



Report

Bulli Seams
Operations
Project
Independent
Environmental
Audit 2013

AUSTRALIA



Bulli Seams Operations Project Independent Environmental Audit

2 April 2014
43177904/IEA/1

Prepared for:
Illawarra Coal Holdings Pty Ltd

Prepared by URS Australia Pty Ltd



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TABLE OF CONTENTS

EXECUTIVE SUMMARY	V
1 INTRODUCTION	1
1.1 Background	1
1.2 Scope of Work	1
1.2.1 <i>Planning and Infrastructure Approval Scope of Works</i>	1
1.2.2 <i>DoE Approval Scope of Works</i>	2
1.3 Audit Methodology.....	3
1.3.1 <i>Documents Reviewed</i>	4
1.4 Personnel and Timing.....	4
1.5 Sensitive Information.....	5
1.6 Format of Report	5
2 SITE DESCRIPTION	7
2.1 BSOP Overview	7
2.2 BSOP Location and History	7
2.2.1 <i>Appin Mine (Appin East and Appin West)</i>	7
2.2.2 <i>West Cliff Colliery</i>	7
2.2.3 <i>North Cliff Shafts Site</i>	8
2.3 Description of BSOP Operations.....	10
2.3.1 <i>Appin Mine (Appin East and Appin West)</i>	10
2.3.2 <i>West Cliff</i>	10
2.4 Development Consents Associated with the BSOP	11
2.4.1 <i>Project Approvals</i>	11
2.4.2 <i>Leases</i>	12
2.4.3 <i>Licences</i>	13
2.5 Activities Occurring During the Site Audit Inspection	14
3 CONSULTATION	15
3.1 Consultation with Key Government Agencies	15
3.1.1 <i>Planning and Infrastructure NSW</i>	15
3.1.2 <i>NSW Department of Trade and Investment, Regional Infrastructure and Services - Division of Resources and Energy (DTIRIS-DRE)</i>	15
3.1.3 <i>(Commonwealth) Department of the Environment (DoE)</i>	15
3.1.4 <i>NSW Environment Protection Authority (EPA)</i>	17
3.1.5 <i>NSW Office of Environment and Heritage (OEH)</i>	17
3.2 Annual Environmental Management Reports	18
4 SITE OBSERVATIONS	19
4.1 Site Inspection Observations.....	19
4.1.1 <i>Appin West Mine</i>	19
4.1.2 <i>Appin East Mine</i>	21

4.1.3	<i>West Cliff Mine</i>	22
4.1.4	<i>North Cliff (redundant)</i>	26
4.1.5	<i>BSOP Operations Area</i>	28
5	ENVIRONMENTAL PERFORMANCE	31
5.1	Incident Management	31
5.2	Complaints Management.....	33
6	COMPLIANCE WITH RELEVANT STATUTORY REQUIREMENTS	37
7	REVIEW OF ENVIRONMENTAL MANAGEMENT SYSTEM	41
7.1	Environmental Management Overview	41
7.2	Environmental Management Strategy.....	44
7.3	Management Plans and Programs	45
7.4	General Summary of Management Plan Adequacy Review	46
8	SUBSIDENCE MANAGEMENT	55
8.1	Background	55
8.2	Site Inspection Observations - Subsidence Management.....	55
8.3	Subsidence Management Plan Development.....	61
8.3.1	<i>Subsidence Prediction</i>	61
8.4	Specific Management Plans.....	62
8.5	Subsidence Monitoring	62
8.6	BHPBIC Subsidence Management Resources.....	63
8.7	Subsidence Management Status Reports	63
8.8	End of Panel Reports.....	63
8.9	Calibration and Updating of Subsidence Assessments	63
8.10	Environmental Monitoring.....	64
8.10.1	<i>Appin Mine Longwall 704</i>	64
8.10.2	<i>West Cliff Colliery Longwall 34</i>	65
8.10.3	<i>West Cliff Colliery Longwall 35</i>	66
8.11	Impacts Related to Georges River.....	67
8.11.1	<i>Subsidence Management Status Reports</i>	69
8.11.2	<i>Notifications of Impact on Georges River Reported to DTRIS-DRE</i>	71
8.12	Community Consultative Committee	73
8.13	Adequacy Assessment and Recommendations	73
9	WATER MANAGEMENT	75
9.1	Water Management Overview	75
9.2	Site Inspection.....	75
9.3	Mine Water Adequacy Review	89
9.3.1	<i>Overview of the Surface Water Management Plan (2012)</i>	89
9.3.2	<i>Management Plan for Water Sensitive EPBC Act Listed Species (September 2012)</i>	90
9.3.3	<i>Overview of the Extraction Plans</i>	90

9.3.4	<i>Monitoring Points and Licensed Discharge Points (LDPs)</i>	91
9.4	Pollution Reduction Programmes	92
9.4.1	<i>Pollution Reduction Programme 18 - Modification to Brennan's Creek Dam off-take</i>	92
9.4.2	<i>Pollution Reduction Programme 19 - Water Discharge Quality Improvement to Upper Georges River via LDP 10</i>	93
9.4.3	<i>Pollution Reduction Programme 20 – Aquatic Health Monitoring Program</i>	95
9.5	Groundwater Monitoring	96
9.6	Adequacy Assessment and Recommendations	96
10	ECOLOGY AND REHABILITATION MANAGEMENT	99
10.1	Ecology and Rehabilitation Overview	99
10.1.1	<i>Strategy and Plan</i>	99
10.1.2	<i>BSOP – Ecology and Rehabilitation Areas</i>	99
10.2	Implementation of Management Plans	104
10.2.1	<i>Rehabilitation Management</i>	107
10.3	Ecology and Rehabilitation Management Plans / Reports	108
10.3.1	<i>Mine Operations Plan (Rehabilitation Management Plan)</i>	108
10.3.2	<i>Coal Wash Emplacement Staging and Rehabilitation Plan (June 2013)</i>	108
10.3.3	<i>BSOP - Shale Sandstone Transition Forest Offset Management Plan</i>	110
10.3.4	<i>Annual Environmental Management Report 2013</i>	110
10.4	Rehabilitation Monitoring	111
10.5	Summary of Recommendations relating to Ecology and Rehabilitation	111
10.6	Adequacy Assessment and Recommendations	112
11	AIR QUALITY MANAGEMENT	113
11.1	Air Quality and Greenhouse Gas Management Overview	113
11.2	Approach to Air Quality and Greenhouse Gas Inspections	113
11.3	Site Observations	114
11.4	Reporting of Results	121
11.5	Air and Dust Complaints	122
11.6	Environmental Protection Licence 2504	122
11.7	Adequacy Assessment and Recommendations	122
12	NOISE MANAGEMENT	127
12.1	Background	127
12.2	Site Inspection Observations - Noise Management	127
12.3	Baseline Noise Assessment	130
12.4	Noise Management and Mitigation Measures	131
12.4.1	<i>Future Noise Mitigation Measures</i>	131
12.5	Reporting of Results	132
12.6	Noise Complaints	132
12.7	Gas Drainage Management Plan Noise Requirements	133

12.8	Adequacy Assessment and Recommendations	133
13	SUMMARY OF NON COMPLIANCES AND RECOMMENDATIONS	137
14	LIMITATIONS	145

TABLES

Table 2-1	Project Approvals Associated with the BSOP	12
Table 2-2	Mining Leases Associated with the BSOP	13
Table 2-3	Licences Associated with the BSOP	13
Table 4-1	Site Inspection Photographs - Appin West Mine	19
Table 4-2	Site Inspection Photographs - Appin East Mine	21
Table 4-3	Site Inspection Photographs - West Cliff Colliery	22
Table 4-4	Site Inspection Photographs - West Cliff Colliery Emplacement Area	25
Table 4-5	Site Inspection Photographs – North Cliff	26
Table 4-6	Site Investigation Photographs - BSOP Operations Area.....	28
Table 5-1	ICHPL Investigation Severity Level Summary	32
Table 5-2	Summary of Incidents from January 2012 to January 2014	33
Table 6-1	Summary of Major Approvals and Licences Assessed.....	37
Table 6-2	List of Strategies, Plans and Programs Reviewed for Adequacy	37
Table 7-1	Adequacy Review of Management Plans / Monitoring Programs.....	48
Table 8-1	Summary of Observations Relating to Subsidence Management	56
Table 9-1	Summary of Observations Relating to Water Management at West Cliff Pit Top	76
Table 9-2	Summary of Observations Relating to Water Management at Appin East Pit Top	82
Table 9-3	Summary of Observations Relating to Water Management at Appin West Pit Top	85
Table 9-4	PRP 19 EPL Requirements by 2016.....	94
Table 9-5	PRP 19 LDP Toxicity Criteria.....	95
Table 10-1	Ecology and Rehabilitation Areas – Bulli Seam Operations	102
Table 10-2	Implementation of the Rehabilitation Management Plan	104
Table 11-1	Summary of Observations Relating to Air Quality Management	114
Table 12-1	Summary of Observations Relating to Noise Management.....	128
Table 13-1	Summary of conditions / requirements assessed as non-compliant or indeterminate and recommendations.....	138
Table 13-2	Summary of Additional Recommendations From Independent Environmental Audit (not related to non compliances)	142

FIGURES

Figure 2-1	Bulli Seam Operations Project Area	9
Figure 7-1	Bulli Seam Operations Project Environmental Strategy Overview	42
Figure 10-1	West Cliff Emplacement Rehabilitation FY13	100
Figure 10-2	West Cliff Final and Post Mining Land Use Conceptual Design	101

APPENDICES

Appendix A	Compliance Matrix
Appendix B	EPBC Compliance Audit
Appendix C	EPA Consultation Letter

ABBREVIATIONS

Abbreviation	Description
AEMR	Annual Environmental Management Report
AHD	Australia Height Datum
AST	Aboveground Storage Tank
AQMP	Air Quality Management Plan
BATEA	Best Available Technology Economically Achievable
BCD	Brennans Creek Dam
BHS	Broad-headed Snake
BMP	Best Management Practice
BSOP	Bulli Seam Operations Project
CWESRP	Coal Wash Emplacement Staging and Rehabilitation Plan
CCC	Community Consultative Committee
CCL	Consolidated Coal Lease
CoA	Condition of Approval
CHPP	Coal Handling and Preparation Plant
DA	Development Application
Day	The period from 7am to 6pm on Monday to Saturday, and 8am to 6pm on Sundays and Public Holidays
Department	Department of Planning and Infrastructure
Director-General	Director-General of Department of Planning, or delegate
DoE	Department of the Environment formerly Department of Sustainability, Environment, Water, Population and Communities
DP&I	Department of Planning & Infrastructure now known as Planning and Infrastructure
DTIRIS-DRE	Department of Trade and Investment, Regional Infrastructure and Services (formerly Department of Primary Industries (DPI))
EA	Environmental Assessment – Bulli Seam Operations Project
EC	Effective Concentration
EIS	Environmental Impact Statement
EEC	Endangered Ecological Community, as defined under the NSW Threatened Species Conservation Act 1995
Environmental consequences	Environmental consequences of Subsidence Impacts, including: damage to infrastructure, buildings and residential dwellings; loss of surface flows to the subsurface; loss of standing pools; adverse water quality impacts; development of iron bacterial mats; cliff falls; rock falls; damage to Aboriginal heritage sites; impacts on aquatic ecology, ponding etc.
EMP	Environmental Management Plan
EMS	Environmental Management System (certified to ISO 14001:2004)
EPA	Environment Protection Authority
EPBC	Environmental Protection and Biodiversity Conservation
EPBC Act	<i>Environmental Protection and Biodiversity Conservation 1999</i>
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPL	Environment Protection Licence
Evening	Evening is defined as the period from 6pm to 10pm
GDMP	Gas Drainage Management Plan
GHG	Greenhouse Gas
GLD	Group Level Document
Ha	Hectares
HSEC	Health, Safety, Environment and Community
HVAS	High Volume Air Sampler
IINSW	Industry and Investment NSW

Abbreviation	Description
IEA	Independent Environmental Audit
IC	Inhibiting Concentration
ICH	Event Reporting and Investigation procedure
ICHPL	Illawarra Coal Holdings Pty Ltd
IBC	Intermediate Bulk Container
ICAM	Incident Cause Analysis Method
INP	Industrial Noise Policy
ISO	International Organization for Standardization
Land	Land means the whole of a lot, or contiguous lots owned by the same landowner, in a current plan registered at the Land Titles Office at the date of this approval
LC	Lethal Concentration
LDP	Licensed Discharge Point (as identified in EPL 2504)
L	Litre
LW	Longwall
m	Metre
Mine Water	Water that accumulates within active mining areas, coal rejects emplacement areas, tailings dams and infrastructure areas, synonymous with dirty water
MOP	Mining Operations Plan
MRD	Medium Radius Drilling
MSGD	Mine Safety Gas Drainage
Mining Operations	Includes all coal extraction, processing, and transportation activities carried out on site
Minister	Minister for Planning, or delegate
Mtpa	Million tonnes per annum
Night	The period from 10pm to 7am on Monday to Saturday, and 10pm to 8am on Sundays and Public Holidays
NMP	Noise Monitoring Program
NOW	NSW Office of Water (adopted certain responsibilities of DWE from July 2009)
OEH	Office of Environment and Heritage (formerly Department of Environment, Climate Change and Water (DECCW))
Planning & Infrastructure	An executive agency of the Department of Premier & Cabinet, formerly known as the Department of Planning & Infrastructure (DP&I).
<i>POEO Act</i>	<i>Protection of the Environment and Operations Act 1997</i>
PED	Personnel Emergency Device
PIRMP	Pollution Incident response Management Plan
Privately owned land	Land that is not owned by a public agency, or a mining company (or its subsidiary).
Project	The development as described in the EA
Proponent	Illawarra Coal Holdings Pty Ltd
PRP	Pollution Reduction Programme
REF	Review of Environmental Factors
ROM	Run of Mine
RMS	Roads and Maritime Services (formerly Roads and Traffic Authority (RTA))
SEWPaC	Department of Sustainability, Environment, Water, Population and Communities now Department of the Environment (DoE)
SEE	Statement of Environmental Effects
SOC	Statement of Commitments The Proponent's commitments
1SAP	A BHP Billiton standard system
SBB	Southern Brown Bandicoot
SBMP	Service Boreholes Management Plan
Subsidence or Subsidence	Deformation of the ground mass due to mining, being all mining induced

Abbreviation	Description
effects	ground movements, including both vertical and horizontal displacement, tilt, strain and curvature
Subsidence impacts	Physical changes to the ground and its surface caused by Subsidence Effects, including tensile and shear cracking of the rock mass, localised buckling of strata caused by valley closure and upsidence and surface disturbance or troughs
SMP	Subsidence Management Plan
SSTF	Shale / Sandstone Transition Forest
the Strategy	Environmental Management Strategy
TARP	Trigger Action Response Plan
TMP	Traffic Management Plan
TSS	Total Suspended Solids
ULABs	Used Lead Acid Batteries
UST	Underground Storage Tank
VAMP	Ventilation Air Methane Project
WestVAMP	West Cliff Ventilation Air Methane Project <i>see VAMP</i>
WMP	Waste Management Plan
WSC or Council	Wollondilly Shire Council

EXECUTIVE SUMMARY

URS Australia Pty Ltd (URS) was engaged by Illawarra Coal Holdings Pty Ltd (ICHPL) to carry out an Independent Environmental Audit of the Bulli Seam Operations Project (BSOP), located at Appin in the Macarthur Region of New South Wales (NSW).

A condition of the Development Consent of DA 08/0150 (dated 22 December 2011), as issued by Planning and Infrastructure, formerly the NSW Department of Planning and Infrastructure (DP&I) requires ICHPL to commission an Independent Environmental Audit (IEA) prior to the end of December 2013 and every three years thereafter. In addition the Department of the Environment (DoE) (formerly the Department of Sustainability, Environment, Water, Population and Communities (SEWPaC)) Approval (dated 15 May 2012) also requires an IEA prior to 31 December 2013 and every three years thereafter.

The audit was completed in accordance with the Condition of Approval (CoA) No's. 9 and 10, Schedule 5 of DA 08/0150, DoE Approval Condition 18 and URS proposal ENV/1097/P/0 dated 13 September 2013.

This is the first IEA to be carried out of the BSOP under Development Consent of DA 08/0150 and for the purpose of this audit, the audit period has generally been defined as from 22 December 2011 (date of Project Approval) to 28 February 2014 (date of last site visit conducted as part of this audit). This report presents the findings of this audit. The audit period for the DoE Approval has been defined as from 15 May 2012 (date of Approval) to 26 November 2013 (date of last site visit conducted by the flora, fauna and rehabilitation specialist as part this audit).

The audit was conducted in accordance with the requirements set out in the Development Consent of DA 08/0150, Schedule 5, Conditions 9 and 10 and DoE Approval Condition 18. The audit methodology comprised the following activities:

- Initial discussions with ICHPL to organise the audit, including the site visits and timing and provision of documentation;
- Discussions with Planning and Infrastructure to discuss any concerns and areas for particular focus during the audit;
- Review of site compliance register and other documentation provided by ICHPL;
- Site inspections and interviews with key site personnel, over a number of days in November and December 2013;
- Consultation with key government agencies;
- Review of additional documentation provided by ICHPL after the site inspections; and
- Submission of this Report to ICHPL outlining the audit findings.

The IEA assessed compliance with relevant approvals, licences and other management plans applicable to the BSOP. The detailed compliance assessment, including comments and recommendations, is presented in Appendix A. Non-compliance with relevant approvals is discussed in Section 13.

The scope of the audit also included a review of the adequacy of the strategies, plans and programs required under the Development Consent and DoE Approval. The findings of the adequacy review are presented in Sections 7 to 12. A number of continuous improvement opportunities were identified and are presented in this report.

A total of four non-compliant and three indeterminate conditions were identified. These are broken down as follows:

- Project Approval 08-1050 = one non-compliant and two indeterminate conditions identified.
- Environmental Protection Licence 2504 = two non-compliant conditions and one indeterminate condition identified.
- EPBC = one non-compliant condition identified.
- Consolidated Coal Lease 724 and 767 = no non-compliant or undetermined conditions identified.

A summary of recommended actions to improve compliance status are presented in Section 13.

1 INTRODUCTION

1.1 Background

URS Australia Pty Ltd (URS) was engaged by Illawarra Coal Holdings Pty Ltd (ICHPL) to carry out an Independent Environmental Audit of the Bulli Seam Operations Project (BSOP), located at Appin in the Macarthur Region of New South Wales (NSW).

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The audit was completed in accordance with the Condition of Approval (CoA) No's. 9 and 10, Schedule 5 of DA 08/0150, DoE Approval Condition 18 and URS proposal ENV/1097/P/0 dated 13 September 2013.

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1.2 Scope of Work

The IEA was conducted in accordance with the requirements set out in two government planning approvals:

- under Schedule 6, Conditions 9 and 10 of the Planning and Infrastructure Project Approval (dated 22 December 2011); and
- Condition 18 of the DoE Approval (dated 15 May 2012).

The audit scopes required by each agency are provided below.

1.2.1 *Planning and Infrastructure Approval Scope of Works*

The Planning and Infrastructure Approval for the BSOP requires that the IEA be conducted under the following scope of works:

- 9. By the end of December 2013, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:**
 - a) Be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General;**
 - b) Include consultation with the relevant agencies;**

- c) Assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals);
- d) Review the adequacy of strategies, plans or programs required under the abovementioned approvals; and
- e) Recommend appropriate measures or actions to improve the environmental performance of the project, and/or any assessment, plan or program required under the abovementioned approvals.

Note: This audit team must be led by a suitably qualified auditor and include experts in any field specified by the Director-General.

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

As defined in the conditions above, the audit team was required to include experts in any field as required by the Director-General. ICHPL obtained approval for the audit team from Planning and Infrastructure which had experts in the fields of subsidence, air, rehabilitation/ecology, noise, surface water and groundwater management.

1.2.2 DoE Approval Scope of Works

In addition, the DoE Approval requires the following scope of works be carried out:

The person taking the action must commission and pay the full cost of an independent environmental audit of the project. This audit must:

- a) Be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Minister;
- b) Include consultation with relevant State agencies;
- c) Assess the environmental performance of the project and assess whether it is complying with the requirements in this approval (including any assessment, plan or program (however described) required under this approval);
- d) Review the adequacy of strategies, plans or programs required under the abovementioned approvals;
- e) Recommend appropriate measures or actions to improve the environmental performance of the action, and/or any assessment, plan or program required under the abovementioned approvals; and
- f) Audit criteria must be agreed to by the Minister.
- g) Within 6 weeks of the completion of this audit, or as otherwise agreed by the Minister, the person taking the action must submit a copy of the audit report to the Minister. The audit report must address the criteria to the satisfaction of the Minister.

Section 3.1.3 of this report provides further details on the requirements and expectations of DoE for the scope of the audit following consultation with DoE.

1.3 Audit Methodology

The audit methodology comprised:

- Initial discussions with ICHPL to organise the audit, including the provision of documentation, the site visit and timing of milestones;
- A phone discussion with the Planning and Infrastructure to discuss any concerns and areas for particular focus during the audit;
- A six-day site inspection involving interviews with key site personnel for the lead auditor, auditor, rehabilitation, subsidence, air, noise and surface and groundwater specialists. Site inspections dates were as follows:
 - 26 November 2013 – opening meeting and BSOP orientation for whole of audit team including visits to West Cliff, Appin East and Appin West collieries;
 - 27 November 2013 – rehabilitation/ecology and subsidence specialists;
 - 3 December 2013 – Lead Auditor and Auditor document review and interviews at ICHPL head office in Wollongong;
 - 4 December 2013 – air specialist;
 - 5 December 2013 – surface water and groundwater specialist;
 - 6 December 2013 – Lead Auditor and Auditor document review and interviews at ICHPL head office in Wollongong and site visits to West Cliff, Appin East and Appin West collieries; and
 - 28 February 2014 – Lead Auditor and Auditor site visits to West Cliff and North Cliff collieries, selected subsidence impact areas, document review at ICHPL head office in Wollongong and closing meeting.

Site inspections were conducted with the ICHPL Environment Manager and involved interviews with key personnel including, but not limited to, the ICHPL Environment Manager, Property and Landholder Relations Manager, Approvals Advisor (Surface) and the Stakeholder Engagement Advisor. The audit team reviewed relevant documentation provided by the ICHPL after their respective site inspections. A close out meeting was held on 28 February 2014.

- Consultation with key government agencies;
- Review of additional documentation provided by ICHPL after the site inspection; and
- Submission of this Draft Report to ICHPL outlining the audit findings.

This report provides a summary of findings including details of non-compliances identified in the audit and recommended actions to improve compliance status. The report also includes recommendations where continuous improvement opportunities were identified.

The Audit was carried out in accordance with ISO 19011:2003 Guidelines for quality and/or environmental management systems auditing (ISO, 2002), which superseded the ISO 14000 series.

1.3.1 Documents Reviewed

The following information was reviewed during the audit process:

- Regulatory approvals as listed in Section 6.
- Management Plans as listed in Section 7.
- Approvals checklists supplied by ICHPL;
- Approvals Database demonstrated during the audit site inspection;
- Site environmental procedures and checklists;
- Selected correspondence with relevant government agencies and stakeholders;
- Selected records indicating competence, induction and training;
- Selected meeting minutes;
- Selected reports; and
- Evidence of monitoring and review.

Documents used as part of the audit are referenced as part of the text discussing compliance status. It is noted that due to the size of operations and activities of the BSOP it was not possible to audit all documents, systems and processes. The auditors reviewed a selective sample of information that was considered representative of operations and activities across the BSOP to assess compliance with the various approvals, licenses and leases to arrive at the audit findings and conclusions.

1.4 Personnel and Timing

The IEA was conducted by suitably qualified, independent and experienced audit team approved by Planning and Infrastructure. The team comprised:

- Michael Woolley, lead auditor (MCW Environmental Consulting Pty Ltd);
- Nick Ballard, URS auditor;
- Neil Mattes, URS subsidence technical specialist;
- Dave Davis, URS noise technical specialist;
- Harry Grynberg, URS surface water and groundwater technical specialist;
- Nick Maynard, URS surface water and groundwater technical specialist;
- James Grieve, URS air technical specialist; and
- Jane Murray, rehabilitation and ecology technical specialist (Biosis Pty Ltd).

Michael Woolley is registered by RABQSA as a Certified Lead Auditor for Environmental Management, Site Contamination Assessment and Compliance Auditing.

The site visit for the audit was conducted by the team listed above between 26 November 2013 and 28 February 2014.

Personnel interviewed during the site visit included the following people:

- Joanne Page, Head of Health, Safety and Environment, formerly Manager Environment
- Scott Coleman, Manager Environment
- Gary Brassington, Manager Approvals (Mining)
- Hank Pinkster, Manager Infrastructure
- Richard Walsh, Manager Subsidence Engineering
- Bruce Blunden, Manager Approvals (Surface)
- Patrick Booth, Manager Energy Utilisation
- Rosanne Moore, Manager Public Affairs
- Chris Schultz, Manager Property and Landholder Relations
- Ellie Randall, IC Environmental Coordinator, West Cliff Colliery
- Will Mitry, Environmental Coordinator, Appin Mine
- Rob Zylstra, Environmental Coordinator, Appin Mine
- Adam West, Approvals Adviser (Surface)
- Sam Aguirre, Site Coordinator, West Cliff Coal Preparation Plant
- Josh Carlon, Team Leader Monitoring
- David Gregory, Specialist Land and Biodiversity

1.5 Sensitive Information

It is understood that information collected during the audit may be sensitive. Documents used during the audit to verify compliance were kept secure and not distributed outside the relevant personnel involved in the audit.

1.6 Format of Report

The format of this report is as follows:

- Section 1 provides an introduction and defines the scope and nature of the audit;
- Section 2 describes ICHPL and the BSOP operations as observed during the site inspections;
- Section 3 summarises the consultation with key regulatory agencies;
- Section 4 provides a summary of site observations made during the site visit;
- Section 5 provides an assessment of the environmental performance of the development and its effects on the surrounding environment;
- Section 6 describes the auditors' approach to assessing against the relevant standards, performance measures and statutory requirements;
- Section 7 presents the assessment of adequacy of the Environmental Management Strategy and environmental management and monitoring plans;

- Section 8 provides an overview of the BSOP's approach to subsidence management and a review of the adequacy of subsidence management;
- Section 9 provides an overview of the BSOP's approach to surface and groundwater management;
- Section 10 provides an overview of BSOP's approach to rehabilitation management;
- Section 11 provides an overview of BSOP's approach to air quality management;
- Section 12 provides an overview of BSOP's approach to noise management; and,
- Section 13 summarises the non-compliances and recommendations made throughout the report.

Appendix A is a tabulated review of the results of the assessment against the Conditions of Approval, EPL conditions, Consolidated Coal Lease conditions, Statement of Commitments (SoCs) conditions. Appendix B is a tabulated review of the results of the assessment against DoE Conditions of Approval.

2 SITE DESCRIPTION

2.1 BSOP Overview

The NSW Government granted approval for the BSOP in December 2011 (DA 08_0150). The BSOP combines future mining operations and provides for the continuation of coal mining operations at the Appin Mine (Appin East and Appin West) and West Cliff Colliery.

Appin Mine consists of the merged Appin and former Tower collieries. Appin Mine is owned and operated by Endeavour Coal Pty Ltd, a subsidiary company of ICHPL which is a wholly owned subsidiary of BHP Billiton Pty Ltd.

West Cliff Colliery is operated by Endeavour Coal Pty Ltd, a subsidiary company of ICHPL with BHP Billiton as the parent company. BHP Billiton owns 100% of the West Cliff assets.

The BSOP is covered by the one Environment Protection Licence (EPL) No. 2504. The Appin East, Appin West and West Cliff premises were covered by separate EPL's prior to being combined into the one Licence via a Section 58 licence variation on the 29th of June 2010 (Variation: 1114258).

2.2 BSOP Location and History

2.2.1 *Appin Mine (Appin East and Appin West)*

Appin East Colliery located at Appin approximately 37 kilometres (km) Northwest of Wollongong, NSW commenced operations in 1962. Longwall mining was introduced in 1969.

Appin West Colliery (formerly known as Tower Colliery located at Douglas Park, NSW commenced operation in 1978. Following the sinking of the access and ventilation shafts, underground development of the mine was undertaken from 1978 through to 1988 when longwall operations were introduced. Tower Colliery completed extraction of 20 longwall blocks between 1988 and September 2002. The mine was redeveloped underground to establish mining operations in the current longwall Area 7 mining domain.

The underground infrastructure, roadways, conveyor and ventilation systems for Appin East and Appin West were joined in 2003 to become the Appin Mine. The Appin West pit top provides access to the underground mining operations at Appin Area 7 for underground personnel and mine equipment and supplies.

Key areas associated with the current Appin operations include the Appin East pit top site, the Appin West pit top, the Appin East fan site, the Appin West fan site, No.6 fan site and the Douglas Park substation site.

2.2.2 *West Cliff Colliery*

West Cliff Colliery is located 26 km northwest of Wollongong, NSW. Key areas of the West Cliff Colliery Site include the pit top, the West Cliff Emplacement Area and Coal Preparation Plant (CPP) at the North Site and the redundant North Cliff Mine site situated within the newly proclaimed Dharawal National Park Area.

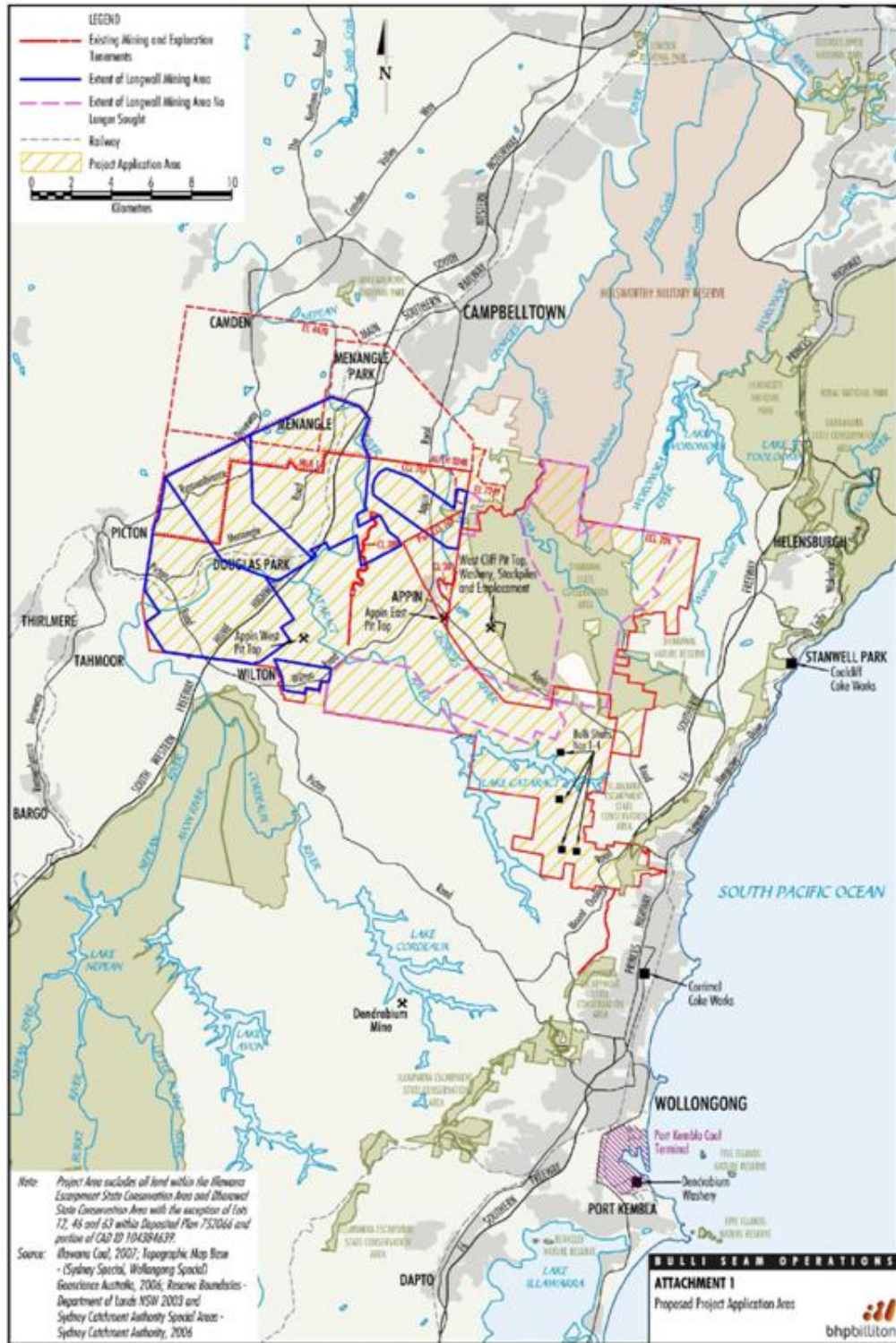
2.2.3 North Cliff Shafts Site

The redundant North Cliff shafts are located approximately 5 km east of the West Cliff Colliery pit top. Infrastructure at North Cliff at the time of the audit included two sealed shafts (No. 3 and No. 4) and associated winder towers, internal roads, three concrete water tanks, concrete bases of former buildings and structures, spoil stockpile, perimeter fencing and sediment dam. The sediment dam is associated with a former EPL Licensed Discharge Point (LDP 2). The site is accessed via a public track through the Dharawal National Park Area. ICHPL are not responsible for the upkeep of the track(s) in the Dharawal National Park Area. Quarterly environmental inspections are conducted at North Cliff.

A summary of operations and activities for North Cliff is provided in the Mining Operations Plan (MOP) 1 October 2012 to 30 September 2019 that states *'mining operations ceased in 1990, at which time all underground equipment was removed from site. The two shafts were temporarily sealed with concrete caps with additional security fencing and associated signage installed to prevent unauthorised access. A number of the buildings and associated structures, and various other pieces of equipment were also removed from site. The spoil heap, which covers an area of approximately 2 Ha and containing 55,000 m³ of loosely tipped shale and sandstone, has been graded, shaped and regenerated with local vegetation species. Illawarra Coal is currently preparing a tender specification to inform the final rehabilitation requirements of the site. No further rehabilitation activities are planned within the MOP term. Once rehabilitation activities are planned, the relevant stakeholder agencies will be consulted and the final rehabilitation plan and objectives will be agreed upon (ICHPL, MOP, 21 September 2012, p.37)'*.

An overview of the BOP project area is shown in Figure 2-1.

Figure 2-1 Bulli Seam Operations Project Area



(Source: ICHPL Environmental Management Strategy, R1.0, August 2012)

2.3 Description of BSOP Operations

2.3.1 *Appin Mine (Appin East and Appin West)*

Underground mining is undertaken using longwall methods in accordance with Subsidence Management Plan (SMP) Approval for Longwalls 704 to 705 within Area 7. Longwall widths at the Appin Mine are 320 metres (m) (rib to rib) with chain pillars of up to 45 m in width.

Run of Mine (ROM) coal extracted from the underground longwall mining operations is transferred by conveyor to the Appin East pit top. ROM coal from the Appin East pit top is either temporarily stockpiled or loaded directly into trucks for transport via road to the West Cliff Colliery Washery. Some ROM coal is also transported via the public road network to the Dendrobium Washery in Port Kembla.

The Appin East pit top consists of the following underground workings and surface infrastructure:

- Longwall panel and development units. At the time of the audit mining was occurring under the Longwall 704-705 Subsidence Management Plans; and
- Surface infrastructure included administration building (to be upgraded), bath house (to be upgraded), stores (to be upgraded), workshop (to be upgraded), storage area (boneyard), explosives storage, men and materials drift, main coal drift, drive house, electricity substation, compressors, coal loader and bins (including conveyor), ROM coal stockpile area, drift winder, settling dam, flocculent dosing plant, dynasand filter and acid dosing facility, stormwater dam and hydrocarbon storage.

The Appin West pit top consists of the following underground workings and surface infrastructure:

- Mine water lagoons, water treatment plant, downcast/upcast ventilation shaft, administration office (to be upgraded), bath house (to be upgraded), former coal loading infrastructure, men and materials winder, workshop and storage area, methane drainage plant, hydrocarbon storage, stabilisation lagoons, former fan house and surface water run-off holding lagoons.

2.3.2 *West Cliff*

Underground mining at the West Cliff is currently undertaken using longwall methods in accordance with approval under Section 138 of the Coal Mines Regulation Act, 1982 and SMP Approval for Longwalls 34, 35 and 36 within West Cliff Area 5 (approved by the DTIRIS-DRE (formerly DPI-MR) on 13 May 2009).

Longwall widths at the West Cliff Colliery at the time of the audit were 305 m (rib to rib) with chain pillars of up to 45 m in width. ROM coal extracted from the underground Longwall mining operation is transferred by conveyor and winder to the West Cliff pit top. The coal wash generated as part of the washing process is emplaced at the purpose-built emplacement area located at the West Cliff Pit Top (North Site).

The West Cliff Colliery consists of the following underground workings and surface infrastructure:

- Longwall panel and development units. At the time of the audit mining was occurring under Longwalls 34, 35 and 36 Subsidence Management Plans; and
- Surface infrastructure including store and workshop, administration offices, bath house, sewage treatment plant, drift portal, coal wash emplacement area (Stages 1, 2 and 3), hydrocarbon storage, coal handling area, winder house, coal drift and conveyor, No. 2 downcast ventilation shaft and men siding, winder building, No. 1 and 2 coal stockpile, No. 3 coal stockpile, No. 4 coal stockpile, bulk coal winder, pump house, ROM coal bins and gas drainage, capture and beneficiation equipment; including west Ventilation Air Methane Project (VAMP).

Existing water management infrastructure at the pit top includes the following:

- Brennans Creek Dam
- Water treatment ponds
- Water collection and settlement ponds
- Tanks
- Irrigation area
- Water diversions
- Water reticulation systems (e.g. tanks, pumps and pipelines)

2.4 Development Consents Associated with the BSOP

The following section provides a summary of Development Consents, Leases and Licences associated with the BSOP.

2.4.1 Project Approvals

Project Approvals associated with the BSOP are shown in Table 2-1.

Planning and Infrastructure granted Approval 08_0150 on 22 December 2011 for the BSOP. The approval allows ICHPL to extract up to 10.5 million tonnes of Run of Mine (ROM) coal per annum, and transport no more than 9.3 million tonnes of product coal in a financial year. PA 08_0150 is due to lapse on 31 December 2041. Schedule 2, Condition 8 of PA 08_0150 requires that: *“By 31 December 2012, or as otherwise agreed by the Director-General, the Proponent shall surrender all existing development consents and project approvals for mining operations relied on by the Proponent for the site (other than this approval) in accordance with Sections 75YA and 104A of the EP&A Act.”*. In accordance with Schedule 2, Condition 8 of the PA 08_0150 existing development consents and project approvals for mining operations with the exception of existing and proposed building works under Part 4A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) were relinquished during the Reporting Period.

It is noted that Project Approvals for the Appin Gas Drainage Project (PA 08_0256) and the Appin Ventilation Shaft No. 6 (PA 10_0079) had not been surrendered as required by Schedule 2, Condition 8 of PA 08_0150 at the time of the audit. The two projects were being managed in accordance with the requirements of the respective Project Approvals and not the BSOP PA 08_0150. The audit did not assess against the requirement of Appin Gas Drainage Project (PA 08_0256) and the Appin Ventilation Shaft No. 6 (PA 10_0079). A letter of surrender for previous approvals was not available for review.

Table 2-1 Project Approvals Associated with the BSOP

Document	Issue Date	Expiry Date
Bulli Seam Operations Project Approval (Planning and Infrastructure) PA 08_0150	22 December 2011	31 December 2041
Appin Gas Drainage Project – Initial	October 2009	-
Appin Gas Drainage Project – 2010	December 2010	Drilling February 2017
Appin Gas Drainage Project – 2012	February 2012	Extraction wells
Bulli Seam Operations Project Approval (<i>Environmental Protection and Biodiversity Conservation 1999</i>) (DoE formerly SEWPaC)	15 May 2012	15 May 2042
No. 6 Ventilation Shaft (Planning and Infrastructure)	4 May 2011	4 May 2041
No. 6 Ventilation Shaft (DoE)	1 April 2011	1 April 2041

2.4.2 Leases

Leases associated with the BSOP are shown in Table 2-2.

The BSOP includes the following two Consolidated Coal Leases (CCL)

- CCL 767 associated with Mine and West Cliff Colliery (granted 29/10/1991; period of renewal until 08/07/2029). CCL 767 covers an area of 20,780 hectares to a maximum depth of 900 metres below Australia Height Datum (AHD).
- CCL 724 associated with West Cliff Colliery only (granted 04/07/1991; period of renewal until 18/12/2031). CCL 724 covers an area of 3,721 hectares to a maximum depth of 900 metres below AHD.

Table 2-2 Mining Leases Associated with the BSOP

Mining Lease / Sub-Lease	Number	Issue Date	Expiry Date
Consolidated Coal Lease	767	29 October 1991	8 July 2029
Coal Lease	388	22 January 1992	21 January 2013*
Mining Lease	1382	20 December 1995	19 December 2016
Mining Lease	1433	24 July 1998	23 July 2019
Mining Lease	1574	09 July 2008	30 December 2023
Mining Lease	1678	27 September 2012	26 September 2033
Consolidated Coal Lease	724	4 July 1991	18 December 2031
Coal Lease	381	24 October 1991	24 December 2012*

Note: * * Application for renewal has been lodged with DTRIS-DRE.

2.4.3

Licences

Table 2-3 Licences Associated with the BSOP

Licence	Number	Issue Date	Expiry Date
BSO Environmental Protection Licence (EPA)	2504	27 June 2011	n/a
Radiation Licence Washery 3-57 (EPA)	9239	1 June 2007	Renewed
Radiation Licence Washery RA1-5 (EPA)	8388	5 May 2007	Renewed
Radiation Licence Washery RA3-20A (EPA)	8389	5 May 2007	Renewed Annually
Pumping Licence from Brennans Creek Dam (Department of Natural Resources)	10SL038404	5 May 2011	Renewed Annually
Licence to divert Brennans Creek around Stage 3 of refuse area (Department of Water and Energy)	10SL056787	9 January 2008	Renewed Every 5 Years
Endeavour Coal P/L - Licence to Sell/Posses Radiation Substances / Apparatus (EPA)	27695		Renewed Every 3 Years

Licence	Number	Issue Date	Expiry Date
Appin - Explosives Licence to Store (WCA)	07-100106-001		
	07-100213-001		

Not all of the above Project Approvals, Leases and Licences were assessed as part of the Independent Environmental Audit. The Project Approvals, Leases and Licences that were assessed are summarised in Section 6.

2.5 Activities Occurring During the Site Audit Inspection

At the time of the audit site visit, a number of activities were observed, as outlined below:

- Longwall mining was occurring in West Cliff Area 5. Area 5 consists of part of Consolidated Coal Lease 767 and Coal Lease 381 which were both transferred from Appin Colliery to West Cliff Colliery in 1997
- Underground mining during the audit period was conducted at Longwalls 34, 35 and 36 and 704 and 705 at Appin Mine
- Area 9 Mine Safety Gas Drainage (MSGD) at sites one and two
- Area 7 MSGD for Longwall 705 Medium Radius Drilling (MRD).
- Construction of Appin Mine’s ventilation shaft No.6
- Redundant surface facilities associated with Longwall 704 were in the process of being rehabilitated. This included grouting and cut-off of boreholes beneath the surface, removal of surface infrastructure, re-establishing natural contours and final re-vegetation
- Construction of gas flares was continuing

Photos of environmentally relevant aspects of the operation, taken during the site inspection in November and December 2013, are provided throughout the report.

3 CONSULTATION

3.1 Consultation with Key Government Agencies

As part of the audit process, URS contacted key government agencies to seek their views on the environmental performance of the BSOP. Feedback obtained is discussed below.

3.1.1 *Planning and Infrastructure NSW*

Feedback was sought on 29 November 2013 from the Planning and Infrastructure officer responsible for the BSOP. The Planning and Infrastructure officer provided a response to URS on 10 December 2013 indicating the Agency was interested in the progress of the following:

- The research program (Condition 10, Schedule 3 of the PA 08_0150).
- The underground coal wash emplacement trial (Condition 20, Schedule 4 of the PA 08_0150).
- Management of:
 - gas drainage (Condition 21, Schedule 4 of the PA 08_0150),
 - service borehole management (Condition 22, Schedule 4 of the PA 08_0150),
 - Personnel Emergency Device (PED) management (Condition 23, Schedule 4 of the PA 08_0150) and
- Progress with management plans required under the PA 08_0150.

The status of BSOP activities with respect to each of these conditions is discussed in the compliance table presented in Appendix A and in various sections of this report.

