant local government authorities and the Roads and Maritime Services (formerly RTA) will be promptly notified regarding noticeable deterioration in road pavement.

Further information on traffic management is provided in the Bulli Seam Operations *Traffic Management Plan*.

5.8 Entitlements of Noise Impacted Land Owners and Residents

Where Project specific noise criteria are exceeded and upon receiving written request from the landowner or resident, ICHPL will implement reasonable and feasible noise mitigation measures at the residence in consultation with the landowner.

If after the end of June 2013, road traffic noise generated by the Project (including employee vehicles) exceeds the NSW criteria for road traffic noise by more than 2 dB(A) on Douglas Park Drive or Macarthur Road at any residence on privately-owned land, and upon receiving a written request from the landowner, ICHPL will implement reasonable and feasible noise mitigation measures at the residence in consultation with the landowner.

Noise mitigation measures are available upon written request from the owner of any residence listed in Table 2.

Table 2: Land where noise mitigation measures are available on request

Receiver Number
57, 60, 63, 64, 66, 79, 80, 138, 140, 144, 165

If within 3 months of receiving a written request from any entitled landowner or resident, ICHPL and the landowner or resident 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.

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5.9 Noise Reduction Program

In accordance with the commitments in the BSOP EA, ICHPL will implement a noise reduction program to identify additional reasonable and feasible noise mitigation measures for consideration over the life of the Project.

The noise reduction program will be developed in consultation with the EPA and will include, where reasonable and feasible:

- the best available technology for Project upgrades including consideration of acoustical specifications for new Project equipment;
- desktop design validation and supplier shop acoustical testing;
- in-situ acoustic testing of new equipment;
- acoustical field testing during plant commissioning;
- refitting and/or replacement in the event of non-compliance with acoustic specifications;
- computer-based acoustical modeling of installed plant using achieved sound power levels; and
- measuring acoustical compliance of Project upgrades via on-site and off-site operator-attended noise measurements of acoustically significant plant.

The outcomes from the BSO Noise Impact Assessment identified that existing noise levels at the nearest residences were typical of suburban and semi-rural areas. Short term attended monitoring at the times of deployment and retrieval of the loggers indicated no significant contribution from industrial sources, with the exception of the colliery cottages located on site at the Appin Pit Top whereby operations at the pit top were audible. The colliery cottages are owned by South32 Illawarra Coal.

With the implementation of the BSO noise monitoring program (as outlined in this plan), the opportunities for project noise reduction will become evident.

Areas of priority noise reduction include:

- Coal loading and handling activities at Appin East;
- Maintenance or heavy equipment activities at the Appin East Pit Top site;
- Restriction on project related heavy vehicle movements through the Appin community residential area;
- Main mine ventilation fan installations in proximity to residential receivers;
- Surface drilling and construction activities on lands within proximity to residential receivers monitoring program appraisal

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5.10 BSO Project Approval Noise Impact Assessment Criteria

5.10.1 Noise Criteria from the End of December 2014

From the end of December 2014, the noise generated by the project is not to exceed the criteria in Table 3 at any residence on privately-owned land or on more than 25% of any privately owned land.

Table 3: Noise Criteria dB(A) from end December 2014

Location Area	Receiver Number	Day LAeq (15 min)	Evening LAeq (15 min)	Night LAeq (15 min)	Night LA1 (1 min)
Appin Township	136, 137, 139, 142, 143	44	44	44	
	135	43	43	43	52
	Any other privately owned property	42	42	42	
All other privately-owned land (excluding receivers 57, 60, 63, 64,66, 79 ,80, 138, 140, 144, 165)		35	35	35	45
Appin West Receivers south-west of Appin West	1-7, 9-11, 13, 184, 188-189	39	39	35	49
Appin West receivers near Hume Highway	185-187, 190	35	35	35	53
All other Appin West Receivers	14, 26	45	45	35	53
	15-25, 27-48, 50-56	43	43	35	
Appin No. 3 Receivers	58, 67, 71, 72	41	41	41	49
	68, 74, 75	40	40	40	
	69, 70, 76	39	39	39	
	217, 218, 233, 279-282	35	35	35	
Appin No. 1 and No. 2 Receivers	82, 91, 216	42	42	42	50
	83, 85	41	41	41	
	78, 84, 86-90, 199	40	40	40	
	212-215, 226, 228-230, 232, 234, 235	35	35	35	

These criteria do not apply if:

- there is a written agreement with the relevant landowner to exceed the criteria; and
- the Department of Planning has been advised in writing of the terms of this agreement.

