



**NARRABRI MINE
ENVIRONMENTAL
MANAGEMENT SYSTEM**

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

ENVIRONMENTAL MANAGEMENT STRATEGY

Approval	Name	Position	Signed	Date
Document Owner:	Brent Baker	Environmental Superintendent		29/05/2020
Authorised by:	Gerald Linde	General Manager		29/5/2020



**NARRABRI MINE
ENVIRONMENTAL
MANAGEMENT SYSTEM**

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

This page has been intentionally left blank



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

Contents

1. INTRODUCTION	6
1.1. Project Approvals.....	10
1.2. Strategic Context and Background Information	10
1.3. Objectives.....	11
2. DESCRIPTION OF THE NARRABRI MINE	12
2.1. Existing Narrabri Mine Environmental Management Plans.....	12
3. STATUTORY REQUIREMENTS.....	15
3.1. Approvals, Licences, Permits and Leases.....	15
3.2. Legislation	15
3.3. Policies and Guidelines for Mining	16
3.4. Relevant Australian Standards.....	18
4. SITE IMPLEMENTATION	19
4.1. Roles and Responsibilities	19
4.2. Training and Competencies	20
4.3. Narrabri Mine Internal Communication.....	20
4.4. EMS Monitoring and Corrective Action	20
4.5. Document Control.....	23
4.6. Retention of Records	23
4.7. Information Dissemination, Complaints, Incident Management and Dispute Resolution..	23
4.8. Response to Non-Compliances	26
4.9. Response to Emergencies	26
5. ENVIRONMENTAL PERFORMANCE.....	28
5.1. Continuous Improvement.....	28
5.2. Managing Unpredicted Impacts	28
6 REVISION HISTORY	29



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

Tables

Table 1: Relevant Project Approval Conditions (PA 08_0144)	6
Table 2: Approved Hours of Operations	12
Table 3: Status of Narrabri Mines' Management Plans and Monitoring Programs	12
Table 4: Roles and Responsibilities	19
Table 5: Monitoring schedule, criteria and responsible persons.	21
Table 6: Noise Assessment Criteria as per the PA 08_0144 Schedule 4, Conditions 1-3.....	22
Table 7: Air Quality Assessment Criteria as per the PA 08_0144 Schedule 4, Conditions 4.....	22
Table 8: Unpredicted Impact Protocol	29

Figures

Figure 1: Regional Location	9
Figure 2: Current Environmental Monitoring Locations.....	14



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

ACRONYMS USED THROUGHOUT THIS DOCUMENT

AR	-	Annual Review
ACHMP	-	Aboriginal Cultural Heritage Management Plan
AQMP	-	Air Quality Management Plan
CHPP	-	Coal Handling and Preparation Plant
DPI&E	-	Department of Planning, Industry and Environment
DRG	-	formerly Division of Resources and Geoscience (now renamed Mining, Exploration and Geoscience, part of the Department of Planning, Industry and Environment)
EA	-	Environmental Assessment
EMS	-	Environmental Management Strategy
EP	-	Extraction Plan (replaces the Subsidence Management Plan)
EPA	-	Environment Protection Authority
EPBC	-	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
EPL	-	Environment Protection Licence
ESAP	-	Energy Savings Action Plan
LMP	-	Landscape Management Plan
Mtpa	-	Million tonnes per annum
MCP	-	Mine Closure Plan
ML	-	Mine Lease
NCO	-	Narrabri Coal Operations Pty Ltd
NM	-	Narrabri Mine
NSC	-	Narrabri Shire Council
NMP	-	Noise Management Plan
OEH	-	Office of Environment and Heritage
PA	-	Project Approval
RMP	-	Rehabilitation Management Plan
WMP	-	Water Management Plan
WCL	-	Whitehaven Coal Limited



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

1. INTRODUCTION

The Narrabri Mine, operated by Narrabri Coal Operations Pty Ltd (NCOPL), is located approximately 30km south-southeast of Narrabri and 10km north-northwest of Baan Baa (Figure 1). The mine is a joint venture between Narrabri Coal Pty Ltd, Narrabri Coal Australia Pty Ltd, J-Power Australia Pty Ltd, Upper Horn Investments (Australia) Pty Ltd, POSCO International Narrabri Investment Pty Ltd and KORES Narrabri Pty Limited. Management of the Narrabri Mine (on behalf of the JV participants) is conducted by Narrabri Coal Operations Pty Ltd (NCO), which is a 100% subsidiary company of Whitehaven Coal Limited (WCL), a publicly listed Company with several mining interests in the Gunnedah-Narrabri region of NSW.

This Environmental Management Strategy (EMS), which forms part of Narrabri Mines' Health, Safety and Environment Management System, describes the overall framework for environmental management on the mine site. The EMS also addresses the principal strategies to be adopted, including compliance management and monitoring, and the consultation / information dissemination processes.

The operations at the mine will be managed in an integrated manner:

- in accordance with PA 08_0144, EPBC:2009/5003, Environment Protection Licence (EPL) 12789 and other licences and approvals from government agencies; and
- in a way which provides for the effective control of all aspects of the operation throughout the life of the mine, i.e. from pre-site development planning, through the site development, construction and operational phases, and culminating in the mine's decommissioning, final rehabilitation and, ultimately, lease relinquishment and/or satisfaction of long-term performance objectives or obligations.