3.1.2 *NSW Department of Trade and Investment, Regional Infrastructure and Services - Division of Resources and Energy (DTIRIS-DRE)*

Feedback was sought on 29 November 2013 from the DTIRIS-DRE officer responsible for the BSOP. The officer reported by email on 20 December 2013 that *'the Environmental Sustainability Unit at DTIRIS-DRE has no major issues with the environmental performance of BSOP.'*

3.1.3 *(Commonwealth) Department of the Environment (DoE)*

Feedback was sought on 29 November 2013 from the DoE officer responsible for the BSOP who noted the following:

- ICHPL provided an audit criteria prepared by URS based on EPBC Approval Conditions 1 to 19. The department wrote to ICHPL indicating they were satisfied with the criteria except that requirement of Condition 8(h) had been omitted. The department did not get updated audit criteria incorporating this requirement and would like Condition 8(h) incorporated in to the audit criteria and addressed in the audit report.
- The department would like all of the requirements under each of the approval conditions (EPBC Approval Conditions 1 to 19) to be audited and addressed and that the audit report be submitted to the department by 15 April 2014.

- To date the department has approved the following management plans:
 - Shale Sandstone Transition Forest Management Plan (Approval Conditions 4 and 5);
and
 - *Persoonia hirsuta* offset management plan (Approval Condition 1).

The audit should report on the status of implementation of commitments made in the above plans.

- Several other plans are required under the approval conditions and the department would appreciate feedback concerning how ICHPL has addressed or is in the process of addressing these requirements.

DoE comments have been addressed in Section 10 and the EPBC compliance table included as Appendix B of this report.

3.1.4 NSW Environment Protection Authority (EPA)

Feedback was sought on 29 November 2013 from the EPA officer responsible for the BSOP. The EPA provided a letter response (ref: EF13/2195:DOC14/5040-01:ATC) to URS concerning BSOP operations. The response provided by the EPA is included as Appendix C.

The following issues were noted in the EPA letter concerning the BSOP:

- *'Non-compliances were reported with four licence conditions in the two Annual Returns submitted to the EPA since December 2011. The non-compliances relate mainly to operation of small package Sewage Treatment Plants (STP) operated at the West Cliff site and Appin East site. The non-compliances were caused by variable effluent quality due to influent load fluctuation and growth of algae in the final effluent pond at the West Cliff site. Endeavour Coal has undertaken various STP upgrades to improve performance and the EPA is currently reviewing the appropriateness of the conditions.*
- *Endeavour Coal has reported a minimal number of incidents to the EPA under Licence Condition R2 – Notification of Environmental Harm.*
- *The EPA has received relatively few complaints from the community concerning air and noise impacts from the premises since the Project Approval was granted in December 2011 (<5 recorded). The complaints appear to have been satisfactorily addressed by Endeavour Coal through direct communication with the complainants and feedback as required to the EPA.*
- *The EPA has reviewed Air, Noise and Water Management Plans prepared as required by the Project Approval and recommended revisions to the plans particularly for air quality issues. The EPA has also signalled its continuing interest in minimising dust emissions from the site by attaching Pollution Reduction Program 17 - Coal Mine Particulate Matter Control Best Practice to the licence in December 2011. The Program required the licensee to undertake a site specific Best Management Practice determination to identify the most practicable means to reduce particle emissions from its sites. The EPA expects that recommendations from PRP17 will become licence requirements in 2014. The EPA also intends to attach conditions requiring additional dust and fine particulate monitoring as listed in the Air Management Plan.*
- *On 24 April 2013, the EPA issued a legal notice attaching new licence limits for dissolved metals, additional monitoring requirements, and three new PRPs to reduce pollution to the Upper Georges River. BHP is also required to report progress on the programs to the EPA every six months and to carry out biological monitoring in the Upper Georges River over the next six years. The new discharge limits come into force in December 2016' (EPA, 2014).*

3.1.5 NSW Office of Environment and Heritage (OEH)

The NSW OEH has not been involved with the BSOP during the audit period and was not included in the audit consultation process.

3.2 Annual Environmental Management Reports

Condition 6, Schedule 4 of PA 08_0150 require ICHPL to review the environmental performance of the project on an annual basis to the satisfaction of the Director-General. ICHPL use the Annual Environmental Management Report (AEMR) as the Annual Review.

A letter of acknowledgement from Planning and Infrastructure to ICHPL dated 21/01/2013 (ref: MCV12/194) confirmed the 2011/2012 AEMR had been prepared in accordance with DTRIS-DRE guidelines and was accepted as complete. The Agency required that for future AEMRs, plans be included, that errors in the waste summary table be addressed and that Section 3.7 (Weeds) include more detailed information. A review of the subsequent 2012/2013 AEMR identified these requests had been addressed. The letter also noted that a site inspections, had been conducted on 25/10/2012 as part of the AEMR review process at West Cliff Colliery, Appin East and Appin West. The Agency noted of the site inspection that there was general compliance with statutory approval instruments administered by DTRIS-DRE and that some significant upgrades and improvements had been made since the 2011 site inspection. Of note was the comment that rehabilitation at West Cliff Colliery was progressing well with '*some excellent revegetation progress*'; and that '*adequacy of weed control and housekeeping at all sites need to be reviewed on a regular basis and improved where required*'.¹

A letter of acknowledgement from the DTRIS-DRE to ICHPL dated 10/12/2013 confirmed that the Agency had read the 2012/2013 AEMR and had requested that future reports include a comparison of all monitoring results that are required under PA 08_0150 over the previous calendar year, with monitoring results from previous years and relevant predictions in the EA, and include the identification of trends in the monitoring results over the life of the project. Planning and Infrastructure also requested the AEMR include a comparison of any complaints made in the past calendar year with those previously received. Graphical representation was also requested to be provided accompany the discussion of trends to compare current results with those of previous years, including relevant impact assessment criteria and predictions in the EA.

The latest AEMR (i.e. 2013/2014) was not available in the audit period to confirm these requests had been included.

¹ DTRIS-DRE, (2013). *Bulli Seam Operations 2011/2012 Annual Environmental Management Report [Letter]* (Personal communication 21/01/2013, File No. MCV12/194).

4 SITE OBSERVATIONS

4.1 Site Inspection Observations

Observations from the site inspections conducted at the time of the audit are provided below. It is noted that observations directly relating to subsidence, water management, rehabilitation and landscape management, air quality and noise management are detailed in Sections 8, 9, 10, 11 and 12 of this report. The audit team were escorted around the site on seven separate occasions by mine personnel who made themselves available for this purpose. The purpose of the separate visits by specialists was to ensure the efficient management of the resources of the audit team and BSOP personnel.

4.1.1 Appin West Mine

Table 4-1 Site Inspection Photographs - Appin West Mine

ID	Comment	Photo
4-1.	Hazardous waste storage area at pit top	
4-2.	Sealed waste sorting pad in dedicated waste storage area	


ID	Comment	Photo
4-3.	Signage at the equipment storage area (i.e. 'Bull Yard')	
4-4.	'Bull Yard' unsealed area for sorting and cleaning underground equipment. Coal fines are transported to West Cliff Colliery emplacement area	
4-5.	Dedicated waste oil facility	

ID	Comment	Photo
4-6.	Sealed pit top area and ordered storage of equipment and materials	

4.1.2 Appin East Mine

Table 4-2 Site Inspection Photographs - Appin East Mine



ID	Comment	Photo
4-7.	Dedicated waste sorting pad and waste oil draining infrastructure	
4-8.	Dedicated waste oil drainage infrastructure	

ID	Comment	Photo
4-9.	Main truck route inside Appin East	

4.1.3

West Cliff Mine

Table 4-3 Site Inspection Photographs - West Cliff Colliery

ID	Comment	Photo
4-10.	Environmental spill equipment container. Two spill equipment containers were located at the pit top (north and south).	
4-11.	Solcenic 2020 bund containing a layer of rain water. A number of bunds at the West Cliff pit top were observed to contain rain water during the site inspection on 28/02/2014. Water levels in bunds are included on the environmental inspection checklist. Bunds were due to be emptied by vacuum truck week commencing 03/03/2014. This was not confirmed by the auditors.	

- 4-12. Waste sorting area. No plans exist to improve the waste sorting area as surface operations are due to be scaled back by 2016. The majority of underground waste is due to be brought to the surface and sorted at Appin East in approximately two years' time.



- 4-13. Used Lead Acid Batteries (ULABs) and lithium batteries were observed to be stored outside without cover or secondary containment.



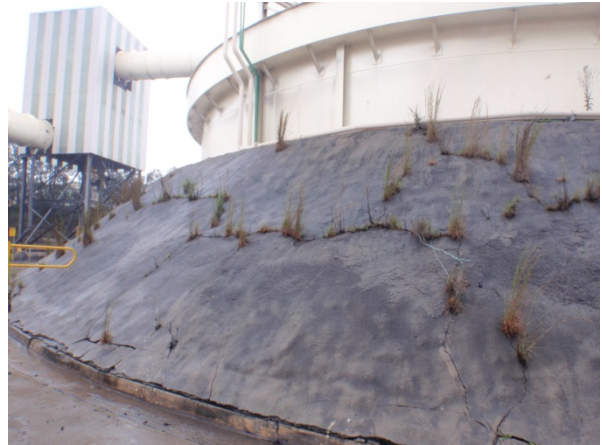
- 4-14. Former on-site refuelling area located in the pit top car park. The area was reported to contain three Underground Storage Tanks (USTs) that were empty. The USTs are due to be removed by the end of July 2014.



- 4-15. The concrete screed to the thickening tanks at the wash plant was observed to be in a poor condition. Weeds were observed growing out of cracks and some locations had been eroded exposing the fill beneath the screed.

Recommendation

The screed should be inspected and repaired to prevent surface water ingress and maintain the integrity of the tanks base.



- 4-16.






- 4-17. Two 30,000 L Above Ground Storage Tanks (ASTs) are located at the Washery. The bund to the tanks was observed to be constructed from besser block with an internal screed of concrete. The bund was reported by BSOP management not to be included on the weekly environmental checklist inspection; however, other bunds and tanks at the pit top are included.

Recommendation

Include the bund to the two reagent tanks on the weekly environmental checklist inspection to ensure that its integrity can be monitored over time.



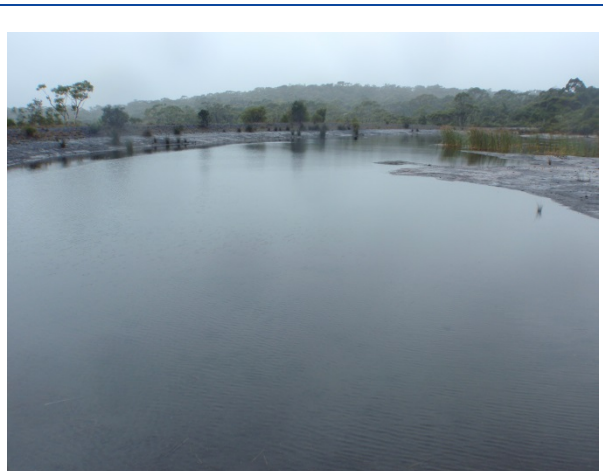




Table 4-4 Site Inspection Photographs - West Cliff Colliery Emplacement Area

ID	Comment	Photo
4-18.	The northern section of the Stage 3 emplacement area facing north.	
4-19.	The formed Stage 3 rehabilitation area facing east towards the pit top that has been covered with topsoil and habitat features.	
4-20.		

4.1.4 North Cliff (redundant)



Table 4-5 Site Inspection Photographs – North Cliff




ID	Comment	Photo
4-21.	Remaining infrastructure at North Cliff.	
4-22.	Former licenced discharge point (LDP) 002 and 'V' notch weir. Recommendation The signage to the former LDP should be removed.	
4-23.	The sediment dam that receives surface water run off from the redundant pit top. Inspections of the dam are conducted on a quarterly basis. Recommendation The dam should be monitored on a regular basis to ensure sediment does not build up and compromise the storage capacity.	

ID	Comment	Photo
4-24.	<p>A small leak at the top of the former man and materials shaft had been sealed with expanding foam. The shaft was capped with concrete, fenced and had signage to warn of potential flammable gas. The leak was not being monitored at the time of the audit.</p> <p>Recommendation</p> <p>ICHPL to perform a screening calculation to assess if this leak is a potential significance to GHG emissions and to determine management measures.</p>	
4-25.	<p>Redundant service conduits had been filled at the ends to allow fauna to escape should it fall into the shallow trench.</p>	

4.1.5 BSOP Operations Area

Table 4-6 Site Investigation Photographs - BSOP Operations Area

ID	Comment	Photo
4-26.	Rehabilitated land adjacent to Area 9 Gas Drainage Site 1	
4-27.	Sound barriers at Area 9 Gas Drainage Site 2	
4-28.	Rehabilitated area for LW703 MRD on Morton Road	

ID	Comment	Photo
4-29.	Rehabilitation at LW704	
4-30.	Gas extraction plant for LW704 and LW705	
4-31.	Perimeter planting of vegetation to the access road off Menangle Road	

5 ENVIRONMENTAL PERFORMANCE

This Section addresses the requirement of the scope of works to “assess the environmental performance of the project”.

ICHPL has developed the following management / monitoring plans to monitor the environmental performance of the BSOP and mitigate its effects on the surrounding environment:

- Environmental Management Strategy (Document Ref: ICHMP0231, Rev1)
- Surface Water Management Plan
- Waste Management Plan
- Heritage Management Plan
- Air Quality and Greenhouse Gas Management Plan
- Gas Drainage Management Plans
- West Cliff Stage 4 Emplacement Area Management Plan
- Service Boreholes Management Plan
- Noise Management Plan
- Subsidence Management Plans / Infrastructure Management Plans
- Pollution Incident Response Management Plan
- Traffic Management Plan

The auditors based the assessment of the environmental performance of the BSOP on the assessment of implementation of the above management and monitoring plans as well as the assessment of compliance with the PA 08_0150, EPL, Mining Lease, CCL, SoC and SMP approvals. The findings of this assessment are provided in the Compliance Matrix presented in Appendix A and Appendix B with the identified non-compliances and associated recommendations summarised in Section 13.

The adequacy of the above management plans has been assessed in Sections 7 to 12 of this report as part of specific chapters addressing the areas of specialist input.

In addition, to further evaluate the Project's environmental performance, the auditors reviewed the environmental incidents and complaints recorded during the audit period. The discussion of incidents and complaints is provided below.

5.1 Incident Management

Section 8, Non-Compliance, Corrective Action and Preventative Action (p.20) and Section 9, Emergency Response (pp.20-21) of the Strategy outline the management of incidents for the BSOP.

An Event Reporting and Investigation (ICH) procedure (ref: ICHP0098) outlines the process followed by ICHPL for the management of events including investigation and internal reporting processes. The procedure applies to environmental events and audit actions at BSOP locations.

The following documents are available for incident management at the BSOP:

- West Cliff Mine Incident Management Manual (for Mine Site, Methane Drainage and Ventilation Shafts)
- Appin Mine Incident Management Manual (for Mine Site, Methane Drainage and Ventilation Shafts)
- West Cliff Coal Preparation Plan Incident Management Manual
- Logistics Incident Response Manual
- External Affairs Field Teams Emergency Preparedness and Response Plan
- Resource & Exploration and Gas & Ventilation Field Teams Emergency Preparedness and Response Plan
- Brennans Creek Dam Safety Emergency Management Plan
- EDL Emergency Management Plan (for WestVAMP)
- Event Reporting and Investigation (ICH) procedure

It is noted that not all of the above documents were available for review by the auditors. The above manuals detail the actions required during an emergency to mitigate damage and loss and expedite recovery. The documents also define the organisational structure to be in place during an emergency and the duties to be carried out by members of the Incident Management and Incident Support Teams where relevant. The above manuals are to be used in conjunction with the BSOP Pollution Incident Management Response Plan (PIRMP), dated August 2012 (Document No. ICHMP0229) as required under section 153A of the POEO Act. The PIRMP defines how internal and external pollution reporting is to be undertaken. Section 3 (p.8) of the PIRMP outlines incident response protocols.

Incidents are logged in 1SAP and are determined according to the severity of the event using the investigation severity level matrix included as Appendix A of the ICH procedure. The Actual and Potential Impact Type are to be determined in accordance with severity level matrix. The ICHPL investigation process is summarised in **Table 5-1**.

Table 5-1 ICHPL Investigation Severity Level Summary

	Severity Level				
	1	2	3	4	≥5
Actual	No Formal Investigation Required	5 Whys & Timeline	5 Whys & Timeline	ICAM	ICAM
Potential	No Formal Investigation Required	No Formal Investigation Required	No Formal Investigation Required	5 Whys & Timeline	ICAM

Actual Level 1 incidents require no formal investigation, Level 5 incidents require an Incident Cause Analysis Method (ICAM).

Table 5-2 summarises the number of incidents recorded by the determined level of severity during the audit period.

Table 5-2 Summary of Incidents from January 2012 to January 2014

Actual Severity	No. of Incidents*
Level 0~	43
Level 1	84
Level 2	9
Level 3	0
Level 4	0
Level ≥5	0

Note:

~ Level 0 are reported in 1SAP where there is an at risk behaviour or condition that has the potential to cause harm or danger to people, assets or the environment.

* data includes environmental and health and safety incidents for West Cliff Colliery, Appin East and Appin West.

5.2 Complaints Management

Section 6, Complaints and Dispute Resolution (pp.18-19) of the Strategy outlines the management of complaints for the BSOP. A procedure titled "*Handling Community Complaints & Enquiries Procedure*" specifies the process for managing community complaints and disputes. The complaints handling process is managed by the ICHPL External Affairs team.

The BSOP operates a toll free 1800 Community Complaints / Inquiry Line (1800 102 210) and an email address: ICEnquiries@bhpbilliton.com. The telephone number is operated 24 hours, 7 day per week by a call centre. The Landholder Relations Team representative is required to respond to the contact promptly (within 24 hours) and liaise with operational personnel to attend to any issues. Complaints are documented and entered into 1SAP in accordance with the ICHPL Event Incident Management procedure. 1SAP was implemented in September 2012. Prior to the implementation of 1SAP ICHPL used a system called FirstPriority to manage complaints. The FirstPriority system was locked at the time of the audit and was a read only database.

A second database, the Stakeholder Database, is used to store details concerning complaints, including the date and time of the complaint, the complainant's name, contact phone number, who received the complaint, the initial response to the complainant, any necessary further actions and feedback from the complainant. Documents including incident reports can be attached to the Stakeholder Database. 1SAP provides a unique reference numbers so that complaints can be identified between the two systems. The Stakeholder Database and 1SAP were observed during the audit.

Complaints are reported daily to the Health Safety Environment and the External Affairs teams and weekly to site management teams. A summary of complaints are reviewed by the ICHPL Senior Leadership Team and provided in the West Cliff Mine and Appin Mine (BSOP) Annual Environmental Management Report.

The community are able to visit the ICHPL Appin Community Office every Tuesday to discuss any concerns and raise a complaint.

A monthly complaints register is uploaded to the BHP Billiton website (http://www.bhpbilliton.com/home/aboutus/regulatory/Documents/_coal/illawarra/bulliseam/131203_coal_illawarra_bullseam_CommunityComplaintsReportNovember2013.pdf).

The following is noted based on a review of complaints from 31 October 2011 through to 27 December 2013:

- Two noise complaints were received from the same complainant between 31/10/2011 to 27/12/2013 concerning BSOP operations and activities:
 - Appin East - Noise from loading bins at Appin East Pit Top (1SAP ref: 402532880) – received 12/04/2013.
 - Appin East - Noise and dust from Appin East Pit Top (1SAP ref: 402918269) – received 20/06/2013.
- The following two dust complaints were received between 31/10/2011 to 27/12/2013 concerning Appin Mine:
 - complainant raised concerns about coal dust from Appin East Pit Top clogging gutters on their property. ICHPL organized an inspection of the Appin site and reviewed dust data at the time of the complaint (1SAP ref: 403035645). The investigation report identified that dust levels were below approved levels. Received 09/07/2013.
 - a resident complained that dust was covering their property adjacent to Appin East. BSOP personnel investigated the property and discussed the concerns of the resident (1SAP ref: ICWEV12070029). Received 17/07/2012.
- One subsidence related complaint was received on 22/06/2013 from a driver concerning impacts from expansion joints on the Hume Highway following subsidence mitigation works (1SAP ref: 402933904). ICHPL reported that there was no further discussion with the complainant and the event was not entered into the Stakeholder database.
- A total of 16 complaints were received from 31/10/2011 to 27/12/2013 concerning debris/rocks falling from trucks and damaging public vehicles. The last complaint from the data reviewed was on 27/12/2013.
- A total of 28 noise complaints were received from 31/10/2011 to 27/12/2013 concerning the Appin Area 9 Gas Drainage Project Area 9 (PA 08_0256).
- A total of five noise complaints were received from 31/10/2011 to 27/12/2013 concerning the Appin Ventilation Shaft No. 6 Project (PA 10_0079).
- One noise complaint was received from 31/10/2011 to 27/12/2013 concerning the Appin Gas Drainage Project (Area 7) (PA 08_0256) (PA 08_0256).
- One light complaint was received at MSGD Site 1 for the Appin Area 9 Gas Drainage Project Area 9 on 25/03/2012 (1SAP ref: ICAEV12030012) (PA 08_0256).

The 2011/2012 and 2012/2013 AEMRs were sighted and noted to include a summary and discussion of the complaints received during the respective reporting periods including the actions taken to resolve the complaint. A summary of complaints are presented at the CCC meetings that are held every two months.

The 2011/2012 AEMR notes that 31 complaints were received in relation to operations from the Appin surface infrastructure (including project work and coal transportation) and that West Cliff Colliery operations received no formal community complaints during the reporting period. The 2011/2012 AEMR notes that 36 complaints were received in relation to BSOP operations (including Pit Tops, Mine Safety Gas Drainage projects, exploration work and coal transportation) and that West Cliff Colliery operations received no formal community complaints during the reporting period.

The complaints register reviewed for the period 31/10/2011 to 27/12/2013 averaged approximately one noise complaint per month over a 26 month period (36 noise complaints). The majority of these complaints were associated with the Appin Gas Drainage Project Areas 7 and 9. The auditors visited both sites and observed noise mitigation measures (refer to Chapter 12).

The second greatest number of complaints from the data reviewed concerned rock and/or debris falling from trucks on public roads resulting in damage to public vehicles. An investigation into the incidents by ICHPL identified that the cause of the incidents was from small pebbles being released from the tyre treads of trucks. ICHPL reported that the trucking contractor is looking into an alternative tyre that has a tread that is less susceptible to collecting small pebbles and is approved to run on the vehicles. A road occupancy licence (ref: SR4454), dated 19/12/2013 and issued by the Roads and Maritime Services (RMS) to the ICHPL road haulage supplier was available for the period 01/01/2014 to 30/06/2014 for the mobile shoulder closure during bobcat sweeping of roadway debris on Appin Road.

Based on a review of the complaints data available, complaints were found to be managed satisfactorily and appeared to have been generally investigated adequately and mitigation measures considered and implemented, where feasible. No discussions were held with complainants or the community during the audit.

6 COMPLIANCE WITH RELEVANT STATUTORY REQUIREMENTS

This Section fulfils the requirement to assess whether the project is complying with the relevant requirements in its Development Consent and any relevant mining lease and EPL.

Table 6-1 identifies the major approvals, licences and leases held by the BSOP, and which were assessed as part of this audit.

Table 6-1 Summary of Major Approvals and Licences Assessed

Issuing / Responsible Authority	Type of Lease, Licence, Approval	Expiry
Minister for Planning and Infrastructure (Planning and Infrastructure) and related Statement of Commitments	Development Consent 08_0150	31 December 2041
Department of the Environment	<i>Environmental Protection, Biodiversity and Conservation Act 1999</i> (EPBC Act) BSOP Approval	15 May 2042
Environment Protection Authority	Environment Protection Licence 2504	n/a
DTIRIS-DRE	Consolidated Coal Lease 724	18 December 2031
DTIRIS-DRE	Consolidated Coal Lease 767	8 July 2029

It is noted that not all Approvals were considered in the audit. The audit did not cover all Mining Leases, and did not include an assessment of Exploration Licences and Borehole Monitoring Licences or water extraction licences.

At the request of ICHPL the conditions of CCL 724 have not been included in this report for confidentiality reasons. URS assessed the compliance of the conditions of CCL 724 and a summary of non-compliances and recommendations are provided in Section 13.

A summary list identifying the strategies, plans and programs that were reviewed for adequacy is provided in Table 6-2.

Table 6-2 List of Strategies, Plans and Programs Reviewed for Adequacy

Strategy / Plan / Program	Date Prepared / Revised	Approval Date
Environmental Management Strategy	August 2012	14 September 2012
Traffic Management Plan – Draft	December 2012	Pending Approval
Waste Management Plan	September 2012	7 January 2013
Heritage Management Plan	October 2012	5 November 2012
WCP Emplacement Area Management Plan (incorporating “Emplacement Area Management Plan” and “Coal Wash Emplacement Staging and Rehabilitation Plan	Revision 3 (June 2013	Pending Approval

Strategy / Plan / Program	Date Prepared / Revised	Approval Date
Gas Drainage Management Plan Longwalls 36 and 37 (August 2013)	August 2012	27 August 2012
Service Boreholes Management Plan	October 2012	6 May 2012
Personal Emergency Device (PED) Communications Management Plan	The PED Communications Management Plan has not been required within the audit period and has therefore not been prepared. Furthermore there are no plans to install a PED cable as technology has advanced and BSOP communications system are being installed underground. ICHPL has a Tickit obligation to create a management plan if this changes.	N/A
Pollution Incident Response Management Plan	August 2012	N/A
Various Subsidence Management Plans	-	Approved Prior to PA 08_0150
Surface Water Management Plan	December 2012	7 January 2013
Air Quality and Greenhouse Gas Management Plan	August 2013	7 January 2013
Noise Management Plan	December 2012	7 January 2013

The status of the performance of the BSOP during the audit, in respect of each of the Ministers Conditions of Approval (PA 08_0150), EPL conditions, and Consolidated Coal Lease conditions is presented in Appendix A. An assessment of compliance with DoE EPBC requirements is presented in Appendix B. Conditions considered to be not complied with or indeterminate have been listed in Section 13 of this report.

Performance categories in respect of compliance with PA 08_0150, EPL 2504, CCL and SoCs are defined as follows:

- Compliant currently in compliance;
- Non Compliant currently not in compliance;
- Not Applicable condition of consent not applicable at time of audit or had not been triggered;
- Indeterminate it has not been possible to determine whether compliance exists; and
- Not Assessed the condition has not been assessed as part of the scope of this audit.

Performance categories in respect of compliance with EPBC requirements are defined as follows:

- **Compliance** A rating of 'compliance' is given when the auditee has complied with a condition or element of a condition;
- **Non Compliance** A rating of 'non-compliance' is given when the auditee has not met a condition or element of a condition;
- **Not Applicable at time of audit** A rating of 'not applicable at the time of the audit' is given when the condition or element of a condition falls outside the scope of the audit e.g. if an activity has not yet commenced;
- **Undetermined** A rating of 'undetermined' is given when the condition or element of a condition falls inside the scope of the audit but there is insufficient evidence to make a judgment on compliance or non-compliance; and
- **Observation** An 'observation' may be made about issues relevant to the protection of a matter of national environmental significance when the issue is not strictly related to compliance or non-compliance with a condition.

Comments and observations are listed alongside each condition to provide context and reasons for each compliance finding. Where appropriate, recommendations have been provided alongside these conditions.

Where compliance with a condition had not been achieved during the audit period, however, the site could demonstrate current compliance, this has been recorded as such.

Conditions considered Non Compliant have been presented in Section 13 of this report as a summary table. The table includes a discussion of the compliance status and recommendations for improvement where appropriate.

In general, URS has not undertaken a rigorous or technical assessment of the documents required by the CoA, EPL, ML or CCL, particularly where these documents have been signed off and/or approved by relevant regulatory authorities (for example, Planning and Infrastructure, EPA, DTIRIS-DRE).

7 REVIEW OF ENVIRONMENTAL MANAGEMENT SYSTEM

This Section fulfils the requirement to assess the adequacy of strategies, plans or programs required under the Development Consent. The implementation of the management plans / programs is discussed in the compliance tables at Appendix A.

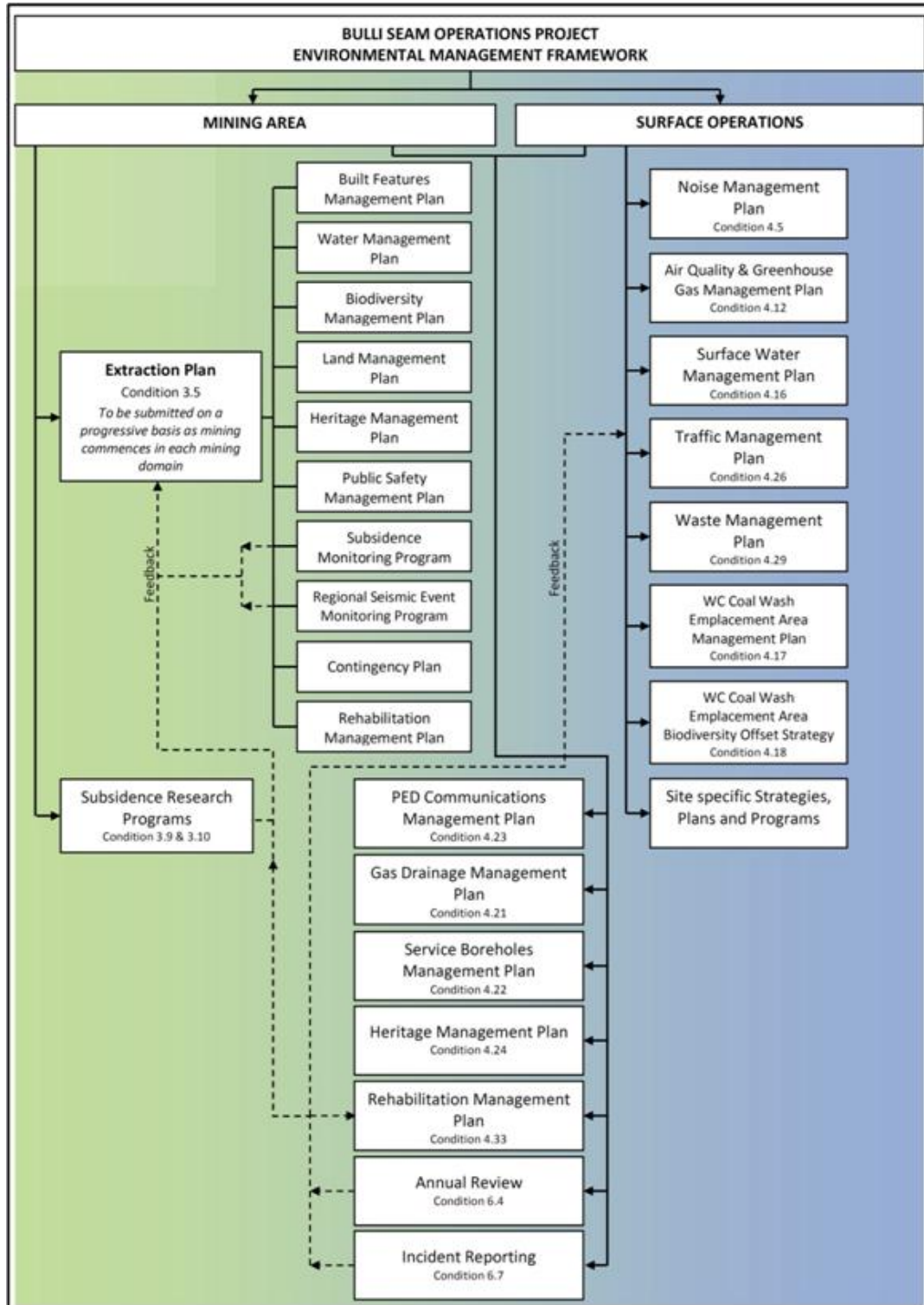
7.1 Environmental Management Overview

The BSOP operates in accordance with the BHP Billiton Charter, BHP Billiton Group Level Document GLD.009 – Environment. GLD.009 details the mandatory environmental performance requirements with respect to land, biodiversity, water, air, greenhouse gases, hydrocarbons and wastes across BHP Billiton sites. The BSOP also operates in accordance with the ICHPL Sustainability Policy. Copies of GLD.009, the BHP Billiton Charter and the ICHPL Sustainability Policy were available for review.

The 2012/2013 AEMR (p.43) states '*the BHP Billiton Health, Safety, Environment and Community (HSEC) Management System framework is consistent with internationally recognised standards. It aims to set benchmarks for the company's diverse range of businesses to develop and implement their own HSEC Management Systems, to provide auditable criteria for these systems and provide a basis from which to drive continuous improvement.*'

An overview of the BSOP environmental management framework is shown in Figure 7-1.

Figure 7-1 Bulli Seam Operations Project Environmental Strategy Overview



(Source: ICHPL Environmental Management Strategy, R1.0, August 2012)

ICHL operates an Environmental Management System (EMS) that is certified to International Organization for Standardization (ISO) 14001:2004 - Environmental Management. A copy of the certificate was sighted by the auditors (Certificate No. CEM20004). The scope of the EMS is for processes involved in the mining, coal washing and transportation by road and rail of black coal. Processes also include coal wash emplacement and rehabilitation of land affected by mining activities. A review of the certified EMS was not conducted by the auditors and is considered outside the scope of this audit. The EMS was initially certified on 20 June 2003 and the current certificate was issued on 6 February 2012 and expired on 20 June 2015.

Strategic planning documents (Balanced Plans) for ICHPL teams external affairs and HSE have been developed for FY14, which set out strategic goals for each team. The goals are focused around zero harm, people, reliability, growth and outcomes. The FY18 Balanced Strategy and FY14 Balanced Plans were available for review.

The BSOP Environmental Management Strategy (the Strategy) is consistent with the principles of the BHP Billiton level documentation, BSOP Development Consent Conditions.

The BSOP Strategy includes the following sites, facilities, surface activities and mining areas:

- Appin West and Appin East Pit Tops (including surface lease associated with Consolidated Coal Lease 767)
- West Cliff Pit Top (including Mining Purposes Leases 200 and 201 and Brennans Creek Dam)
- Mine Ventilation Shaft sites (Appin and West Cliff)
- North Cliff Pit Top (Shafts 1 & 2) and Bulli shafts 1, 2 and 3 (rehabilitation activities only)
- Methane Extraction plants (Appin and West Cliff)
- West Cliff Ventilation Air Methane Project (WestVAMP). WestVAMP is a system that reduces greenhouse gas emissions from operations and that generates electricity at the same time
- West Cliff Coal Preparation Plant (CPP)
- West Cliff Emplacement Areas
- Surface Gas Drainage and other surface works
- Mining Areas (Appin and West Cliff)

A number of environmental management plans have been developed to satisfy the requirements of PA 08_0150. These plans have been submitted as required to the relevant Government Departments. The Strategy and management plans are discussed in more detail in Sections 7.2 and 7.3 below.

URS conducted an adequacy assessment of the Strategy as required by PA 08_0150; however, the assessment did not include the ICHPL/BHP Billiton corporate environment management system(s), GLD's, Standards, policies and procedures.

7.2 Environmental Management Strategy

The Strategy (Document Ref: ICHMP0231), dated 7 August 2012 was prepared to satisfy the requirements of Condition 1, Schedule 6 of the PA 08_0150 and was approved by Planning and Infrastructure on 14 September 2012. It had not been revised at the time of the audit.

Roles and responsibilities are defined in Section 4 of the Strategy.

The Project Approval (Schedule 6, Condition 1 of PA 08_0150) requires the following:

'The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Director-General. This strategy must:

- a) *be submitted to the Director-General for approval by 30 September 2012;*
- b) *provide the strategic framework for environmental management of the project;*
- c) *identify the statutory approvals that apply to the project;*
- d) *describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project;*
- e) *describe the procedures that would be implemented to:*
 - *keep the local community and relevant agencies informed about the operation and environmental performance of the project;*
 - *receive, handle, respond to, and record complaints;*
 - *resolve any disputes that may arise during the course of the project;*
 - *respond to any non-compliance;*
 - *respond to emergencies; and*
- f) *include:*
 - *copies of any strategies, plans and programs approved under the conditions of this approval; and*
 - *a clear plan depicting all the monitoring required to be carried out under the conditions of this approval.'*

In accordance with the Conditions of Approval, the Director-General approved the Strategy on 14/09/2012. The Strategy also contains procedures applicable to CoA Schedule 6, Condition 1, including:

- Section 2 sets out the statutory requirements of the BSOP in accordance with Condition 5.1(c)
- Section 3, Figure 3 of the Strategy provided the strategic framework and included an overview of the Environmental Management System framework. The Strategy included, but was not limited to sections addressing objectives, communications the Community Consultation Committee and complaints and dispute resolution. URS consider these topics to generally provide the strategic framework for the environmental management of the BSOP. It was noted that the Strategy did not include any targets concerning environmental management of the BSOP
- Section 4 sets out accountabilities and responsibilities for environmental management of the BSOP
- Section 5 addressed procedures and controls that would be implemented
- Section 5.1 described the process for managing community issues and information
- Section 5.2 described the CCC process

- Section 6 described how to manage complaints and dispute resolution
- Section 8 addressed non-compliances, corrective and preventive action. Reference was made to an overarching corrective action procedure
- Section 9 referenced emergency response documents used across the BSOP; however, there was no reference to the Pollution Incident Response Management Plan (PIRMP) (Document ID: ICHMP0229), dated August 2012
- Appendix 2 included references to strategies, plans and programs approved under the MCoA 08_0150. Appendix 1 included a plan depicting the monitoring required for Areas 5, 7 and 9 to be carried out under the conditions of this approval. It is noted that references to figures were stated as “TBA” in Appendix 1

Recommendations

URS identified the following recommendations for improvement in the Strategy:

- Review and update the Strategy to include targets for identified BSOP objectives.
- Reference the BSOP Pollution Incident Response Management Plan as a key document for emergency management (Section 9); and
- Update Appendix 1 to reference Figures that have been prepared since the Strategy was approved.

7.3 Management Plans and Programs

The following documents were reviewed by the auditors²:

- Environmental Management Strategy
- Traffic Management Plan – Draft
- Waste Management Plan
- Heritage Management Plan
- WCP Emplacement Area Management Plan (incorporating “Emplacement Area Management Plan” and “Coal Wash Emplacement Staging and Rehabilitation Plan
- Gas Drainage Management Plan Longwalls 36 and 37 (August 2013)
- Service Boreholes Management Plan
- Personal Emergency Device (PED) Communications Management Plan
- Pollution Incident Response Management Plan
- Various Subsidence Management Plans
- Surface Water Management Plan
- Air Quality and Greenhouse Gas Management Plan
- Noise Management Plan

² An assessment of subsidence management, water management, ecology and rehabilitation management, air quality and greenhouse gas management and noise management plans and an assessment of the adequacy of these processes, is discussed separately in the Specialist’s Sections (Sections 8 to12).

The following section outlines a summary of findings made regarding the adequacy of the Management Plans and opportunities for improvement. A summary of adequacy and any recommendations for each management plan is identified below, as well as a general summary.

7.4 General Summary of Management Plan Adequacy Review

ICHPL has established key management and monitoring plans/programs under the scope of the overarching Strategy, certified EMS and BHP Billiton corporate environment management system(s), GLD's, Standards, policies and procedures. In general, these plans and programs are established and implemented in accordance with the consent conditions of PA 08_0150. The management plans provide information to manage, monitor and report on environmental aspects and impacts associated with the BSOP. The following comments are made concerning the Management Plans:

- Generally the plans were well prepared, and up to date having been recently prepared. The Plans included actions and timing allowing BSOP personnel staff to understand roles and responsibilities and timeframes for specific requirements.
- The following management plans had not yet been formally approved by the Director-General at the time of the audit:
 - West Cliff Coal Wash Emplacement Area Management Plan
 - Traffic Management Plan
 - Draft WCP Emplacement Area Management Plan (incorporating 'Emplacement Area Management Plan' and 'Coal Wash Emplacement Staging and Rehabilitation Plan')

ICHPL management reported that the plans were either in the process of being reviewed and updated or feedback concerning initial submission had yet to be received from the Director-General.

The findings of the review of the adequacy of the management plans / monitoring programs and subsequent recommendations are provided in Table 7-1 below.

Overarching Recommendations Relating to Management Plans

The following provides a summary of overarching recommendations relating to BSOP Management Plans:

- That integration between the Strategy and the management plans be improved. Each plan should outline its strategic context in line with ICHPL/BHP Billiton's EMS, Group Level Documents, Standards and other procedures.
- That the structure of management plans be improved so as to highlight management actions that can be easily identified, implemented and audited against. This could include having a table or section listing all of the management/mitigation measures required as part of the plan.

- It is recommended that any revised management plans be submitted to the Director-General. Revised plans may not necessarily be required to be approved, however; submission of the plans will ensure that the Director-General has the most up-to-date documents on file and will have access to changes to environmental management practices for the BSOP.
- Where management plans have been submitted but have yet to be approved by the Director-General it is recommended that where practicable and where cost commitments are not considered excessive/prohibitive these plans be implemented until such time as formal approval and/or feedback is received from the Director-General.
- That Environmental Management related plans be updated to reflect current operations and incorporate the recommendations of this audit report. Where management plans are identified to require actions as per the above recommendations, a repeat recommendation has not been made in the table below to avoid duplication of recommendations.

General observations relating to environmental management plans are provided below in Table 7-1.

Table 7-1 Adequacy Review of Management Plans / Monitoring Programs

Management Plan / Monitoring Program	Adequacy Review and Recommendations
<p>Traffic Management Plan – Draft (December 2012)</p>	<p>The Traffic Management Plan (TMP) was developed in response to Condition 26, Schedule 4 of PA 08_0150. The TMP was submitted to the Director-General on 31/12/2013, however; the plan had not been formally approved at the time of the audit. ICHPL management reported that RMS were reviewing the concept for the road intersection with Appin and Wedderburn Roads prior to endorsement.</p> <p>The TMP applies to all existing and future activities undertaken by ICHPL in relation to the BSOP. The Audit Team did not include a traffic specialist, hence no technical review of the Plan was conducted. Notwithstanding this, some comments are made on the plan as detailed below.</p> <ul style="list-style-type: none"> • Incidents where rocks were reported to have hit the windscreens of public vehicles on Appin Road were reported on 18/06/2012, 16/07/2012, 28/08/2012, 17/09/2012, 09/09/2013, 18/09/2013 and 25/09/2013. The incidents were investigated and contracted truck drivers were advised to check load covers before entering public roads. The TMP requires that oversized loads be securely covered; however; there is no requirement that all vehicle movements on public roads be securely covered. • Roles and responsibilities are defined in Table 1 (p.6), however; more than one role is assigned to a number of the responsibilities. There is potential for confusion as to who is responsible/accountable for each action identified in Table 1. • The TMP stated that the performance of the Traffic Management Program will be reported in the BSOP AEMR and would include: <ul style="list-style-type: none"> – traffic monitoring results and comparison to performance criteria; – traffic related complaints and management/mitigation measures undertaken; – management/mitigation measures undertaken in response to complaints; and – review of the performance of management/mitigation measures and the monitoring program. <p>A review of the 2011/2012 and 2012/2013 AEMRs showed that information on the Traffic Management Program was not included.</p> <p>Recommendations</p> <p>The adequacy review identified the following opportunities for improvement and recommendations:</p> <ul style="list-style-type: none"> • Review and update the TMP to include the requirement to cover all vehicles that travel on public roads rather than just oversized loads. • Review and update the TMP and assign individual roles to responsibilities defined in Table 1. • Report on the performance of the Traffic Management Program in the AEMR as stated in the TMP (Section 8.1.1 (p.15)).

**Management Plan /
Monitoring Program**

Adequacy Review and Recommendations

Waste Management Plan
(September 2012)

The Waste Management Plan (WMP) was developed in response to Condition 29, Schedule 4 of PA 08_0150. The WMP was approved by the Director-General on 07/01/2013.

The WMP applies to all existing and future activities undertaken by ICHPL in relation to the BSOP and includes hazardous and non-hazardous liquid and solid wastes.

- The plan did not clearly identify the requirements of EPL 2504 and how these would be managed.
- Roles and responsibilities are defined in Table 1 (p.5), however; more than one role is assigned to a number of the responsibilities. There is potential for confusion as to who is responsible/accountable for each action identified in Table 1. Furthermore the role of the Site Administrator is not defined in the waste data collection and review process.
- The WMP references the Environment GLD, Section 6 – Waste management that requires a review of waste transport and external disposal facilities to be conducted on a biannual basis to confirm external providers are conducting their activities and operations in accordance with legislative requirements. Two audit reports of service providers Worth Recycling Pty Ltd and Cleanaway Pty Ltd were available for review.
- Section 5.8 of the WMP did not fully explain the recording and reporting process as described to the auditors during the audit. There are at least seven steps in the collection and review of waste management data prior to finalisation; however, the WMP only refers to the monthly waste management reports provided by the contracted waste management service provider. The auditors reviewed detailed spread sheets generated from 1SAP for West Cliff Colliery and Appin Mine. Information including, but not limited to, consumption of quantities of waste generated on or off-site, recycled waste, hazardous mineral waste disposal and water inputs and outputs was available. The spread sheets are reviewed at least twice by different personnel prior to finalisation. A monthly spread sheet for West Cliff Colliery and Appin Mine waste information was also available for review. These data collection and review processes are not referenced in the WMP.
- The WMP did not provide any waste avoidance, reduction, recycling objectives, initiatives or targets.