5.10.2 Construction Noise

Illawarra Coal shall ensure that the noise generated by construction activities relating to the Appin East Mine Safety Gas Management Project is managed in accordance with the requirements of the Interim Construction Noise Guideline (DECC, 2009), as may be updated from time to time.

5.10.3 Project Traffic Noise Criteria after June 2013

If after June 2013 road traffic noise generated by the Project (including employee vehicles) exceeds the NSW criteria for road traffic noise on Douglas Park Drive or Macarthur Road by more than 2 dB(A) at any privately owned land and a written request is received from a land owner the company will implement reasonable and feasible noise mitigation measures.

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If within 3 months of receiving a written request from any entitled landowner or resident, ICHPL and the landowner or resident 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.

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6 NOISE MONITORING PROGRAM

6.1 Overview

A noise monitoring program has been developed to comply with Condition 5(f) of Schedule 4 of the Project Approval. Noise monitoring of the Project will be carried out in accordance with requirements of the Project Approval, the NSW Industrial Noise Policy, the relevant Australian Standards and the BSO Environmental Noise Monitoring Procedure (Internal document - ICHP0302).

The objectives of the noise monitoring program are to:

- measure noise levels experienced by nearby residential receivers;
- assess the effectiveness of the existing noise controls;
- measure project related noise levels;
- detect any adverse developments in Project noise;
- measure Residential Background Level (RBL) noise; and
- acquire sufficient and reliable data to inform the assessment of compliance with noise criteria (as specified in Table 4 of this plan).

The location of sensitive noise receivers and noise monitoring locations near the Bulli Seam operations are shown in Plan 2. Note that the monitoring locations are subject to change pending access availability, any changes to the monitoring location will be recorded on the noise monitoring log sheet.

6.2 Assessment Criteria to Inform Compliance

Assessment criteria have been established for each monitoring location, as outlined in Table 4. The criteria enables an assessment of compliance to be made against the noise levels outlined in Table 3. The site specific assessment criteria were developed using the following methodology:

- adoption of the most stringent noise levels as outlined in the Development Consent noise criteria (refer to Table 3); and
- where relevant, the noise levels were adjusted (to take into account monitoring location verse receivers) using the noise contours from the BSO Noise Impact Assessment.

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**Table 4: Noise Survey Points and Assessment Criteria**

Survey Point ID	Type	Receivers	Assessment Criteria		Locality	Function
			LAeq(15 min)	LA1(1 min)		
AE-NS4	Attended	Appin township	43 (day, evening and night)	52 (night)	Located in paddock between Illawarra and Toggarai St North of Pit Top behind receiver 137	Noise from AE
AE-NS5	Attended	Appin No.1 & 2 receivers	40 (Day, evening and night)	50 (night)	Northampton Dale Road between No.2 Shaft site and power plant project and the nearest residential receivers in the South	Noise Levels between shaft site and the nearest residential receivers
AW-NS5	Attended	Appin West receivers	39 (day and evening)	53 (night)	Between nearest residential receivers on Douglas Park Drive and the Appin West Pit Top	Noise level at AW property boundary; Noise levels between AW and nearest residential receivers on Douglas Park Drive
AW-NS4	Attended	Appin West receivers South- west of Appin West and Appin West receivers near Hume Highway	39 (day and evening)	49 (night)	Ashwood Road, South-west of Appin West Pit Top	Noise level for Appin West receivers South- west of Appin West Receivers near Hume Highway
VS6 Central	Attended	Douglas Park Township	45 (day, evening)	49(night)	Corner Duggan/Hopson Street	Noise Levels for Douglas Park
			39 (night)			

6.3 Monitoring Program

6.3.1 Continuous, real-time noise monitoring

Continuous, real-time monitoring will be conducted at Appin East and West Pit tops and be deployed elsewhere if required as supplementary monitoring to evaluate the performance of the project. The system will be deployed for a period long enough to provide a representative sample. Real-time monitoring will not be undertaken on a routine basis at the vent shaft sites due to the consistency of the sound levels at these sites; however will still be used for investigations and following a noise complaint where required. The results will be used for summarising trends and investigations (where necessary) and will be used to identify the times of the day where project noise appears to be over the relevant limits. The attended monitoring (summarised below) will be used to confirm this and hence assess compliance against the criteria outlined in Table 3.