The requirements of PA 08_0144 with respect to the timing for submission and contents of the EMS are contained within *Condition (1) (a) – (f)* and *Condition (2) (a) – (h)* of Schedule 6. Table 1 below outlines the relevant consent conditions and where it has been addressed in this document.

Table 1: Relevant Project Approval Conditions (PA 08_0144)

Project Approval Condition	Section of Document
<p>Environmental Management Strategy (Schedule 6, Condition 1)</p> <p>The Proponent shall revise the Environmental Management Strategy for the Stage 1 project to encompass all proposed mine activities and potential impacts associated with environmental management for the site (Stages 1 and 2) and subsequently implement this revised version of the Environmental Management Strategy to the satisfaction of the Secretary. This strategy must:</p>	This Document
(a) be submitted to the Secretary for approval prior to 30 June 2011;	N/A
(b) provide the strategic context for environmental management of the project;	1.2
(c) identify the statutory requirements that apply to the project;	3



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

Project Approval Condition	Section of Document
(d) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;	4.1
(e) describe the procedures that would be implemented to:	
<ul style="list-style-type: none"> • keep the local community and relevant agencies informed about the operation and environmental performance of the project; 	4.5.1
<ul style="list-style-type: none"> • receive, handle, respond to, and record complaints; 	4.5.2
<ul style="list-style-type: none"> • resolve any disputes that may arise during the course of the project; 	4.5.4
<ul style="list-style-type: none"> • respond to any non-compliance; and 	4.6
<ul style="list-style-type: none"> • respond to emergencies; and 	4.7
(f) include a clear plan depicting all monitoring currently being carried out in the project area.	Figure 2
<p>Management Plan Requirements (Schedule 6, Condition 2)</p> <p>The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include:</p>	This Document
(a) detailed baseline data;	1.2
(b) a description of;	
<ul style="list-style-type: none"> • the relevant statutory requirements (including any relevant approval, licence or lease conditions); 	3
<ul style="list-style-type: none"> • any relevant limits or performance measures/criteria; 	Individual Management Plans
<ul style="list-style-type: none"> • the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the project or any management measures; 	Individual Management Plans
(c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;	4
(d) a program to monitor and report on the;	
<ul style="list-style-type: none"> • impacts and environmental performance of the project; 	4.5 & 5
<ul style="list-style-type: none"> • effectiveness of any management measures (see (c) above); 	4.5 & 5
(e) a contingency plan to manage any unpredicted impacts and their consequences;	5.2



**NARRABRI MINE
ENVIRONMENTAL
MANAGEMENT SYSTEM**

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

Project Approval Condition	Section of Document
(f) a program to investigate and implement ways to improve the environmental performance of the project over time;	4.5 & 5
(g) a protocol for managing and reporting any:	
• incidents;	4.5.3
• complaints;	4.5.2
• non-compliances with statutory requirements; and	4.6
• exceedances of the impact assessment criteria and/or performance criteria; and	Individual Management Plans
(h) a protocol for periodic review of the plan.	2.1