Recommendations

The adequacy review identified the following opportunities for improvement and recommendations:

- Include the requirements of EPL 2504 and how these will be managed.
- Review and update the WMP and assign individual roles to responsibilities defined in Table 1.
- Review and update the WMP to reflect the collection, review and reporting process for waste data across the BSOP including the 1SAP spread sheets for Appin Mine and West Cliff Colliery.
- Review and update the WMP to reflect waste avoidance, reduction, recycling objectives, initiatives or targets.

**Management Plan /
Monitoring Program**

Adequacy Review and Recommendations

Heritage Management Plan
(October 2012)

The Heritage Management Plan (HMP) was developed on behalf of ICHPL by Biosis Research Pty Ltd in response to Condition 24, Schedule 4 of PA 08_0150. The HMP was submitted to the Director-General on 28/09/2012 and was approved on 05/11/2012. A heritage specialist was not included within the audit team. A review of the plan by the auditors identified the following.

The HMP outlines programs and procedures for the management of Aboriginal and Non-Aboriginal heritage in the BSOP area and includes requirements for the preparation of subsequent management plans required for Extraction Plans and surface works. The HMP has been prepared in consultation with the Heritage Branch of the Office of Environment and Heritage (OEH), and relevant stakeholders for both Aboriginal and Non-Aboriginal heritage. The heritage management strategy outlines the requirement for the following:

- Heritage Management Plans to be prepared for each Extraction Plan and surface infrastructure Management Plans as required.
- Conservation Management Plans to be prepared for all heritage items of State and National significance, or as required within each Extraction or surface infrastructure Management Plan area.
- Extraction Plans to be submitted on a progressive basis as mining commences in each domain.
- West Cliff Coal Wash Emplacement Area Management Plan.
- Gas Drainage Management Plans to be submitted on a progressive basis as mining progresses in each domain.
- Service Boreholes Management Plans to be submitted on a progressive basis as mining progresses in each domain.
- Personal Emergency Device (PED) Communications Management Plans to be submitted on a progressive basis as mining progresses in each domain.

No heritage management plans have been required to support extraction plans and surface works management plans during the audit period as required by the overarching HMP.

Recommendations

The adequacy review identified the following opportunities for improvement and recommendations:

- Update the HMP to clearly identify roles and responsibilities for action items (i.e. who does what and when).
- Table 4 (p.17) should be changed to read Condition 5(k) not Condition 25(k) of Schedule 3 of PA 08_1050.

Gas Drainage Management
Plan Longwalls 36 and 37
(August 2012)

The Gas Drainage Management Plan West Cliff Colliery Longwalls 36 to 37, dated August 2012 for was developed in response to Condition 21, Schedule 4 of PA 08_0150. The plan was approved by the Director-General on 27/08/2012.

The plan details the proposed management activities that will be undertaken during construction, operation and rehabilitation of the West Cliff Area 5 Goaf Gas Drainage Project and includes the gas drainage wells, gas extraction units and surface pipelines associated with Longwalls 36 and Longwall 37.

Management Plan / Monitoring Program	Adequacy Review and Recommendations
	<p>The management plan included a West Cliff Goaf Gas Drainage Longwalls 36-37 Noise Assessment (Wilkinson Murray, February 2012) as Appendix A.3. It was noted that the assessment did not include an investigation of flaring noise.</p> <p>The BSOP Surface Approvals Adviser reported that subsequent to the plan being approved ICHPL decided not to do surface gas drainage activities for Longwalls 36 and 37 and that there are no plans for gas drainage activities for Longwall 37.</p> <p>Recommendations</p> <p>The adequacy review identified the following opportunities for improvement and recommendations:</p> <ul style="list-style-type: none"> • Future Gas Drainage Management Plans should include an assessment of potential flare noise. If flare noise is not considered an issue justification for not conducting an assessment should be provided.
<p>Service Boreholes Management Plan (October 2012)</p>	<p>The Service Boreholes Management Plan (SBMP) was developed in response to Condition 22, Schedule 4 of PA 08_0150. The plan was approved by the Director-General on 06/05/2012.</p> <p>The SBMP describes the generic management and performance measures that will be adopted by ICHPL for the construction and operation of service borehole infrastructure.</p> <p>Recommendations</p> <p>The adequacy review identified the following opportunities for improvement and recommendations:</p> <ul style="list-style-type: none"> • Responsibilities detailed in Section 4 (pp.3-4) of the plan appear should be clearly outlined in a separate section and/or table to ensure BSOP personnel understand their responsibilities and that those actions are implemented within required timeframes. • An explanation of the legislative requirements outlined in Section 5.1 (p.5) and Section 8.1.0 (p.15) of the plan should be provided so their implications to the installation, operation and rehabilitation of boreholes are understood. As this is an overarching plan these lists should not be limiting. • Update to the plan to include timeframes for inspections of control measures during the operational and project completion phases. The plan only identifies a timeframe for weekly inspections of activities and operations to determine control measures are working during the construction phase.
<p>Personal Emergency Device (PED) Communications Management Plan</p>	<p>ICHPL management reported that the PED Communications Management Plan has not been required within the audit period and has therefore not been prepared. Furthermore there are no plans to install a PED cable as technology has advanced and BSOP communications systems are being installed underground. ICHPL has a Tickit obligation to create a management plan if this changes.</p>

Management Plan / Monitoring Program	Adequacy Review and Recommendations
Pollution Incident Response Management Plan (August 2012)	<p>The Pollution Incident Response Management Plan (PIRMP) was developed in response to a requirement by the <i>Protection of the Environment Legislation Amendment Act 2011</i>, now covered under section 153A of the POEO Act.</p> <p>The PIRMP defines how external pollution reporting is to be undertaken in accordance with existing Incident Management Plans. The PIRMP included, but was not limited to a hazard assessment for the BSOP as required by Clauses 98C(1)(a) and (b), included as Appendix B and a pollution inventory as required by Clause 98C(1)(d) and (e). URS undertook a high-level, summary assessment of adequacy against the content of the PIRMP, as outlined at Clause 98C of the Protection of the Environment (General) Regulation 2009 and found a high level of compliance against the requirements identified in the Regulation; and the following was noted:</p> <ul style="list-style-type: none"> • Whilst Incident Management Plans were referenced and discussed for each of the three BSOP sites the interaction with other overarching ICHPL standards and/or procedures was not explained (i.e. GLDs). • The hazard assessment provided in Appendix A did not detail the criteria for achieving the 'likelihood' and 'materiality' ratings. • The PIRMP identified that it would be tested at least every twelve months. No record of a test since August 2013 was available. <p>Recommendations</p> <ul style="list-style-type: none"> • Update the PIRMP to reference and explain the interaction of overarching ICHPL management any relevant GLD documents. • Provide details of the ranking system for determining the 'likelihood' and 'materiality' ratings provided in Appendix B. • Ensure the PIRMP is tested at least every twelve months as stated in Section 4.3 of the plan.
WCP Emplacement Area Management Plan (incorporating "Emplacement Area Management Plan" and "Coal Wash Emplacement Staging and Rehabilitation Plan), Revision 3 (June 2013)	Refer to Section 10.3.2 for further details
Subsidence Management Plans	Refer to Section 8 for further details.
Surface Water Management Plan, December 2012	Refer to Section 9 for further details.
Ecology and Rehabilitation Management	Refer to Section 10 for further details.
Air Quality and Greenhouse Gas Management Plan August 2013	Refer to Section 11 for further details.
Noise Management Plan, December 2012	Refer to Section 12 for further details.

It is suggested that the recommendations provided in Table 7-1 be addressed at the next scheduled review date for each of the management plans.

8 SUBSIDENCE MANAGEMENT

This section of the report details the findings of the review of subsidence management at the BSOP as assessed by the approved subsidence specialist Neil Mattes with input from auditors for discussion of environmental monitoring.

8.1 Background

A key project approval related to subsidence management is Condition 5, Schedule 3 of PA 08_0150 which requires the preparation and implementation of an Extraction Plan for first and second workings within each longwall domain. A note related to the condition indicates that a Subsidence Management Plan (SMP) that is substantially consistent with this condition and that has been approved by the DTRIS-DRE prior to 30 September 2012 is taken to satisfy the requirements of this condition.

Subsidence has been managed during the audit review period from December 2011 under several SMP Approvals relating to the Bulli Seam Operations, as follows:

- Appin LW704: Douglas Area 7 LW701-704 SMP (approved 1 Nov 2006);
- Appin LW705: Appin Colliery Area 7 LW 705-710 SMP (approved 28 Feb 2012); and
- West Cliff LW35 and 36: West Cliff Colliery Area 5 LW 34-36 SMP (approved 13 May 2009).

The SMPs are based on the following key elements:




- Subsidence prediction specific to the particular site and associated surface infrastructure and natural features;
- Risk assessment addressing damage, impacts, likelihood and consequences;
- Specific Management Plans, including Trigger Action Response Plans (TARPs), for key areas or items of interest; and
- Subsidence monitoring to assess performance against predictions, and against action triggers.




The SMPs have been prepared to satisfy the requirements of Guidelines for Subsidence Management Approvals, December 2003 (generally referred to as the SMP Guidelines), issued by the then NSW Department of Mineral Resources. The contents of the SMPs are substantially consistent with the requirements for an Extraction Plan under the BSOP Approval. In particular, the subsidence impact performance measures detailed in Schedule 3 of the BSOP Approval, for natural and heritage features and for built features, are the same as those detailed in the approved SMPs.

8.2 Site Inspection Observations - Subsidence Management




Observations from the site inspection conducted at the time of the site audit as they relate to subsidence management are provided in Table 8-1.




Table 8-1 Summary of Observations Relating to Subsidence Management

ID	Observation	Photo
8-1.	Looking south from top of cuttings for Main Southern Railway (ch 71km) and Hume Highway, from approximately above southern edge of LW704. Rail track and highway pavement are comprehensively instrumented including real-time monitoring (terminal building in mid-ground). Prism post for surface survey line in foreground.	
8-2.	Hume Highway from same vantage point – embedded FBG fibre-optic cables (red arrows), and location of transverse relief slot across pavement (yellow arrows)	
8-3.	Railway cutting at ch 71km – monitoring of geological fault (red arrows) includes fixed inclinometer (blue) with real-time data assessment and displacement extensometer (yellow)	

ID	Observation	Photo
8-4.	Rail cutting at ch 71km. Hillslope above the cutting has extensive survey monitoring for a BSO research project to assess subsidence response of steep slopes.	
8-5.	Minor cracking of a culvert headwall on Morton Park Road due to LW704 extraction – example of the detail which can be picked up by routine physical inspections in accordance with Subsidence Management Plan.	
8-6.	Surface repair to pavement at culvert under Morton Park Road – repaired in accordance with Public Roads Subsidence Management Plan	

ID	Observation	Photo
8-7.	330 kV transmission tower on subsidence-resistant cruciform footing, near western end of West Cliff LW 35	
8-8.	Georges River east of eastern ends of LW 35 – typical transverse cracking of rock bar. No obvious effects on stream pool apparent.	
8-9.	Georges River east of eastern ends of LW 35 – typical transverse cracking of rock bar. No obvious effects on stream apparent	

ID	Observation	Photo
8-10.	Georges River east of east end of LW 35 – possible lateral movement resulting in bedding plane shear in rock streambed and apparent diversion of flows.	
8-11.	Georges River at start of gorge section beyond end of LW35 transverse cracking of rock bar. Steep western side at entrance to gorge has prism for 3D movement survey.	
8-12.	Enlargement of photo above showing survey prism.	

ID	Observation	Photo
8-13.	Georges River east of east end of LW 35 showing diversion of flows at rock bar (upstream of pool 45).	
8-14.	Pool (No.45) on Georges River east of east end of LW 35 below section with diverted flow. Some flows evident into pool at base of rock outcrop.	
8-15.	Pool (No.44) on Georges River east of east end of LW 35 below section affected by diverted flows. ICHPL has periodically discharged water from Brennans Creek Dam to reduce impacts of flow diversion from this pool.	

ID	Observation	Photo
8-16.	Observations of Jutts Crossing (outside of current mining area and not part of this audit) where mining was conducted under the river (1999-2000) and complete flow diversion occurred. Remedial works have been undertaken (injection grouting of stream bed cracks) which has reportedly returned flows to levels similar to pre-mining.	
8-17.	Appin-Campbelltown-Road – traffic warning signs installed in accordance with Subsidence management Plan. Currently no visible subsidence effects apparent.	

8.3 Subsidence Management Plan Development

Hansen Consulting Pty Limited prepared the SMP for Appin Longwalls 701-704 in 2006, and Cardno Forbes Rigby Pty Limited prepared the SMPs for Appin Longwalls 705-710 and for West Cliff Longwalls 34-36 in 2008.

8.3.1 Subsidence Prediction

In each of these SMPs, the prediction of subsidence and assessment of subsidence effects on natural features and infrastructure was carried out by Mine Subsidence Engineering Consultants Pty Limited (MSEC), who have well-regarded expertise in this field.

Subsidence prediction has been carried out using the empirical Incremental Profile Method, which was initially developed by MSEC in the mid 1990s, based largely on the extensive subsidence monitoring data then available for BHP's Southern Coalfield extraction in the Bulli Seam, and has since been progressively updated and refined as further data has become available. As well as providing predictions of maximum subsidence displacements, curvatures, strains and tilts associated with the extraction of each longwall, this analysis method is well suited to the prediction of subsidence movements at any specific point of interest on the surface, such as natural features or elements of infrastructure.

8.4 Specific Management Plans

Based on the subsidence predictions and the results of the risk assessment, specific management plans have been prepared for key elements of surface infrastructure and natural features, including:

- Public Roads
- Gas Pipelines
- Macarthur Pipeline
- Hume Highway
- Main Southern railway
- Sydney Catchment Authority Infrastructure
- Telstra
- Transgrid
- Nepean River Cliffs and Steep Slopes **
- Georges River **

*** these include the Public Safety Management Plans required under the SMP Guidelines*

The management plans for surface infrastructure have been developed in consultation with the relevant infrastructure owners or operators, and typically include detailed TARPs for management of subsidence effects specific to the particular infrastructure involved. Central to each of these Management Plans is a small committee typically comprising representatives of BHPBIC, the infrastructure operator, the Mine Subsidence Board and expert consultants, which coordinates the overall operation of the plan.

Individual Property Subsidence Management Plans are prepared for every private property which could potentially be affected by the mine subsidence.

8.5 Subsidence Monitoring

Comprehensive subsidence monitoring is carried out in accordance with agreed/approved SMPs that are detailed within the various specific management plans.

In addition to conventional 2D surveys for vertical movement and strain along lines of surface targets using Total Stations a substantial amount of detailed monitoring is conducted including 3D far-field movement surveys using real time kinematic GPS techniques and specialised displacement stress, strain and tilt monitoring for the Hume Highway and the Main Southern Railway. Some aspects of the highway and railway monitoring is effectively real-time with electronic data collection and assessment automated trigger alarms.

In addition to this survey and instrumental monitoring there are various physical inspection programs, with inspection frequency geared to longwall extraction progress.

8.6 BHPBIC Subsidence Management Resources

BHPBIC has allocated substantial resources to the management of subsidence matters across its three mining operations (Appin, West Cliff and Dendrobium), with three experienced Manager-level professionals sharing the responsibilities for approvals, compliance, monitoring and assessment, reporting, and liaison with infrastructure operators and the community, supported by survey, environmental and community relations field teams. On a monthly basis, key subsidence management personnel participate in a formal subsidence data review.

8.7 Subsidence Management Status Reports

As required by the SMPs, on a regular basis (4-monthly for Appin, monthly for West Cliff), a Subsidence Management Status Report is submitted to the key regulatory authorities and surface infrastructure operators that addresses such matters as longwall face position, management actions taken by the leaseholder, consultation with stakeholders, observed and/or reported subsidence impacts, summary of subsidence development and effects and comparisons with predictions and action triggers.

In addition to these overall Status Reports, specific detailed status reports for the Hume Highway and Main Southern Railway are provided typically on a weekly basis during extraction with the potential to affect these assets.

8.8 End of Panel Reports

The SMP approvals include the requirement to prepare an end-of-panel report for each longwall panel that includes a summary of subsidence and associated environmental monitoring, analysis of these results against the relevant impact assessment criteria, identification of any trends in monitoring results, and description of any actions taken to manage potential subsidence impacts due to mining. The end-of-panel reports include as appendices the detailed reports that support the end-of-panel assessment, including subsidence monitoring and assessment, environmental monitoring, Nepean/Georges Rivers impacts, cultural heritage, water and groundwater effects, aquatic ecology, flora and fauna.

As required by the SMPs, the end-of-panel reports are provided to relevant agencies and are uploaded to the BSOP website.

8.9 Calibration and Updating of Subsidence Assessments

The end-of-panel reports include a review of subsidence monitoring results and comparison with predictions. ICHPL has used the same consultants, MSEC, for subsidence prediction and assessment work for Appin and West Cliff Collieries for many years, and as noted previously, MSEC was largely responsible for the development of the incremental profile method used for subsidence prediction for the BSOP. It is apparent that the analysis approach is producing predictions for subsidence profiles, tilt, curvature and maximum strain which are typically close to observed behaviour for “conventional” subsidence (i.e. where the behaviour is not driven by localised anomalies in subsurface conditions), and consequently significant changes in calibration have not been necessary to date. With regard to strain, it has long been recognised that localised strains can vary greatly from those conventionally predicted from the subsidence profile, and data from the recent and current Appin and West Cliff longwalls is being used in a more recent approach which involves the statistical assessment of localised strains.

8.10 Environmental Monitoring

Predicted environmental impacts prior to mining are assessed at the end of the extraction period in accordance with SMPs and associated management plans.

Potential impacts from mining induced subsidence are monitored and managed via the Extraction Plan process. The generic monitoring and management methods, mechanisms and performance indicators employed are summarised in Table 7 of the Management Plan for Water Sensitive EPBC Act Listed Species (September 2012) that details the TARPs outlined in the Extraction Plans or SMP. Extraction Plans including monitoring programs are submitted on a progressive basis as mining commences in each mining area.

Monitoring requirements from the above documents are collated into a spreadsheet that lists each monitoring event to be undertaken for the year. When monitoring is completed, it is noted as being undertaken in the spreadsheet and can be compared against the required monitoring. If an event cannot be undertaken (e.g. due to rain, safety reasons or equipment malfunction), this is noted. Monitoring checks as reported in the spreadsheet dated from 2009 to present. ICHPL also reported that a further check of compliance with the monitoring requirements is undertaken at a Corporate level, however this was not sighted.

The ICHPL monitoring team, based at Cordeaux Mine, transfer monitoring requirements from the spreadsheet to a whiteboard for allocating individuals to conduct the monitoring. The process was discussed with the ICHPL Team Leader – Monitoring.

URS did not complete a detailed assessment of compliance with all monitoring requirements, or conduct an assessment of monitoring data. Reference is made to monitoring reports as detailed in the following section that include assessment against predicted subsidence impacts.

8.10.1 Appin Mine Longwall 704

Extraction of Longwall 704 commenced on 7 May 2011 and was completed on the 29 July 2012. During extraction the ICHPL Environmental Field Team conducted monitoring to identify potential impacts associated with Longwall 704. The End of Panel Environment Field Team Report for Longwall 704 prepared by ICHPL (October 2012, p.18) concluded that:

- *Minor gas releases were observed.*
- *Previously identified iron seeps continued unchanged throughout the mining of Longwall 704.*
- *No vegetation impacts associated with mining were observed.*
- *No cliff falls or slope instability was observed.*
- *No changes in water flow or quality resulting from the mining were observed.*
- *No environmental or property impacts resulting from the mining were observed'.*
- A summary of Nepean River inspections dates starting on 07/04/2011 through to 05/09/2012 was included in the End of Panel Report (ICHPL, October 2012, pp.28-29).
- A table of impacts and inspections for gas release dated 09/05/2011 through to 11/09/2012 was included in the End of Panel Report (ICHPL, October 2012, pp.32-51).

- Ecoengineers Pty Ltd completed an End of Panel assessment of water flow and quality effects for Longwall 704 in October 2012. The assessment concluded that *'while it is possible that emission of strata gas into the Nepean River gave rise to some reduction in dissolved oxygen in the River due to microbiological consumption of dissolved methane by natural aerobic bacteria ('obligate aerobes') within the water column, the magnitude and riverine extent of any reduction in Dissolved Oxygen (DO) during the period of mining Longwall 704 was well within the bounds of DO measured during the pre-mining baseline period for similar flow rates in the river'* (Ecoengineers, 2012, p.45).
- Ecoengineers (2012, p.46) reported that no landholders reported erosion, cracking or slumping of dam walls; rapid loss in water level, water level retreat or seepages; changes to dam water appearance, iron staining or gas releases nor detectable loss of water quality (e.g. palatability changes with stock watering), during or since the mining of Longwall 704.
- Niche Environment and Heritage Pty Ltd (Niche) was commissioned by ICHPL to conduct an End of Panel assessment of the European and Aboriginal cultural heritage and archaeological sites within the limit of subsidence of Longwall 704. Minor fracturing was identified in Lyrebird Creek. The cracking was reported to be approximately 250 metres from a known grinding groove site. A detailed archaeological assessment was reported to be planned for identified sites once access to the area has been granted. Niche (unknown date, p.4) concluded that the lack of major movement and the predications of low impact to aboriginal sites, subsidence is considered unlikely to have led to any impacts from Longwall 704.
- GeoTerra Pty Ltd (GeoTerra) was commissioned by ICHPL to conduct an End of Panel Assessment of Groundwater for Longwall 704 (November 2012, p.21). Geo Terra reported that no groundwater TARP triggers were exceeded during extraction of Longwall 70. Further details concerning groundwater monitoring is discussed in Section 9.3.2.
- Cardno Pty Ltd were commissioned by ICHPL to review aquatic flora and fauna impacts from Longwall 704 (Cardno, November 2012). It was concluded that *'there is no evidence of any impact on aquatic ecology in the SMP Area due to extraction of Longwall 704. Although new gas release zones, and the reactivation of existing gas release zones, have been observed, these do not appear to have had any observable impact on any aspect of aquatic ecology. This is consistent with predictions of impacts made prior to commencement of mining'* (Cardno, November 2012, p.4).

8.10.2 West Cliff Colliery Longwall 34

It is noted that extraction of Longwall 34 commenced on 6 February 2010 and was completed 14 September 2011 (i.e. outside of the audit period); however, an overview of environmental monitoring activities is provided to demonstrate how ICHPL assess observed impacts against the predictions provided in the SMP. The program of environmental monitoring for Longwalls 34 to 36 included pool levels, flows and water quality. Photographic records were taken to identify potential mining related fractures, gas releases, iron staining or rock falls.

- End of Panel reports to assess the environmental impacts of Longwall 34 included:
 - ICHPL Environment Field Team Report (ICHPL, December 2011).
 - Assessment of Water Flow and Quality Effects West Cliff Colliery Longwall 34 (Ecoengineers, November 2011).

- Review of Aquatic Flora and Fauna for West Cliff Longwall 34 (Cardno, December 2011).
- Terrestrial Ecological Assessment for Longwall 34 – West Cliff Colliery End of Panel Report (Niche, December 2011).
- Aboriginal and European Heritage Assessment for West Cliff Colliery – Longwall 34 End of Panel Report (Niche, November 2011).
- Ecoengineers (2011, p.18) reported that no significant impacts on the water quality of Leafs Gully or Mallaty Creek were identified. EcoEngineers were engaged by ICHPL to provide an assessment on whether there had been any sub-bed flow diversions or water quality effects in the Georges River and/or whether there had been any water quality effects in the ephemeral of Mallaty and Leafs Gully Creeks that crossed the western end of the Longwall. *'No significant water quality impacts have been observed or measured within the Georges River as a result of mining Longwall 34'* (Ecoengineers (2011, p.i).
- Cardno (2011, pp.2-3) noted that *'impacts were restricted to a small number of pools and within predictions. The minor fracturing, surface flow diversions and localized reductions in pool water levels observed in Mallaty Creek during extraction were also within predictions'*.
- Concerning the ecological impacts of Longwall 34 Niche (December, 2011, p.8) concluded that *'the impacts observed as a result of the extraction of Longwall 34 are localized and have been confined to marginal habitat for terrestrial ecological values. It is not likely that the extraction of Longwall 34 has led to a significant impact on any terrestrial ecological values. Given the nature of the impacts observed within the limit of subsidence of Longwall 34 on terrestrial ecological values and the fact that these impacts are all within predicted levels no further monitoring is recommended'*.
- Concerning Aboriginal and European heritage impacts of Longwall 34, Niche (November 2011, p.1)) stated *'there were no observed impacts as a result of the extraction of Longwall 34 to the Aboriginal shelter sites Georges River No.2, Georges River No.3 and Georges River No.5. This conclusion is supported by the report provided from Donna Whillock of Tharawal Local Aboriginal Land Council'*.

8.10.3 West Cliff Colliery Longwall 35

Longwall 35 was mined between 13 October 2011 and 20 July 2013.

- End of Panel reports to assess the environmental impacts of Longwall 35 included:
 - Assessment of Water Flow and Quality Effects West Cliff Colliery Longwall 35 (Ecoengineers, September 2013).
 - West Cliff Longwalls 33-38, Aquatic Ecology Monitoring May 2002 – December 2012 (Cardno, June 2013).
 - Longwall 35, West Cliff Colliery, End of Panel Report – Terrestrial Flora and Fauna (Biosis, October 2013).
 - Aboriginal Heritage Assessment for West Cliff Colliery - Longwall 35 End Of Panel Report (Niche, October 2013).
 - Longwall 35 End of Panel Report, Landscape Monitoring Report - August 2013 (ICHPL, August 2013).

- Biosis (October, 2013, p.7) concluded that *'impacts have been observed as a result of Longwall 35 within Georges River and Mallaty Creek. This assessment concludes that these subsidence impacts are unlikely to have resulted in impacts to threatened species or ecological communities. Observed impacts are within prediction. No Corrective Management Actions for terrestrial flora or fauna are recommended or required.'*
- ICHPL conducted an End of Panel Report (August 2013) for Longwall 35. The report included monitoring of the Georges River that was undertaken in accordance with the SMP requirements for Longwalls 34 to 36. Monitoring included field water quality and laboratory parameters, water levels as well as observational records. ICHPL noted *'a total of fourteen impacts were identified by the ICEFT as a result of Longwall 35 extraction. All impacts are within predicted levels as per the West Cliff Area 5 Longwalls 34-36 Georges River Management Plan (Revision 2, dated February 2013) and the Monitoring and Management Table 9Table 23-1) (revision 1, dated November 2009) of the SMP for Longwalls 34 to 36'* (ICHPL, August 2013, p.13).
- EcoEngineers (September, 2013, p.i) noted that:
 - *'no significant water quality impacts have been observed or measured within the Georges River as a result of mining of Longwall 35; and*
 - *That there was no more than:*
 - *Negligible diversion of flows or changes in the natural drainage behaviour of pools;*
 - *Negligible gas release and iron staining; and*
 - *Negligible increase in water cloudiness.*
 - *over at least 80% of the stream length was subject to vertical subsidence >20mm; and*
 - *there was no subsidence impact or environmental consequence greater than minor'.*

End of Panel reports and supporting documentation are available on the BSOP website (<http://www.bhpbilliton.com/home/aboutus/regulatory/Pages/default.aspx>).

8.11 Impacts Related to Georges River

Assessment of impacts on the Georges River are defined in the ICHPL Georges River Management Plan (February, 2013, Rev1). This plan identifies the requirements of the SMP and BSOP Approvals as they relate to the Georges River. The Plan includes an impact assessment and a Response Strategy – the Georges River Trigger Action Response Plan (TARP). The TARP defines three levels of impact (Normal, Level 1, Level 2 and Level 3) and effectively defines the impacts as “minor” and “negligible” in the BSOP Approval (Condition 1) as they relate to the Georges River.

- **Normal:**
 - no observable mining induced fractures in rockbars or base of Georges River;
 - no reduction in water level of mapped pools under similar flows comparing pre-mining and post mining; pools generally full;

- where no discharge from Brennans Creek Dam (BCD) occurs, Georges River becomes ephemeral - some pools drain naturally at pre-mining rate;
- Survey Cross Lines: <100mm closure measured.
- **Level 1 (within predicted impact):**
 - fracturing in rockbar or bed of the Georges River which does not cause reduction of water level in mapped pools, when comparing pre-mining baseline and post mining; Iron staining greater than pre-mining levels;
 - gas releases;
 - Water chemistry parameters do not exceed first trigger point when comparing against upstream/downstream and/or pre-mining and post-mining results; and
 - Survey Cross Lines: >100mm closure measured as a result of LW35 – 36.
- **Level 2 (within predicted impact):**
 - more than negligible diversion of flows or changes in the natural drainage behavior of pools for
 - less than 20% of the stream length subject to vertical subsidence >20mm e.g. fracturing in rockbar or bed of the Georges River which causes reduction of water level in mapped pools, which are unable to be maintained with intervention;
 - more than negligible iron staining or gas releases for less than 20% of the stream length subject to vertical subsidence >20mm e.g. iron staining or gas releases resulting in a measurable ecological impact;
 - more than negligible increase in water cloudiness for less than 20% of the stream length subject to vertical subsidence >20mm e.g. water cloudiness resulting in a measurable ecological impact; and
 - Survey Cross Lines: >200mm closure measured as a result of LW35 – 36.
- **Level 3 (exceeding predicted impact):**

Exceed Subsidence Impact Performance Measures as specified in the PA 08_0150, including:

 - more than negligible diversion of flows or changes in the natural drainage behaviour of pools for more than 20% of the stream length subject to vertical subsidence >20mm e.g. fracturing in rockbar or bed of the Georges River which causes reduction of water levels in mapped pools, which are unable to be maintained with intervention;
 - more than negligible iron staining or gas releases for more than 20% of the stream length subject to vertical subsidence >20mm e.g. iron staining or gas releases resulting in a measurable ecological impact; and
 - more than negligible increase in water cloudiness for more than 20% of the stream length subject to vertical subsidence >20mm e.g. water cloudiness resulting in a measurable ecological impact.

The TARP was approved under the SMP approval process and was not changed by Planning and Infrastructure during the BSOP Approval process. It is understood that ICHPL are currently reviewing the TARP for Longwalls 37 and 38 with Planning and Infrastructure.

8.11.1 Subsidence Management Status Reports

The Subsidence Management Status Report (SMSRs) provides monthly reporting of the status of impacts to the Georges River (as well as other subsidence impacts) with reporting conducted against the Georges River Management Plan TARP. The following provides a summary of the reports from September 2013 to February 2014.

The Subsidence Management Status Report – West Cliff Area 5 (Longwall 34-36) for September 2013 (p.2) reported the following observations:

- *'Pool water level in Georges River Pool 58, Pool 51 and Pool 60 were observed to have dropped below the lowest levels experienced in baseline monitoring (impact reference WCA5_LW35_022, WCA5_LW35_023 and WCA5_LW35_024). The impact is consistent with Level 1 TARP* of the Georges River Management Plan (refer to impact reports dated 6/09/2013, 12/09/2013, 16/09/2013 and 25/09/2013).*
- *Impact Update: Pool water level in Georges River Pool 57, 56 and 54 (impact reference WCA5_LW35_012 and WCA5_LW35_007) were observed to have reduced to a level below that experienced in baseline monitoring. The impact is consistent with Level 1 TARP* of the Georges River Management Plan (refer to impact report dated 25/09/2013).*
- *Impact Update: Fracturing in Georges River Pool 38 was initially observed following the extraction Longwall 33 (impact reference WCA5_Fracture_005). On the 23/09/2013 pool water level was observed to be below that observed in baseline monitoring. The impact is consistent with Level 1 TARP* of the Georges River Management Plan (refer to impact report dated 25/09/2013).*
- *Pool water level in Georges River Pool 44 was observed to have dropped to below the lowest level experienced in baseline monitoring (impact reference WCA5_LW35_025). The impact is consistent with Level 1 TARP* of the Georges River Management Plan (refer to impact report dated 25/09/2013).'*

Further the Subsidence Management Status Report – West Cliff Area 5 (Longwall 34-36) for October 2013 (p.2) indicated:

- *'Pool water level in Georges River Pool 60 was observed to have dropped to a level below the baseline (impact reference WCA5_LW35_023).*
- *A change in water appearance initially observed in Georges River Pool 58 (on 21/08/13, impact reference WCA5_LW35_020) was observed to have extended further downstream to the upstream end of Pool 61.*
- *Pool water level in Georges River Pool 58 was observed to have dropped to a level below the baseline (impact reference WCA5_LW35_022).*
- *Pool water level in Georges River Pool 56 and 57 was observed to have dropped to a level below the baseline (impact reference WCA5_LW35_012).*
- *Pool water level in Georges River Pool 54 was observed to have dropped to a level below the baseline (impact reference WCA5_LW35_007).*
- *Pool water level in Georges River Pool 44 was observed to have dropped to a level below the baseline (impact reference WCA5_LW35_025).*

- *Fracturing in Georges River Pool 38 was initially observed on the 7/12/2009, following extraction of Longwall 33. On latest inspection pool water level in Pool 38 was recorded at a level below that in the pre-mining period (impact reference WCA5_Fracture_005).*
- *A change in water appearance, observed initially in Georges River Pool 42 (impact reference WCA5_LW35_021), was observed to have extended to Pool 43 and Rockbar 43.*

The response to the reduced levels has comprised releases from BCD to re-establish pool water levels and for ecosystem protection. SMSR (September, 2013, p.2) indicated that *“Additional flow from Brennans Creek Dam (BCD) was released following initial triggers to re-establish pool water levels. This intervention was successful in returning pool water levels to those of pre-mining conditions, hence the observed impacts remain as a Level 1 Trigger (refer to Impact Update Report dated 2/10/2013)”*.

The SMSR for October 2013 (p.2) indicated that *‘release from BCD had been reduced to allow for pipe maintenance. Additional flow from BCD was released following these observations to re-establish pool water levels and for ecosystem protection’*.

The SMSR for November 2013 (p.2) stated the following:

- *‘No new impacts were reported during November, however updates of previously reported impacts/observations were provided, these impacts are summarised below (refer to Impact Report dated 21/11/13).*
- *Pre-mining baseline levels of pools were established along the Georges River in:*
 - *Pool 60 (impact reference WCA5_LW35_023)*
 - *Pool 58 (impact reference WCA5_LW35_022)*
 - *Pool 57 (impact reference WCA5_LW35_012)*
 - *Pool 56 (impact reference WCA5_LW35_012)*
 - *Pool 54 (impact reference WCA5_LW35_007)*
 - *Pool 38 (impact reference WCA5_LW35_005)*
 - *Pool 44 (impact reference WCA5_LW35_025)*
 - *Significant improvement in water appearance observed in Pool 58 (impact reference WCA5_LW35_020)’*.

The SMSR (November, 2013, p.2) concluded that *‘pool water levels are currently consistent with a Level 1 Trigger according to the Georges River Management Plan’*.

It is noted that the TARP has been modified in the recently developed Georges River Water Management Plan for Longwalls 37 and 38 (approved by DRE and P&I in late March 2014). It is understood that the modifications were made during a review of the TARP that included ICHPL, DRE and P&I, who conducted site visits and considered the TARP for the Georges River Management Plan for the current longwalls as part of the review.

8.11.2 Notifications of Impact on Georges River Reported to DTRIS-DRE

The end of panel report for Longwall 35 included a total of 20 Notifications of impact that were reported to the DTRIS-DRE for the longwall between September 2012 and October 2013. Impacts related to gas release, cracking, iron staining or flow diversion. Impacts were reported as Level 1 as defined by TARP's detailed in the Georges River Management Plan (Longwalls 34-36 Rev 1).

The notification dated 06/09/2013 indicated that a pool water level drop had occurred in Pool 58 and that if this impact could not be addressed by additional flows from BCD, it would comprise a Level 2 impact. Additional notifications on 11 September also indicated reduced water levels in some pools. A notification dated 23 September reported additional water level drops in some pools and reported that increased flows from BCD had '*successfully re-established pool levels to those of pre-mining*'. Due to the re-establishment of pool levels, the impacts were not classified as Level 2 impacts.

As discussed above, the Impact report dated 21/11/2013 reported that pre-mining baseline levels of pools were established along the Georges River in the pools being monitored. Since this time levels in pools have fluctuated with the 28/02/2014 report indicating levels below the pre-mining baseline and the 03/03/2014 report indicating levels above the pre-mining baseline.

The most recent Aquatic Ecology Monitoring (Cardno, February 2014, p.23) provides the following conclusions that summarise impacts to the aquatic ecology of the Georges River:

'The recent physical mining impacts (fracturing, diversion of flows and lowering of pool water levels and associated loss of river connectivity during low flow conditions) associated with the extraction of Longwall 35 that were observed in the Georges River between February and November 2013 have impacted on aquatic ecology. These impacts include reductions in numbers of macroinvertebrate taxa, evidence of a lowering of habitat quality and the desiccation of macrophytes. There also appears to have been a reduction in the numbers of fish and larger mobile macroinvertebrates at one of the affected sites. These changes are linked with the direct loss of aquatic habitat and river connectivity associated with the lowering of pool water levels and loss of flow during dry periods. Impacts to river connectivity would also be expected to affect migratory fish species upstream and downstream of the affected areas, although there is no evidence of this in the data collected during this study. Potential changes to water quality due to physical impacts could also be a contributing factor, however, there is no data to support this at this stage.

No changes to aquatic ecology were evident at sites further downstream and impacts to aquatic ecology appear restricted to the areas directly affected by mining. Increased releases from Brennans Creek Dam in response to the lowering of pool water levels appear to have been successful in temporarily restoring pool water levels to normal. This measure would have reduced impacts to river connectivity and aquatic ecology.

It is recommended that increased discharges from Brennans Creek Dam be maintained for as long as practicable while low pool water levels and flow resulting from mining are experienced in the Georges River.

This will help minimise impacts to aquatic ecology associated with loss of habitat, flow and connectivity. It is also recommended that further monitoring be undertaken to provide additional post-extraction data for Longwall 35 and data as extraction of Longwall 36 progresses and for at least two years thereafter. The next survey should be undertaken during the 2014 Spring AUSRIVAS sampling season. This survey would also provide further baseline data for Longwalls 37 and 38. The collection of additional during and post mining data will facilitate the assessment of the impact of the longwall extraction on the aquatic habitat and biota in the Georges River. It will also provide information that will help further assess the impacts to aquatic ecology associated with the extraction of Longwall 35, and help determine the degree of potential remediation and recovery of impacted aquatic ecology'.

Based on the above, it is evident that ICHPL are responding to low water levels in the affected pools by conducting increased inspections when needed and discharging additional water from BCD periodically. ICHPL consider that these actions maintain the Level 1 Trigger level as detailed in the Georges River Management Plan TARP on the basis that water levels are able to be maintained with intervention of discharges from BCD. Should water levels in the pools not recover, a Level 2 impact would be reported.

During site inspections it was reported by ICHPL management that the preference is to wait until all subsidence impacts have occurred to the section of Georges River affected by mining prior to commencing rehabilitation by grouting of surface subsidence cracks. This is currently estimated to be 2016. ICHPL consider that this will provide the best opportunity for successful rehabilitation of the river bed and reduce rehabilitation impacts through conducting the rehabilitation on one occasion instead of partial rehabilitation conducted during the mining activities followed by final rehabilitation after mining. Based on this, ICHPL consider that current impacts would be temporary as remediation would occur in 2016.

ICHPL developed and implemented a rehabilitation plan for the Georges River (2010) for mining impacts at the time. URS did not conduct a technical adequacy review of this document. It is understood a similar plan will be developed for the rehabilitation of additional sections of the river impacted by subsidence since this time. A MOP approval letter issued by DTRIS-DRE dated 29 November 2012 (ref: MCV12/144) confirms that once rehabilitation is planned for these impacts, the relevant stakeholder agencies will be consulted and the final rehabilitation plan and objectives will be agreed upon. Progress is to be reviewed on an annual basis by DTRIS-DRE as part of the AEMR review process. The letter also states that DTRIS-DRE support the early commencement of consultation concerning this issue with the aim of having an acceptable remediation plan ready for implementation as soon as practicable.

ICHPL showed URS auditors some sections of Georges River where subsidence impacts had been rehabilitated at Jutts Crossing. ICHPL reported that rehabilitation in this section (which was impacted by longwall mining directly under the river) had been successful. The area was observed by a URS auditor to have flow where it was reported that when impacted, flows had been diverted from the section of river (see photos 8-8 to 8-16 in Table 8-1).

8.12 Community Consultative Committee

Subsidence issues are included as agenda items on the Community Consultative Committee (CCC). CCC meetings that addressed subsidence issues were noted to include, but not be limited, to the following:

- 30 October 2012 – subsidence questions were asked by CCC members during the environmental update section of the meeting. In relation to subsidence monitoring, the issue of property subsidence and damage was raised.
- 29 January 2013 – subsidence issues were addressed under the topics “Matters Arising” and “Mining Planning Cycle”. CCC members were noted to have asked questions concerning subsidence including the ‘angle of draw’.
- 28 May 2013 - guest speaker Daryl Kay, Mine Subsidence Engineering Consultants was noted to have presented to the CCC following the meeting.
- 30 July 2013 - it was noted in this meeting that a complaint was made from the public concerning the Hume Highway. The minutes identified this was related to ongoing works to manage subsidence impacts in the Hume Highway.

As noted above one subsidence related complaint was received on 22/06/2013 from a driver concerning impacts from expansion joints on the Hume Highway following subsidence mitigation works (1SAP ref: 402933904). ICHPL reported that there was no further discussion with the complainant and the event was not entered into the Stakeholder database.

8.13 Adequacy Assessment and Recommendations

It is considered that subsidence effects are being well managed under the various SMPs and their specific Management Plans and associated TARPs. While the mining operations carried out during the audit review period fall under three generations of SMP (Appin LW701-704, Appin LW 705-710, and West Cliff LW 34-36), the prediction and ongoing assessment of subsidence effects has a consistent basis across the Plans and subsidence monitoring and assessment is carried out on a generally consistent basis and is reported in a consistent format. Impacts associated with mining extraction generally appear within predicted levels. Ongoing environmental monitoring should be conducted as required by approved plans and reports.

Major surface infrastructure (including Main Southern Railway, Hume Highway, SCA infrastructure, gas pipelines, HV transmission lines, and communication cables) is managed via specific Management Plans developed and implemented in consultation with the infrastructure operators.

ICHPL has allocated substantial resources, both in-house and consultant/contractor, to subsidence management. While it is probably not appropriate or practical to provide more than a general overview of these resources within the relatively high-level Subsidence Management Plans, it may be useful to have available for internal use a brief document and organisation chart which summarises (down to field operations level) the allocation of tasks and responsibilities to, and interfaces between, the various line managers and technical and field staff involved in subsidence management.

9 WATER MANAGEMENT

This section of the report details the findings of the review of water management at the BSOP as assessed by the approved water specialists Nick Maynard and Harry Grynberg.

9.1 Water Management Overview

Water management for the BSOP is operated in accordance with the following documents:

- Surface Water Management Plan, December 2012 (SWMP) for the BSOP;
- Extraction Plans (containing Subsidence Monitoring Plans (SMP) and Water Management Plans for groups of Longwalls); and
- Environmental Assessments (EAs) for other operations.

The SWMP was developed in response to the Project Approval to continue mining until 31 December 2041. As the BSOP mining activities continue, the surface water system will be required to adjust to the expanded activities. This is particularly the case for West Cliff Colliery where water flows are required to be managed that pass over and through the expanding emplacement area. The SWMP addresses the general operation of the three BSOP pit top sites, including surface water release conditions, erosion and sediment control, potential oil contamination, mine water management, monitoring and management strategies and control.