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6.3.2 Attended monitoring using handheld portable monitors

Attended monitoring will be undertaken at the nominated monitoring locations (see Table 4) to confirm compliance (minimum frequency of 6 monthly). Locations will be assessed during the day, evening and night time periods in accordance with Table 4 unless the results from the 'continuous real-time' (AE-NS4 and AW-NS5 only) data are below the compliance limits for that site. In this case, no attended monitoring will be necessary during the periods that are within compliance levels. Night time surveys will be used to verify LA1 (1 min).

Meteorological data will be used when evaluating noise data. The meteorological stations that will be used will comply with the requirements in the *Approved Methods for Sampling of Air Pollutants in New South Wales* guideline and are capable of continuous real-time measurement of temperature lapse rate in accordance with the *NSW Industrial Noise Policy*.

Real-time measurement of temperature lapse rate will be undertaken at the West Cliff site as the vertical height differential required is provided by shaft tower infrastructure height at that locality and is sufficiently close to Appin to be representative of both sites. The direct line of sight distance between the Appin East and West Cliff facilities is approximately three kilometres.

Routine equipment calibration and testing will be undertaken in accordance with the manufacturer's requirements to ensure accuracy and integrity of data recorded and used for noise assessments and compliance evaluation.

6.3.3 Supplementary monitoring

Where required, supplementary noise monitoring in the form of spot checks, surveys and audits will be undertaken to ensure the various activities of the project (whether existing or new) do not generate unacceptable noise levels affecting the amenity of the nearby community or in exceedance of noise criteria for the project.

Illawarra Coal will consider inclusion of 'C' weighted noise level monitoring for operations and equipment with the potential for low frequency noise disturbance such as surface main mine ventilation fan installations, large electric motor drive houses on the surface and surface engine rooms. Although the current noise monitoring devices utilised and deployed by Illawarra Coal are not configured for 'C' weighted noise level monitoring, appropriate equipment will be sourced as required to undertake necessary investigations and assessments. Where unacceptable 'C' weighted noise levels are detected Illawarra Coal will undertake mitigation measures at the source preferentially and at residential receivers secondly.

6.3.4 Traffic Noise Survey

Traffic noise surveys will be undertaken if a complaint is received in relation to road noise (on Douglas Park Drive or Macarthur Drive). Attended noise monitoring will be undertaken in the vicinity of the complainant or via a representative sample of Douglas Park Drive or Macarthur Drive (where appropriate) to measure road noise, and the influence of road transport associated with the project. The attended monitoring may also be supplemented via real time monitoring.

6.4 Training and Competency

The monitoring will be undertaken by suitably trained and competent environmental staff. An internal training and competency program is in place for the noise monitoring equipment outlined in this plan.

6.5 Protocol for Assessing Compliance

In relation to project noise, the criteria in Table 3 applies from December 2014 onwards.

A project noise level criteria exceedance has occurred if at the time of the exceedance:

- Project related noise received by residential receivers exceeds the criteria identified in Table 4 (as applicable); and

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- The exceedance is validated by analysis and assessment of monitoring data (as measured in accordance with the NSW Industrial Noise Policy); and
- Residential Background Level (RBL) noise is not above the Project noise level criteria; and
- The exceedance in noise level criteria is not attributable to some other source (e.g. meteorological event or other source); and
- No landholder agreement is in place to allow the exceedance; and
- No other noise criteria exemptions apply.

Where noise monitoring has recorded a noise criteria exceedance and the exceedance is confirmed as being Project related, the reason for the exceedance will be recorded and the exceedance will be deemed as a Project non-compliance.

Should noise or vibration complaints be received or exceedances of the project related noise levels be identified, supplementary 'targeted' noise monitoring may be necessary to inform the investigation of noise emissions, assessment of data, identification of causes and to inform the design of improved noise control measures required.

Non-compliant noise levels are raised as an 'event/incident' in the Illawarra Coal 'corrective action' management system and reported on our website and in the Annual Review (Refer to Section 8 - reporting and review process).

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7 COMPLAINTS MANAGEMENT

In the event that noise complaints are received in relation to the Bulli Seam operations, the complaint will be managed in accordance with the ICHPL procedure, Handling Community Complaints and Enquiries (Document No: ICHP0112, internal procedure).

Noise monitoring spot checks and surveys are undertaken to detect the development of potential noise issues before they are raised by residential receivers.