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

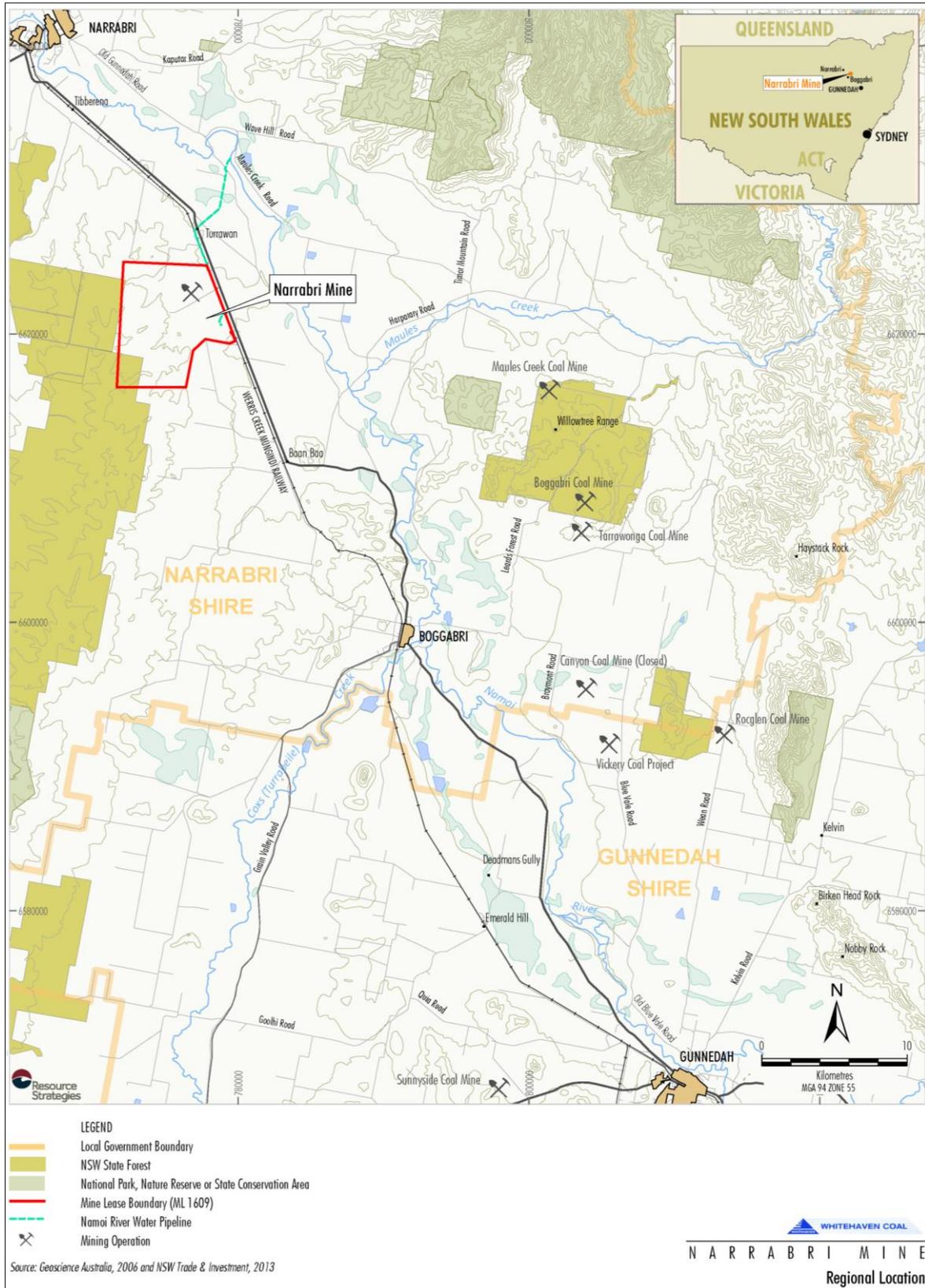


Figure 1: Regional Location



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

1.1. Project Approvals

Project Approval (PA) 05_0102 was issued for the Narrabri Mine Stage 1 Operations on 13 November 2007. A modification to this approval was sought and approved in 2010 to allow for the construction of a Coal Handling and Preparation Plant (CHPP), ventilation shaft and other long lead time items that would ultimately form part of an expanded longwall mining operation. Following detailed studies into the feasibility of Longwall mining at the Narrabri Mine, a project application was lodged under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act), which was subsequently approved (PA 08_0144) by the Minister for Planning on 26 July 2010. Five modifications to PA 08_0144 have been approved by the Minister for Planning to date as follows (Note: Modification 3 was withdrawn):

- March 2011 (an administrative modification in relation to the Extraction Plan – PA 08_0144 MOD1);
- December 2011 (in relation to a one off transport of coal by road for an approximate 600 tonne bulk sample – PA 08_0144 MOD2);
- September 2015 (an extension to the coal stockpiles and associated water management works – PA 08_0144 MOD4);
- December 2015 (increased longwall panel widths to 400m and increased production limit to 11 Mtpa – PA 08_0144 MOD5); and
- January 2017 (an administrative modification to allow for a change in the annual reporting timeframe – PA 08_0144 MOD6).

Upon commencement of Longwall mining operations at the Narrabri Mine, the Stage 1 Operations PA 05_0102 was relinquished. Key elements of the Stage 2 approval can be outlined as follows:

- Underground Longwall mining with an annual production rate of 11Mtpa;
- Mine ventilation and gas drainage;
- Mine dewatering;
- Emplacement of processing reject and storage of saline water;
- Construction and use of a water pipeline from the Namoi River;
- Transportation of the coal from the mine site to the Port of Newcastle via train;
- Final rehabilitation of surface disturbance following completion of the project; and
- All ancillary and related activities.

1.2. Strategic Context and Background Information

This EMS has been developed in accordance with Whitehaven Coals' Health, Safety and Environment Management System. The Whitehaven Systems and the Stage 2 Environmental Assessment (RWC, 2009) provide the strategic context for environmental management of the Narrabri Mine.



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

The Environmental Assessment (RWC, 2009), including the Specialist Consultant Studies Compendium's, provide the detailed background information for the Narrabri Mine on which this EMS is based.

1.3. Objectives

Narrabri Mine recognises that the success of the mine's development from a corporate, neighbour and broader community perspective will be enhanced through the achievement of the following objectives:

- i. The development of a sense of project ownership, community membership and environmental responsibility by all Narrabri Mine and contracted personnel.
- ii. A recognition and acceptance of the physical, biological and social sensitivities of the site by all Narrabri Mine and contracted personnel.
- iii. Developing a culture of environmental awareness as an integral part of all planning and day-to-day activities. The awareness will be achieved through workforce and, to a lesser extent, community education.
- iv. Maintaining an honest and open relationship with the community members and ensuring expeditious responses to any issues which may arise.

To meet the objectives outlined above, this document outlines Narrabri Mines' approach to environmental management at the site.



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

2. DESCRIPTION OF THE NARRABRI MINE

The Narrabri Mine lies within a 5,298ha area covered by Mining Lease (ML) 1609 (the “mine site”), with an indicative mining area of approximately 3,189ha, and a surface facilities area of approximately 457ha.

PA 08_0144 approves the development and operation of the mine as an 11Mtpa underground longwall operation for a period of 21 years, i.e. to 2031.

The mine has completed the development phase and is now in operation. Table 2 summarises the operating hours for the various activities undertaken at the Narrabri Mine.