The prediction, assessment and monitoring of subsidence is controlled by Extraction Plans (as discussed in Section 8). These are developed to cover the planned mining of Longwalls, usually four to five at any one time. The Extraction Plan overarches a number of investigations and assessments that consider the various impacts that mining subsidence may cause for those Longwalls. With respect to water management, these include the SMP and Water Management Plan. The SMP considers what surface features are within the predicted zone of impact, the likely subsidence and how that movement will be monitored. The WMP considers the likely impacts the predicted subsidence may have on surface water features and ground water flows, how to monitor these impacts and what management actions can be taken, should they occur. These plans must be developed and approved by the EPA prior to mining the Longwall(s). At the end of each panel, an End of Panel Report is prepared that assesses the actual subsidence and effects against the predictions. The impact of works that occur outside of the areas covered by the SWMP and Extraction Plan is assessed through an Environmental Assessment (EA). An example of this type of work is the ventilation shafts for the underground works. These works are not covered by PA 08_0150 and have therefore not been considered in this audit.




9.2 Site Inspection



Observations from the site inspection directly relating to water management are detailed in Table 9-1 (Westcliff), Table 9-2 (Appin East) and Table 9-3 (Appin West). The water specialist was escorted around the site on two separate occasions by mine personnel who made themselves available for this purpose.



Table 9-1 Summary of Observations Relating to Water Management at West Cliff Pit Top

ID	Observation	Photo
9-1.	<p>Pond 1 collects water from Stockpiles 2 and 3 and other disturbed ground to the south and east.</p> <p>The water level is controlled by gravity feed to Pond 2. When storage is exceeded, water backs up into the stockpile area. If the available storage were to be exceeded, flow would pass to Pond 1. Westcliff staff reported that this has not occurred to date.</p>	
9-2.	<p>Pond 2 collects water from Stockpile 1 and other disturbed ground to the east.</p> <p>The water level is controlled by pumping to the Water Treatment Tanks and Pond 3. Overtopping of Pond 2 will follow the natural topography Pond 4a. During the audit period the auditors were unable to assess if overtopping had occurred.</p>	
9-3.	<p>Pond 3 is used to store water prior to treatment and is used for additional settlement. Water can be pumped from this location to the Water Treatment Tanks or to Pond 4a for treatment.</p> <p>Overtopping of Pond 3 will follow the natural topography to Pond 4a. During the audit period the auditors were unable to assess if overtopping had occurred.</p>	
9-4.	<p>Pond 4a collects water from the coal wash underdrainage system as well as surrounding disturbed areas. It is a treatment point where flocculant dosing is applied as flow is pumped from Pond 3. Water in this pond is released to Brennan's Creek Dam through controlled pumping/gravity feed or via the spillway. During the audit period the auditors were unable to assess if uncontrolled spill had occurred.</p>	

ID	Observation	Photo
9-5.	<p>Pond 5 is located within Stockpile 4 and is formed by the stockpile topography. Water is pumped to Pond 6 for treatment. The capacity of Pond 5 is 33 kL, however; there is a significant storage volume available in the stockpile should water naturally overtop. If overtopping of the pond were to occur, it would follow the natural topography to Pond 6. During the audit period the auditors were unable to assess if overtopping had occurred.</p>	
9-6.	<p>Pond 6 holds water flow prior to treatment process in Pond 7 and is used for initial settlement and storage of excess flow from Pond 5. Overtopping from this pond will follow the natural topography directly to Pond 7. During the audit period the auditors were unable to assess if overtopping had occurred.</p>	
9-7.	<p>Pond 7 holds flow from Pond 6 after it has been dosed with flocculant. Following treatment water flows are released to Brennan's Creek Dam.</p>	
9-8.	<p>Water treatment tanks located between Ponds 2 and 3 are used to treat water from the two ponds and are typically used following rainfall events when larger volumes of water require treatment. The water treatment tanks can also be used independently of the pond system, as required.</p>	




ID	Observation	Photo
9-9.	<p>Ponds EP2, and EP3 are located in Brennan's Creek Valley to the north of the coal wash emplacement. EP2 receives water from the emplacement area. Water flow leaving the active areas of the emplacement is considered 'dirty' and therefore this water requires treatment.</p> <p>An unnamed small pond is located between EP2 and EP3 and is used to hold water before treatment via pumping to EP3.</p> <p>Should overtopping occur water will pass into the small pond and then into EP3.</p>	
9-10.	<p>Pond EP3 receives water from the small pond located between EP3 and EP2. This water is treated as it is pumped to EP3 where suspended solids are allowed to settle. Water from this dam is released to Brennan's Creek Dam.</p> <p>Flows from EP2 and EP3 represent a significant contribution to Brennan's Creek Dam and therefore the quality of water leaving this system has a significant effect on the quality of water in Brennan's Creek dam. If the water in EP3 is deemed to require further treatment before moving to Brennan's Creek Dam it is pumped from the downstream end, re-dosed and then re-introduced at the upstream end of EP3. This improves the water quality prior to release to Brennan's Creek Dam.</p> <p>If this pond EP3 were to overtop, the water would flow via a dedicated channel to Brennan's Creek Dam.</p>	
9-11.	<p>The outlet at EP3 is pumped to control Brennan's Creek Dam volumes. Water is pumped through a dedicated channel to Brennan's Creek Dam.</p>	



ID	Observation	Photo
9-12.	<p>There are two Clean Water Diversion Channels that pass on either side of EP2 and EP3. These channels carry clean water runoff from undisturbed areas around the water management system to Brennan's Creek Dam. The channel pictured is located to the east of EP2 and EP3. Use of the eastern channel will be reduced as the emplacement expands.</p>	
9-13.	<p>The western Clean Water Diversion captures flow that enters West Cliff surface infrastructure and diverts it to Brennan's Creek Dam. This process significantly reduces the volume of water requirement treatment through the system. This diversion is approved under Water Act Licence 10SL056787.</p>	

ID	Observation	Photo
9-14.	<p>Brennan's Creek Dam is the final storage point for surface water flows across the West Cliff surface infrastructure. Water is taken from the dam for non-potable uses in both the surface and underground operations and receives a dose of chlorine to reduce microbiological growth from the new chlorine dioxide dosing plant.</p> <p>Water from the dam is also released to the Georges River through Licenced Discharge Points (LDP) 10 and LDP 13. LDP 10 covers flow from a Reclaim Dam, immediately downstream of Brennan's Creek Dam. The Reclaim Dam is used to capture seepage from Brennan's Creek Dam. LDP 13 covers flow released directly from the Brennan's Creek Dam.</p> <p>Spills from Brennan's Creek Dam discharge over a spillway (LDP 1) to the west of the dam. Water monitoring associated with LDP 1 previously associated with spillway discharge has been removed from EPL 2504 due to safety concerns associated with discharge volumes.</p>	
9-15.	<p>The outlet from Brennan's Creek Dam discharges flow from the Reclaim Dam and Brennan's Creek Dam through the one discharge point (i.e. LDP 10 and LDP 13 combine through this outlet). The discharge outlet flows into the Georges River. The configuration of LDP 10 was changed from the bottom Brennan's Creek Dam to floating off-take so that water discharged is taken from the surface water and not 'bottom' waters in accordance with PRP 18 of EPL 2504.</p>	

ID	Observation	Photo
9-16.	On-line data logger at LDP 3 irrigation area at West Cliff pit top.	
9-17.	LDP 3 at West Cliff pit top. The irrigation area covers three terraced levels and is connected to the on-site sewage treatment plant.	

Table 9-2 Summary of Observations Relating to Water Management at Appin East Pit Top

ID	Observation	Photo
9-18.	<p>The Stormwater Dam is the central feature of the water management system at Appin East pit top. Surface water flow from the site naturally falls to this location where it is collected in drains, treated and discharged into the silt trap (shown in the foreground). The silt trap settles much of the suspended sediment before the water enters the main dam (shown in the background).</p> <p>Overflows from the Stormwater Dam pass through a dam outlet. Water from the dam is used in the truck wash and for dust suppression around the site. The water then flows back to the Stormwater Dam for treatment and reuse.</p>	
9-19.	<p>The Settling Dam lies to the north of the Stormwater Dam. The dam no longer has a dedicated treatment purpose, but is used in the maintenance of the whole water management system. Treated flows can be directed to this dam rather than the silt trap to allow cleaning of the silt trap and Stormwater Dam.</p>	
9-20.	<p>The Stormwater Dam Outlet (spillway overflow) is a licenced discharge point (LDP 21) and releases flows to the Georges River. Site staff reported that the Stormwater Dam is managed to reduce the likelihood of overflows through this outlet. The site releases water through the Dynasand Plant (see below) and time operations to account for forecast rainfall.</p>	

ID	Observation	Photo
9-21.	<p>The Dynasand Plant treats water via filtration through a bed of sand so that it achieves the required discharge limits specified in EPL 2504.</p>	
9-22.	<p>The outlet from the Dynasand Plant is LDP 19 that discharges to the Georges River. Discharge water is sampled as required by the EPL and the outlet is fitted with a probe that continuously monitors volume.</p>	
9-23.	<p>BSOP management reported that the sand filter lagoons were used prior to the commissioning of the Dynasand Plant and are now rarely used, however; they could be re-instated if needed. Should they be re-instated their function would be to add an additional level of filtration to site water or as additional storage capacity. The lagoons are linked to LDP 18, however; monitoring data shows that no flow has been discharged through this LDP since April 2012.</p>	













ID	Observation	Photo
9-24.	<p>A first flush settling basin is operated on the site to take runoff water from the main site entrance and a number of the surrounding minor roads located off-site. The basin is designed to collect the first 136 kL of runoff from the catchment and allow it to settle. Any flow greater than 136 kL bypasses the basin and flows directly to Georges River. The areas serviced by this basin are sealed roads and unsealed abutments.</p> <p>Captured water is pumped to the stormwater dam and treated before re-use or release.</p>	
9-25.	<p>Toilet waste from the site is treated via an Envirocycle® system and then spray irrigated to a licensed irrigation area (LDP 20). The signage for this discharge point was not evident at the time of the site visit. Bathhouse water is collected in a separate closed system and disposed off-site by a licenced contractor at a licenced waste facility. A compliance assessment of the on-site sewage management system was not conducted by the auditors.</p> <p>Recommendation</p> <p>It is recommended that the signage for LDP20 be reinstated.</p>	

Table 9-3 Summary of Observations Relating to Water Management at Appin West Pit Top

ID	Observation	Photo
9-26.	<p>Mine water lagoons collect water pumped from the underground workings. Water from these lagoons is treated by an on-site desalination plant.</p>	
9-27.	<p>The on-site desalination plant treats water from the mine water lagoons. Treated water is used in underground processes with a proportion being discharged via LDP 24 a tributary of Sandy Gully. Brine water is stored next to the facility in a dedicated above ground storage tank.</p>	

ID	Observation	Photo
9-28.	<p>The brine storage tank (300 kL) holds the brine until it is trucked off-site to Unanderra where it is discharged under a separate EPL (not considered in this audit). The image shows the truck filling station which is designed to return any spill to the storage tank.</p> <p>Historic leaks from filling operations have impacted unsealed ground adjacent to the concrete filling pad with salt.</p> <p>It is recommended that the deflector screen size is increased to the size of the full length of the pad to prevent further spills impacting the soil.</p> <p>The suitability of the bunding surrounding the brine storage tank has not been assessed.</p> <p>Recommendation</p> <p>Review the adequacy of the bunding to the brine storage in conjunction with the AS1940 audit as recommended for PA 08_0150, Condition 12, Schedule 2.</p>	
9-29.	<p>Treated mine water is discharged via LDP 24. LDP 24 was previously located to the east of the site, however; downstream erosion issues were observed and the LDP was consequently moved to the same location as LDP 23 and LDP 25 located south of the Surface Water Basins to the south-east of the site. The movement of the LDP has addressed the erosion issue and the watercourse now only takes the natural runoff, not discharge.</p>	

ID	Observation	Photo
9-30.	<p>The sewage treatment plant receives water from the bathhouse and toilet systems. The system consists of a Mutrator and two treatment lagoons.</p> <p>Water is pumped from this system and discharged at the licensed spray irrigation area (LDP 22).</p>	
9-31.	<p>A sump located at the lowest point of the workshop parking area collects water that is potentially contaminated with oil. Water is pumped from the sump to an oil water separator and the clean water is transferred to Surface Water Basin 1.</p>	
9-32.	<p>Surface Water Basin 1 (East) collects runoff from pit top areas that have the potential to be contaminated with oil. This is a final precaution in the event of an unplanned water related incident. Water from this location can be joined via pipework under the spillway with Surface Water Basin 2, or by flow over the interconnecting spillway. No surface sheen was observed at the time of the site inspection.</p>	

ID	Observation	Photo
9-33.	<p>Surface Water Basin 2 (West) collects surface water runoff from the areas not discharging to Basin 1. Water from this basin is released to a water treatment system (described in photo 9-34) prior to discharge. During rain events greater than the design condition of a 10 year 72hr event as specified in the SWMP, bypass discharge occurs via an overflow spillway through LDP 25 to Sandy Gully.</p>	
9-34.	<p>The water treatment system attached to Surface Water Basin 2 reduces suspended solids, oil and grease, odour and nutrient load prior to discharge. Water that leaves this system discharges via LDP 23. The cartridges used by the system contain granulated carbon and are replaced as needed with variations in monitoring results used to signal this requirement. The system was cleaned and cartridges replaced in November 2012.</p>	
9-35.	<p>Overflow from Surface Water Basin 2 is discharged via LDP 25 to Sandy Gully.</p>	

ID	Observation	Photo
9-36.	The water outlet from the Water Treatment System is discharged via LDP 23 to Sandy Gully.	

9.3 Mine Water Adequacy Review

9.3.1 Overview of the Surface Water Management Plan (2012)

A Surface Water Management Plan (SWMP) was prepared by ICHPL and submitted for review by NSW Office of Water (NOW) and the EPA. Comments from these agencies were incorporated into the latest version, dated 28 December 2012. URS sighted a letter from Planning and Infrastructure to ICHPL dated 07/01/2013 that approved the Surface Water Management Plan in accordance with Condition 16 of Schedule 4 of PA 08_0150.

The SWMP is the overarching document for the water management at all three sites that make up the surface workings for the BSOP. The SWMP was reviewed and assessed against observations made on site. Aspects of the Plan were discussed with BSOP staff.

The SWMP provides a detailed description of the water management across the BSOP, covering surface water flow and discharge from the three sites. The Plan also addresses the management of groundwater that is brought to the surface from underground operations. It describes the roles and responsibilities of the staff, the strategies used, treatment systems and other infrastructure available on the three sites. Finally it considers the potential impacts to the surrounding waters, methods of monitoring the volume and quality of water and corrective actions.

The review identified the water management system to be both well planned and well implemented. Areas of each site had been carefully considered and sensible systems employed to store, move and treat water across the three sites. BSOP personnel interviewed during the audit reported a close working relationship with the EPA and demonstrated a thorough understanding of the requirements of the SWMP and EPL placed on the three sites.

A detailed Australian Water Balance Model (AWBM) was developed as part of the EA for the main BSOP sites. The model represented the West Cliff Colliery, however; took into account the inflows of mine water from the Appin East and Appin West sites. Elements of this model were verified against recorded data and found to provide a good representation of BSOP conditions. The model was then used to predict the behaviour of Brennan’s Creek Dam over a thirty year period.

No further work has been carried out with the water balance model since the EA and the SWMP does not consider current operations in comparison to the predictions made in the EA. Many changes have occurred in site operations across the three sites since the model predictions were made, which have not been updated in the SWMP, including the cessation of discharging mine water to Brennan's Creek Dam. In accordance with PRP 19 water from underground is sent directly to the West Cliff Colliery Washery to be used as process water. The three sites operate in a water surplus, with controls being based around the controlled release of water so as to meet EPL conditions. It is possible that an update of the water balance model would allow greater refinement in the designated release volumes, allowing the occurrence of uncontrolled overflow events to be reduced; however, this could be achieved more easily by relaxing the volume conditions and implementing operating levels on the storages upstream of LDPs.

Recommendations

- Update the SWMP to reflect current operations in comparison to the predictions made in the EA. The site inspection identified minor elements of the water management system such as the cessation of discharging mine water to Brennan's Creek that had changed from those described in the SWMP. The update can be conducted during the scheduled review of the SWMP.
- Update Tables 3-2, 3-3 and 3-4 of the SWMP to reflect the current PRP requirements such as PRP 18 – Modification to Brennan's Creek Dam off-take, PRP 19 – Water Quality Discharge Improvements to Upper Georges River via LDP 10 and PRP 20 – Aquatic Health Monitoring Program. These PRPs include current and future due dates for actions.

9.3.2 *Management Plan for Water Sensitive EPBC Act Listed Species (September 2012)*

The Management Plan for Water Sensitive EPBC Act Listed Species was developed to meet the requirements of Clause 8 of the EPBC Approval and applies to potential surface and ground water impacts of the Project on species listed under the EPBC Act within a Study Area illustrated in Figure 2 in the plan.

The plan includes an attachment that provides details to support the application to vary EPL 2504, in order to include additional pollutants and concentration limits for LDP 10. The proposed additional pollutants and concentration limits were determined using the National Water Quality Guideline methodologies and scientific dataset from a series of PRPs required by EPL 2504 completed during the last 10 years. Refer to Appendix B, Condition 8 for a review of the Management Plan for Water Sensitive EPBC Act Listed Species.

9.3.3 *Overview of the Extraction Plans*

The Extraction Plan ties together a series of documents that consider the effects of underground mining including the Subsidence Monitoring Program and Water Management Plan. The SMP considers what surface features are within the predicted zone of impact, the likely subsidence and how that movement will be monitored. The Water Management Plan considers the likely impacts the predicted subsidence may have on surface water features and ground water flows, how to monitor these impacts and what management actions can be taken, should they occur.

To assess the suitability of these plans for water management, the Extraction Plan for Longwalls 901-904 was reviewed. The Extraction Plan itself is a relatively short document that introduces the Longwalls under consideration, the extraction sequence, the relevant guidelines and licenses and the administration of the Plan documents.

The SMP references the Water Management Plan for the detail on monitoring; however, it also contains the master TARPs for the study area. These TARPs identify the general monitoring points for the surface water and groundwater as well as the types, frequency and parameters of the monitoring. The TARP table does not consider triggers and response actions and is best considered a description of the monitoring being carried out.

The Water Management Plan contains a TARP that considers triggers and response actions for surface water and groundwater. These are graded into three levels of severity that attract increasing numbers of actions. This is supported by more detailed consideration of the predicted subsidence and the effects this may have on the surrounding surface water and groundwater. The Plan is a summary of two detailed investigations that have been carried out by external consultants on behalf of ICHPL. The first is a Groundwater Assessment (Geoterra, 2011) and the second is an Assessment of Surface Water Flow and Quality (EcoEngineers, 2012). These reports consider the potential effects of subsidence and make recommendations concerning the water monitoring that should be carried out prior to, during and after mining of the Longwalls. These reports form the basis for the development of the TARPs that manage the mining process to conform with the conditions imposed on the mine.

The audit identified the water elements of the Extraction Plan to be thorough and give rise to TARPs that monitor and control the mining process. The requirements of PA 08_0150 specify that BSOP is to cause negligible environmental consequences to the Nepean and Georges rivers and no greater impact to other watercourses than predicted in the EA (2009) and Preferred Project Report. Discussion of impacts to the Nepean and Georges Rivers is provided in the Subsidence Section of this report.

9.3.4 Monitoring Points and Licensed Discharge Points (LDPs)

The BSOP has fifteen water related LDPs spread across its three sites. The audit of the water management system has found that these discharge points are sufficient to allow the effective management of water across the three BSOP sites. Published monitoring data indicates that the ICHPL follows the monitoring requirements specified in EPL 2504; however, a number of non-compliances have been recorded during the audit period. The EPA continues to review the conditions attached to these points with the aim of reducing the impact of BSOP operations.

Non-compliances against the requirements of EPL 2504 are discussed further in the compliance tables provided in Appendix A.

The water management system has been developed in such a way as to allow control of water treatment prior to discharge from the three sites. This allows BSOP personnel to react quickly and effectively to the results of the monitoring. Site Environmental personnel have stated that the three sites operate in a state of water surplus and work to manage available storage through controlled discharges. This reduces the occurrence of uncontrolled discharges from the sites.

9.4 Pollution Reduction Programmes

EPL 2504 reviewed at the time of the audit included the following PRPs:

- PRP 18 – Modification to Brennan’s Creek Dam off-take,
- PRP 19 – Water Quality Discharge Improvements to Upper Georges River via LDP 10; and
- PRP 20 – Aquatic Health Monitoring Program.

The above PRPs include current future due dates for actions.

The EPL reviewed at the time of the audit identified that the following PRPs had been completed prior to the audit period:

- West Cliff and North Cliff Colliers – PRP numbers 1 to 9.
- Appin Colliery – PRP numbers 1 to 14.
- Appin West Colliery – PRP numbers 1 to 16.

The EPA prepared a report titled Statement of Reasons Variation to Endeavour Coal Pty Limited’s Environment Protection Licence No. 2504 for West Cliff Mine, dated May 2013 that summarised ICHPL’s request to vary EPL 2504.

9.4.1 **Pollution Reduction Programme 18 - Modification to Brennan’s Creek Dam off-take**

PRP 18 requires ICHPL to change the configuration of LDP 10 from a pipe at the bottom of Brennan’s Creek Dam to surface water off-take by 30 June 2013.

The configuration of LDP 10 was changed from the bottom Brennan’s Creek Dam to a floating off-take so that water discharged is taken from the surface water and not ‘bottom’ waters in accordance with this PRP (refer to photo 9-15) in June 2013.

The EPA also changed the upper pH limit of LDP 10 to 9.3 to allow for the modification of Brennans Creek Dam off-take. The upper pH limit will be in place until completion of PRP 19 Water Discharge Quality Improvement to Upper Georges River via LDP 10 that is due by 30 December 2016. The EPA (May, 2013, pp.8-9) considers that *‘the change to the upper pH limit will not in effect represent any increase in environmental impact, due to carbon dioxide out gassing in the discharge waters that causes the pH to increase downstream of discharge point 10, compared to the pH measured at discharge point 10’*.

An EPA Notice of Variation to Licence No.2504 (Notice No. 1515381, File No. LIC06/433, no date) noted that on 30 June 2013 the *‘EPA received written notification that the licensee had completed PRP 18 – Modification to Brennan’s Creek Off-take’*. Operation of the off-take commenced on 28 June 2013. The EPA inspected the off-take on 25 July 2013 and confirmed its satisfactory operation and have marked PRP 18 as having been completed on the next variation to EPL 2504.

9.4.2 Pollution Reduction Programme 19 - Water Discharge Quality Improvement to Upper Georges River via LDP 10

This PRP is divided into the following two Stages:

- Stage 1: Water Efficiency Project – due by 30 June 2013.
- Stage 2: Carry out a Program of Works – due by 30 December 2016.

An EPA Notice of Variation to Licence No.2504 (Notice No. 1515381, File No. LIC06/433, no date) noted that on 30 June 2013 the *'EPA received written notification that the licensee had completed PRP 19 – Stage 1- Water Efficiency Project.'* ICHPL informed the EPA that the system can be used except after heavy rain events when suspended solid loadings are elevated. The EPA has marked PRP 19 – Stage 1 as having been completed on the next variation to EPL 2504.

PRP 19 requires ICHPL to reduce the concentration of pollutants in the discharge from LDP 10 to meet the concentration limits specified in Table 9-4. The EPA (May, 2013, p.9) reports that concentration limits are based on achieving a 95 percent protection level, as outlined in ANZECC 2000 Guidelines and the Assessment of West Cliff Mine Brennans Creek Discharge - Recommendations Regarding Discharge Trigger Values Required to Protect Receiving Waters. The concentration criteria specified in Table 9-4 are 100 percentile limits and must be achieved at all times following the completion of PRP 19.

Table 9-4 PRP 19 EPL Requirements by 2016

Pollutant	Units of Measure	Variations made to the EPL in 2013		PRP 19 requirements by 2016
		90 percentile concentration limit	100 percentile concentration limit	100 percentile concentration limit
Oil and Grease	mg/L		10	10
pH	pH		6.5 – 9.3	6.5 - 8.0
Total suspended solids	mg/L		50	50
Conductivity	µS/cm	2500 (>2ML/day) 3570 (≤2ML/day)		495
Bicarbonate	mg/L			225
Aluminium (dissolved)	µg/L	1000		55
Arsenic (dissolved)	µg/L	19		24
Cadmium (dissolved)	µg/L			0.2
Cobalt (dissolved)	µg/L			30
Copper (dissolved)	µg/L	8		1.4
Lead (dissolved)	µg/L	6		3.4
Manganese (dissolved)	µg/L	102		1900
Nickel (dissolved)	µg/L	200		11
Zinc (dissolved)	µg/L	84		8
Chemical oxygen demand	mg/L	50		50
Total dissolved solids	mg/L	2500		340
Total nitrogen	µg/L			250
Nitrogen (Ammonia)	µg/L			13
Oxides of nitrogen	µg/L			15

(Source: EPA, May 2013, pp.9-10 and EPL 2504)

In addition to the concentration criteria specified in Table 9-4 PRP 19 also requires ICHPL to reduce the concentration of pollutants in the discharge from LDP 10 to meet the toxicity limits specified in the Table 9-5. The toxicity limits provide that the toxic effect on species of freshwater crustacean and shrimp must not exceed the corresponding 90 percentile limit for that species.

Table 9-5 PRP 19 LDP Toxicity Criteria

Species	Frequency	Sampling Method	90 percentile concentration limit
<i>Ceriodaphnia dubia</i>	Monthly	7-day reproductive impairment test (USEPA 2002 - EPA/821/R/02/013)	No reduction in reproduction (EC10 reproduction)>100% effluent)
<i>Paratya australiensis</i>	Monthly	10-day acute test (USEPA 2002 - EPA/821/R/02/012) Adaptation of Test Method 2007.0 in that mature <i>Paratya australiensis</i> are used, with feeding 3 hours prior to 48-hour renewal of test solutions	No lethal acute effects (L10>100%

(Source: EPA, May 2013, p.10 and EPL 2504)

Initial investigations and planning are underway to develop a series of works to achieve the requirements of Stage 2 of PRP19 by 30 December 2016.

9.4.3 Pollution Reduction Programme 20 – Aquatic Health Monitoring Program

PRP 20 requires ICHPL to assess the aquatic health of Brennan’s Creek and the upper Georges River prior to, during and after completion of PRP 18 and PRP 19. ICHPL are required to undertake the aquatic health monitoring program between 1 September and 30 November (monitoring period) in the years 2013, 2015, 2017 and 2019.

This PRP is divided into the following two Stages:

- Stage 1: Prepare Aquatic Health Monitoring Program – due by 31 May 2013.
- Stage 2: Conduct Aquatic Health Monitoring Program – due by 1 December 2019.

A letter from the EPA to ICHPL dated 25/09/2013 (ref: EF13/2915:DOC13/65550:ATC) noted that ICHPL had submitted a revised draft Aquatic Health Monitoring Program Plan as required by this PRP. The program outlined the proposed monitoring and assessment of the aquatic health of Brennan’s Creek and the Upper Georges River in the years 2013, 2015, 2017 and 2019. The aim of the program is intended to show the current status of the river and any changes that may occur following implementation of PRP 19. The EPA reviewed the revised draft monitoring program and approved it in accordance with the requirement of PRP 20.

An EPA Notice of Variation to Licence No.2504 (Notice No. 1515381, File No. LIC06/433, no date) noted that on '25 September 2013, the EPA gave written approval of the draft Aquatic Health Monitoring program required by PRP 20. The EPA has agreed to extend the due date for completion of monitoring reports to 31 March each year to allow time for data analysis and report preparation.' The EPA has marked PRP 20 – Stage 1 as having been completed on the next variation to EPL 2504.

The auditors sighted the Aquatic Health Monitoring Program (15 August 2013) required in accordance with Condition 1 of Clause U3.1 of EPL 2504. ICHPL reported that the first round of monitoring was conducted between October and November 2013 and that identification and DNA testing is underway.

In addition the EPA (May, 2013, p.11) note the following concerning this PRP:

- Completion of PRP 18 and PRP 19, it is anticipated that the discharge signature will move closer to LDP 10, as works to reduce the concentration of pollutants in the discharge are carried out. The 2013 monitoring period will capture the anticipated improvements to the discharge after completion of PRP 18. The 2015, 2017 and 2019 monitoring periods will capture anticipated improvements prior to, during and after completion of PRP 19.
- PRP 20 requires ICHPL to undertake chemical analysis and an in-stream biota assessment, such as macroinvertebrate, algal and vertebrate species. Chemical analysis and an in-stream biota assessment will be required to be carried out at five or more locations including LDP 10, LDP 11, LDP 12 and at the confluence of Georges River and O'Hares Creek.
- PRP 20 requires ICHPL to provide reports to the EPA following each monitoring period (1 September and 30 November), commencing in 2013.

9.5 Groundwater Monitoring

A quarterly groundwater monitoring program was established in 2011 at Appin East Pit Top. Monitoring results have indicated that Total Petroleum Hydrocarbon (TPH) concentrations have increased in all monitoring wells at the site. ICHPL reported that the cause of the increase of TPH concentrations in groundwater was unknown at the time of the audit and that the only major change on site has been asphaltting of the area in the vicinity of the groundwater monitoring bores.

Groundwater monitoring at West Cliff Colliery up to February 2012 indicated that TPH concentrations have generally trended downwards. The carbon chain range are between C₁₀ – C₂₈ indicating that diesel is a potential source of contamination at this location. This is consistent with data reported in the validation report which was submitted to the EPA in August 2010 that indicated there was a small hot spot of contamination remaining. A contamination site assessment conducted in 2009/2010 identified a small groundwater seep that was discharging into one of the site dirty water catchment ponds (Pond P3). Laboratory analysis identified that the seep contained traces of hydrocarbons that triggered the reporting requirements under Section 60 of the *Contaminated Land Management Act 1997* (CLM Act).

9.6 Adequacy Assessment and Recommendations

It is considered that water issues are being well managed under the Surface Water Management Plan. Improvements were observed to have been made to the BSOP water management systems; however, ongoing issues were noted concerning exceedances from Brennans Creek Dam and that ICHPL were liaising with the EPA to further improve the system.

The following improvement opportunities were noted following the site inspection:

- The deflector screen adjacent to the brine loading area be extended to the full length of the pad in order to prevent future spills impacting adjacent soil.

Compliance against specific conditions are described in Appendix A with Non-compliances reported in Section 13. In addition to these specific items of non-compliance, URS has noted other areas where continuous improvement opportunities were noted, which are also presented in Section 13.

10 ECOLOGY AND REHABILITATION MANAGEMENT

This section of the report details the findings of the review of ecology and rehabilitation management at the BSOP as assessed by the approved ecology and rehabilitation specialist Jane Murray.

10.1 Ecology and Rehabilitation Overview

10.1.1 Strategy and Plan

The following documents have been developed to meet PA 08_0150 conditions relating to ecology and rehabilitation (Schedule 3, condition 3.2 and Schedule 4 conditions; 4.17, 4.18, 4.19, 4.31, 4.32 and 4.33) as well as *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) approval commitments:

- EPBC Act Approval 201/5350.
- EPBC Annual Compliance Report – Bulli Seam Operations Project, 2013.
- Annual Environmental Management Report (AEMR) 1 July 2012 to 30 June 2013.
- WCP Emplacement Area Management Plan (incorporating “Emplacement Area Management Plan” and “Coal Wash Emplacement Staging and Rehabilitation Plan”. Draft 29.06.2013.
- Rehabilitation Management Plan (Mine Operations Plan).
- *Persoonia hirstuta* Offset Management Plan – Conditions 1 and 2 Bulli Seam Operations - EPBC Approval 201/5350, Revision 6, November 2013.
- Bulli Seam Operations - Shale Sandstone Transition Forest Offset Management Plan, Revision 3 May 2013.
- Southern Brown Bandicoot Management Plan, Draft, May 2013.
- Broad-headed Snake Management Plan, Draft, May 2013.
- Bulli Seam Operations Project Environmental Assessment, 2009

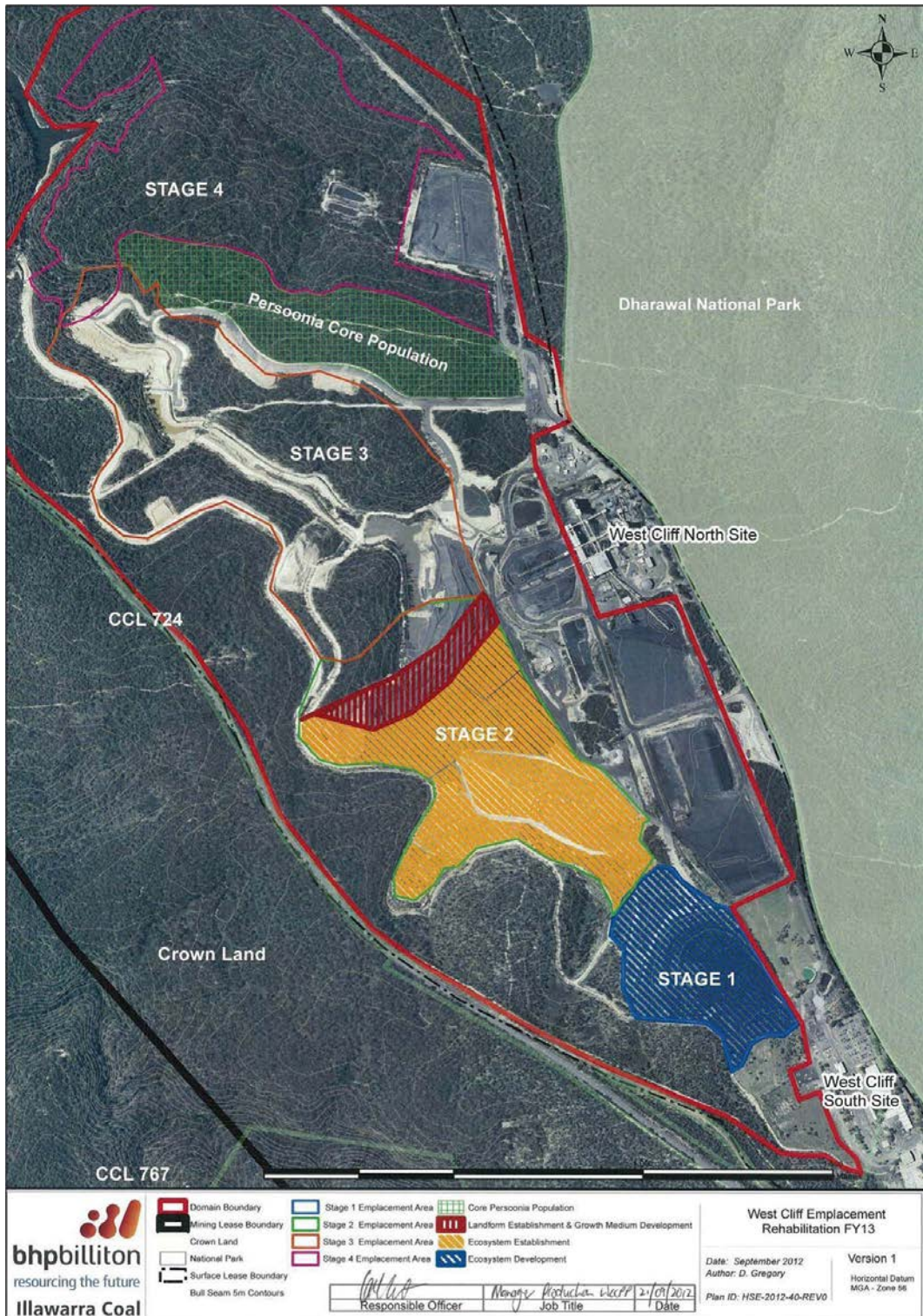
These documents were noted to have been prepared by suitably qualified experts in consultation with the relevant agencies and approved or are currently the subject of review by Planning and Infrastructure in accordance with PA 08_0150.

These documents are discussed below.

10.1.2 BSOP – Ecology and Rehabilitation Areas

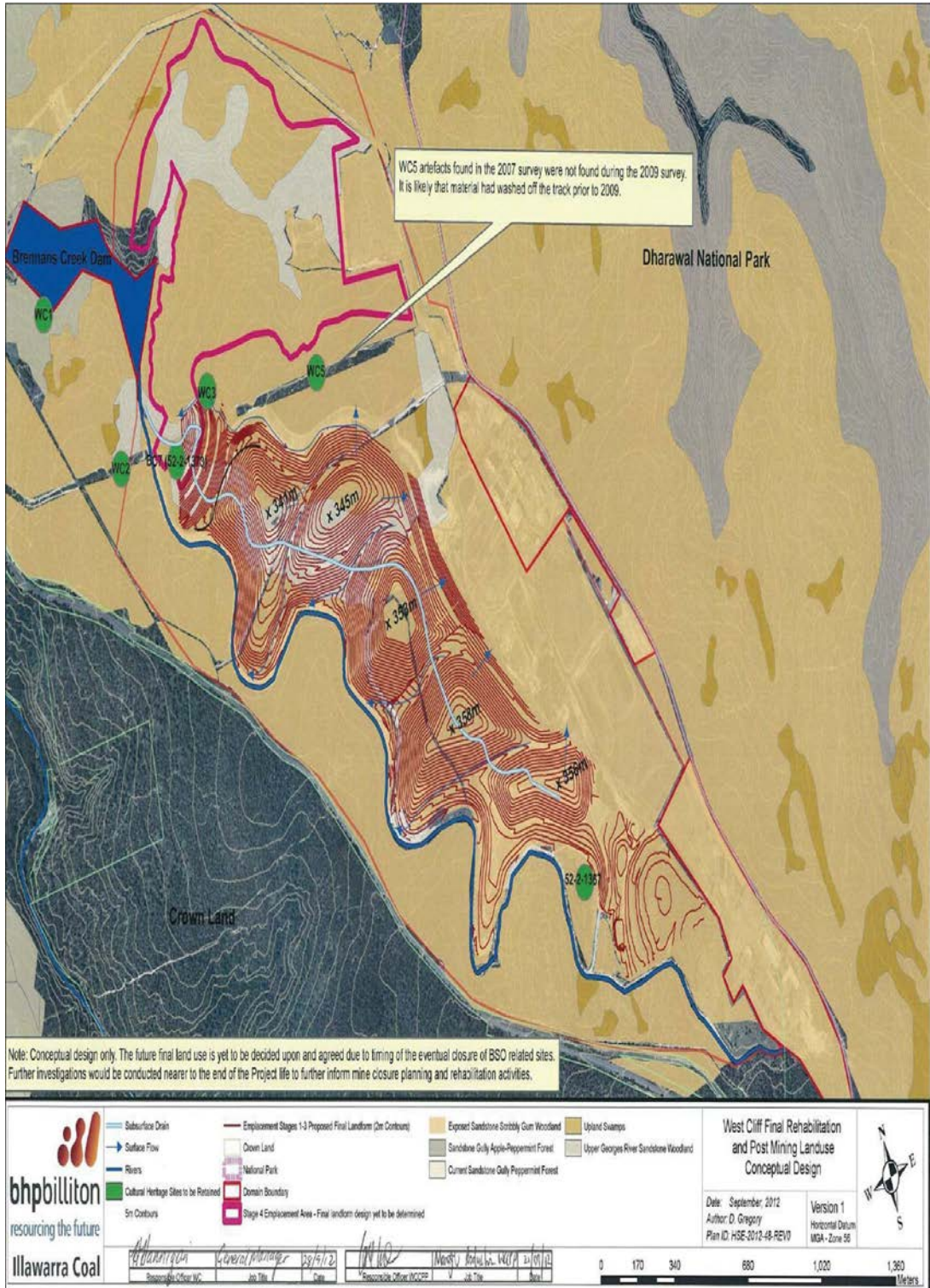
The WCP Emplacement Area has been rehabilitated stage by stage in accordance with the West Cliff Final Rehabilitation and Post Mining Land Use Conceptual Design and the Rehabilitation Management Plan (Mine Operations Plan) shown in Figure 10-1 and Figure 10-2.

Figure 10-1 West Cliff Emplacement Rehabilitation FY13



(Source: ICHPL Mining Operations Plan 1 October 2012 to 30 September 2019, V1.0, September 2012)

Figure 10-2 West Cliff Final and Post Mining Land Use Conceptual Design







(Source: ICHPL Mining Operations Plan 1 October 2012 to 30 September 2019, V1.0, September 2012)

Table 10-1 outlines the ecologically significant and rehabilitation areas for the BSOP that form part of this assessment.

Table 10-1 Ecology and Rehabilitation Areas – Bulli Seam Operations

Rehab Area	Locality / Observation	Photo
West Cliff – Stage 1	<p>Stage 1 at West Cliff Colliery was initially rehabilitated approximately seven years prior to the November 2013 site visit.</p> <p>Resilience and species diversity for Stage 1 was observed to be lacking and was found to be dominated by approximately five canopy species. This lacking diversity is in contrast with Stage 2 and Stage 3 planted and/or naturally regenerating (seed bank) areas that are already showing good species diversity and structure.</p> <p>The presence of the exotics African Love Grass and Rhodes Grass is an issue in Stage 1.</p> <p>The soil medium showed evidence of less top soil application than in Stage 2 or 3 areas</p>	
West Cliff – Stage 2	<p>Stage 2 rehabilitation areas (rehabilitated within the last three to seven years) showed strong resilience and native species diversity right up to the road boundaries.</p> <p>Rock outcrops were evident throughout with wet soaks and large scatterings of coarse woody debris.</p> <p>Small birds, reptiles, frogs and insects were observed during the site inspection.</p> <p>Diversity in native species was evident through participation in an ecological monitoring event</p>	


Rehab Area	Locality / Observation	Photo
	<p>designed to determine species composition, cover and abundance and habitat abundance.</p>	
<p>West Cliff – Stage 3</p>	<p>Stage 3 is currently being formed, topsoil spread with habitat features being laid. Stage 3 is already beginning regeneration naturally from within the top soil seed bank. Topsoil stockpiles were viewed and areas ready for spreading. Land form contours sit well within surrounding landscape.</p>	 
<p>Appin West</p>	<p>The Grassy woodland appeared to be healthy alongside mine entrance. Regular mowing of the woodland understorey is proving an effective strategy for weed control. Scattered rubbish piles and weeds were evident on the adjoining property boundary (as pictured).</p>	



There was no rehabilitation undertaken at Appin East during the audit period.





10.2 Implementation of Management Plans


The ecology and rehabilitation specialist was accompanied by BSOP personnel during the inspections conducted on 26 and 27 November 2013. Observations and comments concerning rehabilitation and biodiversity across the BSOP are provided in Table 10-2.

Table 10-2 Implementation of the Rehabilitation Management Plan

ID	Observation	Photo
10-1.	<p>During the site inspection within the Stage 1, 2 and 3 rehabilitation areas at West Cliff Colliery two separate rehabilitation methods had been undertaken. The two main methods comprised:</p> <p>Method A (Stage 1):</p> <ol style="list-style-type: none"> 1) Shaping the rehabilitation area with a fairly high compaction rate. 2) Addition of top soil. 3) No habitat features laid out. 4) Tube stock plantings and non local seed laid out. <p>Method A has resulted in erosion, exotic grass' taking hold and death of tube stock.</p> <p>Method B (Stage 2 / Stage 3):</p> <ol style="list-style-type: none"> 1) Shaping the rehabilitation area. 2) Lay down of habitat (coarse woody debris, rocks). 3) Placement of a top layer of coal wash, creating loose areas and space for infiltration. 4) Addition of top soil thicker than in Stage 1 areas which was ripped into top layers. 5) Direct seeding through local seed collection. <p>Method B has resulted in high native diversity and resilience, low weed influence, habitat creation for fauna.</p> <p>The photograph of Method B shows habitat placement in the foreground and coal wash ready for spreading in the background.</p>	

ID	Observation	Photo
10-2.	<p>The Shale Sandstone Transition Forest (SSTF) offset area, yet to be formally and legally secured, was traversed and found to be in good condition across the majority of the site. There were a few areas requiring weed control as per the SSTF offset management plan. BSOP personnel showed works undertaken to date within the proposed SSTF offset area such as; rubbish removal, fencing, and placement of barriers to prevent vehicular access.</p>	
10-3.	<p><i>Persoonia hirstuta</i> plants have been tagged, GPS mapped, fenced and are the subject of annual spring condition monitoring.</p>	

ID	Observation	Photo
10-4.	<p>Habitat restoration throughout Stage 1 and particularly Stage 2 and 3 where habitat restoration has been created through:</p> <ul style="list-style-type: none"> • Land form and contouring to create wet soaks and thus habitat for fauna such as frogs as well as key watering points for other fauna. • Deposition of woody debris to create habitat for reptiles and refuge for other fauna and limit erosion. • Deposition of rock outcrops for fauna habitat especially reptiles. 	
		