Upon receipt of a community complaint, preliminary investigations will commence as soon as practicable to determine the source of the issue. Initial response to the complainant will be made within 24 hours from receipt of the complaint.

Supplementary noise monitoring surveys will also be undertaken as necessary and until satisfactory resolution of the issue.

Where project noise or vibration related issues are raised by an affected landowner or community member and the affected landowner or community member requests feedback in relation the issue raised, the landowner or community member will be provided with the investigation results and proposed course of corrective action.

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8 REPORTING AND REVIEW PROCESS

8.1 Annual Review

ICHPL will report on the performance of the Noise Monitoring Program in the Bulli Seam Operations Annual Review (AR) and provide updates to the Community Consultative Committee (CCC).

The AR will include:

- Noise monitoring results and comparison to performance criteria;
- Noise related complaints and management/mitigation measures undertaken;
- Management/mitigation measures undertaken in the event of any confirmed exceedance of performance criteria; and
- Review of the performance of management/mitigation measures and the monitoring program.

The AR will be submitted to the CCC and the relevant agencies in September each year. A copy of the report will also be made available to the general public via the South32 website. The AR will be prepared in accordance with the requirement of Schedule 6, Condition 4 of the project approval conditions.

8.2 Public Reporting of Results (via website)

A summary of the noise monitoring results, including details of exceedances (as determined in accordance with the protocol for assessing compliance as described in Section 6 of this plan), will be provided on the South32 website.

8.3 Exceedance Notifications

Confirmed exceedances of relevant noise criteria and details of notifications will be published on the South32 public web-site.

Details of non-compliances with noise criteria will also be reflected in Annual Review (AR) for the Project and in EPL Annual Returns where prescribed.

8.3.1 Notification of Noise Criteria Exceedances - Government Authorities

In the event that an exceedance of the relevant noise criteria is confirmed as per protocol, and the exceedance has impacted the amenity of the local community or environment, or is likely to if the exceedance continues, the EPA will be informed.

8.3.2 Notification of Noise Criteria Exceedances – Landowners

Where project noise related issues are raised by an affected landowner or community member and the affected landowner or community member requests feedback in relation the noise issue raised, the landowner or community member will be provided with the investigation results as requested.

Where an exceedance has been confirmed as per protocol, and where requested by the landowner or community member, regular monitoring updates will be provided until the relevant criteria is compliant.

Additional targeted noise monitoring and analysis at the affected landowners premises may be required to verify noise criteria exceedances attributable to the Project.

Within three months of receiving a land acquisition request from an entitled landowner, the acquisition procedures detailed in Condition 4-5 of Schedule 5 of the BSP Project Approval will apply.

8.4 Revision

In accordance with Condition 5 of Schedule 6 of the BSO Project Approval, this NMP and associated monitoring program will be reviewed, and if necessary revised, within 3 months, of:

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- the submission of an annual review if required following submission;
- the submission of an incident report related to noise that has caused, or threatens to cause, material harm to the environment;
- the submission of an independent Environmental Audit report if required by the audit; or
- any modification to relevant Project approval conditions (unless the conditions require otherwise).

8.5 Independent Environmental Audit

In accordance with Condition 9 of Schedule 6 of the BSO Project Approval, an independent Environmental Audit of this Plan will be undertaken every three years. The report will be submitted to the Secretary within 6 weeks of completion.

The 2013 Audit was conducted by URS and the recommendations from the audit were included in the 2014 review and submission of this Plan.

ERM conducted the 2016 Development Consent Audit in January/February 2017 (Extension granted by Department of Planning and Environment (DPE) and Department of Environment and Energy) report was provide on the 22nd of March 2017 to both departments. No recommendation associated with this management plan were identified.

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9 REFERENCES

NSW Industrial Noise Policy (2000)

NSW Road Noise Policy (2011)