Table 2: Approved Hours of Operations

Activity	Hours of Operation
Pit Bottom Area development	24 hours / 7 days
Underground mining	24 hours / 7 days
Gas drainage	24 hours / 7 days
Ventilation fan operation	24 hours / 7 days
Crushing, screening, washing and stockpiling	24 hours / 7 days
Rail loading and transportation	24 hours / 7 days
Surface maintenance	24 hours / 7 days
CPP reject disposal	24 hours / 7 days*
Raw materials / supply delivery	7:00am to 10:00pm / 7 days
<small>* Reject disposal activities would generally be restricted to 7:00am to 10:00pm, 7 days per week. However, it is possible that the proportion of reject material generated by the CHPP may exceed the predicted average 5% level for short periods. To account for these periods of elevated reject production, contingent hours of operation would be 24 hours / 7 days (when inversion conditions do not prevail).</small>	

2.1. Existing Narrabri Mine Environmental Management Plans

Management plans and monitoring programs, which comprise the Narrabri Mine Environmental Management System, have been prepared and implemented for the Narrabri Mine in accordance with PA 08_0144. As outlined in Schedule 2, Condition 11 of PA 08_0144, certain strategies, plans and programs may be prepared and implemented on a progressive basis. Table 3 below outlines the status of management plans and monitoring programs required by the Stage 2 approval.

The environmental monitoring subject of the plans outlined below currently being undertaken at the Narrabri Mine is illustrated on Figure 2.

Table 3: Status of Narrabri Mines’ Management Plans and Monitoring Programs

Title	Stage 2 Status
Environmental Management Strategy (Revision 2)	Approved 26 May 2015
Extraction Plan (includes Coal Resource Recovery Plan, Subsidence Monitoring Program, Built Features Management Plan, Land Management Plan, Biodiversity Management Plan, Heritage Management Plan, Water Management Plan and Public Safety Management Plan)	Extraction Plan for longwall panels (LW) 101 to 106 approved by DP&E on 18 May 2016 Extraction Plan for LW107 to LW110 approved by DP&E on 6 April 2017



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

Title	Stage 2 Status
Water Management Plan (includes Site Water Balance, Erosion and Sediment Control Plan, Groundwater and Surface Water Monitoring Programs, Raffinate Discharge and Transfer Control and Monitoring Plan, and Groundwater and Surface Water Response Plans)	Approved 5 April 2013 The Raffinate Discharge and Transfer Control and Monitoring Plan does not need to be produced and approved until 3 months prior to planned discharge or transfer from the site
Noise Management Plan (Revision 5)	Approved 05 June 2018
Air Quality Management Plan Revision 2	Approved 26 May 2015
Landscape Management Plan (includes Rehabilitation Management Plan and Mine Closure Plan)	Approved by DP&E 18 May 2016, updated as part of the Extraction Plan
Aboriginal Cultural Heritage Management Plan (Revision 4)	Approved 3 October 2019
Energy Savings Action Plan (Revision 4)	Approved 11 August 2014
Greenhouse Gas Minimisation Plan (Revision 0)	Approved 12 June 2012
Waste Management Plan (Revision 2)	Approved 26 May 2015
Biodiversity Offset Strategy (Revision 1)	Approved 11 August 2014

NOTE: Revisions to the relevant management plans occur following reviews triggered by the Project Approval and the current versions are available on the Whitehaven Coal website.

Schedule 6, Condition 3 of PA 08_0144 requires that within 3 months of the submission of an:

- (a) audit;
- (b) incident report;
- (c) annual review; and
- (d) any modification to the conditions of approval (unless the conditions require otherwise),

The Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Secretary.



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

3. STATUTORY REQUIREMENTS

3.1. Approvals, Licences, Permits and Leases

All activities at or in association with the mine will be undertaken in accordance with the following approvals, licences, permits and leases which have been issued or have revisions pending:

- PA 08_0144, granted by the Minister for Planning pursuant to Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) on 26 July 2010, as varied.
- The conditions of Environment Protection Licence 12789 (EPL 12789) issued under the *Protection of the Environment Operations Act 1997* (POEO Act).
- The prescribed conditions of Mining Lease (ML) 1609 issued by the Division of Resources and Energy under the *Mining Act 1992* and varied on 1 July 2014 by the Executive Director.
- EPBC: 2009/5003, granted by the Assistant Secretary pursuant to Sections 130(1) and 133 of the *Environment Protection and Biodiversity Conservation Act 1999* as varied on 8 December 2016.
- The prescribed conditions of Exploration Licence (EL) 6243 issued by the Department of Primary Industries under the *Mining Act 1992* on 18 February 2015 by the Minister for Resources and Energy.
- The prescribed conditions of SMP approval 10/9000 issued by the DRG under the *Mining Act 1992* on 13 April 2012.
- Water licences issued by the NSW Office of Water (NOW) under the *Water Act 1912* and the *Water Management Act 2000*.
- Road construction permits issued by Narrabri Shire Council and RMS under Section 138 of the *Roads Act 1993*.
- A licence issued by the WorkCover Authority under the *Explosives Act 2003* and *Explosive Regulation 2005* (for explosives magazines and fuel storage).
- Construction and Occupation Certificates for proposed building works issued by Narrabri Shire Council under Part 4A of the EP&A Act.
- Reject Emplacement Area approval 12/1580, granted by the Minister of Mineral Resources pursuant to Section 100 *Coal Mines Health and Safety Act 2002* on 23 November 2012.

3.2. Legislation

The key reference documents include the following Acts and their respective regulations:

- *Mining Act 1992*.