		
		

ID	Observation	Photo
10-5.	<p>Target weeds to be controlled across sites include:</p> <ul style="list-style-type: none"> • African Love Grass (<i>Eragrostis curvula</i>), pictured, • Scotch Thistle (<i>Onopordum acanthium</i>) • Rhodes Grass (<i>Chloris gayana</i>) • Whiskey Grass (<i>Andropogon virginicus</i>) • Red Natal Grass (<i>Melinis repens</i>) • Sharp Rush (<i>Juncus acutus</i>) 	

Other findings and observations made during the audit inspection included:

- It was reported by BSOP personnel that nest boxes have been purchased for the rehabilitation areas and offset areas; however, at the time of the site inspections none had been installed.
- Stage 1 requires further habitat placement (i.e. nest boxes, rock outcrops, coarse woody debris), weed control and potentially planting of natives to enhance species diversity.
- Based on information supplied by ICPHL during the site inspection topsoil used for rehabilitation purposes have been sourced within the BSOP site for Stage 1, 2, and 3 works thus far. This is considered a key success factor with seed bank regeneration, reducing the need for seeding and planting, causing true endemic rehabilitation in terms of species composition. At the time of the audit ICHPL did not believe they will have an issue with the availability of top soil and reported that the life expectancy of available topsoil is for at least 30 years until the final rehabilitation. ICHPL would review the requirement to bring in top soil as part of their Closure Plan.

10.2.1 Rehabilitation Management

Following the site inspection and in review of the Mine Operations Plan (Rehabilitation Management Plan) it was evident that two separate rehabilitation methods have been undertaken based on knowledge and key learnings from the initial Stage 1 rehabilitation.

The Stage 1 emplacement area rehabilitation initially began as the landform was shaped with rock and stockpiled sub-soils at a high compaction rate, followed by the addition of topsoil with tube stock then directly planted and non-local seed spread. The Stage 2 area rehabilitation included the creation of habitat (coarse woody debris, rocks, shaping of depressions for wet soak areas). This was followed by placement of a top layer of coal wash, creating space for infiltration and microbial activity, then a top soil layer was added. This was thicker than in Stage 1 areas that was then ripped into surface layers. Lastly the medium was direct seeded through local seed collection.

Comparison of the two methodologies indicates the following:

- Stage 1 area has been subject to erosion, exotic grasses taking hold and the failure of tubestock.
- Stage 2 has resulted in high native diversity and resilience, low weed influence and ample habitat creation for fauna.

Stage 3 which is was underway at the time of the site inspection and was observed to be following the process utilised in Stage 2 and is already showing signs of good native diversity and resilience, low weed influence and ample habitat creation for fauna.

At the time of the site inspection ICHPL had undertaken the following revegetation activities in accordance with the Mining Operations Plan (MOP - Rehabilitation Management Plan):

- Clearance of Stage 3 emplacement area guided by the two-stage clearance procedure outlined within the Draft Coal Wash Emplacement Staging and Rehabilitation Plan (CWESRP).
- Re-vegetation activities were reportedly undertaken as soon as practical following land form shaping and soil placement.
- Topsoil from clearance areas was stockpiled and reused for rehabilitation areas as soon as practicable.

10.3 Ecology and Rehabilitation Management Plans / Reports

A range of management plans and reports have been reviewed due to their relevance with the PA 08_0150, EPBC conditions and/or with ecology and rehabilitation matters for the BSOP. Comments relating to these documents are provided below.

10.3.1 Mine Operations Plan (Rehabilitation Management Plan)

The Mine Operations Plan (2012), approved by NSW Department of Trade and Investment (29/11/2012) inclusive of the BSOP was reviewed and found to adequately address rehabilitation related issues.

Review of the Mine Operations Plan demonstrated that key rehabilitation items have been addressed in a robust manner for each of the domain locations. Table 14 (Appendix J) of the MOP pulls together succinctly the rehabilitation management objectives for the BSOP and the respective regulatory requirements, timing, indicators, criteria, justification and responsibilities. The detail captured within Table 14 of the MOP sets out a clear platform for delivery.

It was noted that the Department of Trade and Investment through their approval make additional comments and conditions with respect to mine closure and remediation works.

10.3.2 Coal Wash Emplacement Staging and Rehabilitation Plan (June 2013)

The Draft WCP Emplacement Area Management Plan (incorporating 'Emplacement Area Management Plan' and 'Coal Wash Emplacement Staging and Rehabilitation Plan'), Revision 3 dated June 2013 had not been approved at the time of the audit. The West Cliff Coal Wash Emplacement Area Management Plan was developed in response to Condition 17, Schedule 4 of PA 08_0150.

Revision 1 of the plan was prepared in April 2010 the second revision occurred in May 2011 (i.e. prior to PA 08_0150). Therefore revision three represents the first submission under PA 08_0150.

The plan applies to potential impacts of the emplacement operations at West Cliff Colliery on threatened species, cultural heritage sites and groundwater. Emplacement construction and operations are conducted in accordance with detailed design plans prepared for each emplacement phase. Due to the long life of the emplacement detailed final design details are prepared progressively and are therefore not outlined in the plan.

The Draft plan contains comments from OEH suggesting further revision regarding sub plans within the plan, namely the *Persoonia hirstua* Offset Management Plan, Southern Brown Bandicoot (SBB) Management Plan and Broad-headed Snake (BHS) Management Plan. OEH comments were noted to include:

- Measureable mitigation measures need to be a focus of the Southern Brown Bandicoot MP with relocation not being a viable option for Southern Brown Bandicoot.
- Requirements for annual environmental reporting and dust level assessment through implementation of monitoring to address dust management for *Persoonia hirstua*.
- Annual condition surveys for *Persoonia hirstua* address; shading, erosion and sedimentation.
- Reliance on unproven management strategies, especially for *Persoonia hirstua* such as; translocation, fire, supplementary planting etc. should not be a focus.
- Summary tables needed for Broad-headed snake management plan outlining impact minimisation measures.

URS have completed a high level review of the Plan, however this has not included a technical assessment of the details of the Plan. Overall the plan was found to be adequate with some minor gaps observed in addition to those identified by OEH. In particular it was noted that there is a lack of detail covering the offset mechanism, locality and consultation that has led to the offset for Shale Sandstone Transition Forest and *Persoonia hirstua*.

A draft West Cliff Stage 4 Emplacement Area Management Plan, Revision 1, dated May 2013 had been prepared, however this Plan was not reviewed as work on the Stage 4 emplacement area is not due to commence for nine to ten years therefore the actions required by this management plan were not implemented at the time of the audit.

Recommendations

URS provides the following recommendations concerning the WCP Emplacement Area Management Plan and appendices, SBB management plan and BHS management plan:

- It is recommended that seed collection efforts to outline the source of the seed collection (locality) and by who collects the seed be defined in the WCP Emplacement Area Management Plan.
- It is recommended that the Pre-clearance checklist (referenced section 7.1.1) be included in the appendices of the WCP Emplacement Area Management Plan.

- Update the plan to include a summary status of the various stages. An overview of the various stages (i.e. Stage 3 and Stage 4) and the status of these stages was not provided in the WCP Emplacement Area Management Plan.
- Update page 15 of the WCP Emplacement Area Management Plan to correct the '*Section Error! Reference source not found*' text.
- Define a timeframe for audits of the procedures maintained and implemented by the contract company employed to maintain the emplacement area (p.25 the WCP Emplacement Area Management Plan).

10.3.3 BSOP - Shale Sandstone Transition Forest Offset Management Plan

The Shale Sandstone Transition Forest Offset Management Plan, Revision 3 (May 2013) outlines the findings of a vegetation assessment that was prepared to provide information on the vegetation community, condition and adequacy of the proposed 60.48 hectare offset area located at Douglas Park, NSW. The plan was found to adequately address the detail of the offset area with respect to the development site as well as the mechanism for offset. In addition the methodology undertaken for the assessment was reviewed and found to be adequate. Management measures for the plan area have also been well set out by vegetation community with pictures provided for ease of implementation. The plan concludes with realistic monitoring and performance measures, including reporting requirements and responsibilities.

10.3.4 Annual Environmental Management Report 2013

The Annual Environmental Management Report (AEMR), 2013, provides a summary of the annual activities undertaken relevant to ecology and rehabilitation. The AEMR provided a brief summary of 2012/13 activities and is split into Appin, No 6 Ventilation Shaft Offset Zone and West Cliff areas, making it easy to decipher where the reporting is focused.

Recommendations

Opportunities for improvement identified concerning the AEMR have been outlined below and recommendations provided:

- Weed control activities for each of the BSOP operation areas should be more specific in terms of outlining what weed species were targeted during which season and the control method (chemical, mechanical, etc.) applied.
- The AEMR could go to further to outline specific tasks e.g. monitoring and research undertaken for the threatened species that are the subject of annual focus at the BSOP.
- The activities outlined for the next AEMR period (section 6) have omitted key ecology and rehabilitation activities including, but not limited to weed control activities, Stage 3 rehabilitation works (planting/seeding and habitat restoration) and feral animal control activities.

10.4 Rehabilitation Monitoring

Rehabilitation monitoring undertaken at the time of the site inspection was observed. The auditor accompanied qualified ecologists using NSW accepted methodologies to determine Stage 1, 2 and 3 conditions, resilience, abundance, weed issues and threatened flora presence.

Monitoring reports such as the West Cliff Monitoring Survey (Niche, 2013) provide a good summary of rehabilitation activities.

Recommendations

Opportunities for improvement identified concerning rehabilitation monitoring and recommendations have been outlined below:

- It is recommended that flora and fauna monitoring reporting include figures outlining survey locations, monitoring and rehabilitation issues and successes.
- Future AEMR's should outline monitoring locations and results to provide a summary of the flora and fauna monitoring undertaken at the BSOP during the year.

10.5 Summary of Recommendations relating to Ecology and Rehabilitation

The following recommendations have been provided to address areas for continual improvement at the BSOP with respect to ecology and rehabilitation:

- Electronic filing of correspondence (letters and meeting notes) relating to specific EPBC conditions should be saved in easy to locate folders. It is suggested that folders correspond with each EPBC condition item.
- Further information should be provided within the EPBC Annual Compliance Report – Bulli Seam Operations Project on the individual components of each of the condition items for future reports to provide a clear understanding on progress.
- Document upload dates should be provided on the BSOP/ICHPL website BHP Billiton website to allow for efficient condition compliance assessment where upload timeframes are required.
- ICHPL to develop and implement a Weed Management Plan including non-local native species and noxious weeds for West Cliff Colliery and Appin BSOP areas. Species such as Whiskey Grass, Rhodes Grass, African Love Grass and Sharp Rush should be a focus at West Cliff Colliery for 2014 and beyond.
- ICHPL to develop and implement a Pest Species Management Plan for the control and management of feral animals such as foxes, cats and rabbits. The plan should be prepared in consultation with Department of Primary Industries, OEH and the Sydney Catchment Authority.
- ICHPL to include threatened biota information; such as protected areas on site and procedures for; SBB, BHS, *Persoonia hirstuta*, SSTF and other threatened biota found on site into site inductions.

- Placement of artificial habitat, specifically tiles and/or metal, in a few areas on western facing rehabilitation areas within Stage 3 and eventually Stage 4 at West Cliff Colliery to provide optimal habitat for the Broad-headed snake. Signage locations could be placed on nearby roadways where habitat is visible as an educational tool for workers and visitors.
- Provide educational signage for future guided site tours to indicate the different planting timeframes and rehabilitation effort for each of the Stage 1, 2 and 3 emplacement areas.

10.6 Adequacy Assessment and Recommendations

There were no identified Non-Compliances concerning EPBC or MCoA Ecology and Rehabilitation conditions.

For a number of requirements that were assessed as compliant or not applicable, recommendations were made where continuous improvements were identified. These requirements and recommendations are summarised in Table 13-2.

11 AIR QUALITY MANAGEMENT

This section of the report details the findings of the review of air quality management at the BSOP as assessed by the approved air specialist James Grieve.

11.1 Air Quality and Greenhouse Gas Management Overview

The key plan for the management of air quality and greenhouse gas emissions is the Bulli Seam Operations Project, Air Quality and Greenhouse Gas Management Plan, Version 2.0, August 2013 (AQMP). The AQMP was developed in consultation with EPA and approved by Planning and Infrastructure in January 2013. The plan includes a broad and detailed management framework that includes identification of emission sources, operational controls, and relevant monitoring measures across the BSOP sites. The AQMP also covers compliance and legal requirements, complaints handling, as well as air quality analysis, data review and reporting.

Operational controls include, but are not limited, to the following:

- Maintenance of road condition, sealing of frequently used roads, speed restrictions;
- Operation of water carts and vacuum sweeper trucks;
- Use of sprays on stockpiles;
- Truck wheel washes;
- Covering of loads on haul trucks;
- Enclosure of conveyors;
- Control of underground mining emissions; and
- Utilisation of drainage gas in power generation where feasible.

Monitoring measures include, but are not limited, to the following:

- Informal visual inspections by personnel on site;
- Weekly site inspections;
- Meteorological monitoring;
- Dust deposition monitoring;
- Real time particulate matter monitoring using optical photometers;
- Particulate matter monitoring using High Volume Air Samplers (HVAS¹);
- Sensory survey and hydrocarbon analysis of ventilation stack emissions; and
- Methane emission measurement at ventilation and gas drainage sites.

11.2 Approach to Air Quality and Greenhouse Gas Inspections

The air quality and Greenhouse Gas (GHG) component of the audit focused on compliance and implementation requirements contained within AQMP, PA 08_0150 and EPL. The URS air quality specialist conducted a site inspection of the BSOP operations across two days. Site visits were prioritised to areas that showed the greatest risk in terms of potential air quality issues as determined by site operations, environmental sensitivities and public complaints.

The West Cliff Colliery and Appin East sites were considered of key importance concerning the scale of operational/emission potential and the sensitivity of surrounding environments. Air quality inspections included:

26 November 2013

- West Cliff – site office, coal stockpiles, emplacement area, coal loadout;
- Appin East – coal stockpiles, coal loadout, workshop area; and
- Appin West – workshop and storage area, water treatment plant, runoff lagoons.

4 December 2013



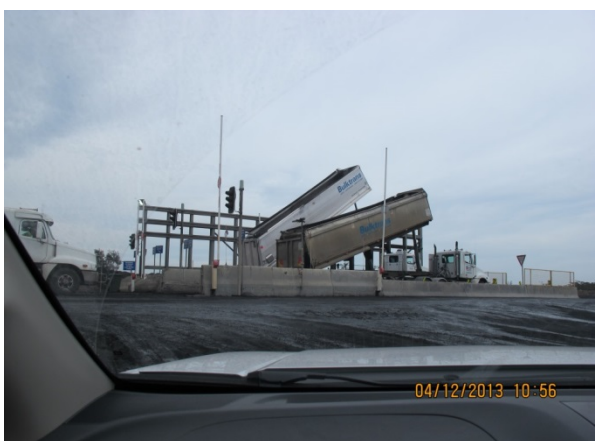
- West Cliff – site office, coal stockpiles, emplacement area, coal handling and preparation plant, coal loadout, ventilation tower;
- Appin East – site office, coal stockpiles, coal loadout, workshop area; and
- Appin Ventilation Site – Appin #2 (upcast) ventilation shaft, Appin #1 (downcast) ventilation shaft.




11.3 Site Observations




Observations and comments concerning air quality and GHG management across the BSOP are provided in Table 11-1.




Table 11-1 Summary of Observations Relating to Air Quality Management



ID	Observation	Photo
11-1.	West Cliff Colliery – Equipment enclosure awaiting commissioning of air quality monitoring equipment.	

ID	Observation	Photo
11-2.	West Cliff Colliery – Aerial vehicle washdown/inspection point.	 <p>A photograph showing a large, industrial metal structure with multiple levels and walkways, likely used for vehicle washdown or inspection. The structure is situated on a paved area with trees in the background. A timestamp in the bottom right corner reads '26/11/2013 12:50'.</p>
11-3.	West Cliff Colliery – Water cart operation on emplacement area haul road.	 <p>A photograph showing a water cart operating on a haul road. The cart is dumping water, creating a misty spray. The background shows a large area of dark material, likely coal, and a worker in an orange safety vest is visible in the foreground. A timestamp in the bottom right corner reads '26/11/2013 14:12'.</p>
11-4.	West Cliff Colliery – Dumping of ROM coal at CHPP. Minimal dust generation observed.	 <p>A photograph taken from the perspective of someone inside a vehicle, showing a large truck dumping ROM coal into a hopper. The truck's bed is raised, and the coal is falling. The scene is set in an industrial area with a paved road and some structures. A timestamp in the bottom right corner reads '04/12/2013 10:56'.</p>




ID	Observation	Photo
11-5.	West Cliff Colliery – Water cannon operation on reject haul truck at CHPP.	
11-6.	West Cliff Colliery – Wheel wash for product coal haul truck.	
11-7.	West Cliff Colliery – Product coal loading in progress. Application of water evident.	

ID	Observation	Photo
11-8.	West Cliff Colliery – speed limit signage on emplacement area haul road near to CHPP.	
11-9.	Appin East Ventilation Site – Methane monitoring instrumentation on ventilation point.	
11-10.	Appin East – Surge stockpile spray system in operation	

ID	Observation	Photo
11-11.	Appin East – Dust deposition gauge AE-DD15. Proximity to foliage noted.	
11-12.	Appin East – Rain gauge and anemometer assembly as used on input for sprinkler activation.	
11-13.	Appin East – Manual stockpile spray system activation point (operation demonstrated)	

ID	Observation	Photo
11-14.	Appin East - Coal haul truck wheel wash (operation sighted).	 A photograph showing a coal haul truck at a wheel wash station. The truck is positioned on a metal grate platform. A large blue structure with a yellow arm is spraying water onto the truck's wheels. The background shows industrial buildings and trees. A timestamp in the bottom right corner reads "04/12/2013 13:49".
11-15.	Appin East – Automatic haul truck cover (shown in the process of closing).	 A photograph of a white haul truck driving through a circular automatic cover system. The cover is partially closed, and a large amount of white steam or mist is being generated by the water spray. The truck is in the center of the frame. A timestamp in the bottom right corner reads "26/11/2013 15:15".
11-16.	Appin East – Signage for covering of loads.	 A photograph of a blue and white sign on two metal posts. The sign reads "TRUCKS ALL LOADS MUST BE COVERED" in bold, black, sans-serif capital letters. The sign is set against a background of green trees and a clear blue sky. A timestamp in the bottom right corner reads "26/11/2013 15:16".

ID	Observation	Photo
11-17.	Appin East - Dust generation on approach to coal loader.	
11-18.	Appin East - Coal haul truck exiting the site. Minimal dust visible in vehicle wake.	
11-19.	Appin East – Equipment enclosure awaiting commissioning of air quality monitoring equipment.	

ID	Observation	Photo
11-20.	Appin West – Control valves for sprinklers located adjacent to unsealed road to waste management area.	
11-21.	Appin West – Sprinklers located adjacent to unsealed road to waste management area.	
11-22.	Appin West – unsealed area of waste sorting area and laydown area. Mobile water sprays were observed in this area.	

11.4 Reporting of Results

A summary of air quality monitoring results is provided on the BHP Billiton website (<http://www.bhpbilliton.com/home/aboutus/regulatory/Pages/default.aspx>) as part of the 14 day monitoring report. At present, the reporting is limited to dust deposition monitoring conducted at the Appin West, Appin East, and West Cliff sites.

11.5 Air and Dust Complaints

The following is noted following a review of complaints from 31 October 2011 through to 27 December 2013:

- The following two dust complaints were received between 31/10/2011 to 27/12/2013 concerning Appin Mine:
 - complainant raised concerns about coal dust from Appin East Pit Top clogging gutters on their property. ICHPL organized an inspection of the Appin site and reviewed dust data at the time of the complaint (1SAP ref: 403035645). The investigation report identified that dust levels were below approved levels. Received 09/07/2013, records from the Stakeholder database dated 10/07/2013 to 23/07/2013 concerning this incident were observed during the audit. The records did not indicate a resolution had been made with the complainant.
 - a resident complained that dust was covering their property adjacent to Appin East. BSOP personnel investigated the property and discussed the concerns of the resident (1SAP ref: ICWEV12070029). Received 17/07/2012, records from the Stakeholder database dated 17/07/2013 to 17/08/2013 concerning this incident were observed during the audit

BSOP procedures and practices for managing air and dust issues appear to be effective given the low number of air and dust complaints received between 31 October 2011 and 27 December 2013.

11.6 Environmental Protection Licence 2504

An EPA Notice of Variation to Licence No.2504 (Notice No. 1515381, File No. LIC06/433, no date) noted that in 2011 PRP 17 – Coal Mine Particulate Matter Control Best Practice was attached to the EPL. ICHPL prepared a report that recommended a range of measures to minimise dust sources such as stockpiles, haul roads and transfer of coal. The recommendation has now been formalised as a licence requirement by the EPA notice under PRP 21 – Implementation of Dust Control Best Management Practice Measures.

The EPA Notice of Variation to Licence No.2504 (referenced above) has attached a PRP 22 requiring ICHPL to undertake an investigation into measures to reduce the amount of dust that is tracked out from West cliff Colliery on to Wedderburn and Appin Roads.

The two new PRPs (PRP 21 and PRP 22) will appear on the next variation to EPL 2504.

The EPA Notice of Variation to Licence No.2504 (Notice No. 1515381, File No. LIC06/433, no date) noted that dust monitoring points on the EPL will be updated at the next licence variation to reflect the network contained in the Air Management Plan.

11.7 Adequacy Assessment and Recommendations

It is considered that, in general, ICHPL are implementing appropriate measures to manage BSOP air and dust emissions. URS sighted a broad range of effective control measures targeting air emissions from the various sites within the BSOP consistent with best practice emission control such as at the Appin East site where dust controls were observed to be implemented across a range of emission sources using systems that require little or no operator input. Specific examples included the automation of stockpile sprays (with

automated processing of rainfall and wind speed inputs), sealing of roads, automated truck weighers, automated haul truck wheel wash, and haul truck load covering.

Monitoring and mitigation of greenhouse gas emissions was observed across the BSOP. URS were provided with examples of ICHPL's central real time monitoring system that brings together monitoring information across gas production, ventilation, flaring, venting and energy production activities across the BSOP sites.

The AQMP is broad in scope, covering 11 BSOP locations with a comprehensive level of detail. The AQMP was reviewed and it is recommended that subsequent versions of the AQMP consider the following:

- Prioritise management and monitoring measures in accordance with air quality risks. At present, there are a range of areas where a comprehensive level of detail is provided for areas/activities that are considered to represent a relatively low emission potential. An example of this is the management of air emissions from surface vehicles at Appin West. Current nominated control and monitoring measures include:
 - outline vehicle maintenance regimes;
 - use of low emission diesel fuel;
 - periodic vehicle emissions testing;
 - occupational hygiene testing;
 - health surveillance monitoring; and
 - routine maintenance and inspection of vehicles.

For a facility of this scale at which intensive vehicle operations do not occur, there is a risk that the extent of these controls may draw attention away from key emission sources, whilst providing little or no improvement in air quality. A more targeted set of management measures for this emission source would be:

- operation of on-site plant and vehicles in a proper and efficient manner, including regular maintenance;
 - procurement of off-road plant/vehicles that meet the US EPA Tier 3 emission standard (or equivalent); and
 - use of low emission diesel.
- Removal of duplication in the AQMP is recommended, with cross reference (to site-specific section) included if required. Duplication and crossover are noted on a range of areas within the AQMP, and should be minimized or removed where possible. For example in Table 6-1 of the AQMP, under "Transport of Coal Product on Public Roads" requirements including dust deposition/photometer monitoring, loading chute enclosure/gap, internal roadway water spraying, wheel wash requirements are direct duplicates of measures covered under other areas (e.g. "Appin East Site").

- A more practical monitoring protocol should be established for the use of optical photometers. This protocol should be developed by a BSOP environmental officer after familiarisation with the monitoring instrument in a field situation, with contribution/review from an air quality specialist. Such a protocol should be concise in nature (e.g. largely dot points, 2-4 pages in length), and address the following:
 - typical triggers for a survey event;
 - instrument specification and relevant calibrations;
 - monitoring methodology – instrument siting (proximity, alignment), monitoring period, averaging period, particulate class (e.g. PM10 or TSP), statistics of interest;
 - threshold levels and response mechanisms; and
 - record keeping (e.g. sample log sheet).
- Site inspection sheets should be attached to the AQMP.
- Screening out of risks should not be included under “Operational Controls”. If the emission source is not considered to be a potential risk, then ideally it should be excluded from the table.
- Airborne particulate matter monitoring is yet to commence at the West Cliff Colliery and Appin Mine. Monitoring equipment was in the process of being commissioned at the time of the audit. Proposed compliance monitoring is limited to one event per month when real time (optical) measurements are greater than 80% of respective criteria. The proposed real time instrumentation is not considered to be of adequate precision for assessment of compliance against acquisition and project approval criteria. Should HVAS monitoring be required by the real time monitoring, then given the inherent scatter in dust monitoring results, the HVAS sampling frequency of one event per month over three months (i.e. 3 samples in total) is not considered adequate to make a meaningful comparison against the acquisition and project approval criteria.

It is recommended where it is required to demonstrate compliance with PA 08_0150 criteria, that sampling be performed at a suitable frequency (e.g. 1 in 6 days), and to a method for which an Australian Standard is available. Additionally, monitors should be located in a manner that allow comparison against the criteria. At present, should exceedances be measured at the monitoring location, it will be unclear whether they extend to residential or privately owned land beyond the location of the monitor (i.e. the locations at which the criteria apply).

- The AQMP should include a specific protocol for establishing the contribution of the BSOP to total particulate matter levels for assessment against incremental criteria. Given the presence of frequent exceedances due to regional events across NSW, this protocol would assist in diagnosing the cause of exceedances, and estimating the contribution from the BSOP under such conditions. This would typically involve identifying background monitoring data sources, as well as procedures for considering variability in real-time monitoring data in conjunction with wind direction influences.
- The clear-sky angle of dust deposition gauges should be reviewed. As an example, dust deposition gauge AE-DD15 was noted to be located in close proximity to plant foliage.

- Dust emissions were observed at Appin East from trucks approaching the loading point (prior to u-turn). The source of this dust should be investigated and control measures identified. In addition, a timeframe should be nominated for the completion of the sealing of the central area (i.e. to allow effective sweeping and/or rinsing).
- Weekly checklists (or similar) should include the inspection of (fabric) haul truck covers. Covers on some trucks observed noted to be showing signs of wear that may impede their ability to prevent dust emissions.
- Only one transfer water spray was observed at the West Cliff Colliery CHPP. It is recommended that the AQMP be reviewed and updated to consider the need for water sprays at all transfer points at the West Cliff CHPP.
- Dust emissions were observed by the auditors at Appin West waste facility. Appin West site management reported that plans were in place to seal (provide hardstand for) a larger area which would help reduce dust from this location.

12 NOISE MANAGEMENT

This section of the report details the findings of the review of noise management at the BSOP as assessed by the approved noise specialist Dave Davis.

12.1 Background

From the end of June 2013 ICHPL was required to ensure that the noise generated by the BSOP does not exceed the criteria specified in Table 1 of Condition 1, Schedule 4 of the PA 08_0150 at any residence on privately-owned land or on more than 25 percent of any privately-owned land. From the end of December 2014, ICHPL are required to ensure that the noise generated by the BSOP does not exceed the criteria in Table 2 of Condition 2, Schedule 4 of the PA 08_0150 at any residence on privately-owned land or on more than 25 percent of any privately-owned land. The requirements of Condition 2, Schedule 4 had not been triggered at the time of writing this report, however; ICHPL has already commenced attended and real time noise monitoring at locations specified in Table 2 to assess noise levels at these locations so as to be in a position to address any potential noise issues after December 2014.




Noise emissions are managed through a Noise Management Plan (NMP). The Noise Management Plan, dated December 2012 has been established and implemented by ICHPL to address the requirement of Condition 5, Schedule 4 of the PA 08_0150. The plan was approved by the Director-General on 7 January 2013. The objectives of the NMP 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 BHP Billiton and other relevant standards and requirements.

12.2 Site Inspection Observations - Noise Management

Observations from the site inspection conducted at the time of the site audit as they relate to noise management are provided in the table below.

Table 12-1 Summary of Observations Relating to Noise Management

ID	Observation	Photo
12-1.	Sound walls at Appin Area 9 Mine Safety Gas Drainage (MSGD) Site 1. Sound walls were observed to be placed adjacent to Menangle Road and between the pad and nearest reliever.	
12-2.	Sound walls at Appin Area 9 MSGD Site 2 were observed to be located near site infrastructure and between the site noise sources and the nearest receivers.	
12-3.	Appin No. 2 Vent Shaft noise mitigation works included installation of a noise barrier, installation of acoustic cavity panels around fan cawling, installation of acoustic northern wall panels including concrete footings and installation of acoustic roof duct panels on ventilation ducts.	

ID	Observation	Photo
12-4.	Appin No. 2 Vent Shaft noise mitigation works	 A photograph showing a large industrial structure with a corrugated metal roof and concrete supports. The structure appears to be a vent shaft or similar facility. The ground in front is covered with debris and there are concrete barriers.
12-5.	Appin No. 2 Vent Shaft noise mitigation works showing recently constructed noise barrier	 A photograph of a long, blue, diamond-patterned noise barrier wall. The wall is situated on a grassy area. In the foreground, there is a red fire hydrant and a red fire cabinet. A bicycle is parked near the fire cabinet.
12-6.	Appin East pit top main slope belt motor room - door(s) closed and signage	 A close-up photograph of a green metal door set into a green-painted concrete wall. The door is closed and has a red sign that reads "KEEP DOOR CLOSED". The wall shows signs of wear and peeling paint.

ID	Observation	Photo
12-7.	Appin East pit top main slope belt motor room - roller door (open at time of site audit but motor not operational)	
12-8.	Appin East pit top main slope belt motor room - one of the walls to be insulated as part of future noise mitigation works	
12-9.	Appin East pit top – bash plate to be installed on the surface belt elevator on discharge to the coal handling bin which was identified as a noise source. The plate had not been installed due to additional engineering works required to support the plate.	

12.3 Baseline Noise Assessment

A baseline assessment was undertaken as part of the EA process for the BSOP Approval. A review of the noise levels monitored around the operations is presented in Appendix I of the BSOP EA (Wilkinson Murray, July 2009).

12.4 Noise Management and Mitigation Measures

The NMP identifies the following three strategies for controlling noise as identified in the NSW Industrial Noise Policy (INP) (EPA, December 1999):

- 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.

To date ICHPL has not been required to implement noise mitigation measures at the receiver as noise levels have not warranted such measures.

The following noise mitigation measures were sighted during the site inspections:

- Appin East - concrete noise barrier at the coal truck loading point under the bin and acoustical skirting on the coal discharge chutes to coal trucks hoppers, use of low tone reversing alarm on loader at coal stockpile, heavy maintenance activities undertaken within enclosed workshops, signs to close doors on main slope belt motor room, initiatives to keep doors closed at the belt motor room.
- Appin West - no coal handling activities on site, limited heavy equipment movement, relatively light maintenance activities undertaken.
- Appin Mine No.2 and No.3 Vent Shafts - noise attenuation doors on fan house buildings, enclosed motor rooms.
- West Cliff (South) - no coal handling activities undertaken at the site.
- West Cliff (North) - enclosed motor rooms and pump houses, enclosed coal processing plant, coal transport (on public roads) by public road registered vehicles.
- Appin Area 9 MSGD Sites 1 and 2 – sound walls and use of earthen and vegetative barriers where practicable.

Other noise mitigation works conducted by BSOP during the reporting period included:

- Three metre noise walls were installed around the mud pumps and drilling rig at Appin Area 7 MRD.
- Sound walls were placed around pumps and flare(s), and additional flares and articulating gas flows at Appin Area 9 MSGD sites 1 and 2 (to reduce noise by reducing flows at any one flare). The auditors observed the sound walls at the two sites.

12.4.1 Future Noise Mitigation Measures

ICHPL reported that further noise mitigation measures were planned for the main slope motor room including adding insulation of the northern and western walls. A quote has reportedly been received for re-cladding these walls. Additional measures were reported to include two exhaust fans to be fitted to the building to aid ventilation and the installation of 'whirly birds' (ventilation) to be added to the roof (to enable operation of plant with the doors closed).

Other mitigation measures included a residential muffler fitted to the loader at the Appin East coal stockpile. A bash plate is to be installed on the surface elevator belt prior to the end of June 2014 to replace the existing plate. Capital for this work has been applied for and approved. The replacement bash plate was observed by the auditors. Four ventilators are also to be installed during the installation of the bash plate so that existing doors can be shut.

12.5 Reporting of Results

A summary of noise monitoring results including details of exceedances is provided on the BHP Billiton website (<http://www.bhpbilliton.com/home/aboutus/regulatory/Pages/default.aspx>) as part of the quarterly environmental update report.

A summary of the monitoring results is provided at Community Consultative Committee meetings. BSOP 14 day monitoring data was available for the auditors to review on the BHP Billiton website.

12.6 Noise Complaints

The following is noted following a review of complaints from 31 October 2011 through to 27 December 2013:

- Two noise complaints were received from the same complainant between 31/10/2011 to 27/12/2013 concerning BSOP operations and activities:
 - Appin East - Noise from loading bins at Appin East Pit Top (1SAP ref: 402532880) – received 12/04/2013, records from the Stakeholder database dated 12/04/2013 to 19/04/2013 concerning this incident were observed during the audit. The records indicated that ICHPL had communicated to the complainant that the incident had been investigated and that mitigation measures to close the bin doors and issue a notice to remind personnel to keep the doors closed was put in place. The auditors observed the mitigation measures during the site inspection of Appin East Pit Top.
 - Appin East - Noise and dust from Appin East Pit Top (1SAP ref: 402918269) – received 20/06/2013, a record from the Stakeholder database dated 20/06/2013 was observed during the audit.

The following noise complaints were associated with activities and operations operating under previously approved Project Approvals and that had not been surrendered as part of Condition 8, Schedule 2 of PA 08_1050:

- A total of 28 noise complaints were received from 31/10/2011 to 27/12/2013 concerning the Appin Area 9 Gas Drainage Project Area 9 (PA 08_0256).
- A total of five noise complaints were received from 31/10/2011 to 27/12/2013 concerning the Appin Ventilation Shaft No. 6 Project (PA 10_0079).
- One noise complaint was received from 31/10/2011 to 27/12/2013 concerning the Appin Gas Drainage Project (Area 7) (PA 08_0256) (PA 08_0256).

The complaints register reviewed for the period 31/10/2011 to 27/12/2013 averaged approximately one noise complaint per month over a 26 month period (36 noise complaints). The majority of these complaints were associated with the Appin Gas Drainage Project Areas 7 and 9 (PA 08_0256) and the Appin Ventilation Shaft No. 6 Project (PA 10_0079).

The auditors visited both sites and observed noise mitigation measures (refer to Table 12-1); however; the Project Approvals were not assessed as part of this audit as these approvals did not require an Independent Environmental Audit and the works were outside of the Project Approval being audited..

12.7 Gas Drainage Management Plan Noise Requirements

Condition 21, Schedule 4 of PA 08_0150 requires ICHPL prepare and implement a Gas Drainage Management Plan in respect of construction and future gas drainage infrastructure i.e. for any gas drainage not subject to approval at the date of this instrument. At the time of the audit Appin Gas Drainage Project Areas 7 and 9 and Appin Ventilation Shaft No. 6 Projects were subject to the requirements of separate Project Approvals that had not been surrendered in accordance with Condition 8, Schedule 2 of PA 08_0150.

Future Gas Drainage Management Plans will need to specify applicable noise level criteria, the allowable hours of operations and the commitment to undertaken noise monitoring and implement additional mitigation measures.

12.8 Adequacy Assessment and Recommendations

It is considered that, in general, ICHPL are implementing appropriate measures to manage BSOP noise emissions. From the end of December 2014, ICHPL will be required to comply additional noise criteria specified in PA -8_0150 (Condition 2, Schedule 4); however, it is noted that night time noise attended and real time noise monitoring is currently conducted at West Cliff Colliery, Appin West pit top and Appin West in preparation for complying with the future noise criteria requirements. The following observations relating to continual improvement opportunities are provided with respect to noise management documentation:

- It was not clear from the BSOP Noise Management Plan (December, 2012) how noise issues and criteria for existing and future projects (e.g. Appin Area 9 Gas Drainage Project Area 7 and 9) are managed. For example Appin Ventilation Shaft No. 6 was not referenced. There was also no mention how noise issues associated with gas drainage is managed. For example the Gas Drainage Management Plan West Cliff Longwalls 36 to 37 (August, 2012) had been prepared by ICHPL and approved by the Director-General; however, there was no reference to this in the BSOP Noise Management Plan. The BSOP Noise Management Plan only referred to noise criteria specified in PA 08_0150.
- Only one Gas Drainage Management Plan had been prepared during the audit period, this being the Gas Drainage Management Plan West Cliff Longwalls 36 to 37 (August, 2012). The management plan included a West Cliff Goaf Gas Drainage Longwalls 36-37 Noise Assessment (Wilkinson Murray, February 2012) as Appendix A.3. It was noted that the assessment did not included an investigation of flaring noise.
- The NMP did not include the recent noise mitigations measures already installed at Appin Mine No.2 Ventilation Shaft (Section 5.1.3, p.11).
- BarnOwl® calibration is conducted internally by BSOP personnel. No signature or approved calibration method was referenced on the sign-off sheet sighted by the auditors it was therefore not possible to determine if BSOP staff were trained in BarnOwl® calibration techniques.

- Receiver numbers as stated in Tables 1 and 2 of Conditions 1 and 2, Schedule 4 of PA 08_0150 do not correlate with the survey points (AE-NS1, AE-NS2, AE0NS3, AW-NS1, AW-NS2, AW-NS3, W-NS1 and W-NS2) identified in the NMP. The Environmental Noise Monitoring Procedure (Document ID: ICHP0302, V1.0) did not provide a reference to the nearest receiver. The only reference to receivers is provided in the comments section of the table shown on page 3 of the procedure.
- The complaints register only refers to a 'residential' complaint from an operational or project area (i.e. Appin Mine). It is not possible to cross reference noise complaints with receiver numbers identified in Tables 1 and 2 of Conditions 1 and 2, Schedule 4 of PA 08_0150 to demonstrate compliance with the specified noise criteria.
- Road Traffic Noise training was not evident in the Appin Environmental Awareness training presentation or in the BSOP HSE Skills Matrix even though specified in the NMP (Section 5.1.9, p.13).
- The NMP does not reference the BSO Environmental Noise Monitoring Procedure (Document ID: ICHP0302, V1.0).
- The BSO Environmental Noise Monitoring Procedure (Document ID: ICHP0302, V1.0) does not refer to or reference the process to calibrate the BarnOwl®.
- Section 6.2.2 (p.21) of the NMP states that '*if traffic related project noise is raised as an issue by the community, a monitoring survey will be conducted in a timely manner to identify the appropriate actions to be taken*'. The phrase 'timely manner' does not provide a specific timeframe in which a survey will be conducted and actions taken.
- The NMP does not discuss noise monitoring training requirements and competency for BSOP personnel. ICHPL management reported that BSOP personnel conduct attended and real-time noise monitoring. Table 2-1 (Roles and Responsibilities) states that an acoustic consultant is responsible for conducting attended noise monitoring in accordance with the relevant noise monitoring standards.

Recommendations

- A clear reference should be made in the Noise Management Plan that noise issues and criteria associated with projects (e.g. Appin Area 9 Gas Drainage Project Area 7 and 9) are managed under separate management plans, i.e. the Gas Drainage Management Plan.
- Given the number of flare noise complaints received from the Appin Gas Drainage Project Areas 7 and 9 and Appin Ventilation Shaft No. 6 Projects future Gas Drainage Management Plans should include an assessment of potential flare noise. If flare noise is not considered an issue justification for not conducting an assessment should be provided.
- Update the Noise Management Plan to reflect the noise mitigation measures at changes to Appin Mine No.2 Ventilation Shaft such as the noise barrier.
- It is recommended that BSOP personnel sign the BarnOwl® calibration sheet to confirm they have been trained in calibration techniques. It is also suggested that the BarnOwl® be calibrated by a NATA accredited laboratory and/or serviced by the manufacturer on an annual basis.

- Clearly identify which survey points (AE-NS1, AE-NS2, AE0NS3, AW-NS1, AW-NS2, AW-NS3, W-NS1 and W-NS2) correspond to which receiver numbers as stated in Table 1 Condition 1, Schedule 4 of PA 08_0150 to demonstrate compliance with noise criteria at each of the identified receivers.
- Clearly identify which receiver numbers as stated in Table 1 of Conditions 1, Schedule 4 of PA 08_0150 have made a complaint to demonstrate compliance with noise criteria at each of the identified receivers. Ensure site environmental personnel are made aware of the latest complaints concerning BSOP operations.
- Include Road Traffic Noise as a topic in environmental awareness training and record the training on the HSE Skills Matrix.
- Review and update the NMP to reference the BSO Environmental Noise Monitoring Procedure (Document ID: ICHP0302, V1.0) in particular Sections that refer to monitoring requirements.
- Review and update the BSO Environmental Noise Monitoring Procedure (Document ID: ICHP0302, V1.0) to include the process for calibrating the BarnOwl®. Include the BarnOwl® Calibration Record sheet as a formal attachment.
- Review and update Section 6.2.2 (p.21) of the NMP to provide a specific timeframe to conduct a noise monitoring survey.
- Review and update the NMP to define training requirements for BSOP personnel to conduct attended and real-time noise monitoring using the BarnOwl® or handheld equipment should an external acoustic consultant not be used.

SUMMARY OF NON COMPLIANCES AND RECOMMENDATIONS

A summary of approvals assessed is provided in Table 6-1. A list of strategies, plans and monitoring programs reviewed for adequacy is provided in Table 6-2.

Some non-compliances have been identified with the Development Consent Conditions, EPL conditions and Mining Lease conditions. These non-compliances as well as the requirements assessed as indeterminate and the associated recommendations have been consolidated and are summarised in **Table 13-1** below. For a number of requirements that were assessed as compliant or not applicable, recommendations were made where continuous improvements were identified. These requirements and recommendations are summarised in Table 13-2.

Recommendations relating to observations of general environmental management, the adequacy of the various plans / programs and findings relating to subsidence, ecology and rehabilitation, water, air quality and GHG and noise management are included in Sections 7 to 12.