Project Approval Conditions

BSOP Environmental Assessment

Noise Impact Assessment – Wilkinson Murray

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10 PLANS

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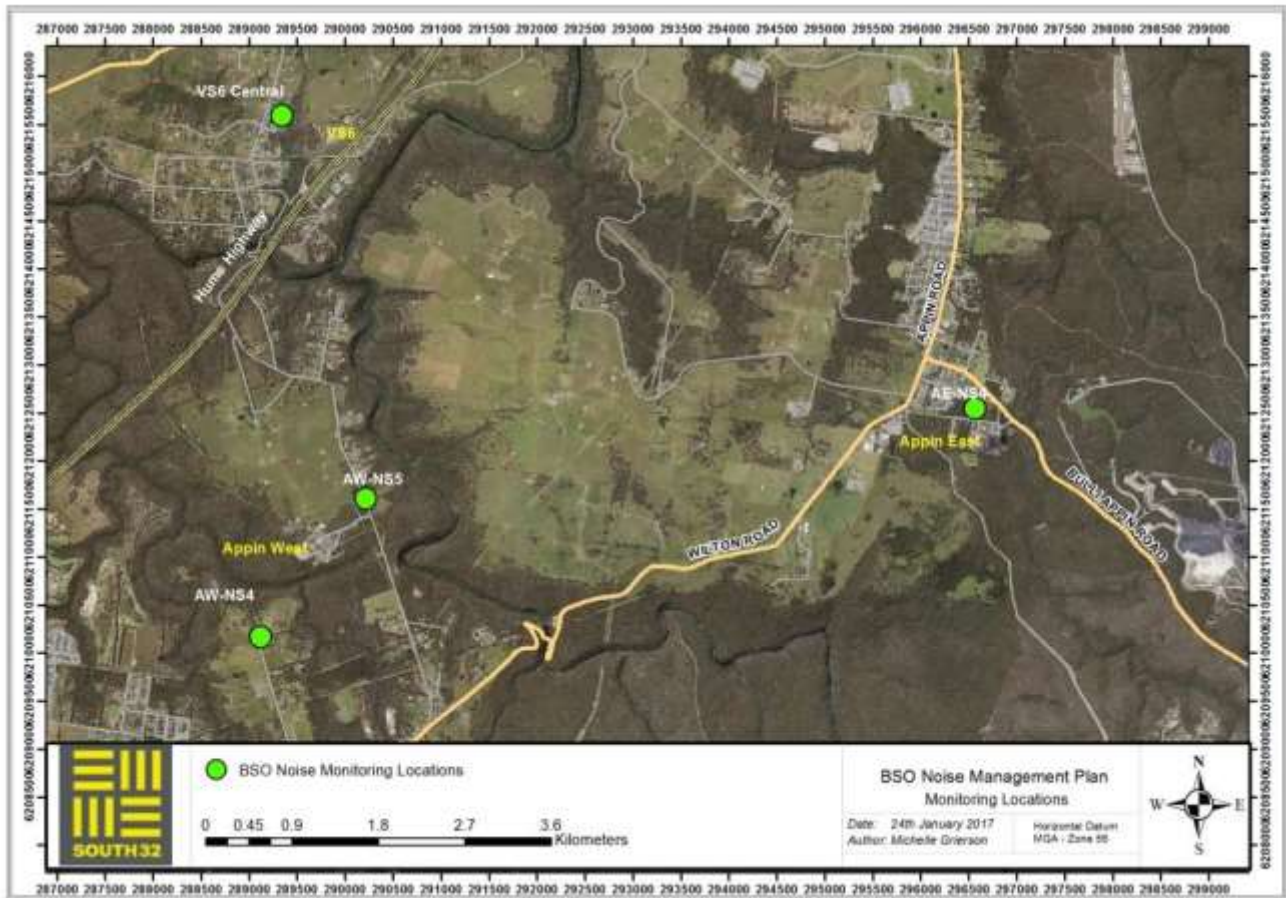
PLAN 1: BULLI SEAM OPERATIONS LOCALITY PLAN



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PLAN 2: BSO ATTENDED NOISE MONITORING SITES