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

- *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*
- *Explosives Act 2003.*
- *Work Health and Safety Act 2011.*
- *Work Health and Safety (Mines and Petroleum Sites) Act 2013.*
- *Environmental Planning and Assessment Act 1979.*
- *Protection of the Environment Operations Act 1997.*
- *National Parks and Wildlife Act 1974.*
- *Water Act 1912.*
- *Water Management Act 2000.*
- *Fisheries Management Act 1994.*
- *Roads Act 1993.*
- *Local Government Act 1993.*
- *Contaminated Land Management Act 1997.*
- *Soil Conservation Act 1938.*
- *Threatened Species Conservation Act 1995.*
- *Waste Avoidance and Resource Recovery Act 2001.*
- *Protection of the Environment Operations (Waste) Regulation 2014.*

3.3. Policies and Guidelines for Mining

The following policies and guidelines are, or are potentially of relevance to the Environmental Management System for the mine:

- EDG01 Borehole Sealing Requirements on Land: Coal Exploration
- ESF4 Application to Conduct Exploration Activities
- ESG1 Rehabilitation Cost Estimate Guidelines
- ESG3 Mining Operations Plan (MOP) Guidelines, September 2013
- ESB28 Environmental Incident Reporting Requirements
- Annual Review Guideline (October 2015)
- Independent Audit Guideline (October 2015)
- Guidelines for the Preparation of Extraction Plans (Draft, unknown)
- NSW Aquifer Interference Policy (NSW Office of Water, 2012);
- National Water Quality Management Strategy (ANZECC and ARMCANZ, 1994);



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

- National Water Quality Management Strategy: Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC, 2000);
- Managing Urban Stormwater: Soils and Construction and associated Volume 2E: Mines and Quarries (Department of Environment and Climate Change, 2008);
- Environmental Guidelines: Use of Effluent by Irrigation (Department of Environment and Conservation, 2004);
- NSW Biodiversity Offset Policy for Major Projects (OEH, 2014);
- EPBC Act Environmental Offsets Policy (Commonwealth Department of the Environment and Energy, 2012);
- Aboriginal Cultural Heritage Consultation Requirements for Proponents (Department of Environment and Climate Change, 2010);
- NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects (NSW Minerals Council Ltd, 2010);
- NSW Industrial Noise Policy (EPA, 2000);
- Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009);
- Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA, 2007);
- Coal Mine Particulate Matter Control Best Practice – Site Specific Determination Guideline (EPA, 2011);
- National Greenhouse Accounts Factors (Commonwealth Department of the Environment and Energy, 2014);
- Waste Classification Guidelines (EPA, 2014);
- Guidelines for Energy Savings Action Plans (Department of Energy, Utilities and Sustainability, 2005);
- Community Consultative Committee Guidelines – State Significant Projects (DP&E, 2016);
- Australian Dangerous Goods Code Edition 7.4 (Commonwealth National Transport Commission, 2016);
- Strategic Framework for Mine Closure (ANZMEC and MCA, 2000);
- Mine Closure – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth Department of Industry, Innovation and Science, 2016); and
- Storing and Handling Liquids: Environmental Protection – Participants Manual (Department of Environment and Climate Change, 2007).



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

3.4. Relevant Australian Standards

The following standards are, or are potentially, of relevance to the Environmental Management System for the mine. AS refers to an “Australian Standard, NZS refers to “New Zealand Standard” and ISO refers to the “International Organisation for Standardisation”:

- AS / NZS 3580.1.1:2016 – Methods for Sampling and Analysis of Ambient Air: Guide to Siting Air Monitoring Equipment.
- AS / NZS 3580.10.1:2016 – Methods for Sampling and Analysis of Ambient Air: Determination of Particulate Matter – Deposited Matter – Gravimetric Method.
- AS / NZS 3580.9.6:2015 – Methods for sampling and analysis of ambient air - Determination of suspended particulate matter - PM(sub)10(/sub) high volume sampler with size-selective inlet - Gravimetric method.
- AS 1055:1997 – *Acoustics – Description and measurement of environmental noise.*
- AS 2702:1984 – *Acoustics – Methods for the Measurement of Road Traffic Noise.*
- AS / IEC 61672.1:2004 – *Electroacoustics - Sound level meters – Specifications.*
- AS 2601:2001 – Demolition of Structures.
- AS 2187.2:2006 – Explosives: Storage and Use – Use of Explosives.
- AS 4282:1997 – Control of the Obtrusive Effects of Outdoor Lighting.
- AS 1940:2004 (incl. Amdt 1:2004; Amdt 2:2006) – The Storage and Handling of Flammable and Combustible Liquids.
- AS / NZS 1596:2014 – The Storage and Handling of LP Gas.
- AS / NZS / ISO 19011:2014 - Guidelines for Auditing Management Systems.



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

4. SITE IMPLEMENTATION

4.1. Roles and Responsibilities

Ultimate responsibility for the achievement of the objectives outlined in Section 1.3 will lie with Narrabri Mine’s General Manager. Overall site-based responsibility for all activities and all personnel on the mine site, including their compliance with all applicable laws, regulations, licences, approvals, the conditions of PA 08_0144 and achievement of the desired environmental outcomes will be the responsibility of the General Manager.

Table 4 below outlines the roles responsibilities for all site personnel.