Table 13-1 Summary of conditions / requirements assessed as non-compliant or indeterminate and recommendations

Condition / Requirement No.	Summary of Condition / Requirement	Comment	Compliance Status and Recommendation
PA 08_0150 – Schedule 2, Condition 8	<p>SURRENDER OF CONSENTS AND APPROVALS</p> <p>By 31 December 2012, or as otherwise agreed by the Director-General, the Proponent shall surrender all existing development consents and project approvals for mining operations relied on by the Proponent for the site (other than this approval) in accordance with Sections 75YA and 104A of the EP&A Act.</p>	<p>Existing development consents and Project Approvals for mining operations with the exception of existing and proposed building works under Part 4A of the <i>Environment Planning and Assessment Act 1979</i> were relinquished during the audit period. The only evidence to support this was provided in the 2012/2013 Annual Environmental management Report (AEMR) (p.10).</p> <p>At the time of the audit Appin Gas Drainage Project Areas 7 and 9 (PA 08_0256) and Appin Ventilation Shaft No. 6 Project (PA 10_0079) were subject to the requirements of separate Project Approvals that had not been surrendered in accordance with Condition 8, Schedule 2 of PA 08_0150. No correspondence with Planning and Infrastructure was available to demonstrate that the Director General had agreed that these projects not be surrendered or that operations and activities associated with these projects would be managed in accordance with the previously approved Project Approvals.</p> <p>On this basis, compliance with this condition is considered Indeterminate.</p>	<p>Indeterminate</p> <p>Recommendation</p> <p>Confirm with relevant agencies appropriate Approvals have been surrendered as per the requirements of Condition 8, Schedule 2.</p>
PA 08_0150 – Schedule 4, Condition 15	<p>Surface Water Discharges</p> <p>The Proponent shall ensure that all surface water discharges from the site (including from the Brennans Creek Dam) comply with the discharge limits (both volume and quality) set for the project in any EPL.</p>	<p>The Water Management Plan identifies Licenced Discharge Points (LDPs) as specified in EPL 2504. The plan describes the treatment processes and the waters reporting to each LDP as well as measures to manage and minimise water use at the three BSOP sites. The Water Management Plan requires that water monitoring be conducted in accordance with the requirements of EPL 2504. A sample of data (04/04/2012 to 12/12/2013) from the 14 day monitoring data exceedances correlated with non-compliances reported in the Annual Return for 2012/2013.</p> <p>The site inspection identified ICHPL have installed automated monitoring equipment at a number of LDPs. BSOP personnel report on the monitoring required at LDP. Monitoring reports are available online providing the results of monitoring carried out at the LDPs for each of the BSOP sites.</p> <p>ICHPL has recorded non-compliances at West Cliff Colliery, Appin East and Appin West. Non-compliances are reported in 1SAP and formally reported in the Annual Returns to the EPA. Annual returns for the audit period were available for review. The EPA website accessed on 16/01/2013 for EPL 2504 identified the following number of non-conformances concerning surface water discharges:</p> <ul style="list-style-type: none"> • 2011/2012 Annual Return: <ul style="list-style-type: none"> - Condition L2, six occurrences. EPA comments '<i>BOD, pH exceedances at West Cliff and Appin STPs, TSS exceedance at Appin West. Exceedances not environmentally significant. Corrective actions have been adopted to prevent a recurrence.</i>' - Condition L3, three occurrences. EPA comments '<i>Exceedance of discharge volume limit at LDP 22 Appin. The STP & irrigation system had recently been upgraded & the flow limit switch was not operational. No environmental impact expected. Programable Logic Controller (PLC) installed March 2013.</i>' - Condition M2, two occurrences. EPA comments '<i>Sample not collected on 30 April, due to miscommunication between contractor & BHP. Samples were collected on 2 May. Illawarra Coal now undertakes a fortnightly review of all Environmental data including Certificate of analysis & Chain of Custody.</i>' • 2012/2013 Annual Return: <ul style="list-style-type: none"> - Condition O4.1, one occurrence. EPA comments '<i>Runoff from Point 3 effluent irrigation area. Runoff collected and treated in site's dirty water collection system. A Programable Logic Controller (PLC) installed to control effluent irrigation.</i>' - Condition L3, 13 occurrences. EPA comments '<i>Limit exceedances at effluent irrigation areas. Inconsistent treatment plant operation resulted in algal growth. Treatment plant upgraded in 2011/12, and also improved maintenance. Environmental impacts unlikely.</i>' - Condition M2, two occurrences. EPA comment '<i>A single sample not collected/analysed as pump system out of service at time of sampling at Point 3, and one dust sample not collected. No environmental impact as a result of non-compliance.</i>' - Condition M6, one non-compliance. EPA comments '<i>Flow data from LDP1 could not be located for the discharge in June 2011 as monthly field sheet misplaced. Data now recorded and e-mailed to Env staff weekly. A piezometer will be installed & data will be sent daily via telemetry into a database.</i>' <p>It is noted that for each non-compliant condition the EPA noted that appropriate action had been taken by the licensee.</p> <p>The outlet at Brennan's Creek Dam (LDP 010 at West Cliff Colliery) regularly records non-compliance for the slight exceedance of Copper concentration. ICHPL reported that discussions are ongoing with the EPA concerning the exceedance of Copper. Minutes of a meeting between ICHPL and the EPA on 6 March 2014 indicate that the potential to change the Copper limit in the EPL was discussed and that ICHPL should submit an EPL variation request based on recent monitoring data.</p> <p>Water monitoring results are reviewed every 14 days and uploaded to the BSOP website.</p>	<p>Non-compliant</p> <p>Recommendation</p> <p>As discussed with the EPA (minutes of meeting 6 March 2014), ICHPL to submit an EPL variation request based on recent monitoring data.</p>

Condition / Requirement No.	Summary of Condition / Requirement	Comment	Compliance Status and Recommendation
PA 08_0150 – Schedule 4, Condition 20	<p>Underground Coal Wash Emplacement Trial</p> <p>The Proponent shall prepare and undertake an Underground Coal Wash Emplacement Trial for the project to the satisfaction of the Director-General. The design of the trial must:</p> <ul style="list-style-type: none"> a) be undertaken in consultation with OEH; b) be submitted to the Director-General for approval by the end of December 2012; c) contain a two year program to undertake both pilot scale and demonstration scale trials of underground coal wash disposal; d) include commitments for ongoing development and/or implementation of underground emplacement options following this two-year trial; and e) include 6 monthly progress reporting to the Department and OEH. 	<p>The following was noted concerning the Underground Coal Wash Emplacement Trial:</p> <ul style="list-style-type: none"> a) An Underground Coalwash Emplacement Research and Trial draft proposal/plan for West Cliff Colliery dated December 2012 was available for the auditors to review. The draft proposal/plan notes that the plan was provided to the OEH and where appropriate feedback has been incorporated into the plan, however; the OEH did not provide feedback concerning the draft proposal/plan. b) A letter dated 11/12/2012 from ICHPL to the Wollongong EPA concerning submission of the draft plan prior to formal submission was available for review. A letter dated 19/12/2012 from ICHPL to Planning and Infrastructure concerning submission of the draft proposal/plan was available for review. ICHPL management reported that no formal communications has been received from Planning and Infrastructure concerning the draft proposal/plan. c) A preliminary project schedule (Section 2.6) was included in the draft proposal/plan. It is noted that the schedule included a set of assumptions and would be revised during the detailed planning phase of the research plan. The schedule had not been implemented at the time of the audit as consultation had not been received from OEH. d) The draft proposal/plan included commitments for ongoing development and/or implementation of underground emplacement options following this two-year trial. e) Given the trial had not commenced as formal approval from the Director-General had not been granted or feedback received from OEH, no progress reports have been prepared. <p>Given no formal approval had been received at the time of the audit this Condition was found to be indeterminate.</p>	<p>Indeterminate</p> <p>Recommendation</p> <p>It is recommended that ICHPL update the Director-General concerning the status of the Underground Coal Wash Emplacement Trial and this Condition. Communications with the Director-General should be documented.</p>
EPL 2504 – Condition L2.1	<p>Concentration Limits</p> <p>For each monitoring/discharge point or utilisation area specified in the table/s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.</p>	<p>The Surface Water Management Plan states that monitoring is carried out to check the concentration limits at the licenced discharge points. If exceedances are found, site operations are investigated and changes made to improve the non-compliant results. Where possible, the release of water is reduced or stopped during the adjustment phase.</p> <p>Water quality reporting shows that BSOP activities have generally maintained water quality within the required limits, with only minor and occasional non-conformances. Where non-conformances have occurred, brief commentary is provided as to the causes and corrective actions taken. 14 Day water monitoring data for the three BSOP sites was available on the ICHPL website. Data was available to URS for review from April 2012 through to published data on 16/01/2014. ICHPL reported that the Biochemical Oxygen Demand (BOD) limit for LDP 020 was in the process of being increased by the EPA at the time of the audit. A variation to the EPL containing an increased BOD limit for LDP 020 was expected in March 2014.</p> <p>The following non-conformances are noted:</p> <ul style="list-style-type: none"> • The 90th percentile concentration of dissolved Copper in discharge water from Brennan’s Creek Dam (LDP 10) exceeded the concentration limit during the 2013-14 reporting period. Monitoring data was available from 02/05/2013. ICHPL management reported that the limit was set following discussion with the EPA. ICHPL advised they requested the 90% limit be set to the current baseline of 10 µg/L; however, the EPA subsequently set the limit to 8 µg/L. West Cliff Colliery has regularly exceeded this discharge criteria from LDP 10. Meeting minutes between ICHPL and the EPA dated 6 March 2014 record that the EPA indicated that the 90th percentile Copper level should be generated using the 90th percentile calculation and be reported as one non-compliance (dated the last day of the reporting period). The raw data showing the 19 occurrences where the level was above 8 parts per billion (ppb) is to be provided as an attachment to the Annual Return. One TSS exceedance at West Cliff Colliery LDP 10 on 07/03/2013 (53 mg/L) up to 16/01/2014. • Five BOD exceedances at Appin Mine LDP 20 from 30/04/2012 to 16/01/2014. • One TSS exceedance at Appin Mine LDP 23 on 13/06/2012 (64 mg/L) up to 16/01/2014. • The 2011/12 Annual Return to the EPA recorded one non-conformance for concentration limit exceedance (BOD) at LDP 3 (04/01/2012). The cause was identified and actions taken were described in the return. <p>The 2012/13 Annual Return to the EPA recorded five non-conformances for concentration limit exceedance. These were recorded between 23/02/2012 and 31/10/2013 at LDP 3 (two exceedances), LDP 20 (two exceedances) and LDP 23 (one exceedance).</p>	Non-compliant

Condition / Requirement No.	Summary of Condition / Requirement	Comment	Compliance Status and Recommendation
EPL 2504 – Condition L3.1	<p>Volume and Mass Limits</p> <p>For each discharge point or utilisation area specified below (by a point number), the volume/mass of:</p> <ul style="list-style-type: none"> (a) liquids discharged to water; or (b) solids or liquids applied to the area; <p>must not exceed the volume/mass limit specified for that discharge point or area.</p>	<p>The identified discharge points have continuous flow monitoring equipment to record the flow data. Continuous flow monitoring was observed at LDP 10 and LDP 19. A summary of this information is contained in the published 14 Day monitoring data on the ICHPL website.</p> <ul style="list-style-type: none"> • The Annual Return for 2012/13 reports non-compliances due to volume exceedance on three occasions at LDP 22 (29/02/2012 = 111 kL/Day, 05/03/2012 = 96 kL/Day and 08/03/2013 = 123 kL/Day). It was reported that the system was in the process of being upgraded. During heavy rainfall treated effluent was sprayed onto the irrigation area over three days whilst the flow limit switch was not operational. URS sighted FirstPriority (former ICHPL health, safety, environment risk management system) reports for the exceedances noted on 29/02/2012, 03/03/2013 and 08/03/2012. (Event ref No.: APENV12030022). • The above information could not be verified when reviewing the data that was available on the 14 Day monitoring spread sheet uploaded to the ICHPL website on 16 /01/2014. 14 Day monitoring data has only been required to be published since April 2012. LDP 001 was not shown on the 14 Day monitoring spreadsheet and data for LDP 22 for March 2013 showed a maximum daily flow of 50 kL/Day. The original data was requested but not available for review during the audit period. <p>The Water Management Plan states that monitoring is undertaken in accordance with the requirements of the EPL.</p> <p>URS observed use of the Watersavers® website that provided volume and mass data for LDPs at Appin Mine and West Cliff Colliery. The Watersavers® website provides volume and mass information for LDPs as specified in the EPL. Data viewed included the period 28/01/2014 to 28/02/1014.</p> <p>Data from the website is downloaded by HSEC Analyst and uploaded to 14 Day monitoring data spreadsheet. Any exceedances against the criteria are noted during this download process. Environmental Coordinators at each site are also able to login to the Watersavers® website at any time and can identify if there are any exceedances to the criteria prior to the monthly download by the HSEC Analyst. Given the three non-compliances recorded at LDP 22 during the audit period this Condition was found to be non-compliant.</p>	Non-compliant

Condition / Requirement No.	Summary of Condition / Requirement	Comment	Compliance Status and Recommendation
EPL 2504 – Condition M2.5	The licensee must carry out acute and chronic (sub-lethal) toxicity testing of the discharges from discharge point 10 on the following species using the test or tests indicated for each species.	<p>Testing results are publicly available on the ICHL website in the 14 Day monitoring data spreadsheet. When comparing the requirements of EPL with the initial test results it was found that some alternate tests were being conducted. An example is the Inhibitory Concentration (IC) being provided when the Effective Concentration (EC) is requested. ICHPL reported that the issue has been discussed with both the Laboratory and the EPA as to whether the existing results comply with the licence requirements. A meeting was to be organised between ICHPL, EPA and the laboratory to discuss and determine what, if any, changes need to be made in order to comply with the condition. If the EPA determines the current practice to be non-compliant this will be reported by ICHPL in the 2014/15 Annual Return. On this basis URS consider this condition to be indeterminate. Re-issued test reports were sighted for August 2013 and January 2014 that showed IC25 values instead of IC15 values.</p> <p>The ICHPL contractor takes samples from LDP 010 and sends them under COC to Ecotox Services Australasia Pty Ltd (Ecotox). Results are sent from Ecotox to the ICHPL Land and Biodiversity Specialist and the HSEC Analyst who enters the data into the 14 Day monitoring data spreadsheet. There were no exceedances against the requirements of M2.5 reported by ICHPL. Results are cross checked with original data and what has previously been entered into the 14 Day monitoring data spreadsheet.</p> <p>An email from the ICHPL Manager, Environment (PRP19 - Review of Lab Results vs PRP requirements, 18/02/2014, 09:37hrs) requested clarification concerning the units of measurement associated with Condition M2.5. The clarifications to the questions raised by the ICHPL Manager, Environment have been summarised below (PRP19 - Review of Lab Results vs PRP requirements, 18/02/2014, 10:13hrs):</p> <ul style="list-style-type: none"> • Ceriodaphnia dubia (Acute Test) <ul style="list-style-type: none"> - the ICHPL Manager, Environment noted that Effective Concentration (EC) and Inhibiting Concentration (IC) is dependent on the statistical analyses run. The laboratory noted that for the non-proportional data, i.e. duckweed and algae, the statistical output will always be an IC value. The laboratory is able to report the EC or IC25 depending on what is requested on the COC. • Ceriodaphnia dubia (7-day Reproduction Impairment Test) <ul style="list-style-type: none"> - the ICHPL Manager, Environment noted that Condition M2.3 requires ICHPL to report on LC50 (parental mortality); however, this has not been included in the lab reports. The laboratory noted that it does not report LC values as the endpoint is technically an immobilisation of the adults therefore only EC or an IC50 are reported and that this was an acceptable reported endpoint. The laboratory confirmed that it can report EC or IC25; however, this needs to be clearly stipulated on the COC or in other correspondence. • Paratya australiensis (10-day acute test) <ul style="list-style-type: none"> - the ICHPL Manager, Environment noted that EPL 2504 requires ICHPL to report Lethal Concentration (LC) LC10, LC25 and LC50; however, laboratory reports (not sighted by URS) reported only ECs or ICs. The laboratory noted that LC values are not largely reported in Australia and that immobilisation is reported due to their NATA accredited endpoint (EC or an IC50). • Larval Melanotaenia (4-day acute test) <ul style="list-style-type: none"> - the ICHPL Manager, Environment noted that the June 2013 test was conducted for 72 hrs. The laboratory reported that there was a poor survival of fish larval in the 96 hr tests and that ICHPL was advised of this who requested that the laboratory report the results for the 72 hrs available. No evidence concerning this communication was observed by URS. - the ICHPL Manager, Environment noted that for the August results IC10 and IC25 were reported instead of the required EC10 and EC25. The laboratory noted that for the non-proportional data, i.e. duckweed and algae, the statistical output will always be an IC value due to the statistical analyses that is applied to the data. • Lemna disperma (7-day growth inhibition test) <ul style="list-style-type: none"> - the ICHPL Manager, Environment noted that for the August 2013 and January 2014 results.. The laboratory noted that this is what had been requested at the time and that they can report the EC or IC25; however, this will need to be requested on the COC or in correspondence as it is not an endpoint normally reported. • Pseudokirchneriella subcapitata (3-day growth inhibition test) <ul style="list-style-type: none"> - the ICHPL Manager, Environment noted that for the August 2013 and January 2014 results. The laboratory noted that this is what had been requested at the time and that they can report the EC or IC25; however, this will need to be requested on the COC or in correspondence as it is not an endpoint normally reported. 	<p>Indeterminate</p> <p>Recommendation</p> <p>Ensure the required units of measurement (i.e. EC or IC) are included on the Chain of Custody or another form of communication so that the laboratory is aware of the required endpoint.</p>
EPBC 2010/530 – Condition 14	<p>Compliance Report</p> <p>A compliance report is provided to SEWPac by 15 August every year.</p>	A letter dated 20 August 2013 from ICHPL to DoE was sighted providing evidence the compliance report was submitted; however, the date was five days after the due date required by the condition. This condition was found to be non-compliant due to late submission of the compliance report.	<p>Non-compliance</p> <p>(due to late timing of submission)</p>

The following table has been reproduced from Appendix A and Appendix B. For details on the requirement, and for further discussion of the issue, please refer directly to the table in Appendix A and Appendix B. Many recommendations are based around continuous improvement opportunities identified during the audit and do not necessarily represent immediate potential non-compliance issues.

Table 13-2 Summary of Additional Recommendations From Independent Environmental Audit (not related to non compliances)

Condition / Requirement No.	Recommendation
PA 08_0150 – Schedule 2, Condition 12 – Operation of Plant and Equipment	It is recommended that the site conduct an audit of its compliance against AS1940, AS1596 and the Dangerous Goods Code
PA 08_0150 – Schedule 4, Condition 1 - Noise Impact Assessment Criteria	Implement a review process of noise monitoring data prior to uploading the 14 day monitoring report to the BHP Billiton website.
PA 08_0150 – Schedule 4, Condition 16 – Surface Water Management Plan	Review and update the Surface Water Management Plan to reflect the current operations of water management at the three BSOP sites. It is recommended that a formal description of the monitoring process be developed. The document should describe the timing and methods used to gather monitoring data as well as the reporting required and include specific roles and responsibilities for those tasks. This will assist BSOP to reduce the reliance on specific site staff to operate an effective system.
PA 08_0150 – Schedule 4, Condition 27 – Visual Amenity and Lighting	It is recommended ICHPL conduct inspections of outdoor lighting to demonstrate it meets the requirements of AS4282 (INT) 1995 - Control of Obtrusive Effects of Outdoor Lighting.
PA 08_0150 – Schedule 4, Condition 28 - Waste	As already proposed by ICHPL, seal the access road and ring road to the waste sorting area to reduce the potential for dust emissions from unsealed ground at Appin West.
PA 08_0150 – Schedule 4, Condition 29 - Waste	Ensure the date of the audit is provided on waste audit report. It is recommended that 1SAP (or similar) tracking numbers are included against non-conformances to demonstrate the issues have been closed out. Used batteries should be stored in a dedicated storage area/container that provides cover and secondary containment.
PA 08_0150 – Schedule 4, Condition 31 – Rehabilitation Objectives	It is recommended that Stage 1 and 2 rehabilitation areas be targeted and spot sprayed for weeds, particularly Rhodes Grass, African Love Grass.
PA 08_0150 – Schedule 4, Condition 32 - Progressive Rehabilitation	It is recommended that the planning for Stage 4 clearance and rehabilitation consider key learnings from Stage 2 and 3 rehabilitation works in terms of soil medium, land form shaping, use of endemic species, retention and use of coarse woody debris, creation of water soaks and lay out of rock outcrops. Where not already included in the relevant Emplacement Management Plans.

Condition / Requirement No.	Recommendation
PA 08_0150 – Schedule 6, Condition 2 – Management Plan Requirements	<p>It is recommended that management plans be reviewed and revised to:</p> <ul style="list-style-type: none"> • Define specific roles and responsibilities. Where specific control measures are stated it is recommended that roles be assigned so it is clear who is responsible; • Clearly state how unpredicted impacts and their consequences are managed and those ongoing impacts are reduced to levels below relevant impact assessment criteria as quickly as possible. • Provide a review period for the Service Borehole Management Plan.
EPL 2504 – Condition M1.3 – Concentration Limits	Conduct a periodic broad analysis of potential pollutants in water, including those that are naturally occurring against ANZECC guidelines.
EPL 2504 – Condition M1.3 - Monitoring and Recording Conditions	<p>It is recommended that the time of the sample be included on the 14 Day monitoring data spread sheet for all monitoring locations.</p> <p>It is recommended that the contractor include the date(s) on which the sample was taken; the time(s) at which the sample was collected; the point at which the sample was taken; and the name of the person who collected the sample on all COCs. This information should also be included Field the Sheets.</p>
EPL 2504 – Condition M2.1 - Requirement to monitor concentration of pollutants discharged	Update the Illawarra Coal Surface Water Monitoring Audit Form to include an assessment of the sampling method(s) as required by EPL 2504.
EPL 2504 – Condition M5.1 - Telephone Complaints Line	Ensure the BSOP Telephone Complaints Line is clearly available on the ICHPL/BSOP website.
EPL 2504 – Condition M6.1 - Requirement to monitor volume or mass	Ensure back-up systems or processes are available to monitor discharge points where upgrade or maintenance works are being conducted.
EPL 2504 – Condition R2.1 - Notification of environmental harm	Document the roles, responsibilities and process for deciding if an incident has the potential to cause environmental harm
EPL 2504 – Condition G2.1 - Signage	<p>Reinstate the signage for LDP 20.</p> <p>Remove the former LDP 2 signage at redundant North Cliff Mine.</p>
EPBC 201/5350 – Condition 6 – Coal Wash Emplacement Staging and Rehabilitation	Review and update Figure 11 to clearly show a 100 metre habitat corridor.
EPBC 201/5350 – Condition 6 – Coal Wash Emplacement Staging and Rehabilitation	Review and update Figure 11 to clearly show a 100 metre habitat corridor as required by Condition 6(c).
EPBC 201/5350 – Condition 14 – Compliance Report	It is recommended that upload dates be added to cover pages or the website so that compliance with publishing timeframes can be quickly and easily determined.
EPBC 201/5350 – Condition 14 – Compliance Report	It is recommended that further information be provided concerning the individual components of each of the condition items for future reports to provide a clear understanding on progress against the requirement.
EPBC 201/5350 – Condition 15 – Accurate Records Must Be Maintained	It is recommended that electronic filing of correspondence concerning EPBC actions be saved in easy and accessible folders/locations that correspond with each EPBC condition item.

LIMITATIONS

URS Australia Pty Ltd (URS) has prepared this report in accordance with the usual care and thoroughness of the consulting profession for the use of Illawarra Coal Holdings Pty Ltd and only those third parties who have been authorised in writing by URS to rely on this Report.

It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this Report.

It is prepared in accordance with the scope of work and for the purpose outlined in the URS Proposal ENV_1097 dated 13 September 2013 and the contract dated on 25 November 2013.

Where this Report indicates that information has been provided to URS by third parties, URS has made no independent verification of this information except as expressly stated in the Report. URS assumes no liability for any inaccuracies in or omissions to that information.

This Report was prepared between 26 November 2013 and 2 April 2014 (finalised on 2 April 2014) and is based on the conditions encountered and information reviewed at the time of the site visits on 26 and 27 November 2013, 3, 4, 5 and 6 December 2013 and 28 February 2014. URS disclaims responsibility for any changes that may have occurred after this time.

This Report should be read in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties. This Report does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.

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It is the responsibility of third parties to independently make inquiries or seek advice in relation to their particular requirements and proposed use of the site.

Any estimates of potential costs which have been provided are presented as estimates only as at the date of the Report. Any cost estimates that have been provided may therefore vary from actual costs at the time of expenditure.

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S2.1	Obligation to Minimise Harm to the Environment In addition to meeting the specific performance criteria established under this approval, the Proponent shall implement all reasonable and feasible measures to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the project.	Other than where issues have been identified, in general Illawarra Coal appeared to be compliant with its obligation to minimise harm to the environment. The Environmental Management Strategy and associated management plans and procedures have been established and generally implemented to identify, plan for and manage environmental aspects and impacts related to the BSOP. BSOP have not reported any incidents of environmental harm to Planning and Infrastructure or the EPA.	Compliant Refer to the recommendations within this document and the audit report for areas of non-compliance and identified opportunities for improvement.
Bulli Seam Operations Project - Project Approval DA 08_0150	S2.2	The Proponent shall carry out the project generally in accordance with the: a) EA; b) Statement of Commitments; c) PPR; and d) Conditions of this approval.	The Environmental Assessment (2010), Statement of Commitments, Preferred Project Report and Project Approval were available on the company's website. The Condition of Approval 08_0150 dated 22 December 2011 were available on the company's website. Based on a high level review of these documents, Illawarra Coal is considered to have carried out the BSO Project in general accordance with the EA (2010), Statement of Commitments, Preferred Project Report and Conditions of Approval.	Compliant
Bulli Seam Operations Project - Project Approval DA 08_0150	S2.3	If there is any inconsistency between the above documents, the more recent document shall prevail to the extent of the inconsistency. However, the conditions of this approval shall prevail to the extent of any inconsistency.	Noted.	Noted
Bulli Seam Operations Project - Project Approval DA 08_0150	S2.4	The Proponent shall comply with any reasonable requirement/s of the Director-General arising from the Department's assessment of: a. Any strategies, plans, programs, reviews, audits, reports or correspondence that are submitted in b. Accordance with this approval; and c. The implementation of any actions or measures contained in these documents.	There has been no reported request from the Director-General concerning implementation of the plans, thus this requirement has not been triggered within the audit period. There was one action from the Director-General from submission of the 2012 Annual Environmental Management Report (AEMR). This involved updating the land preparation plan for West Cliff Colliery and updating the detailed site plans and regional location plans for Appin Mine (East and West) and West Cliff in Table 7 of the 2011/2012 AEMR. Submissions of plan changes were made prior to approval of the plans.	Compliant
Bulli Seam Operations Project - Project Approval DA 08_0150	S2.5	Limits on Approval The Proponent may carry out mining operations on the site until 31 December 2041.	Noted.	Noted
Bulli Seam Operations Project - Project Approval DA 08_0150	S2.6	Coal Extraction and Production The Proponent shall not: a. extract more than 10.5 million tonnes of ROM coal from the site in any financial year. b. transport more than 9.3 million tonnes of product coal from the site in a financial year.	a) The following ROM coal production was reported: - 2011/2012: Appin Mine extracted 3.5 million tonnes of ROM coal. West Cliff Colliery extracted 2.5 million tonnes of ROM coal. Total = 6 million tonnes. - 2012/2013: Appin Mine extracted 2.85 million tonnes of ROM coal. West Cliff Colliery extracted 2.99 million tonnes of ROM. Total = 5.84 million tonnes. b) ROM Coal is transported to West Cliff CPP by coal trucks from Appin East via Appin and Wedderburn Roads. ROM Coal from Appin Mine is also directed to the Dendrobium CPP on an 'as required' basis to maintain work continuity and maintain reduced stockpile sizes at the Appin Site. ROM coal is transported via Mt Ousley to the Dendrobium CPP (located within the BlueScope Steel (Port Kembla Steel Works) coal handling facilities or to the Port Kembla Coal Terminal for distribution. Given the highest combined ROM figure for Appin Mine and West Cliff Colliery within the audit period is 6 million tonnes ICHPL are within the limits of the Condition for transportation of coal product from the BSOP in a financial year.	Compliant
Bulli Seam Operations Project - Project Approval DA 08_0150	S2.7	Hours of Operation The Proponent may undertake mining operations 24 hours a day, 7 days a week.	Noted. ICHPL management reported that the BSOP operates 24hrs a day seven days a week.	Noted.

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S2.8	<p>SURRENDER OF CONSENTS AND APPROVALS</p> <p>By 31 December 2012, or as otherwise agreed by the Director-General, the Proponent shall surrender all existing development consents and project approvals for mining operations relied on by the Proponent for the site (other than this approval) in accordance with Sections 75YA and 104A of the EP&A Act.</p>	<p>Existing development consents and Project Approvals for mining operations with the exception of existing and proposed building works under Part 4A of the <i>Environment Planning and Assessment Act 1979</i> were relinquished during the audit period. The only evidence to support this was provided in the 2012/2013 Annual Environmental management Report (AEMR) (p.10).</p> <p>At the time of the audit Appin Gas Drainage Project Areas 7 and 9 (PA 08_0256) and Appin Ventilation Shaft No. 6 Project (PA 10_0079) were subject to the requirements of separate Project Approvals that had not been surrendered in accordance with Condition 8, Schedule 2 of PA 08_0150. No correspondence with Planning and Infrastructure was available to demonstrate that the Director General had agreed that these projects not be surrendered or that operations and activities associated with these projects would be managed in accordance with the previously approved Project Approvals.</p> <p>On this basis, compliance with this condition is considered Indeterminate.</p>	<p>Indeterminate</p> <p>Recommendation</p> <p>Confirm with relevant agencies appropriate Approvals have been surrendered as per the requirements of Condition 8, Schedule 2.</p>
Bulli Seam Operations Project - Project Approval DA 08_0150	S2.9	<p>Prior to the surrender of these consents and/or approvals, the conditions of this approval (including any notes) shall prevail to the extent of any inconsistency with the conditions of these consents and/or approvals.</p>	Noted	Noted
Bulli Seam Operations Project - Project Approval DA 08_0150	S2.10	<p>STRUCTURAL ADEQUACY</p> <p>The Proponent shall ensure that all new buildings and structures, and any alterations or additions to existing buildings and structures, are constructed in accordance with:</p> <ol style="list-style-type: none"> the relevant requirements of the BCA; and any additional requirements of the MSB where the building or structure is located on land with declared Mine Subsidence District. 	<p>The following buildings and structures were reported to have been built during the audit period:</p> <ul style="list-style-type: none"> Brennans Creek Dam Chlorine Dioxide Plant (2012 / 2013). West Cliff Coal Preparation Plant Bath House (2012 / 2013). Appin West Mine Bath House (2012 / 2013). No.2 Shaft Noise Mitigation Measures (2012 / 2013). Menangle Road intersection (2011 / 2012). West Cliff Coal Preparation Plant Raw Coal Reliability Improvement Project (2011 / 2012). 	Compliant
Bulli Seam Operations Project - Project Approval DA 08_0150	S2.11	<p>DEMOLITION</p> <p>The proponent shall ensure that all demolition work is carried out in accordance with <i>Australian Standard AS 2601-2001: The Demolition of Structure</i>, or its latest version.</p>	Site management reported that no buildings were demolished during the audit period.	Not Applicable (Not triggered)

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S2.12	<p>OPERATION OF PLANT AND EQUIPMENT</p> <p>The Proponent shall ensure that all plant and equipment used on site is:</p> <p>a) maintained in a proper and efficient condition; and</p> <p>b) operated in a proper and efficient manner.</p>	<p>Daily, weekly and monthly inspections of plant, equipment and site areas are conducted. An Appin Maintenance Schedule for Key Environmental Controls was available for review that listed work orders Weekly surface cleaning work orders from 03/09/2012 to 06/01/2014. A number of random work orders were cross refereed with the spread sheet and were found to correlate. Surface inspections were noted to address inspections for leaking machinery and equipment.</p> <p>Records including, but not limited to the following were reviewed:</p> <ul style="list-style-type: none"> • Calibration records: <ul style="list-style-type: none"> ▪ BarnOwl® calibration records dated March to November 2013. ▪ Appin Mine Surface Water Sampling Field Sheet (14/11/2013 and 17/10/2013). • Monthly service of the Chlorine Dosing Plant and the Dam treatment system (30/05/2013 to 29/11/2013). • Appin Mine Maintenance Schedule for Key Environmental Controls spread sheet dated 03/09/2012 through to 06/01/2014. The spread sheet included, but was not limited to inspection and maintenance dates for the following plant and equipment: Periodic Elec Insp Sykes Pump PMPA006, Periodic Elec Insp Dyna Sand Pump PMPA08, 1W Mech Insp Water Flocculent PMPA009, Appin West Fans Emissions Mon. Repairs, Debris screen - AW Stormwater Filter Pit, drain to main dam and Broken spray and riser AW Bullyard Road. • Work Order Corrective Action 411293015 dated 10/09/2013 to clean the Appin East Envirocycle tank. • Job Instruction (ref: AM1218 Appin East Daily Environment Inspections) for week commencing 26/11/2013. Tasks included but were not limited to: recording of meter readings for LDPs, rotation of sprinklers at the treated effluent area, checking of Heggies pump, assessment of truck wash and ensuring gutters are clear. • Work Order 411769463 dated 04/11/2013 for a production of a stand for the flocculent plant suction line. The Work Oder cross referenced with the Appin Maintenance Schedule for Key Environmental Controls spread sheet. • Work Order 411769466 dated 04/11/2013 to drain the main dam. The Work Oder cross referenced with the Appin Maintenance Schedule for Key Environmental Controls spread sheet. • Work Order 422659012 dated 24/11/2013 for the installation of a spray to reduce dust. • Work Order 422617852 dated 24/11/2013 for the installation of a spray to reduce dust. • Monthly Environmental Inspections Appin Mine and Infrastructure (ref: APNF0203) for September, October and November 2013. The form included, but was not limited to the following inspection areas, external infrastructure, water filtration plant/water tanks, dams and general surface infrastructure. • Appin West Weekly Environmental Inspection Report (ref: APNF0002) dated 28/11/2013, 25/11/2013, 19/11/2013, 15/11/2013, 11/11/2013 and 04/11/2013. Weekly Inspection reports were also reviewed for September and October 2013. Areas for inspection included, but were not limited to the water treatment plant and dams, diesel tank and bund and sewage treatment lagoons. • Appin West – Environmental Standards (ref: APNF0204) included acceptable and unacceptable criteria for surface water dams, mine dams, oil storage, the hazardous waste areas, the diesel and waste oil tank, bunds, spill kits and the sewage treatment mutrator. • The FY14 Environmental Improvement Plan indicated the following initiatives: <ul style="list-style-type: none"> ▪ repair of bunding for solcenic tanks or a new solcenic loading point near West Cliff Coal Preparation Plant (status = repair planned). ▪ complete the work to increase the bunding of the bulk oil store (status = Purchase Order raised and work planned). ▪ complete spill capture bund for diesel bowser (part of Opex/Capex package). ▪ cover the current oil separator to remove the additional rain water and debris from surrounding trees (status = in process). <p>It was noted that the site has not undertaken a systematic assessment of its compliance against the requirements of AS1940 - The storage and handling of flammable and combustible liquids. A full assessment of the Standard was not within the scope of this audit and one was not undertaken by URS. For sites the size of the BSOP facilities best practice would encompass regular audits of dangerous goods storage and handling.</p>	<p>Compliant</p> <p>Recommendation:</p> <p>It is recommended that the site conduct an audit of its compliance against AS1940, AS1596 and the Dangerous Goods Code. The audit should include the brine storage tank at Appin West pit top.</p>

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S2.13	STAGED SUBMISSION OF STRATEGIES, PLANS OR PROGRAMS With the approval of the Director-General, the Proponent may submit any strategies, plans or programs required by this approval on a progressive basis.	Noted	Noted

Appendix A – Bulli Seam Operations Project Independent Environmental Audit					
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations	
Project Approval 08_0150					
Bulli Seam Operations Project - Project Approval DA 08_0150	S3.1	SUBSIDENCE		<p>No known subsidence exceedances of performance measures detailed in Table 1 have occurred to date. The following documents were reviewed concerning performance measures for natural and heritage features:</p> <ul style="list-style-type: none"> • Douglas Area 7 LW701 – 704 Subsidence Management Plan • Appin Colliery Area 7 Longwalls 705 to 710 – Subsidence Management Plan • Westcliff Colliery Area 5 Longwalls 34 to 36 – Subsidence Management Plan • Appin LW704 End of Panel Report • Westcliff LW35 End of Panel Report • BSO AEMR July 2011-June 2012 • Samples of recent Subsidence Management Status Reports LW705 • Samples of recent Subsidence Management Status Reports LW36 • Samples of Subsidence Review meeting minutes <ul style="list-style-type: none"> • A table of impacts and inspections for gas release dated 09/05/2011 through to 11/09/2012 was included in the End of Panel Report (ICHPL, October 2012, pp.32-51). • Ecoengineers Pty Ltd completed an End of Panel assessment of water flow and quality effects for Longwall 704 in October 2012. The assessment concluded that 'while it is possible that emission of strata gas into the Nepean River gave rise to some reduction in dissolved oxygen in the River due to microbiological consumption of dissolved methane by natural aerobic bacteria ('obligate aerobes') within the water column, the magnitude and riverine extent of any reduction in Dissolved Oxygen (DO) during the period of mining Longwall 704 was well within the bounds of DO measured during the pre-mining baseline period for similar flow rates in the river' (Ecoengineers, 2012, p.45). • Ecoengineers (2012, p.46) reported that no landholders reported erosion, cracking or slumping of dam walls; rapid loss in water level, water level retreat or seepages; changes to dam water appearance, iron staining or gas releases nor detectable loss of water quality (e.g. palatability changes with stock watering), during or since the mining of Longwall 704. • Niche Environment and Heritage Pty Ltd (Niche) was commissioned by ICHPL to conduct an End of Panel assessment of the European and Aboriginal cultural heritage and archaeological sites within the limit of subsidence of Longwall 704. Minor fracturing was identified in Lyrebird Creek. The cracking was reported to be approximately 250 metres from a known grinding groove site. A detailed archaeological assessment was reported to be planned for identified sites once access to the area has been granted. Niche (unknown date, p.4) concluded that the lack of major movement and the predications of low impact to aboriginal sites, subsidence is considered unlikely to have led to any impacts from Longwall 704. GeoTerra Pty Ltd (GeoTerra) was commissioned by ICHPL to conduct an End of Panel Assessment of groundwater for Longwall 704 GeoTerra November 2012, p.21) reported that no groundwater TARP triggers were exceeded during extraction of Longwall 70. Further details concerning groundwater monitoring is discussed in Section 9.3.2. Cardno Pty Ltd were commissioned by ICHPL to review aquatic flora and fauna impacts from Longwall 704 (Cardno, November 2012). It was concluded that 'there is no evidence of any impact on aquatic ecology in the SMP Area due to extraction of Longwall 704. Although new gas release zones, and the reactivation of existing gas release zones, have been observed, these do not appear to have had any observable impact on any aspect of aquatic ecology. This is consistent with predictions of impacts made prior to commencement of mining (Cardno, November 2012, p.4). 	Compliant
		Performance Measures – Natural and Heritage Features, etc			
		The Proponent shall ensure that the project does not cause any exceedances of the performance measures in Table 1, to the satisfaction of the Director-General.			
		Table 2: Subsidence Impact Performance Measures			
		Watercourses			
		Nepean River	Negligible environmental consequences including: <ul style="list-style-type: none"> • negligible diversion of flows or changes in the natural drainage behaviour of pools; • negligible gas releases and iron staining; and • negligible increase in water cloudiness. 		
		Georges River	Negligible environmental consequences including: <ul style="list-style-type: none"> • negligible diversion of flows or changes in the natural drainage behaviour of pools; • negligible gas releases and iron staining; and • negligible increase in water cloudiness over at least 80% of the stream length subject to vertical subsidence >20 mm. No subsidence impact or environmental consequence greater than minor.		
		Other watercourses	No greater subsidence impact or environmental consequences than predicted in the EA and PPR.		
		Land			
		Dharawal State	Negligible environmental consequences.		
Cliffs of "special significance" (ie cliffs longer than 200 m and/or higher than 40 m; and cliff-like rock faces higher than 5 m that constitute waterfalls)	Negligible environmental consequences (that is occasional rockfalls, displacement or dislodgement of boulders or slabs, or fracturing, that in total do not impact more than 0.5% of the total face area of such cliffs within any longwall mining domain).				
Other cliffs flanking the Nepean River	Negligible environmental consequences (that is occasional rockfalls, displacement or dislodgement of boulders or slabs, or fracturing, that in total do not impact more than 0.5% of the total face area of such cliffs within any longwall mining domain).				
Other cliffs	Minor environmental consequences (that is occasional rockfalls, displacement or dislodgement of boulders or slabs, or fracturing, that in total do not impact more than 3% of the total face area of such cliffs within any longwall mining domain).				

Appendix A – Bulli Seam Operations Project Independent Environmental Audit					
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations	
Project Approval 08_0150					
Bulli Seam Operations Project - Project Approval DA 08_0150	S3.1	<i>Continued:</i>		<p><i>Continued:</i></p> <ul style="list-style-type: none"> Niche (December, 2011, p.8) concluded that ‘the impacts observed as a result of the extraction of Longwall 34 are localized and have been confined to marginal habitat for terrestrial ecological values. It is not likely that the extraction of Longwall 34 has lead to a significant impact on any terrestrial ecological values. Given the nature of the impacts observed within the limit of subsidence of Longwall 34 on terrestrial ecological values and the fact that these impacts are all within predicted levels no further monitoring is recommended’. Biosis (October, 2013, p.7) concluded that ‘impacts have been observed as a result of Longwall 35 within Georges River and Mallaty Creek. This assessment concludes that these subsidence impacts are unlikely to have resulted in impacts to threatened species or ecological communities. Observed impacts are within prediction. No Corrective Management Actions for terrestrial flora or fauna are recommended or required.’ <p>Comur Consulting Pty Ltd, November 2012, Section 5 (pp.24-52) addresses impacts to natural surface features from Longwall 704, Area 7.</p> <p>Refer to Section 8 of the main report for further information concerning subsidence impacts.</p>	
		Biodiversity			
		Threatened species, threatened populations, or endangered ecological communities	Negligible environmental consequences.		
		Aboriginal Heritage			
		Sites determined to hold “special	Negligible impact or environmental consequence.		
		Sites determined to hold high or moderate	Less than 10% of such sites across the mining area are affected by subsidence impacts (other		
		Other Aboriginal heritage sites	Less than 10% of such sites (or 1 such site, whichever is the greater) within any longwall mining domain are/is affected by subsidence impacts (other than minor impacts or Environmental consequence).		
		Historic Heritage			
		St James Church (Menangle) St Mary’s Tower (Douglas Park)	Negligible loss of heritage value. Negligible impact on structural integrity or external fabric.		
		Broughtons Pass Weir	Negligible loss of heritage value.		
Other buildings or structures of State or National heritage significance	Negligible loss of heritage value. Negligible impact on structural integrity or external fabric,				
First workings under an approved Extraction Plan beneath any feature where performance measures in this table require negligible impact, negligible consequence or negligible loss (including main headings under the Georges River)	To remain longterm stable and non-subsiding.				
Second workings	To be carried out only within longwall mining domains, in accordance with an approved Extraction Plan.				