12 APPENDICES

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APPENDIX A – CONSENT CONDITIONS REQUIREMENTS: NOISE MANAGEMENT

Condition	Requirement	Section
5 (Schedule 4)	<p>Noise Management Plan</p> <p>The Proponent shall prepare and implement a Noise Management Plan for the project to the satisfaction of the Director-General. This plan must:</p> <ol style="list-style-type: none"> be prepared in consultation with OEH and WSC, and submitted to the Director-General for approval by 30 September 2012; include provisions to ensure that the road haulage fleet attains and maintains best practices in both equipment and operations; seek to minimise road traffic noise generated by employee commuter vehicles on public roads, particularly Douglas Park Drive and Macarthur Road; outline procedures to manage responses to any complaints or issues raised by the owners of affected residences; and include a noise monitoring program that: <ul style="list-style-type: none"> - uses a combination of real-time and supplementary attended monitoring to evaluate the performance of the project; and - includes a protocol for determining exceedances of the relevant conditions of this approval. 	This Document
4 (Schedule 4)	<p>Operating Conditions</p> <p>The Proponent shall:</p> <ol style="list-style-type: none"> Implement best management practice, including all reasonable and feasible noise mitigation measures, to minimise the construction, operational and road traffic noise generated by the project; Operate a comprehensive noise management system on site that uses real-time noise monitoring data for mining operations and the implementation of noise mitigation measures to ensure compliance with the relevant conditions of this approval; and Regularly assess the real time noise monitoring to ensure compliance with the relevant conditions of this approval, <p>To the satisfaction of the Director-General.</p>	<p>Section 5 - Noise Management and Mitigation; and</p> <p>Section 6 - Noise Monitoring Program</p>
6 (Schedule 4)	<p>Road Traffic Noise Mitigation</p> <p>If after the end of June 2013, road traffic noise generated by the project (including employee vehicles) results in an exceedance by more than 2 dB(A) of the NSW criteria for road traffic noise on Douglas Park Drive or Macarthur Road at any residence on privately-owned land, then the proponent shall, upon receiving a written request from the landowner, implement reasonable and feasible noise mitigation measures (such as double-glazing, insulation, and/or air conditioning) at the residence in consultation with the landowner. 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.</p>	Section 5.7 - Potential Noise Reduction Measures
13 (Schedule 4)	<p>Meteorological Monitoring</p> <p>During the life of the project, the Proponent shall ensure that there is a suitable meteorological station operating in the vicinity of the site the:</p>	Section 6.3.2 - Attended monitoring using handheld portable monitors

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	<ul style="list-style-type: none"> a) complies with the requirements in the <i>Approved Methods for Sampling of Air Pollutants in New South Wales</i> guideline; and b) is capable of continuous real-time measurement of temperature lapse rate in accordance with the <i>NSW Industrial Noise Policy</i> 	
1 (Schedule 5)	<p>Notification of Landowners</p> <p>As soon as practicable after obtaining monitoring results showing:</p> <ul style="list-style-type: none"> a) an exceedance of any relevant criteria in schedule 4, the Proponent shall notify affected landowners in writing of the exceedance, and provide regular monitoring results to each affected landowner until the project is again complying with relevant criteria. 	Section 8.2 Exceedance Notifications

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APPENDIX B – IC COMMITMENTS: NOISE MANAGEMENT

EA Section	EA Commitment	Section
5.12.5	<p>Noise Reduction Program</p> <p>The noise reduction program would be developed in consultation with the EPA (previously part of DECC) and would include, where reasonable and feasible:</p> <ul style="list-style-type: none"> the best available technology for Project upgrades including consideration of acoustical specifications for new Project equipment; desktop design validation and supplier shop acoustical testing; in-situ acoustic testing of new equipment; acoustical field testing during plant commissioning; refitting and/or replacement in the event of non-compliance with acoustic specifications; computer-based acoustical modelling of installed plant using achieved sound power levels; and measuring acoustical compliance of Project upgrades via on-site and off-site operator-attended noise measurements of acoustically significant plant. 	Section 5.9 - Noise Reduction Program
5.12.5	<p>Noise Management Plan including:</p> <ul style="list-style-type: none"> Applicable Project Approval noise criteria/limits Noise monitoring to be undertaken (monitoring locations, frequencies, parameters & specifications) A summary of relevant Project Noise mitigation measures Procedures to be followed in the event of an exceedence Complaint response protocols Response to exceedances 	This Management Plan
5.12.5	<p>Construction Noise</p> <ul style="list-style-type: none"> Noise management measures to be implemented to minimise noise during construction Protocol for community consultation and complaint response Construction times/noise limits Protocol for the ongoing management of construction noise including ICHPL responsibilities for monitoring, review and implementation of the NMP 	<p>Section 5.7.1 - Construction Activities; and</p> <p>Section 5.10.2 - Construction Noise; and</p> <p>Section 7 - complaints management</p>
5.12.5	<p>Road Transport Noise</p> <ul style="list-style-type: none"> Heavy vehicle deliveries to be scheduled during daylight hours where practicable 	Section 5.7.3 - Traffic noise

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	Workforce to be encouraged to car-pool and minimise light vehicle movements	
	Prompt notification of local government authorities or the RTA regarding noticeable deterioration in the road pavement.	

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