Table 4: Roles and Responsibilities

Role	Responsibilities
General Manager	<ul style="list-style-type: none"> • ensure adequate people and resources are allocated to enable this EMS to be effectively implemented.
Environmental Superintendent	<ul style="list-style-type: none"> • implement this EMS with support and guidance from the General Manager; • monitor environmental performance at the site; • ensuring all operations are undertaken in accordance with relevant environmental legislation and approvals; • receipt and response to complaints; • co-ordination / management of monitoring programs; • environmental reporting; • environmental incident reporting; • ensure complaints are recorded and managed appropriately; • site rehabilitation; • keeping abreast of new applicable developments in environmental research and technology as it applies to environmental management on mine sites; and • post-induction education and contact with all site-based and contracted employees on environmental matters.
Site Managers	<ul style="list-style-type: none"> • ensure activities under their control are undertaken in accordance with this EMS; • bring to the attention of the Environmental Superintendent all complaints at first available opportunity; and • maintain an awareness of environmental issues and report any possible non-conformances to the Environmental Superintendent.



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

Role	Responsibilities
Safety and Training Team	<ul style="list-style-type: none"> Maintain the Training Needs Analysis (TNA) and Training Competency Matrix's which records: name of the employee / contractor; required qualifications; and training undertaken.
Employees and Contractors	<ul style="list-style-type: none"> conduct all activities in accordance with this EMS; bring to the attention of their supervisor/manager all complaints at first available opportunity; and maintain an awareness of environmental issues and report any possible non-conformances to their supervisor/manager.

Though retaining the responsibilities identified above, the General Manager and Environmental Superintendent may, at their discretion, delegate specific tasks to suitably qualified and/or experienced operational personnel and/or consultants.

4.2. Training and Competencies

All training, competency assessment, and maintenance of training records in relation to this EMS will be conducted in line with Whitehaven training requirements.

4.3. Narrabri Mine Internal Communication

Communication of information related to this EMS will be undertaken through site based forums such as toolbox talks. Evidence of such undertakings will be recorded and retained.

4.4. EMS Monitoring and Corrective Action

4.4.1 Audits

The audit process and the completion and retention of audit records will be conducted in accordance with the requirements of the Narrabri Mine *Audit and Review Standard*.

The Environmental Superintendent will ensure that an internal audit of this EMS is conducted annually and that an external audit is carried out every three years as outlined in Project Approval 08_0144 MOD 2. All Environmental staff will be trained appropriately to ensure that the implementation of the management plans (Table 5) are conducted efficiently.

4.4.2 Reviews

Within 3 months of the submission of an Annual Review (AR), incident report, audit or any modification to the conditions of PA 08_0144 MOD 2, this EMS will be reviewed and if necessary revised. Any revisions to this document will be submitted to the Secretary for approval.

4.4.3 Plan Monitoring

In addition to the formal means of monitoring the performance of this EMS by scheduled audit and review, every person who performs a function defined by this EMS also has a responsibility to



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

monitor the performance of this EMS and to bring to the attention of the Environmental Superintendent any non-conformance, deviation or potential improvement of which they may become aware.

4.4.4 Corrective Action

Where monitoring of this EMS identifies the need for corrective action to be taken, the Environmental Superintendent will prepare a corrective action plan. Preparation of the plan may require the assistance of internal and external specialists. Details on the preparation of the corrective action plan will be included in the relevant Annual Review (AR) and the site Environment Protection Licence (EPL) Annual Return, and forwarded to the relevant Government agencies prior to implementation.

Table 5: Monitoring schedule, criteria and responsible persons.

Monitoring Type	Monitoring Schedule	Criteria	Responsible Persons
<i>Noise</i>	Attended Monitoring is conducted quarterly. Real Time Monitoring and Temperature Inversion are conducted continuously.	The exceedance criteria is shown on Table 6.	The Environmental Superintendent is directly responsible for monitoring and reporting exceedances to the secretary within a 7 day time period of becoming aware of the issue. This is in compliance with schedule 6, condition 4 of the PA 08_0144.
<i>Air Quality</i>	Monthly	The exceedance criteria is shown on Table 7.	
<i>Water Management</i>	Monthly	Monitored for quantitative measures and toxicity exceedances as per the MP and section 4, conditions 9-21 of the PA 08_0144.	
<i>Heritage</i>	Prior to any major disturbances.	The responsible persons must conduct a detailed aboriginal cultural heritage survey in consultation with the local indigenous community and the OEH as per section 4, conditions 23-24 of the PA 08_0114. Training is to be provided during the induction process to ensure the responsible persons understands the relevance of the task.	
<i>Visual</i>	On going	To be minimised and mitigated as per section 4, condition 29 of the PA 08_0114.	
<i>Energy Efficiency and Greenhouse Gas</i>	Prior to any underground operation that could produce excess greenhouse gases.	Minimise emissions from all underground mining operations as per section 4, condition 32 of the PA 08_0114. A Greenhouse Gas Minimisation Plan is to be submitted prior to longwall coal operations.	



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

Waste	On going	Minimise construction material quantities for contractors to avoid the over-ordering of materials. Stock ordering will be regularly reviewed. The minimisation will be as per section 4 condition 33 of the PA 08_0114.
-------	----------	---

Table 6: Noise Assessment Criteria as per the PA 08_0144 Schedule 4, Conditions 1-3.

Noise Impact Criteria	Location	Day	Evening	Night	
		L _{Aeq} (15 minutes)			
	All privately-owned residences	35	35	35	45
Noise Acquisition Criteria	Location	Day	Evening	Night	
		L _{Aeq} (15 minutes)	L _{Aeq} (15 minutes)	L _{Aeq} (15 minutes)	
	All privately-owned residences	40	40	40	
Additional Noise Mitigation Measures	Location	Day	Evening	Night	
		L _{Aeq} (15 minutes)	L _{Aeq} (15 minutes)	L _{Aeq} (15 minutes)	
	All privately-owned residences	38	38	38	

Table 7: Air Quality Assessment Criteria as per the PA 08_0144 Schedule 4, Conditions 4.