Appendix A – Bulli Seam Operations Project Independent Environmental Audit														
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations										
Project Approval 08_0150														
Bulli Seam Operations Project - Project Approval DA 08_0150	S3.2	<p>Offsets</p> <p>If the Proponent exceeds the performance measures in Table 1 and the Director-General determines that:</p> <p>a) it is not reasonable or feasible to remediate the impact or environmental consequence; or</p> <p>b) remediation measures implemented by the Proponent have failed to satisfactorily remediate the impact or environmental consequence; then the Proponent shall provide a suitable offset to compensate for the impact or environmental consequence, to the satisfaction of the Director-General.</p>	<p>No performance requirements have been exceeded and no offsets have been required in accordance with the requirements of this Condition. ICHPL management advised that no determinations have been received from the Director-General.</p> <p>Extension was granted on 31/12/2014 for the development of the Biodiversity Offset Strategy, correspondence from Department of Planning and Infrastructure (20/12/2012).</p> <p>Offset Management Plans have been developed by ICHPL for:</p> <ul style="list-style-type: none"> • <i>Persoonia hirstuta</i> – Revision 6 approved by Department of Trade and Investment, Regional Infrastructure and Services (15.08.2013) as well as DoE (22/11/2013). • Shale Sandstone Transition Forest – Revision 3, May 2013, approved by DoE 07/06/2013. 	Compliant										
Bulli Seam Operations Project - Project Approval DA 08_0150	S3.3	<p>Performance Measures – Built Features</p> <p>The Proponent shall ensure that the project does not cause any exceedances of the performance measures in Table 2, to the satisfaction of the Director-General.</p> <p>Table 2: Subsidence Impact Performance Measures</p> <table border="1"> <thead> <tr> <th colspan="2">Built features</th> </tr> </thead> <tbody> <tr> <td>Key public infrastructure: • Main Southern Railway; • Hume Highway; and • Key SCA infrastructure (Nepean Tunnel, Cataract Tunnel, Upper Canal, Broughtons Pass Weir and other weirs)</td> <td>Always safe and serviceable. Damage that does not affect safety or serviceability must be fully repairable, and must be fully repaired.</td> </tr> <tr> <td>Other public infrastructure (including water supply pipelines; high pressure gas pipelines and the gas distribution network; electricity transmission and distribution lines; telecommunications cables and optical fibre networks; roads, trails and associated structures). Houses, industrial premises, swimming pools, farm dams and other built features or improvements</td> <td>Always safe. Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated. Damage must be fully repaired or fully compensated, or else the damaged built feature or damaged infrastructure component must be replaced.</td> </tr> <tr> <th colspan="2">Public safety</th> </tr> <tr> <td>Public Safety</td> <td>Negligible additional risk.</td> </tr> </tbody> </table>	Built features		Key public infrastructure: • Main Southern Railway; • Hume Highway; and • Key SCA infrastructure (Nepean Tunnel, Cataract Tunnel, Upper Canal, Broughtons Pass Weir and other weirs)	Always safe and serviceable. Damage that does not affect safety or serviceability must be fully repairable, and must be fully repaired.	Other public infrastructure (including water supply pipelines; high pressure gas pipelines and the gas distribution network; electricity transmission and distribution lines; telecommunications cables and optical fibre networks; roads, trails and associated structures). Houses, industrial premises, swimming pools, farm dams and other built features or improvements	Always safe. Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated. Damage must be fully repaired or fully compensated, or else the damaged built feature or damaged infrastructure component must be replaced.	Public safety		Public Safety	Negligible additional risk.	<p>No known exceedances were reported during the audit period concerning key public infrastructure or other public infrastructure including, but not limited to water supply pipelines, high pressure gas pipelines and the gas distribution network, electricity transmission and distribution lines, telecommunications cables and optical fibre networks, roads, trails and associated structure.</p> <p>URS Sighted a letter from the ICHPL Manager of property and Landholder Relations to a landowner dated 11/12/2012 concerning submission of receipts (by the landholder) for water due to damage to a water tank as a result of subsidence impacts at the property.</p> <p>Performance Measures to determine and manage built features included the following:</p> <ul style="list-style-type: none"> • Safe & Serviceable • No public safety issues • Management Plans in place, no non compliances <p>The following documents were reviewed concerning performance measures for built features:</p> <ul style="list-style-type: none"> • Douglas Area 7 LW701 – 704 Subsidence Management Plan • Appin Colliery Area 7 Longwalls 705 to 710 – Subsidence Management Plan • Westcliff Colliery Area 5 Longwalls 34 to 36 – Subsidence Management Plan • Appin LW704 End of Panel Report • Westcliff LW35 End of Panel Report • BSO AEMR July 2011-June 2012 • Samples of recent Subsidence Management Status Reports LW705 • Samples of recent Subsidence Management Status Reports LW36 • Evidence of Subsidence Review meeting minutes were sighted. 	Compliant
Built features														
Key public infrastructure: • Main Southern Railway; • Hume Highway; and • Key SCA infrastructure (Nepean Tunnel, Cataract Tunnel, Upper Canal, Broughtons Pass Weir and other weirs)	Always safe and serviceable. Damage that does not affect safety or serviceability must be fully repairable, and must be fully repaired.													
Other public infrastructure (including water supply pipelines; high pressure gas pipelines and the gas distribution network; electricity transmission and distribution lines; telecommunications cables and optical fibre networks; roads, trails and associated structures). Houses, industrial premises, swimming pools, farm dams and other built features or improvements	Always safe. Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated. Damage must be fully repaired or fully compensated, or else the damaged built feature or damaged infrastructure component must be replaced.													
Public safety														
Public Safety	Negligible additional risk.													
Bulli Seam Operations Project - Project Approval DA 08_0150	S3.4	Any dispute between the Proponent and the owner of any built feature over the interpretation, application or implementation of the performance measures in Table 2 is to be settled by the Director-General, following consultation with the MSB and the Executive Director Mineral Resources. Any decision by the Director- General shall be final and not subject to further dispute resolution under this approval.	ICHPL Management confirmed that no such disputes have occurred within the audit period.	Compliant										

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S3.5	<p>Extraction Plans</p> <p>The Proponent shall prepare and implement an Extraction Plan for first and second workings within each longwall mining domain to the satisfaction of the Director-General. Each extraction plan must:</p> <ol style="list-style-type: none"> be prepared by suitably qualified and experienced persons whose appointment has been endorsed by the Director-General; be approved by the Director-General before the Proponent carries out any of the second workings covered by the plan; include detailed plans of existing and proposed first and second workings and any associated surface development; include detailed performance indicators for each of the performance measures in Tables 1 and 2; provide revised predictions of the potential subsidence effects, subsidence impacts and environmental consequences of the proposed second workings, incorporating any relevant information obtained since this approval; describe the measures that would be implemented to ensure compliance with the performance measures in Tables 1 and 2, and manage or remediate any impacts and/or environmental consequences; include a Built Features Management Plan, which has been prepared in consultation with DRE and the owners of affected public infrastructure, to manage the potential subsidence impacts and/or environmental consequences of the proposed second workings, and which: <ul style="list-style-type: none"> addresses in appropriate detail all items of key public infrastructure and other public infrastructure and all classes of other built features; has been prepared following appropriate consultation with the owner/s of potentially affected feature/s; recommends appropriate pre-mining mitigatory measures to reduce subsidence impacts; recommends appropriate remedial measures and includes commitments to mitigate, repair, replace or compensate all predicted impacts on potentially affected built features in a timely manner; and in the case of all key public infrastructure, and other public infrastructure except roads, trails and associated structures, reports external auditing for compliance with ISO 31000 (or alternative standard agreed with the infrastructure owner) and provides for annual auditing of compliance and effectiveness during extraction of longwalls which may impact the infrastructure; 	<p>Condition S3.5 includes the following Note: <i>A Subsidence Management Plan that is substantially consistent with this Condition and which is approved by the DRE prior to 30 September 2012 is taken to satisfy the requirements of this Condition.</i></p> <p>Extraction in the audit period has been carried out under previously approved Subsidence Management Plans (SMP) for Longwalls 704 and 705 (Appin) and Longwall 35 (Westcliff) in lieu of Extraction Plans. The approved Subsidence Management Plans were reviewed during the audit to assess their substantial consistency with Condition S3.5, as follows:</p> <p>The following plans and documents were reviewed during the audit:</p> <p><u>Subsidence Management Plan Appin LW 704 – Douglas Area 7 LW 701 – 704</u></p> <ol style="list-style-type: none"> Prepared by Hansen Consulting, report dated 13 April 2006 Approval letter sighted, dated 1 Nov 2006 Plans included Includes performance indicators which generally address the measures in Tables 1 and 2 Includes detailed prediction of subsidence effects, impacts and consequences prepared by Mine Subsidence Engineering Consultants Includes monitoring plans for natural and man-made features Includes management plans for major surface infrastructure and for private properties Covered under monitoring plans for natural features Covered under monitoring plans for natural features “Aquatic ecology”, “Terrestrial ecology” Covered under monitoring plans for natural features “Nepean River Gorge” Covered under monitoring plans for man-made features “Aboriginal Heritage”, “Historical Heritage” Cliff and Steep Slope Safety Management Plan satisfies this requirement Covered under (f) “Monitoring plans for natural and man-made features Regional Seismic Monitoring Plan submitted to DI&I 8 October 2012 for Longwall 705-710 SMP (in lieu of Extraction Plan). Installation planned for FY14 Covered within monitoring and management plans (f) and (g) <p><u>Subsidence Management Plan Appin LW 705 – Appin Colliery Area 7 Longwalls 705 to 710</u></p> <ol style="list-style-type: none"> Prepared by Cardno Forbes Rigby P/L, report dated June 2008 Approval letter for LW705, 706 sighted, dated 28 Feb 2012 Plans included Includes performance indicators and TARPs which generally address the measures in Tables 1 and 2 Includes detailed prediction of subsidence effects, impacts and consequences prepared by Mine Subsidence Engineering Consultants (report dated June 2008) Includes monitoring plans for natural and man-made features Management plans for major surface infrastructure, including specific plans for: Hume Highway, Main Southern Railway, Sydney Catchment Authority, Telstra, Transgrid, Public Roads, and for private properties Includes monitoring plans and TARPs for surface and groundwater Includes monitoring plans and TARPs for aquatic and terrestrial ecology Includes monitoring plans and TARPs for cliffs and steep slopes, and specific Management Plan for Nepean River Cliffs and Steep Slopes Includes monitoring plans and TARPs for aboriginal and European heritage features Public Safety Management Plan has been submitted and approved for Longwalls 705-706 Covered under (f) “Monitoring plans for natural and man-made features Regional Seismic Monitoring Plan submitted to DI&I 8 October 2012 for Longwall 705-710 SMP (in lieu of Extraction Plan). Installation planned for FY14 Covered within monitoring and management plans 	Complaint

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S3.5	<p><i>Continued:</i></p> <p>h) include a Water Management Plan, which has been prepared in consultation with OEH, SCA and NOW, which provides for the management of the potential impacts and/or environmental consequences of the proposed second workings on watercourses and aquifers, including:</p> <ul style="list-style-type: none"> • surface and groundwater impact assessment criteria, including trigger levels for investigating any potentially adverse impacts on water resources or water quality; • a program to monitor and report stream flows and assess any changes resulting from subsidence impacts; • a program to monitor and report groundwater inflows to underground workings; and • a program to predict, manage and monitor impacts on groundwater bores on privately-owned land; <p>i) include a Biodiversity Management Plan, which has been prepared in consultation with OEH and DPI (Fisheries), which provides for the management of the potential impacts and/or environmental consequences of the proposed second workings on aquatic and terrestrial flora and fauna, with a specific focus on threatened species, populations and their habitats; endangered ecological communities; and water dependent ecosystems, including (for Appin Areas 7, 8 and 9):</p> <ul style="list-style-type: none"> • additional targeted surveys for threatened species, sufficient to identify any actions required to protect significant populations from potential impacts; <p>j) include a Land Management Plan, which has been prepared in consultation with any affected public authorities, to manage the potential impacts and/or environmental consequences of the proposed second workings on land in general, with a specific focus on cliffs and steep slopes;</p> <p>k) include a Heritage Management Plan, which has been prepared in consultation with OEH and relevant stakeholders for both Aboriginal and historic heritage, to manage the potential environmental consequences of the proposed second workings on both Aboriginal and non-Aboriginal heritage items, and which:</p> <ul style="list-style-type: none"> • includes additional investigations (such as surveys and current register searches) for Aboriginal heritage items (including previously known sites) and historic heritage items, sufficient to identify the significance (including “special significance”) of all sites which may be impacted by subsidence and to identify any actions required to ensure that the performance measures in Table 1 are met; and • is prepared in accordance with the relevant requirements for preparation of the Heritage Management Plan required under condition 23 of Schedule 4; 	<p><i>Continued:</i></p> <p><u>Subsidence Management Plan Westcliff LW 35 – Westcliff Colliery Area 5 Longwalls 34 to 36</u></p> <ol style="list-style-type: none"> Prepared by Cardno Forbes Rigby P/L, report dated June 2008 Approval letter sighted, dated 13 May 2009 Plans included Includes performance indicators and TARPs which generally address the measures in Tables 1 and 2 Includes detailed prediction of subsidence effects, impacts and consequences prepared by Mine Subsidence Engineering Consultants (report MSEC326 dated December 2007) Includes monitoring plans for natural and man-made features Management plans for major surface infrastructure, including specific plans for: Sydney Catchment Authority, Telstra, Transgrid, Public Roads, Gas Lines, Macarthur Pipeline, and for private properties Includes monitoring plans and TARPs for surface and groundwater Includes monitoring plans and TARPs for aquatic and terrestrial ecology Includes monitoring plans and TARPs for cliffs and steep slopes, and specific Management Plan and TARPs for Georges River Includes monitoring plans and TARPs for aboriginal and European heritage features Public Safety Management Plan has been submitted and approved for Longwalls 35-36 Covered under (f) “Monitoring plans for natural and man-made features Regional Seismic Monitoring Plan submitted to DI&I 8 October 2012. Installation planned for FY14 <p>Covered within monitoring and management plans</p> <p>It is considered that these Subsidence Management Plans prior to 30 September 2012 by DTIRIS-DRE are substantially consistent with the requirements of Condition S3.5.</p>	

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S3.5	<p><i>Continued:</i></p> <p>l) include a Public Safety Management Plan, which has been prepared in consultation with DRE, to ensure public safety in the mining area;</p> <p>m) include a subsidence monitoring program, which has been prepared in consultation with DRE, OEH and SCA, to:</p> <ul style="list-style-type: none"> • provide data to assist with the management of the risks associated with subsidence; • validate the subsidence predictions; • analyse the relationship between the predicted and resulting subsidence effects and predicted and resulting impacts under the plan and any ensuing environmental consequences; and • inform the contingency plan and adaptive management process; <p>n) include a regional seismic event monitoring program, which has been prepared in consultation with DRE, and which includes analysis of outcomes and proposed triggers for review of potential correlations with mining operations;</p> <p>o) include a contingency plan that expressly provides for adaptive management where monitoring indicates that there has been an exceedance of any performance measure in Tables 1 and 2, or where any such exceedance appears likely;</p> <p>p) proposes appropriate revisions to the Rehabilitation Management Plan required under condition 33 of Schedule 4; and</p> <p>q) include a program to collect sufficient baseline data for future Extraction Plans.</p>		
Bulli Seam Operations Project - Project Approval DA 08_0150	S3.6	<p>The Proponent shall ensure that the management plans required under condition 5(g)-(l) above include:</p> <p>a) an assessment of the potential environmental consequences of the Extraction Plan, incorporating any relevant information that has been obtained since this approval; and</p> <p>b) a detailed description of the measures that would be implemented to remediate predicted impacts.</p>	Documents reviewed as noted above. Approved Subsidence Management Plans contain sections that address the requirements of this Condition.	Compliant
Bulli Seam Operations Project - Project Approval DA 08_0150	S3.7	<p>First Workings</p> <p>The Proponent may carry out first workings within the project area, other than in accordance with an approved extraction plan, provided that DRE is satisfied that the first workings are designed to remain stable and non-subsiding, except insofar as they may be impacted by approved second workings.</p>	First workings are in areas covered by approved Subsidence Management Plans (refer to Condition 3.5). ICHPL management advised that officials from DTIRIS-DRE are frequently on site at Westcliff and Appin and are aware of the design approach and the observed performance. No evidence of DTIRIS-DRE sites visits were reviewed by the auditors.	Compliant
Bulli Seam Operations Project - Project Approval DA 08_0150	S3.8	<p>Payment of Reasonable Costs</p> <p>The Proponent shall pay all reasonable costs incurred by the Department to engage suitably qualified, experienced and independent experts to review the adequacy of any aspect of an Extraction Plan.</p>	It is considered that as no Extraction Plans applicable to extraction during the audit period were prepared and implemented in accordance with Condition 3.5 there has been no requirement for ICHPL to meet any associated independent review costs incurred by the Department.	Not Applicable (Not triggered)

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S3.9	<p>Improved Understanding and Prediction of Subsidence Impacts</p> <p>The Proponent shall prepare and implement a program to improve its prediction and understanding of subsidence impacts (in particular sub-surface impacts and impacts on groundwater resources), to the satisfaction of the Director-General. This program must be prepared in consultation with DRE and be submitted to the Director-General for approval by 30 September 2012 and must include proposals for:</p> <ol style="list-style-type: none"> a) testing (including core testing and in situ testing) to further define the mechanical, hydrogeological and geochemical properties of rock strata within each longwall domain, including: <ul style="list-style-type: none"> • testing and validation of assumptions regarding regional continuity of modelled hydraulic properties (including mass porosity and permeability); • identifying hydraulic properties of rock strata close to water-dependent ecosystems; and • identifying the presence and distribution of iron-bearing minerals that might contribute to surface water quality impairment; b) installation of a regional network of deep pore pressure monitoring bores with vertical arrays of pore pressure transducers to assess and quantify the height and impacts of subsurface fracturing; c) a census of boreholes which may be impacted by subsidence, the gathering of relevant borehole and groundwater quality data and a regular monitoring program; d) regular enhancement, calibration and verification of the project's regional groundwater model, and the further development of this model on a mining-domain scale; and e) regular recalibration of methodologies and models used for subsidence effect and impact prediction, as they are applied within the project area. 	<p>This program was submitted to Planning and Infrastructure for approval on 19 September 2012. Implementation of some aspects of the program was noted to be proceeding. This Condition was found to be compliant pending approval by the Director-General.</p>	<p>Preparation – Compliant (pending approval by the Director-General). Implementation – Compliant (on basis Program was still to be approved at the time of the audit).</p>
Bulli Seam Operations Project - Project Approval DA 08_0150	S3.10	<p>Improved Understanding and Prediction of Environmental Consequences on Significant Natural Features</p> <p>The Proponent shall prepare and implement a Research Program to the satisfaction of the Director-General and allocate \$1,000,000 in total to this program for expenditure over a period of seven years from the date of the program's approval. This program must be prepared in consultation with OEH, SCA and DRE, be submitted to the Director-General for approval by 30 September 2012, and be:</p> <ol style="list-style-type: none"> a) directed at research into improving the prediction, assessment, remediation and/or avoidance of subsidence impacts and environmental consequences on significant natural features in the Project Area; and b) targeted at genuine research, as opposed to implementing the matters required by this approval. 	<p>This program was submitted to Planning and Infrastructure for approval on 19 September 2012. Implementation of some aspects of the program was noted to be proceeding. This Condition was found to be compliant pending approval by the Director-General.</p>	<p>Preparation – Complaint (Compliant (pending approval by the Director-General)). Implementation – Compliant (on basis Program was still to be approved at the time audit).</p>

Appendix A – Bulli Seam Operations Project Independent Environmental Audit

Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations																										
Project Approval 08_0150																														
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.1	<p>NOISE</p> <p>Noise Impact Assessment Criteria</p> <p>From the end of June 2013, the Proponent shall ensure that the noise generated by the project does not exceed the criteria in Table 1 at any residence on privately-owned land or on more than 25 percent of any privately-owned land.</p> <p>However, these criteria do not apply if the Proponent has a written agreement with the relevant landowner to exceed the criteria, and the Proponent has advised the Department in writing of the terms of this agreement.</p>	<p>No exceedances have been recorded against the criteria of Table 1 since the end of June 2013.</p> <p>The 14 day monitoring report accessed on 06/01/2014 identified that night time attended and real time noise monitoring was conducted at Appin East pit top on 24/07/2013. Site noise contribution was identified to be less than 35 L_{Aeq} (15 min). Subsequent attended noise monitoring conducted on 30/07/2013 (day and evening), 06/11/2013 (night), 14/11/2013 (day and night) identified site noise contribution from Appin East to be less than the noise criteria dB(A) specified in Condition 1 of Schedule 4.</p> <p>Attended noise monitoring from Appin West conducted on 24/07/2013 (night), 30/07/2013 (day and evening), 13/12/2013 (day) and 17/12/2013 (night) identified site noise contribution from to be less than the noise criteria dB(A) specified in Condition 1 of Schedule 4.</p> <p>A review of the 14 day monitoring report available on the BHP Billiton website accessed on 09/01/2014 identified the following inconsistencies concerning the reporting of noise monitoring data:</p> <ul style="list-style-type: none"> Appin East Noise Monitoring Results: <ul style="list-style-type: none"> only the attended noise monitoring results at monitoring location AE-NS2 has been given. The monitoring results spread sheet states that the attended monitoring was undertaken in July and the real-time (i.e. BarnOwl®) monitoring was undertaken in September; however, the BSO Environmental Noise Monitoring Procedure (Document ID: ICHP0302) states that attended monitoring is to be undertaken simultaneously (in conjunction) with the BarnOwl® real-time monitoring (p.3). the BSO Environmental Noise Monitoring Procedure states that attended noise monitoring be undertaken at the BarnOwl® monitoring location concurrently with the BarnOwl® monitoring. No record of attended monitoring at the BarnOwl® location has been provided. Appin West Noise Monitoring Results: <ul style="list-style-type: none"> the measured noise level values in the column 'Site Noise Contribution' are inconsistent with the accompanying comments that make statements such as 'Mine ... barely audible' and 'Mine site inaudible'. Where similar comments are provided in other spread sheets the measured noise level is preceded with a less than sign (i.e. <) or 'not audible'. Date and time input: <ul style="list-style-type: none"> the time of the measurements taken on 30/07/2013 (16:15hrs) at West Cliff Colliery are the same for Day and Evening monitoring. the time of the measurements taken on 30/07/2013 (17:20hrs) at No 2 Vent shaft noise are the same for Day and Evening monitoring. <p>Results from the noise monitoring program are provided on the BHP Billiton website at: http://www.bhpbilliton.com/home/aboutus/regulatory/Pages/default.aspx No written agreement with relevant landowners to exceed the criteria specified in Condition 1 of Schedule 4 is known to exist.</p>	<p>Compliant</p> <p>Recommendation</p> <p>Implement a review process of noise monitoring data prior to uploading the 14 day monitoring report to the BHP Billiton website.</p>																										
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.1	<p>Table 1: Interim Noise Criteria dB(A)</p> <table border="1"> <thead> <tr> <th colspan="2">Location</th> <th>Day</th> <th>Evening</th> <th colspan="2">Night</th> </tr> <tr> <th>Area</th> <th>Receiver Number</th> <th>L_{Aeq} (15 min)</th> <th>L_{Aeq} (15 min)</th> <th>L_{Aeq} (15 min)</th> <th>LA1 (1 min)</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Appin Township</td> <td>136, 137, 139, 142, 143</td> <td>44</td> <td>44</td> <td>44</td> <td rowspan="3">52</td> </tr> <tr> <td>135</td> <td>43</td> <td>43</td> <td>43</td> </tr> <tr> <td>100-134, 141, 146-160, 194-197, 200-209, 211, 236-278, 283-284</td> <td>42</td> <td>42</td> <td>42</td> </tr> </tbody> </table>	Location		Day	Evening	Night		Area	Receiver Number	L _{Aeq} (15 min)	L _{Aeq} (15 min)	L _{Aeq} (15 min)	LA1 (1 min)	Appin Township	136, 137, 139, 142, 143	44	44	44	52	135	43	43	43	100-134, 141, 146-160, 194-197, 200-209, 211, 236-278, 283-284	42	42	42		
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Project Approval 08_0150						
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.3	<p>Noise Mitigation</p> <p>Upon receiving a written request from the owner of any residence listed in Table 3, the Proponent shall implement noise mitigation measures (such as double-glazing, insulation, and/or air conditioning) at the residence in consultation with the landowner. These measures must be reasonable and feasible. If within 3 months of receiving this request from the owner, the Proponent and the owner 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> <p>Table 3: Land where noise mitigation measures are available on request</p> <table border="1"> <thead> <tr> <th>Receiver Number</th> </tr> </thead> <tbody> <tr> <td>57,60, 63, 64, 66, 79, 80, 138, 140, 144, 165</td> </tr> </tbody> </table>	Receiver Number	57,60, 63, 64, 66, 79, 80, 138, 140, 144, 165	<p>ICHPL has not received a written request from the owner of any residence listed in Table 3. Implementation of noise mitigation measures such as double-glazing, insulation, and/or air conditioning have been required. The 2012-2013 AEMR (p.75) stated that 'no written requests were received from residents for noise mitigation measures as listed in the BSO Development Consent, Schedule 4, and Table 3'.</p> <p>It is noted that ICHPL is currently negotiating with one resident in the vicinity of the Appin No. 2 Vent Shaft concerning noise vibration issues. Mitigation works have recently been undertaken on the ventilation shaft fans as well as the installation of a noise barrier in an attempt to reduce the noise vibration impact at the receiver. Mitigation measures included:</p> <ul style="list-style-type: none"> • Installation of Acoustic Cavity Panels around fan cowling; • Installation of Acoustic Northern Wall Panels including concrete footings; and • Installation of Acoustic Roof Duct Panels on ventilation ducts. <p>The auditors observed the mitigation measures at the Appin No. 2 Vent Shaft. The resident has not requested any further investigation into mitigation measures for the property and has not been in contact with ICHPL since 30/09/2013.</p> <p>Implementation of additional works at the residence will be dependent on the success of the mitigation works at the Appin No. 2 Vent Shaft site. The 2012-2013 AEMR (pp.70-71) stated that 'attended and real-time monitoring at the closest residence (where the most complaints were received) show a 2.6-2.8 dB reduction (approximately 50% reduction) in noise levels following the completion of the project. All other receivers showed a similar noise reduction and are well within the BSO compliance limits set out in the BSO development consent. No further complaints have been received following the completion of the noise mitigation project'.</p>	Not Applicable (Not triggered)
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Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.4	<p>Operating Conditions</p> <p>The Proponent shall:</p> <p>a) 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;</p> <p>b) 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</p> <p>c) regularly assess the real-time noise monitoring to ensure compliance with the relevant conditions of this approval, to the satisfaction of the Director-General.</p>	<p>a) Section 5 of the Noise Management Plan included noise management and mitigation measures for Appin East and West pit tops, Appin Mine No.2 and No. 3 mine ventilation shafts, West Cliff South and West Cliff North. Noise mitigation works at Appin East pit top were observed by the auditors. These included:</p> <ul style="list-style-type: none"> - eaves installed on the Dolly Car Winder room; and - sealing of the main slope belt motor room roller door and including signage to keep doors closed. <p>The above measures were proposed in the 2011/2012 AEMR. ICHPL reported that further noise mitigation measures were planned for the main slope motor room including adding insulation of the northern and western walls. A quote has reportedly been received for re-cladding these walls. Additional measures were reported to include two exhaust fans to be fitted to the building to aid ventilation and the installation of 'whirly birds' (ventilation) to be added to the roof, allowing doors to be closed. Other mitigation measures include a residential muffler has been fitted to the loader at the Appin East coal stockpile. A bash plate is to be installed on the surface elevator belt prior to the end of June 2014 to replace the existing plate. Capital for this work has been applied for and approved. The replacement bash plate (yet to be installed) was observed by the auditors. Four ventilators are also to be installed during the installation of the bash plate so that doors can be shut.</p> <p>Other noise mitigation works conducted for the BSOP during the reporting period include:</p> <ul style="list-style-type: none"> - three metre noise walls were installed around the mud pumps and drilling rig at Appin Area 7 MRD. - sound walls were placed around pumps and flare(s), additional flares and articulating gas flows at Appin Area 9 MSGD sites 1 and 2. The auditors observed the sound walls at the two sites. <p>One complaint concerning track noise from an excavator undertaking road construction was received on 31/10/2011. This issue was followed up with the road constructor and actions were put in place. No further information was available. No road traffic noise complaints have been received by ICHPL. Speed limit signs were observed around the BSOP by the auditors. Maintaining low revs was included in the Appin Mine Training Awareness presentation.</p> <p>b) ICHPL purchased a BarnOwl® directional noise monitoring unit during the audit period. The unit is used to monitor operational and compliance noise issues at pit tops, fan sites and project sites, background noise monitoring for future projects and complaint investigations at residences. The BarnOwl® was observed at a residence by the auditors during the audit. The 2013-2013 AEMR states that <i>'the BarnOwl noise monitoring trailer allows for real time directional monitoring to determine the industrial noise contribution from Illawarra Coal operations. The data is sent via 3G telemetry into the IC network where it is captured in a database and displayed on a BHPBIC hosted website. Data is available in real-time (15minute intervals) through the website. Audio files can be set to record at any given frequency and are stored on the on-board computer located in the trailer. The BarnOwl system is powered by a solar powered battery pack.'</i></p> <p>c) Results from the noise monitoring program are provided on the BHP Billiton website at: http://www.bhpbilliton.com/home/aboutus/regulatory/Pages/default.aspx</p>	Compliant

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Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.5	<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; describe the measures that would be implemented to ensure compliance with the relevant conditions of this approval; 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. 	<p>Preparation</p> <p>URS sighted a letter from Planning and Infrastructure to ICHPL dated 07/01/2013 that approved the Noise Management Plan (NMP) in accordance with Condition 5 of Schedule 4 of the PA 08_0150. The following was noted concerning the Noise Management Plan:</p> <ol style="list-style-type: none"> ICHPL submitted the NMP to the Director-General on 27 July 2012. Section 1.3 (p.6) notes that the EPA and the Wollondilly Shire Council were provided drafts of the plan for comment and offered a presentation or meeting with ICHPL personnel. Appendix C of the plan included consultation comments from the EPA and Wollondilly Shire Council as well as responses by ICHPL. Sections 5.1.9 (p.13) noted that 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. The agreement was not available to the auditors for review. Section 6.1.3 (p.18) and 6.2.2 (p.21) addressed road traffic noise generated by employee commuter vehicles on public roads. Section 6 (in particular Section 6.3) of the Plan described the measures that would be implemented to ensure compliance with the relevant conditions of this approval. Section 7 (p.24) outlined the procedures to manage responses to any complaints or issues raised by the owners of affected residences. Section 6.2 (pp.18-21) included a noise monitoring program that uses a combination of real-time and supplementary attended monitoring. Section 6.3.1 outlined a protocol for determining exceedances. <p>Implementation:</p> <p>Implementation of the NMP was demonstrated through the following:</p> <ul style="list-style-type: none"> The following noise mitigation measures were sighted during the site inspections: <ul style="list-style-type: none"> Appin East - concrete noise barrier at the coal truck loading point under the bin and acoustical skirting on the coal discharge chutes to coal trucks hoppers, use of low tone reversing alarm and residential muffler on loader at coal stockpile, heavy maintenance activities undertaken within enclosed workshops, signs to close doors on main slope belt motor room. Appin West - no coal handling activities on site, limited heavy equipment movements, relatively light maintenance activities undertaken. Appin Mine No.2 and No.3 Vent Shafts - noise attenuation doors on fan house buildings, enclosed motor rooms. West Cliff (South) - no coal handling activities undertaken at the site. West Cliff (North) - enclosed motor rooms and pump houses, enclosed coal processing plant, coal transport (on public roads) by public road registered vehicles. Appin Area 9 MSGD Sites 1 and 2 – sound walls. Quarterly attended and real time noise monitoring commenced on 24/07/2013 at Appin East pit top. Monitoring was carried out two monitoring locations (AE-SN2 and Illawarra Street) as identified in the NMP. Quarterly attended monitoring was conducted at locations W-NS1, W-NS-2 and WC-NS2 at West Cliff between 24/07/2013 and 17/12/2013 as identified in the NMP. Quarterly attended monitoring was conducted at AW-NS1, AW-NS2 at Appin West between 24/07/2013 and 17/12/2013 as identified in the NMP. Quarterly attended monitoring was conducted an Appin No.2 and No. 3 vent shafts between 24/07/2013 and 17/12/2013 as identified in the NMP. Attended monitoring was conducted at the commencement of steered hole drilling between 06/05/2013 and 18/06/2013 at Appin Area 9 MSGD Site 2. Continuous meteorological monitoring was sighted as part of the BarnOwl® system. Outputs from the system were sighted indicating temperature, wind speed and direction etc. BarnOwl® calibration records (no reference) dated from 14/03/2013 through to 27/11/2013 were sighted. 	Preparation – Compliant Implementation - Compliant

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.6	<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>	<p>ICHPL reported that there have been no issues raised by residents concerning traffic noise and no written requests from landowners during the time of the audit concerning road traffic noise.</p> <p>Section 6.2.2 (p.21) of the Noise Management Plan notes that a report will be prepared detailing the results of the annual noise traffic survey in the vicinity of Douglas Park Drive and Macarthur Road. A summary of the monitoring will be provided as part of the AEMR and published on the BHP Billiton Regulatory website.</p> <p>The annual traffic noise survey had not been conducted or required at the time of the audit therefore this Condition was found to be not applicable.</p> <p>ICHPL management reported that they had received the traffic survey for the week commencing 16/09/2013 which indicated BSOP overall traffic has not increased; however, the base flow had increased. The right turning lane (BSOP traffic only) was below the LOS in PA -8_0150.</p> <p>ICHPL management also reported that they expect BSOP traffic flows to drop over the next two years, but that the base flow is expected to increase above the decrease.</p> <p>The auditors sighted an email to Planning and Infrastructure dated 20/09/2013 titled Updated Air Quality and GHG MP and Traffic Survey from the ICHPL Environment Manager (08:47am) that indicated ICHPL will need to develop a conceptual plan for RMS. The conceptual plan was not available for review.</p>	Not applicable (Not triggered)
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.7	<p>AIR QUALITY & GREENHOUSE GAS</p> <p>Odour</p> <p>The Proponent shall ensure that no offensive odours are emitted from the site, as defined under the POEO Act.</p>	<p>Odour emissions from exhausted underground ventilation were identified as key odour emission sources with the AQIA for the BSOP.</p> <p>During August 2012 a single odour complaint was received from a resident concerning a gas odour from a borehole. The complaints report identified that the well was inspected and checked for leaks. It was identified that the well was not being utilised so further investigation was required. The complaint was recorded in (ref: ICAEV12080012). The complaint was associated with a gas drainage bore under a separate Project Approval (PA 08_0256) therefore assessing this investigation was considered outside the scope of this audit.</p> <p>No offensive odours were noted by the auditors during the site inspections.</p> <p>Given only one odour complaint was received during the audit period this condition was found to be compliant.</p>	Compliant
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.8	<p>Greenhouse Gas Emissions</p> <p>The Proponent shall implement all reasonable and feasible measures to minimise the release of greenhouse gas emissions from the site to the satisfaction of the Director-General.</p>	<p>URS sighted a range of measures aimed at minimising greenhouse gas emissions, including the preferential utilisation of drainage gas for power generation, with flaring and venting only in cases where the energy from the gas could not be economically recovered. The WestVAMP project was also noted as a key emission reduction measure, whereby approximately 20% of the mine ventilation air (containing <1% methane) is oxidised to produce steam for on-site power generation. The WestVAMP operation was reported to result in an emission abatement of approximately 279 kt CO₂-e during the 2012-13 financial year.</p>	Compliant

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.9	<p>Air Quality Criteria</p> <p>The Proponent shall ensure that all reasonable and feasible avoidance and mitigation measures are employed so that the particulate emissions generated by the project do not exceed the criteria listed in Tables 4, 5 and 6 at any residence on privately-owned land or on more than 25 percent of any privately- owned land.</p>	<p>Long term and short term project approval criteria for particulate matter:</p> <p>The Air Quality and Greenhouse Gas Management Plan was approved by the Director-General on 07/01/2013. This program outlines the air quality monitoring program that is being progressively implemented in accordance with the AQMP requirements.</p> <p>Airborne particulate matter monitoring in accordance with the criteria specified in Table 4 and Table 5 is yet to commence at the West Cliff and Appin sites. At the time of the site inspections (26 November 2013 and 4 December 2013) monitoring equipment in the process of being commissioned. URS sighted an invoice (SD 1053) dated 24/01/2014 for the purchase of a high volume air sampler with PM10 inlet and a delivery docket (ref: BHBI200) dated 21/01/2014 from Kenelec Scientific Pty Ltd for the supply of a monitoring system.</p> <p>Monitoring enclosures were sighted. As such monitoring data to assess against the requirements of Tables 4 and 5 was not available for review at the time of the audit. Noting this, proposed compliance monitoring is limited to one event per month when real time (optical) measurements are greater than 80% of respective criteria. The proposed real time instrumentation is not considered to be of adequate precision for assessment of compliance against acquisition and project approval criteria. Additionally, should HVAS monitoring be triggered by the real time monitoring, then given the inherent scatter in dust monitoring results, the HVAS sampling frequency of one event per month over 3 months (i.e. 3 samples in total) is not considered adequate to make a meaningful comparison against the acquisition and project approval criteria.</p> <p>It is recommended where it is required to demonstrate compliance with project approval criteria, that sampling is performed at a suitable frequency (e.g. 1 in 6 days), and to a method for which an Australian Standard is available. Additionally, monitors should be located in a manner that allow comparison against the criteria. At present, should exceedances be measured at the monitoring location, it will be unclear whether they extend to residential or privately owned land beyond the location of the monitor (i.e. the locations at which the criteria apply). In the context of ICHPL's operations, and the proximity of sensitive receptors, it is anticipated that 1 in 6 day HVAS monitoring at a single location near to Appin East would represent a targeted approach to satisfying the monitoring requirements of this condition. Noting this recommendation, it is also recognised that Planning and Infrastructure have specifically endorsed the current AQMP as meeting the requirements of the consent condition in a manner consistent with current best practice, and the interests of the public (Planning and Infrastructure correspondence 23/5/13 sighted).</p> <p>Proposed compliance monitoring is limited to one event per month when real time (optical) measurements are greater than 80% of respective criteria. The proposed real time instrumentation is not considered to be of adequate precision for assessment of compliance against acquisition and project approval criteria. Additionally, should HVAS monitoring be triggered by the real time monitoring, then given the inherent scatter in dust monitoring results, the HVAS sampling frequency of one event per month over 3 months (i.e. 3 samples in total) is not considered adequate to make a meaningful comparison against the acquisition and project approval criteria.</p>	<p>Compliant</p> <p>Recommendation</p> <p>Refer to Section 11.5 of the Report for recommendations concerning the adequacy of the AQMP.</p>

Appendix A – Bulli Seam Operations Project Independent Environmental Audit																											
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Project Approval 08_0150																											
		Continued:	<p>Continued:</p> <p>Long term project approval criteria for deposited dust: URS reviewed dust deposition monitoring results as collated by ICHPL. This monitoring is conducted at the Appin West, Appin East, and West Cliff facilities. Whilst the dust deposition monitoring is not located at residences or on privately owned land, this monitoring is considered indicative of compliance with criteria at locations distant from the site. Monitoring results have been sourced from Illawarra Coal Bulli Seam Operations Environmental Monitoring Data, January 2014 (16/01/2014).</p> <ul style="list-style-type: none"> Appin West - Within the 21 monthly monitoring of monitoring data, annual average dust deposition levels AW-DD1 and AW-DD2 were measured at approximately 2.5 and 0.7 g/m²/month (respectively), which given the central location of AW-DD1, are likely within both the incremental and cumulative criteria of 2 g/m²/month and 4 g/m²/month. Appin East - AE-DD16 is located to the north-west of the site between site operations, and residences. The last 21 monthly monitoring results are provided within the most recently available monitoring data summary (Illawarra Coal Bulli Seam Operations Environmental Monitoring Data, 16/01/2014). Within this period, annual average dust deposition levels were measured at approximately 1.8 g/m²/month, which is within both the incremental and cumulative criteria of 2 g/m²/month and 4 g/m²/month. West Cliff Colliery - W-DD1 is located at the south-east of the West Cliff site, at the entrance to Appin road. Within the 21 monthly monitoring of monitoring data, annual average dust deposition levels W-DD1 was measured at approximately 2.5 g/m²/month (respectively). Noting that the location of W-DD1 is directly adjacent to the roadway, it is likely that dust deposition levels are within both the incremental and cumulative criteria of 2 g/m²/month and 4 g/m²/month. <p>This condition was found to be compliant given that ICHPL are monitoring air quality and were in the process of purchasing and installing equipment to meet the requirements of this condition at the time of the audit following approval for the progressive implementation of the AQMP.</p>																								
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.9	<p>Table 4: Long term criteria for particulate matter</p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>^d Criterion</th> </tr> </thead> <tbody> <tr> <td>Total suspended particulate (TSP) matter</td> <td>Annual</td> <td>^a 90 µg/m³</td> </tr> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>Annual</td> <td>^a 30 µg/m³</td> </tr> </tbody> </table> <p>Table 5: Short term criterion for particulate matter</p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>^d Criterion</th> </tr> </thead> <tbody> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>24 hour</td> <td>^a 50 µg/m³</td> </tr> </tbody> </table> <p>Table 6: Long term criteria for deposited dust</p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>Maximum increase in deposited dust level</th> <th>Maximum total deposited dust level</th> </tr> </thead> <tbody> <tr> <td>^c Deposited dust</td> <td>Annual</td> <td>^b 2 g/m²/month</td> <td>^a 4 g/m²/month</td> </tr> </tbody> </table>	Pollutant	Averaging period	^d Criterion	Total suspended particulate (TSP) matter	Annual	^a 90 µg/m ³	Particulate matter < 10 µm (PM ₁₀)	Annual	^a 30 µg/m ³	Pollutant	Averaging period	^d Criterion	Particulate matter < 10 µm (PM ₁₀)	24 hour	^a 50 µg/m ³	Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level	^c Deposited dust	Annual	^b 2 g/m ² /month	^a 4 g/m ² /month		
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Appendix A – Bulli Seam Operations Project Independent Environmental Audit																														
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Project Approval 08_0150																														
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.10	<p>Air Quality Acquisition Criteria</p> <p>If the particulate matter emissions generated by the project exceed the criteria in Tables 7, 8 and 9 at any residence on privately-owned land or on more than 25 percent of any privately owned land, then upon receiving a written request for acquisition from the landowner the Proponent shall acquire the land in accordance with the procedures in Conditions 5 - 6 of Schedule 5.</p>	<p>Long term and short term acquisition criteria for particulate matter:</p> <p>Refer to Condition S4.9.</p> <p>Long term acquisition criteria for deposited dust:</p> <p>Refer to Condition S4.9.</p> <p>No requests have been received from landholders for land acquisition.</p>	Not Applicable (Not triggered)																										
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.10	<p>Table 7: Long term acquisition criteria for particulate matter</p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>^d Criterion</th> </tr> </thead> <tbody> <tr> <td>Total suspended particulate (TSP) matter</td> <td>Annual</td> <td>^a90 µg/m³</td> </tr> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>Annual</td> <td>^a30 µg/m³</td> </tr> </tbody> </table> <p>Table 8: Short term acquisition criteria for particulate matter</p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>^d Criterion</th> </tr> </thead> <tbody> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>24 hour</td> <td>^a150 µg/m³</td> </tr> <tr> <td>Particulate matter < 10 µm (PM₁₀)</td> <td>24 hour</td> <td>^b50 µg/m³</td> </tr> </tbody> </table> <p>Table 9: Long term acquisition criteria for deposited dust</p> <table border="1"> <thead> <tr> <th>Pollutant</th> <th>Averaging period</th> <th>Maximum increase in deposited dust level</th> <th>Maximum total deposited dust level</th> </tr> </thead> <tbody> <tr> <td>^cDeposited dust</td> <td>Annual</td> <td>^b2 g/m²/month</td> <td>^a4 g/m²/month</td> </tr> </tbody> </table>	Pollutant	Averaging period	^d Criterion	Total suspended particulate (TSP) matter	Annual	^a 90 µg/m ³	Particulate matter < 10 µm (PM ₁₀)	Annual	^a 30 µg/m ³	Pollutant	Averaging period	^d Criterion	Particulate matter < 10 µm (PM ₁₀)	24 hour	^a 150 µg/m ³	Particulate matter < 10 µm (PM ₁₀)	24 hour	^b 50 µg/m ³	Pollutant	Averaging period	Maximum increase in deposited dust level	Maximum total deposited dust level	^c Deposited dust	Annual	^b 2 g/m ² /month	^a 4 g/m ² /month		
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Bulli Seam Operations Project - Project Approval DA 08_0150	S4.11	<p>Operating Conditions</p> <p>The Proponent shall:</p> <ol style="list-style-type: none"> implement best practice air quality management on site, including all reasonable and feasible measures to minimise the off-site odour, fume and dust emissions generated by the project, including from any spontaneous combustion on site, minimise any visible air pollution generated by the project; and regularly assess the air quality monitoring and meteorological forecasting data, and relocate, modify and/or stop operations on site to ensure compliance with the relevant conditions of this approval; to the satisfaction of the Director-General. 	<ol style="list-style-type: none"> URS sighted Appin Mine and West Cliff Colliery Particulate Matter Control Best Practice Pollution Reduction Program (PAEHolmes, 2012) that contains a determination of best practice air quality management measures specific to the ICHPL's operations at Appin East and West Cliff; During the audit, the nomination and implementation of a range of air quality management measures were observed, in a manner consistent with the minimisation of air pollution. URS sighted a range of Air quality management measures that are implemented by ICHPL including the receipt of daily weather forecasting information (via email and SMS) from the early warning network weather forecasting network. Environmental officers were also aware of daily conditions and those that are of relevance to potentially elevated air emissions. 	Compliant																										

Appendix A – Bulli Seam Operations Project Independent Environmental Audit

Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.12	<p>Air Quality & Greenhouse Gas Management Plan</p> <p>The Proponent shall prepare and implement a detailed Air Quality & Greenhouse Gas Management Plan for the project to the satisfaction of the Director-General. This plan must:</p> <ul style="list-style-type: none"> a) be prepared in consultation with OEH, and submitted to the Director-General for approval by 30 September 2012; b) describe the measures that would be implemented to ensure compliance with the relevant conditions of this approval, including consideration of applying a real-time air quality management system that employs both reactive and proactive mitigation measures; c) describe the measures that would be implemented to minimise the release of greenhouse gas emissions from the site; and d) include an air quality monitoring program that uses a combination of high volume samplers and dust deposition gauges to evaluate the performance of the project, and includes a protocol for determining exceedances with the relevant conditions of this approval. 	<ul style="list-style-type: none"> a) URS sighted a letter from Planning and Infrastructure to ICHPL dated 07/01/2013 that approved the Air Quality and Greenhouse Gas Management Plan in accordance with Condition 12 of Schedule 4 of the BSOP Project Approval. b) The AQMP was reviewed and noted to include comprehensive detail on air quality and greenhouse control measures that would be implemented as part of the Project. This included the implementation of real-time air quality monitoring systems. c) As per S4.12(b); d) The AQMP was reviewed and noted to include an air quality monitoring program that features a combination of dust deposition gauges and high volume samplers, with a protocol for determining exceedances of the conditions of the approval. It is noted that recommendations have been made regarding protocols for this aspect of the AQMP, as detailed under condition S4.9. 	Compliant
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.13	<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 that:</p> <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>. 	<p>Two weather stations are located at West Cliff Colliery and Appin East. At the time of writing (early March 2014) ICHPL were planning to install new weather stations at West Cliff Colliery and Appin East in March 2014.</p> <ul style="list-style-type: none"> a) URS sighted the enclosure within which the meteorological monitoring station is proposed to be located; however, the meteorological station had not been commissioned at the time of the audit. The location of the station is unlikely to meet the sighting requirements of AS2923. This is noted as a common limitation of weather station sighting. b) It is noted that the lapse rate is to be measured via direct measurement (i.e. temperature at 10 m and 50 m), at a separate location to the meteorological station (i.e. the West Cliff Bulk Coal Winder Tower). <p>Appendix A (p.36) of the Noise Management Plan notes that Section 6.2.1 of the plan addresses the requirements of this Condition. Section 6.2.1 (p.18) of the Noise Monitoring Plan states that the 'Barn-Owl' noise monitoring system consists of a mobile transportable unit complete with self-contained weather station, independent power supply (solar charged batteries), on-board computer, data logger and wireless communications features'. There is no reference to the BarnOwl® in the AQMP and its compliance with the requirements of Condition 13, Schedule 4(a).</p>	Compliant
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.14	<p>SOIL & WATER</p> <p>Compensatory Water Supply</p> <p>The Proponent shall provide a compensatory water supply to any owner of privately-owned land whose water supply is adversely impacted (other than an impact that is negligible) as a result of the project, in consultation with NOW, and to the satisfaction of the Director-General.</p> <p>The compensatory water supply measures must provide an alternative long-term supply of water that is equivalent to the loss attributed to the project. Equivalent water supply must be provided (at least on an interim basis) within 24 hours of the loss being identified.</p> <p>If 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> <p>If the Proponent is unable to provide an alternative long-term supply of water, then the Proponent shall provide alternative compensation to the satisfaction of the Director-General.</p>	<p>The Water Management Plan contains statements that address the requirements of this Condition. BSOP sites utilise water from runoff or the underground workings that are beneath the local aquifers therefore there are no known impacts to surrounding land owners; however, ICHPL management reported that compensation payments have been made to three landholders for the provision of loads of water. These have been on a short-term basis and to the satisfaction of the landholder.</p> <p>Sighted email evidence from the ICHPL Landholder Relations Coordinator to a landowner dated 21/12/2012 [12:34pm] concerning reimbursement of costs for approximately 6,000 Gallons required to re-fill two water tanks.</p> <p>Sighted a letter from the ICHPL Manager of property and Landholder Relations to a landowner dated 11/12/2012 concerning submission of receipts (by the landholder) for water due to damage to a water tank as a result of subsidence impacts at the property.</p>	Not Applicable (Not triggered)