	Pollutant	Averaging Period	Criteria
Long Term Impact Assessment Criteria For Particulate Matter	Total suspended Particular matter	Annual	90 µg/m ³
	Particulate Matter < 10µm (PM ₁₀)	Annual	30 µg/m ³



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

Short Term Impact Assessment Criteria Particulate Matter	Pollutant	Averaging Period	Criteria	
	<i>Particulate Matter < 10µm (PM₁₀)</i>	24hr	50 µg/m ³	
Long Term Impact Assessment Criteria 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

4.5. Document Control

This EMS will be maintained in accordance with the mine's document control system:

- the master copy will be maintained electronically on the mine server;
- where alterations to the EMS are required, such as following formal review, the Environmental Superintendent will update the master copy and notify the Technical Services Manager and Group Environment Manager of the alteration; and
- the Environmental Superintendent will be the only person with access to the master copy for the purpose of making alterations. Copies of the EMS printed from the mine server must be considered to be uncontrolled copies.

4.6. Retention of Records

The assigned persons will ensure this EMS and associated records are retained on file for a period of at least 5 years.

4.7. Information Dissemination, Complaints, Incident Management and Dispute Resolution

4.7.1 Information Dissemination

Dissemination of information to the local community and relevant agencies regarding the mining operation, its progress and environmental management performance, will be achieved by both formal and informal means including the following.

Community Consultative Committee (CCC)

The CCC comprises an independent chair and appropriate representation from Whitehaven, Narrabri Shire Council and the local community.



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

The committee acts as a local focal point for the provision of information to, and receipt of comments from, community members. Narrabri Mine representatives will provide advice on the status of the mine's progress, environmental performance and monitoring results and complaints. The CCC meetings will also act as a forum for discussion of each of the above aspects or any other issue brought up by members of the community through the CCC representatives, or directly with the Narrabri Mine.

The minutes of the CCC meetings will be available on the Whitehaven website.

Copies of all management plans/strategies or monitoring programs, together with the results of independent audits undertaken in accordance with PA 08_0144 are publicly available on the Whitehaven website.

Annual Review (AR)

Each year, Narrabri Mine will prepare an AR in accordance with the DP&E *Annual Review Guideline* and PA 08_0144, which will:

- Describe the development (including any rehabilitation) that was carried out in the past year, and the development that is proposed to be carried out over the next year;
- Include a comprehensive review of the monitoring results and complaints records of the development over the past year, which includes a comparison of these results against:
 - the relevant statutory requirements, limits or performances measures/criteria;
 - the monitoring results of previous years; and
 - the relevant predictions in any EA of the development;
- Identify any non-compliance over the last year, and describe what actions were (or are being) taken to ensure compliance;
- Identify any trends in the monitoring data over the life of the development;
- Identify any discrepancies between the predicted and actual impacts of the development, and analyse the potential cause of any significant discrepancies; and
- Describe what measures will be implemented over the next year to improve the environmental performance of the development.

The AR will be provided to Narrabri Shire Council, relevant agencies and to the CCC members and also made available to the public on Whitehaven Coal website.

Other Methods

Visits by relevant government agencies, e.g. EPA, RR and DPI&E, to inspect the mine site and Narrabri Mine's performance will be documented together with the provision of reports or information as requested.

Narrabri Mine will maintain regular formal and informal contact with relevant government agencies.

Narrabri Mine will provide reports to relevant government agencies in the event of a non-compliance or a potential non-compliance with respect to statutory criteria or guidelines.



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

In addition to the above, Narrabri Mine may also utilise the local press to present feature articles on the mine's progress. Other forms of communication with the community may include the provision of newsletters.

4.7.2 Complaints Management

A complaints management protocol has been developed to ensure an appropriate and consistent level of reporting, response and follow-up is adopted by Narrabri Mine. At a minimum, the following complaints management protocol will be followed on all complaints received:

- a publicly advertised telephone complaints line will be in place to receive complaints during operating hours and record complaints at other times.
- each complaint received will be recorded on a Complaints Form, which will include the following details:
 - the date and time of complaint;
 - any personal details the complainant wishes to provide or if no such details are provided a note to that effect;
 - the nature of the complaint;
 - the action taken by Narrabri Mine in relation to the complaint, including any follow-up contact with the complainant; and
 - if no action was taken by Narrabri Mine, the reason why no action was taken.
- the Environmental Superintendent will be responsible for ensuring that an initial response is provided within 24 hours of receipt of a complaint (except in the event of complaints recorded when the mine is not operational or outside usual business hours).
- the cause of the complaint and any required remedial actions identified.
- additional measures will be undertaken as required to address the complaint.
- once the identified measures are undertaken, the Environmental Superintendent will sign off on the relevant complaint within the Complaints Form.
- if necessary, the Environmental Superintendent will follow-up to confirm the source of the complaint is adequately mitigated.
- a summary of the complaints will be kept in a Complaints Register which will be maintained by Narrabri Mine and made available to the CCC, the complainant (on request) and on the Whitehaven Coal website. A summary of complaints received every 12 months will be provided in the AR.

Based on the nature of individual complaints, specific contingency measures may be implemented to the (reasonable) satisfaction of the complainant. The Environmental Superintendent retains responsibility to ensure that complaints received are properly recorded and addressed appropriately.

4.7.3 Incident Management

In addition to the protocol for complaints management, environmental incidents at the mine will be managed in accordance with the site's emergency and incident management processes, including



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

the site's Pollution Incident Response Management Plan (PIRMP). The reporting of incidents will also be undertaken in accordance with Schedule 6, Condition 4 of PA 08_0144.

4.5.4 Dispute Resolution

Dispute resolution will be undertaken in accordance with Schedule 7, Conditions 3 and 4 of PA 08_0144.

4.8. Response to Non-Compliances

Compliance with all approvals, plans and procedures will be the responsibility of all personnel (staff and contractors) employed on or in association with the mine, and will be developed through promotion of mine ownership under the direction of the General Manager and Environmental Superintendent.

The Environmental Superintendent (or delegate) will undertake regular inspections (i.e. at least monthly), internal audits (i.e. at least annually) and initiate directions identifying any remediation / rectification work required, and areas of actual or potential non-compliance.

Any non-compliance with regulations, licences or approvals will be reported to the relevant authority, together with details of the corrective actions taken to avoid future occurrences.

Non-compliances with the requirements of the mine's EPL will also be reported in each Annual Return.

A review of Narrabri Mine's compliance will be undertaken in accordance with the requirements of NSW Government *Annual Review Guideline* (October, 2015).

Additionally, an independent environmental audit will be undertaken a minimum of once every three years and the report submitted to the Secretary and made available to the public on Whitehaven Coal's website. The independent audit will be undertaken by an appropriately certified auditor whose appointment has to be approved by the Secretary and in accordance with the NSW Government *Independent Audit Guideline* (October 2015). A copy of all publicly available documents will be placed on Whitehaven Coal's website.

4.9. Response to Emergencies

As part of routine mine operations, Narrabri Mine will undertake risk assessments to identify the risk probability and consequences of the proposed activities and aspects of the operation, the adequacy of existing controls to contain the hazards and, where identified as deficient, propose additional controls to further manage or eliminate hazards.

The existing emergency management plan developed for the mine which, though primarily prepared in accordance with Work Health and Safety requirements, extends to environmental emergencies.

Although there are specific procedures for individual situations, all incorporate three basic steps:

1. Protection of personnel as a first priority;
2. Notification of the emergency (internal and/or external); and



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

3. Protection of the environment, plant and equipment.

Initially each of steps (1) and (3) would use internal resources, with assistance from external resources called upon as and when necessary.

Any emergency situations or incidents, which have, or could potentially have, caused environmental harm, will be reported to EPA via the PIRMP process and the DP&E as required by Schedule 6, Condition 4 of PA 08_0144, which requires notification as soon as practicable and a written report to be provided within 7 days..



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

5. ENVIRONMENTAL PERFORMANCE

The success of Narrabri Mines' environmental performance will be assessed by way of its satisfaction of the conditions of PA 08_0144, Conditions of Authority appended to the mining lease, and conditions within the EPL, other approvals, licences or leases. This, in turn, will be measured by way of achievement of key performance outcomes and satisfaction of Narrabri Mines' objectives with respect to the management of:

- Aboriginal cultural heritage;
- Flora and fauna;
- Surface and groundwater;
- Soil resources;
- Subsidence;
- Bushfire;
- Air quality;
- Noise;
- Visibility;
- Waste;
- Rehabilitation; and
- Socio-economic issues.

The assessment of performance, which may be quantitative and/or qualitative, will be reported in each relevant AR.

5.1. Continuous Improvement

Narrabri Mine will investigate and implement ways to improve the environmental performance of the project over time by keeping abreast of best environmental management practices in the industry.

5.2. Managing Unpredicted Impacts

It is considered unlikely that the operation of the Narrabri Mine will result in any unpredicted or unforeseen environmental impacts. In the event that unpredicted impacts do occur the protocol outlined in Table 8 will be adopted, these will be managed in accordance with the measures outlined in Section 4.7.



NARRABRI MINE ENVIRONMENTAL MANAGEMENT SYSTEM

Document Owner:	Environmental Superintendent
Document Approver:	General Manager
Revision period:	3 years
Issue:	4
Last Revision Date:	29/05/2020

WHC-PLN-NAR-ENVIRONMENTAL MANAGEMENT STRATEGY

Table 8: Unpredicted Impact Protocol

Step	Procedure
1	Review the unpredicted impact including consideration of: <ul style="list-style-type: none"> Any relevant monitoring data; and Current mine activities as well as activities in the vicinity of the issue.
2	Commission an investigation by an appropriate specialist into the unpredicted impact, if considered appropriate.
3	Develop appropriate ameliorative measures based on the results of the above investigations, in consultation with relevant government departments.
4	Implement additional monitoring, where relevant, to measure the effectiveness of the improvement measures.

6 REVISION HISTORY

Rev.	Comments	Author	Authorised By	Date
0	Initial document	D Young	C Burgess	December 2007
1	Stage 2 Revision	S Farrar	S Pegg	November 2011
2	3 Yearly Review	S Farrar	D Ellwood	26 May 2015
3	Following submission of 2016 Annual Review	S Farrar	D Ellwood	15 May 2018
4	Updated following DPI&E comments and submitted to DPI&E on 31/05/2019. No response received. DPI&E advised to re-submit.	Brent Baker	Gerald Linde	29 May 2020