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
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Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.15	<p>Surface Water Discharges</p> <p>The Proponent shall ensure that all surface water discharges from the site (including from the Brennans Creek Dam) comply with the discharge limits (both volume and quality) set for the project in any EPL.</p>	<p>The Water Management Plan identifies Licenced Discharge Points (LDPs) as specified in EPL 2504. The plan describes the treatment processes and the waters reporting to each LDP as well as measures to manage and minimise water use at the three BSOP sites. The Water Management Plan requires that water monitoring be conducted in accordance with the requirements of EPL 2504. A sample of data (04/04/2012 to 12/12/2013) from the 14 day monitoring data exceedances correlated with non-compliances reported in the Annual Return for 2012/2013.</p> <p>The site inspection identified ICHPL have installed automated monitoring equipment at a number of LDPs. BSOP personnel report on the monitoring required at LDP. Monitoring reports are available online providing the results of monitoring carried out at the LDPs for each of the BSOP sites.</p> <p>ICHPL has recorded non-compliances at West Cliff Colliery, Appin East and Appin West. Non-compliances are reported in 1SAP and formally reported in the Annual Returns to the EPA. Annual returns for the audit period were available for review. The EPA website accessed on 16/01/2013 for EPL 2504 identified the following number of non-conformances concerning surface water discharges:</p> <ul style="list-style-type: none"> • 2011/2012 Annual Return: <ul style="list-style-type: none"> - Condition L2, six occurrences. EPA comments '<i>BOD, pH exceedances at West Cliff and Appin STPs, TSS exceedance at Appin West. Exceedances not environmentally significant. Corrective actions have been adopted to prevent a recurrence.</i>' - Condition L3, three occurrences. EPA comments '<i>Exceedance of discharge volume limit at LDP 22 Appin. The STP & irrigation system had recently been upgraded & the flow limit switch was not operational. No environmental impact expected. Programable Logic Controller (PLC) installed March 2013.</i>' - Condition M2, two occurrences. EPA comments '<i>Sample not collected on 30 April, due to miscommunication between contractor & BHP. Samples were collected on 2 May. Illawarra Coal now undertakes a fortnightly review of all Environmental data including Certificate of analysis & Chain of Custody.</i>' • 2012/2013 Annual Return: <ul style="list-style-type: none"> - Condition O4.1, one occurrence. EPA comments '<i>Runoff from Point 3 effluent irrigation area. Runoff collected and treated in site's dirty water collection system. A Programable Logic Controller (PLC) installed to control effluent irrigation.</i>' - Condition L3, 13 occurrences. EPA comments '<i>Limit exceedances at effluent irrigation areas. Inconsistent treatment plant operation resulted in algal growth. Treatment plant upgraded in 2011/12, and also improved maintenance. Environmental impacts unlikely.</i>' - Condition M2, two occurrences. EPA comment '<i>A single sample not collected/analysed as pump system out of service at time of sampling at Point 3, and one dust sample not collected. No environmental impact as a result of non-compliance.</i>' - Condition M6, one non-compliance. EPA comments '<i>Flow data from LDP1 could not be located for the discharge in June 2011 as monthly field sheet misplaced. Data now recorded and e-mailed to Env staff weekly. A piezometer will be installed & data will be sent daily via telemetry into a database.</i>' <p>It is noted that for each non-compliant condition the EPA noted that appropriate action had been taken by the licensee.</p> <p>The outlet at Brennan's Creek Dam (LDP 010 at West Cliff Colliery) regularly records non-compliance for the slight exceedance of Copper concentration. ICHPL reported that discussions are ongoing with the EPA concerning the exceedance of Copper. Minutes of a meeting between ICHPL and the EPA on 6 March 2014 indicate that the potential to change the Copper limit in the EPL was discussed and that ICHPL should submit an EPL variation request based on recent monitoring data.</p> <p>Water monitoring results are reviewed every 14 days and uploaded to the BSOP website.</p>	<p>Non-compliant</p> <p>Recommendation</p> <p>As discussed with the EPA (minutes of meeting 6 March 2014), ICHPL to submit an EPL variation request based on recent monitoring data.</p>

Appendix A – Bulli Seam Operations Project Independent Environmental Audit

Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.16	<p>Surface Water Management Plan</p> <p>The Proponent shall prepare and implement a Surface Water Management Plan for the project to the satisfaction of the Director-General. This plan must be prepared in consultation with NOW and OEHL by suitably qualified and experienced persons whose appointment has been endorsed by the Director-General, and submitted to the Director-General for approval by 30 September 2012. This plan must include:</p> <p>a) a comprehensive water balance for the project, that includes details of:</p> <ul style="list-style-type: none"> • sources and security of water supply and water make; • water use; and • water discharges; and <p>b) management plans for the surface facilities sites, that include:</p> <ul style="list-style-type: none"> - a detailed description of water management systems for each site, including: <ul style="list-style-type: none"> - clean water diversion systems; - erosion and sediment controls; and - any water storages; • measures to minimise potable water use and to reuse and recycle water; • measures to comply with surface water discharge limits; • implementation of any pollution reduction program relating to mine water discharges from Brennans Creek Dam and identification of 5, 7 and 10 year commitments to substantially reduce • the impacts on biota of salinity and other pollutants in such discharges; and • monitoring and reporting procedures. 	<p>Planning</p> <p>A Surface Water Management Plan was prepared and submitted for review by NSW Office of Water (NOW) and the EPA. Comments from these agencies were incorporated into the latest version, dated 28 December 2012. URS sighted a letter from Planning and Infrastructure to ICHPL dated 07/01/2013 that approved the Surface Water Management Plan in accordance with Condition 16 of Schedule 4 of PA 08_0150. A date for submission of the plan was not available.</p> <p>The following was noted concerning the Surface Water Management Plan:</p> <ul style="list-style-type: none"> • Water Balance - Section 11 Bulli Seam Operations Water Balance • Description Of Water Management Systems - Section 7 and Section 9: <ul style="list-style-type: none"> - Table 13.1: Appin East Surface Water Management and Usage Minimisation Measures - Table 13.2: Appin West Surface Water Management and Usage Minimisation Measures - Table 13.3: West Cliff Surface Water Management and Usage Minimisation Measures. • Section 6 Overview Of Surface And Storm Water Management - Section 13.5 Erosion and Sediment Controls: <ul style="list-style-type: none"> - Table 4.2: Key Water Storages at Appin East - Table 4.3: Key Water Storages at Appin West - Table 4.4: Key Water Storages at West Cliff • Potable And Recycle Water - Section 7 and Section 13.1 Potable water savings: <ul style="list-style-type: none"> - Table 13.1: Appin East Surface Water Management and Usage Minimisation Measures - Table 13.2: Appin West Surface Water Management and Usage Minimisation Measures - Table 13.3: West Cliff Surface Water Management and Usage Minimisation Measures • Surface Water Discharge Limits: <ul style="list-style-type: none"> - Table 3.1: EPL2504 – Licence Points - Section 7 and Section 9: <ul style="list-style-type: none"> - Table 13.1: Appin East Surface Water Management and Usage Minimisation Measures - Table 13.2: Appin West Surface Water Management and Usage Minimisation Measures - Table 13.3: West Cliff Surface Water Management and Usage Minimisation Measures • Pollution Reduction Program - Section 17, Section 17.1 and 0 • Monitoring And Reporting - Section 15 - Monitoring, Reporting and Review • Integrated With The Water Management Plans That Form Part Of Extraction Plans - Section 14 Mining Induced Subsidence <p>Implementation</p> <p>Implementation of the Surface Water Management Plan was demonstrated through the following:</p> <ul style="list-style-type: none"> • Storage capacities in dams at West Cliff Colliery were observed to have additional capacity for water flow in accordance with the Surface Water Management Plan (Section 6.3). • Dust suppression at Appin East coal stockpile and internal roadway. • Water carts were observed operating on unsealed roads at West Cliff Colliery. • Observed irrigation from LDP 20 at Appin East. • Observed Stormfilter® and LDP 23 at Appin West. • Observed in-flow monitor at LDP 10 discharge point from Brennan's Creek Dam and LDP 19 from Dynasand filter at Appin East. • Sighted Appin Maintenance Schedule for Key Environmental Controls listing work orders for inspections, including, but not limited to the Dynasand pump, mechanical inspections of the water flocculant system and the drain to the main dam. Work orders were dated from 03/09/2012 to 06/01/2014. • Chain of Custody forms sighted including, but not limited to samples from LDP 19 and LDP 20, LDP 22 dated 12/06/2013. Certificates of Analysis dated 19/07/2013 for LDP 10 and 18/06/2013 for LDP 22 and 23. 	<p>Preparation - Compliant Implementation - Compliant</p> <p>Recommendation</p> <p>Review and update the Surface Water Management Plan to reflect the current operations of water management at the three BSOP sites.</p> <p>It is recommended that a formal description of the monitoring process be developed. The document should describe the timing and methods used to gather monitoring data as well as the reporting required and include specific roles and responsibilities for those tasks. This will assist BSOP to reduce the reliance on specific site staff to operate an effective system.</p>

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
		<i>Continued:</i>	<p><i>Continued:</i></p> <p>Minor elements of the water management process have changed from those described in the current Plan. The changes either improve the operation of the system or allow the system to adjust to changing site conditions. For example Pond 4 has been moved and is now known as Pond 4A, the eastern water diversion at Stage 4 emplacement area is no longer used and flows are being diverted away from it. LDP 24 has moved and not currently reflected in the plan. LDP 18 from the filter lagoon is currently not used as a discharge point.</p>	

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.17	<p>WEST CLIFF COAL WASH EMPLACEMENT AREA</p> <p>West Cliff Coal Wash Emplacement Area Management Plan</p> <p>The Proponent shall prepare and implement a West Cliff Coal Wash Emplacement Area Management Plan for the project to the satisfaction of the Director-General. This plan must be prepared in consultation with OEH and be submitted to the Director-General for approval by the end of June 2013. This plan must include:</p> <ol style="list-style-type: none"> detailed design plans which include options for reducing, avoiding and/or managing impacts on Aboriginal heritage sites in and adjacent to the southwestern fringe of the proposed Stage 4 footprint (including sites 52-2-2228/3617, 52-2-1373, 52-2-3533/3613 and 52-2-3506); management strategies to ensure no impacts to Aboriginal heritage site 52-2-3505 other than negligible impacts, including consideration of potential staged development of the emplacement and/or buffer areas; management strategies for the protection and conservation of <i>Persoonia hirsuta</i>; management strategies for the protection and conservation of the Broad-headed Snake and the Southern Brown Bandicoot; a comprehensive groundwater monitoring program for the Brennans Creek valley, including the area of the emplacement; provide for progressive rehabilitation of the emplacement area, including through: <ul style="list-style-type: none"> maximising opportunities for natural regeneration; maximising retention of suitable habitat species; appropriate weed and pest control strategies; and planting only endemic species in habitat mixes appropriate for soil, slope and aspect. 	<p>Preparation</p> <p>ICHPL has developed a draft WCP Emplacement Area Management Plan (incorporating “Emplacement Area Management Plan” and “Coal Wash Emplacement Staging and Rehabilitation Plan), Revision 3 dated June 2013 in accordance with Condition 17, Schedule 4 of PA 08_0150; however, this had not been approved by the Director-General at the time of the audit.</p> <p>The following was noted concerning the plan:</p> <ol style="list-style-type: none"> Sections 3.6.9, 3.6.1, 3.6.2 and 3.6.11 addressed design plans which include options for reducing, avoiding and/or managing impacts on Aboriginal heritage sites in and adjacent to the south-western fringe of the proposed Stage 4 footprint (including sites 52-2-2228/3617, 52-2-1373, 52-2-3533/3613 and 52-2-3506). Sections 3.2, 3.4.2 and 3.6.10 addressed management strategies to ensure no impacts to Aboriginal heritage site 52-2-3505 other than negligible impacts, including consideration of potential staged development of the emplacement and/or buffer areas. Section 7.8 addressed management strategies for the protection and conservation of the Broad-headed Snake and the Southern Brown Bandicoot. Section 7.9 addressed the groundwater monitoring program for the Brennans Creek valley, including the area of the emplacement. Sections 9.1 and 9.5 addressed progressive rehabilitation of the emplacement area. Sections 6 and 7 provide for progressive rehabilitation of the emplacement area. <p>Item c) and d):</p> <p>The draft plan contains: management strategies for the protection and conservation of <i>Persoonia hirsuta</i> as well as the Broad-headed Snake and the Southern Brown Bandicoot, namely for the development of the:</p> <ul style="list-style-type: none"> <i>Persoonia hirsuta</i> Offset Management Plan Southern Brown Bandicoot Management Plan Broad-headed Snake Management Plan <p>Each of these plans identified in Condition 17 (c) and (d) of Schedule 4 have been assessed and found compliant against relevant EPBC 201/5350 Conditions.</p> <p>Sighted the Draft WCP Emplacement Area Management Plan, <i>Persoonia hirsuta</i> Offset Management Plan, Southern Brown Bandicoot Management Plan, Broad-headed Snake Management Plan.</p> <p>Implementation</p> <p>Implementation of the WCP Emplacement Area Management Plan included, but was not limited to the following:</p> <ul style="list-style-type: none"> The emplacement area was visited by the auditors during the site inspection. Staged sections were observed that had been covered with topsoil and revegetated. Preparation of active emplacement areas was observed. Clean water diversion channels, clean water cut-off drains and other temporary diversion works were observed at the current active emplacement area. Transportation of coal wash to active emplacement area was occurring during site visits. Floodlights (mobile light towers) for night operation of the emplacement were observed at the active area. Horizontal benches as required by the plan were observed in the active area. Haul road for Stage 4 emplacement area <p>No stripping or vegetation removal was observed during the audit.</p> <p>Rehabilitation and biodiversity management issues are discussed in Conditions 4.18. Dust management issues are discussed in Conditions 4.7 to 4.13. Water management issues are discussed in Conditions 4.14 to 4.16.</p> <p>Work on the Stage 4 emplacement area was not due to commence for nine to ten years therefore the actions required by this management plan had not been implemented at the time of the audit.</p>	<p>Preparation - Compliant (pending formal approval by the Director-General)</p> <p>Implementation – Compliant (pending formal approval by the Director-General)</p>

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
		<i>Continued:</i>	<i>Continued:</i> During the site inspection the audit team were taken to Stage 1, 2 and 3 rehabilitation areas. Evidence was seen to support; planting of endemic species to maximise species diversity and encourage natural regeneration, weed control efforts, appropriate soil medium and preparation, progressive rehabilitation between Stage 1, 2 and 3, protection and re-usage of habitat features, creation of habitat features such as water depressions/billabongs and woody debris. The ecology and rehabilitation expert was provided with and reviewed monitoring records and viewed a BHP Billiton rehabilitation DVD concerning emplacement rehabilitation.	
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.18	West Cliff Coal Wash Emplacement Area Biodiversity Offset Strategy The Proponent shall provide a suitable biodiversity offset strategy to compensate for the impacts of Stage 4 of the West Cliff Coal Wash Emplacement Area, to the satisfaction of the Director-General. This offset strategy must: a) be prepared in consultation with OEH; b) be submitted to the Director-General for approval by the end of December 2012, or as otherwise agreed by the Director-General; and c) fulfil “maintain or improve” and seek to fulfil “like for like or better” conservation outcomes for the vegetation associations and the <i>Persoonia hirsuta</i> impacted by clearing.	URS sighted a letter from Planning and Infrastructure to ICHPL dated 20/12/2012 granting an extension to the submission of West Cliff Coal Wash Emplacement Area Biodiversity Offset Strategy. The Biodiversity Offset Strategy must now be submitted by 31 December 2014. Progress towards Condition S4.18 was shown through Draft Biodiversity Offset Strategy (sighted during site inspection)	Not Applicable (Not triggered)
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.19	The Proponent shall make suitable arrangements to provide appropriate long-term security for the offset areas by 31 December 2012, or other date agreed by the Director-General, to the satisfaction of the Director-General.	URS sighted a letter from Planning and Infrastructure to ICHPL dated 20/12/2012 granting an extension to the submission of West Cliff Coal Wash Emplacement Area Biodiversity Offset Strategy. The Biodiversity Offset Strategy must now be submitted by 31 December 2014. Progress towards this Indicator was evident by the Offset Management Plans have been developed by ICHPL for: <ul style="list-style-type: none"> <i>Persoonia hirsuta</i> – Revision 6 approved DTIRIS-DRE (15/08/2013) as well as DoE (22/11/2013). Shale Sandstone Transition Forest – Revision 3, May 2013, approved by DoE 07/06/2013. 	Not Applicable (Not triggered)
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.20	Underground Coal Wash Emplacement Trial The Proponent shall prepare and undertake an Underground Coal Wash Emplacement Trial for the project to the satisfaction of the Director-General. The design of the trial must: a) be undertaken in consultation with OEH; b) be submitted to the Director-General for approval by the end of December 2012; c) contain a two year program to undertake both pilot scale and demonstration scale trials of underground coal wash disposal; d) include commitments for ongoing development and/or implementation of underground emplacement options following this two-year trial; and e) include 6 monthly progress reporting to the Department and OEH.	The following was noted concerning the Underground Coal Wash Emplacement Trial: a) An Underground Coalwash Emplacement Research and Trial draft proposal/plan for West Cliff Colliery dated December 2012 was available for the auditors to review. The draft proposal/plan notes that the plan was provided to the OEH and where appropriate feedback has been incorporated into the plan, however; the OEH did not provide feedback concerning the draft proposal/plan. b) A letter dated 11/12/2012 from ICHPL to the Wollongong EPA concerning submission of the draft plan prior to formal submission was available for review. A letter dated 19/12/2012 from ICHPL to Planning and Infrastructure concerning submission of the draft proposal/plan was available for review. ICHPL management reported that no formal communications has been received from Planning and Infrastructure concerning the draft proposal/plan. c) A preliminary project schedule (Section 2.6) was included in the draft proposal/plan. It is noted that the schedule included a set of assumptions and would be revised during the detailed planning phase of the research plan. The schedule had not been implemented at the time of the audit as consultation had not been received from OEH. d) The draft proposal/plan included commitments for ongoing development and/or implementation of underground emplacement options following this two-year trial. e) Given the trial had not commenced as formal approval from the Director-General had not been granted or feedback received from OEH, no progress reports have been prepared. Given no formal approval had been received at the time of the audit this Condition was found to be indeterminate.	Indeterminate Recommendation It is recommended that ICHPL update the Director-General concerning the status of the Underground Coal Wash Emplacement Trial and this Condition. Communications with the Director-General should be documented.

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.21	<p>PROJECT SURFACE INFRASTRUCTURE MANAGEMENT</p> <p>Gas Drainage Management Plan</p> <p>The Proponent shall prepare and implement a Gas Drainage Management Plan in respect of construction and use of future gas drainage infrastructure (i.e. for any gas drainage not subject to approval at the date of this instrument) to the satisfaction of the Director-General. This plan must be submitted to the Director- General for approval prior to the construction of any future gas drainage infrastructure and must include details of the proponent’s commitments regarding:</p> <ol style="list-style-type: none"> community consultation; landholder agreements; assessment of noise, air quality, traffic, biodiversity, heritage, public safety and other impacts in accordance with approved methods; avoidance of significant impacts and minimisation of impacts generally; flaring or use of drained hydrocarbon gases, wherever practicable; achievement of applicable standards and goals; mitigation and/or compensation for significant noise, air quality and visual impacts; and rehabilitation of disturbed sites. 	<p>Preparation</p> <p>ICHPL has developed a Gas Drainage Management Plan (GDMP) dated August 2012 for West Cliff Colliery Longwalls 36 to 37 in accordance with Condition 21, Schedule 4 of PA 08_0150. The plan was approved by the Director-General on 27/08/2012. The Gas Drainage Management Plan for West Cliff Colliery Longwalls 36 to 37 is the only plan to be prepared and approved for this condition.</p> <p>The following was noted concerning the plan:</p> <ol style="list-style-type: none"> Section 7 addresses ICHPLs commitment to community consultation. Section 7 addresses ICHPLs commitment to landholder agreements. Section 8 identified that an Environmental Assessment (EA) was undertaken for the West Cliff Goaf Drainage Project as approved by MP 07_0073. The EA identified, investigated and justified a range impacts relevant to the project, including: air quality and dust, surface and ground water management, noise, flora and fauna, traffic, waste Management, cultural heritage, visual impact and greenhouse gas. Section 9 (Environmental Management Plans) identified the commitment to avoidance of significant impacts and minimisation of impacts. Section 3.2 identified the commitment to flaring. Section 6.3 addresses environmental performance standards for noise, air quality, soil and water and vegetation and fauna issues. Section 9 (Environmental Management Plans) identified the commitment for mitigation and/or compensation for significant noise, air quality and visual impacts. Section 7 also addressed compensation requirements for landowners. Section 9.1 addressed the commitment to rehabilitation of disturbed lands. <p>The BSOP Surface Approvals Adviser reported that subsequent to the plan being approved ICHPL decided not to do surface gas drainage activities for Longwalls 36 and 37 and that there are no plans for gas drainage activities for Longwall 37.</p> <p>Implementation</p> <p>Gas drainage works conducted during the audit period included, but was not limited to:</p> <ul style="list-style-type: none"> Extraction continued from the MRD borehole installed to service Longwalls 704 and 705. Four vertical wells were installed to drain gas from the Bulgo Sandstone unit. Gas extracted from the MRD and vertical wells flows to the existing Extraction Plant for electricity generation. Two steered-horizontal boreholes and two vertical boreholes were constructed and in operation to service underground development mining in Appin Area 9. <p>Implementation of the GDMP was demonstrated through the following:</p> <ul style="list-style-type: none"> Completed rehabilitated area for LW703 located on Morton Road observed. Commencement of rehabilitation for LW704 boreholes observed. Extraction plant for LW704 and LW705 observed. <p>Need to reference flaring noise complaints but confirm if there are standalone management plans for Appin Area 7 and 9. Also mentioned in main report.</p>	Preparation - Compliant Implementation - Not Applicable (Not triggered)

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.22	<p>Service Boreholes Management Plan</p> <p>The Proponent shall prepare and implement a Service Boreholes Management Plan in respect of construction and use of future service boreholes (i.e. any service boreholes not subject to approval at the date of this instrument) to the satisfaction of the Director-General. This plan must be submitted to the Director-General for approval prior to the construction of any future service borehole and must include details of the proponent's commitments regarding:</p> <ul style="list-style-type: none"> a) community consultation; b) landholder agreements; c) assessment of noise, air quality, traffic, biodiversity, heritage, public safety and other impacts in accordance with approved methods; d) avoidance of significant impacts and minimisation of impacts generally; e) achievement of applicable standards and goals; f) mitigation and/or compensation for significant noise, air quality and visual impacts; and g) rehabilitation of disturbed sites. 	<p>Preparation</p> <p>ICHPL has developed a Service Boreholes Management Plan (SBMP) dated October 2012 in accordance with Condition 22, Schedule 4 of PA 08_0150. The plan was approved by the Director-General on 06/05/2012.</p> <p>The following was noted concerning the plan:</p> <ul style="list-style-type: none"> • Section 6 addresses ICHPLs commitment to community consultation. • Section 6.1 addresses ICHPLs commitment to landholder agreements. • Section 7 identified that an Environmental Assessment (EA) will be undertaken for each new borehole. The plan identified that generally surface water, groundwater, air quality, greenhouse gas, terrestrial flora and fauna, cultural heritage, noise and traffic would be included in an EA. • Section 7.1, in particular Table 3 of Section 7.1 addressed ICHPLs commitment to d) avoidance of significant impacts and minimisation of impacts by providing management measures for potential impacts. • Section 5.6 addresses the achievement of applicable standards including those for noise, air quality, soil and water, vegetation and cultural heritage. • Section 6.1 (landholder Agreements) addresses the mitigation and/or compensation for significant noise, air quality and visual impacts to be paid to any landholder. Section 7.1 addresses the management measures to minimise potential impacts. • Section 8 addresses the commitment for rehabilitation of disturbed sites. <p>The SBMP is a generic document that describes the general environment outcomes required for such activities. Noise, roles and responsibilities etc. are specified in project specific service borehole management plans such as for Area 7 Dyke Backfilling and Appin to West Cliff Service Borehole Management Plans. Project specific management plans are implemented in conjunction with the generic SBMP.</p> <p>Implementation</p> <p>Implementation of the SBMP was demonstrated through the following:</p> <ul style="list-style-type: none"> • Sighted Service Boreholes Management Plan – Appin East – West Cliff Services Connection Environmental, Revision 2 Assessment dated April 2013. • Sighted approval letter from the Director-General dated 06/05/2013 for the Services Borehole Management Plan Appin East to West Cliff Services Connection. • Sighted the Appin Area 7 Dyke Backfill Project Service Boreholes Management Plan dated October 2012. <p>An overarching review identified the plan included, but was not limited to:</p> <ul style="list-style-type: none"> - a communication schedule was include as Table 6 (p.20) of the plan. - the EA as stated in Section 8 of the plan was available for review. - table 7 (p.26) addressed potential impacts on flora and fauna. - noise sensitive receptors were included in Section 8.7.3. - it was not possible to quickly and easily determine noise criteria for a sensitive receiver. Noise mitigation measures and sensitive receiver locations were provided; however, no noise criteria were clearly identified in the plan. The reader was referred to an appendix that contained the noise assessment conducted as part of the EA. - roles and responsibilities for actions identified in the plan were not clear. Actions and responsibilities were hidden in paragraphs making it difficult to understand if an action was required. For example page 22 of the plan stated <i>'any soils left exposed by the construction works would be stabilised prior to commencement of the operational phase (e.g. via hydroseeding). This should take place in a progressive fashion in accordance with the staging of the works. It is intended that this will aid in both erosion and sedimentation control as well as dust control.'</i> It was not clearly stated who was responsible to this action. A table outlining roles, responsibilities and actions would allow for a better understanding and implementation of the plan. 	Preparation - Compliant Implementation – Compliant

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
		<i>Continued:</i>	<p><i>Continued:</i></p> <ul style="list-style-type: none"> The auditors visited LW705 MRD batch plant site, accessed from the vent shaft six access road. The MRD site was located at the base of a ridge and shielded to the best extent practicable from nearby receivers. Commencement of rehabilitation for LW704 boreholes observed. <p>Two internal Environmental Management System audits dated May and June 2013 for the Appin Longwall 705 Dyke Backfill Project were available for review. No non-compliances were identified for the May audit. No non-compliances were identified for the June audit. Three 'improvement opportunities' were identified in the June internal audit. Closeout of the improvement opportunities identified in June 2013 was not followed-up by the URS auditors.</p>	
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.23	<p>Personal Emergency Device (PED) Communications Management Plan</p> <p>The Proponent shall prepare and implement a PED Communications Management Plan in respect of construction and use of future PED communications infrastructure (ie for any PED communications infrastructure not subject to approval at the date of this instrument) to the satisfaction of the Director- General. This plan must be submitted to the Director-General for approval prior to the construction of any future PED communications infrastructure and must include details of the proponent's commitments regarding:</p> <ol style="list-style-type: none"> community consultation; landholder agreements; assessment of noise, air quality, traffic, biodiversity, heritage, public safety and other impacts in accordance with approved methods; avoidance of significant impacts and minimisation of impacts generally; achievement of applicable standards and goals; mitigation and/or compensation for significant noise, air quality and visual impacts; and rehabilitation of disturbed sites. 	<p>ICHPL management reported that the PED Communications Management Plan has not been required within the audit period and has therefore not been prepared. Furthermore there are no plans to install a PED cable as technology has advanced and BSOP communications system are being installed underground. ICHPL has a Tickit obligation to create a management plan if this changes.</p>	Not Applicable (Not triggered)

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.24	<p>HERITAGE</p> <p>Heritage Management Plan</p> <p>The Proponent shall prepare and implement a Heritage 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, the Aboriginal community, Council, any local historical organisations and relevant landowners; be submitted to the Director-General for approval by 30 September 2012; include the following program/procedures for managing Aboriginal heritage management within the project area: <ul style="list-style-type: none"> recording, salvaging, excavating and/or managing the Aboriginal sites and potential archaeological deposits within the site; conserving, managing, and monitoring the Aboriginal sites outside the site; managing the discovery of any new Aboriginal objects or skeletal remains during the project; maintaining and managing access to archaeological sites by the Aboriginal community; and ongoing consultation and involvement of the Aboriginal communities in the conservation and management of Aboriginal cultural heritage within the project area. include the following program/procedures for managing other heritage on site: <ul style="list-style-type: none"> preparing conservation management plans and/or photographic and archival recording of potentially affected heritage items; making the conservation management plans and photographic and archival recording publicly available for buildings or structures of State or National heritage significance once they are completed; protection and monitoring of heritage items outside the site; baseline dilapidation surveys of all heritage items potentially affected by subsidence and/or blasting; monitoring, notifying and managing the effects of subsidence and/or blasting on potentially affected heritage items; and additional archaeological excavation and/or recording of any significant heritage items requiring demolition. 	<p>Preparation</p> <p>URS sighted a letter from Planning and Infrastructure to ICHPL dated 05/011/2012 that approved the Heritage Management Plan (HMP) prepared by Biosis Research Pty Ltd in accordance with Condition 24 of Schedule 4 of the PA 08_0150. The following was noted concerning the Heritage Management Plan:</p> <ol style="list-style-type: none"> Section 2.5 noted consultation with OEH, the Aboriginal community, Council, any local historical organisations and relevant landowners. A log of consultation was included as Appendix 1 to the HMP. The Heritage management Plan was submitted to the Director-General on 28/09/2012 i.e. two days before the required deadline. The following was noted concerning program/procedures for managing Aboriginal heritage management within the project area: <ul style="list-style-type: none"> Section 7.4 and 7.5.1 addressed recording, salvaging, excavating and/or managing the Aboriginal sites and potential archaeological deposits within the site; Section 7 and 7.5.1 addressed conserving, managing, and monitoring the Aboriginal sites outside the site; Section 9 addressed managing the discovery of any new Aboriginal objects or skeletal remains during the project; Section 5.1 and 5.1.5 addressed maintaining and managing access to archaeological sites by the Aboriginal community; and Section 5.1 addressed ongoing consultation and involvement of the Aboriginal communities in the conservation and management of Aboriginal cultural heritage within the project area. The following was noted concerning program/procedures for managing other heritage on site: <ul style="list-style-type: none"> Section 8 and 7.5.3 addressed preparing conservation management plans and/or photographic and archival recording of potentially affected heritage items; Section 8 and 7.5.3 addressed making the conservation management plans and photographic and archival recording publicly available for buildings or structures of State or National heritage significance once they are completed; Section 7.5.1 addressed protection and monitoring of heritage items outside the site; Section 7.5.1 addressed baseline dilapidation surveys of all heritage items potentially affected by subsidence and/or blasting; Section 7.5.1 addressed monitoring, notifying and managing the effects of subsidence and/or blasting on potentially affected heritage items; and Section 7.5.2 and 7.5.3 addressed additional archaeological excavation and/or recording of any significant heritage items requiring demolition. <p>Implementation</p> <p>The 2011/2012 AEMR (p.70) noted that management strategies for aboriginal sites identified at Stage 3 coal wash emplacement area at West Cliff Colliery are outlined in the West Cliff Emplacement Management Plan and the West Cliff Cultural Heritage Management Plan. During the 2011/2012 reporting period, aboriginal heritage site WCHS2 was consumed by the emplacement operations in accordance with the above approved management plans. The 2012/2013 AEMR noted that no aboriginal sites at West Cliff Colliery were consumed by the emplacement operations.</p> <p>The End of Panel Report for Longwall 704 at Appin Colliery (Comur Consulting Pty Ltd, November 2012, p.22) noted that an Aboriginal Heritage Impact Permit (AHIP No 1097997) was issued by EPA (formerly DECC and DECCW) on 27 March 2009 for Longwall 704. ICHPL reported that for heritage items within the Stage 4 emplacement area Section 87 consent and Section 90 excavation permits are not required as per Part 3A of the <i>Environmental Planning and Assessment Act 1979</i> and that there are no heritage items with the Stage 4 emplacement area footprint.</p>	<p>Preparation – Compliant</p> <p>Implementation – Compliant</p>

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
		<i>Continued:</i>	<p><i>Continued:</i></p> <p>During the 2013/14 reporting period ICHPL expect that historic sites BCPAD 4 and BC2 (52-2-1368) will be impacted by the emplacement operations as the active emplacement areas progress further down the Brennans Creek valley. As required by the management strategy these sites have been mapped and photographed by a suitably qualified consultant (Biosis Research Pty Ltd).</p> <p>No natural or European heritage sites were mined under during the audit period or subject to any significant subsidence movements (AEMR, 2011/2012 (p.75) and AEMR 2012/2013 (p.83)). No impacts to Aboriginal heritage sites have been observed during the audit period (AEMR, 2011/2012 (p.75) and AEMR 2012/2013 (p.83)). No heritage management plans have been required to support extraction plans and surface works management plans during the audit period as required by the overarching HMP.</p> <p>Assessment of European and Aboriginal heritage sites are undertaken as part of End of Panel reports. The auditors reviewed the End Of Panel Report for Longwall 704 (Comur Consulting Pty Ltd, November 2012, p.ES-i) noted that 'no changes to the landscapes associated with heritage sites were observed and therefore it was concluded that there were no impacts to the sites as a result of the mining of Longwall 704.'</p> <p>Subsidence monitoring for heritage items is discussed in Conditions 5 to 10 of Schedule 3 of PA 08_0150.</p>	
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.25	<p>TRANSPORT</p> <p>Monitoring of Coal Transport</p> <p>The Proponent shall:</p> <ol style="list-style-type: none"> keep accurate records of the amount of coal transported from the site (on a daily basis); and make these records publicly available on its website at the end of each financial year. 	<p>Records of the amount of coal transported from the BSOP on a daily basis were available from 01/07/2012 to 30/06/2013. The records were publicly available on the BSOP website at: http://www.bhpbilliton.com/home/aboutus/regulatory/Pages/default.aspx</p>	Compliant
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.26	<p>Traffic Management Plan</p> <p>The Proponent shall prepare and implement a Traffic Management Plan for the project to the satisfaction of the Director-General. This plan must be:</p> <ol style="list-style-type: none"> prepared in consultation with the RMS, WCC, WSC and the CaCC; submitted to the Director-General for approval by 31 December 2012; and propose an appropriate program and schedule of works for any intersection upgrades to be undertaken or contributed to by the Proponent over the life of the project, including an upgrade of the intersection of West Cliff Mine Access Road and Appin Road that is generally in accordance with the requirements of the RMS and that is to be completed before the Level of Service at this intersection drops below LOS C, <p>to the satisfaction of the Director-General.</p>	<p>Preparation</p> <p>The Traffic Management Plan (TMP) was developed in response to Condition 26, Schedule 4 of PA 08_0150. The TMP was submitted to the Director-General on 31/12/2013, however; this had not been approved by the Director-General at the time of the audit. ICHPL management reported that RMS are reviewing the concept for the road intersection with Appin and Wedderburn Roads prior to endorsement.</p> <p>The following was noted concerning the Traffic Management Plan:</p> <ol style="list-style-type: none"> Section 1.3 of the TMP noted consultation with the RMS, WCC, WSC and the CaCC. The TMP was submitted to the Director-General on 31/12/2012. Section 5.3 (pp.12-13) addressed an appropriate program for upgrades. <p>Implementation</p> <p>Implementation of the TMP was demonstrated through the following:</p> <ul style="list-style-type: none"> Heavy vehicles transporting coal were observed by the auditors to be using existing transport routes (Section 5.1.1). Various road signage, pedestrian refuge areas and painting of road markings on and off-mine sites were observed by the auditors (however a full compliance assessment of the requirements of the TMP was not undertaken). The auditors observed upgraded car parking at Appin West pit top (Section 5.7). <p>No oversized vehicle loads were observed by the auditors during the site inspections.</p>	<p>Preparation – Compliant (pending formal approval by the Director-General)</p> <p>Implementation – Compliant (pending formal approval by the Director-General)</p>

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.27	<p>VISUAL</p> <p>Visual Amenity and Lighting</p> <p>The Proponent shall:</p> <ul style="list-style-type: none"> a) minimise the visual impacts, and particularly the off-site lighting impacts, of the main infrastructure area and associated ancillary surface works; b) take all practicable measures to further mitigate off-site lighting impacts from the project; and c) ensure that all external lighting associated with the project complies with Australian Standard AS4282 (INT) 1995 - Control of Obtrusive Effects of Outdoor Lighting, to the satisfaction of the Director-General. 	<p>The EA (BHP, 2009, p.5-200) noted that Night-lighting from the existing Appin Mine and West Cliff Colliery operations is visible as a glow over the facilities, however the visual impacts of night-lighting are generally minimised by the mature vegetation surrounding the West Cliff, Appin East and Appin West pit tops. The AEMRs for 2011/2012 and 2012/2013 reporting periods noted that lighting at Appin West, East and West Cliff has not previously been raised by the community as a concern. The 2012/2013 AEMR noted that there were no lighting impacts from the construction activities undertaken during the reporting period.</p> <p>The site inspection was conducted during daylight hours. An assessment of night time lighting was not conducted as part of this audit by URS. No complaints had been received concerning outdoor lighting. Lights are left on at night as the mines operate 24hrs a day.</p> <p>URS did not assess if outdoor lighting for the BSOP complies with AS4282. Outdoor lighting works are conducted by third party electricians. ICHPL were not able to demonstrate that lighting does comply with AS4282.</p>	<p>Compliant</p> <p>Recommendation</p> <p>It is recommended ICHPL conduct inspections of outdoor lighting to demonstrate it meets the requirements of AS4282 (INT) 1995 - <i>Control of Obtrusive Effects of Outdoor Lighting</i>.</p>

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.28	<p>WASTE</p> <p>The Proponent shall:</p> <p>a) minimise the waste (including coal reject) generated by the project; and</p> <p>b) ensure that the waste generated by the project is appropriately stored, handled and disposed of, to the satisfaction of the Director-General.</p>	<ul style="list-style-type: none"> A licensed waste contractor is engaged by ICHPL to manage waste streams for the BSOP. The BSOP operates a recycling waste collection system. Waste is separated into the following streams: timber, cardboard/paper, printers/cartridges, oil, oily water, steel/scrap metal, sewage (effluent), industrial filters, bathhouse water, particulate filters, hazardous waste and general waste. Waste streams are tracked using data inputted into 1 SAP. Monthly Mine Environment SAP Reports for Appin Mine and West Cliff Colliery were available for review that detailed data for General Waste - Quantity Disposed to Landfill (Off-Site), General Waste Recycled (on or off site), Hazardous Waste - Other Hazardous Waste: Disposed to Landfill (Filters) and Hazardous Waste - Waste Oil: Total Generated. Dedicated waste sorting areas were observed by the auditors at Appin East, Appin West and West Cliff Colliery. Waste sorting areas were observed to be largely sealed although some areas were unsealed and in these areas some dust generation in windy conditions was observed by the auditors. The FY14 Environmental Improvement Plan identified the following: <ul style="list-style-type: none"> an initiative to upgrade the Envirocycle and irrigation area to accommodate an increase in site personnel associated with the AA9 project had been started at Appin East. An application to Sydney Water Corporation was reported to have been accepted in principal. an initiative for road cleanliness along Appin and Wedderburn Roads had been started at Appin East. capital for a concrete pad to allow for stormwater diversion away from the separator pad had been secured. a review of site drainage and drainage points into the sewer system had been completed at West Cliff Colliery. a pump-out of the Sewage Treatment Plant had been completed at West Cliff Colliery to check the integrity of the tank. regional initiatives included, but were not limited to, implementation of a battery storage area at each BSOP mine site. The plan indicated this initiative was still underway at the time of the audit. The FY15 Environmental Improvement Plan identified the following: <ul style="list-style-type: none"> Appin West had applied for capital to seal the access road and ring road to the waste sorting area to reduce the potential for dust emissions from unsealed ground. <p>Coal wash is produced as a by-product of processing ROM coal. Coal wash is currently managed at the Stage 3 Emplacement Area at West Cliff Colliery. The Stage 3 Emplacement Area provides an additional 33.5 million tonnes of coal wash emplacement and has an expected emplacement life of 13 years (based on projected coal wash volumes). ICHPL received approval for Stage 4 of the West Cliff Emplacement Area on the 22/12/2011. The Stage 4 Emplacement Area will provide an additional 59.39 million tonnes of coal wash emplacement and is expected to reach capacity in 2041.</p> <p>The following is noted concerning coal wash:</p> <ul style="list-style-type: none"> A total of 2.4 million tonnes of coal wash (including Dendrobium, Appin and West Cliff mines) was emplaced at the West Cliff Colliery emplacement area (AEMR, 2011/2012). A total of 2.5 million tonnes of coal wash (includes Dendrobium, Appin and West Cliff) was emplaced at the West Cliff Emplacement Area (AEMR, 2012/2013). A road base mixture containing coal wash, fly ash and lime was trailed at West Cliff Colliery in April and May 2013 to reduce dust emissions. 	<p>Compliant</p> <p>Recommendation</p> <p>As already proposed by ICHPL, seal the access road and ring road to the waste sorting area to reduce the potential for dust emissions from unsealed ground at Appin West.</p>

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
			<p><i>Continued:</i></p> <p>The Stage 3 Emplacement Area was inspected by the auditors during the site inspection. The Emplacement Area is managed through a number of management plans.</p> <p>The 2011/2012 and 2012/2013 AEMRs were sighted that included reporting on waste management (Section 2.6). The reports identified the volumes of bulk general rubbish sent to landfill (tonnes) for the respective reporting periods.</p> <p>Refer to Condition 29, Schedule 4 for further details concerning storage, handling and disposal issues.</p>	

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.29	The Proponent shall prepare and implement a Waste Management Plan for the project to the satisfaction of the Director-General. This plan must be submitted to the Director-General by 30 September 2012.	<p>Preparation</p> <p>URS sighted a letter from Planning and Infrastructure to ICHPL dated 07/01/2013 that approved the Waste Management Plan in accordance with Condition 29 of Schedule 4 of the BSOP Project Approval. An email provided to URS by ICHPL indicated the Waste Management Plan was submitted to the Director-General on 28/09/2012. A letter response from Planning and Infrastructure concerning the Waste Management Plan was received by ICHPL on 05/10/2012 (ref: 09/00774-4).</p> <p>Implementation</p> <p>Implementation of the TMP was demonstrated through the following:</p> <ul style="list-style-type: none"> • Appin West: <ul style="list-style-type: none"> - dedicated waste sorting area including X2 general waste skips, X1 steel recycling skip and X1 hazardous waste skip. - dedicated oil drainage area containing X1 waste oil Above Ground Storage Tank (AST) (unknown capacity) and X1 1,00 Litre (L) Intermediate Bulk Container (IBC). - dedicated hazardous waste area. - 'Bull Yard' storage area for wash-down of underground vehicles and material brought to the surface. Coal fines are sent to the emplacement area at West Cliff Colliery. - general waste area at pit top container skips for general waste, timber and scrap steel. • Appin East: <ul style="list-style-type: none"> - dedicated waste sorting area including X1 steel recycling skip and X1 timber waste skip. - dedicated oil drainage area containing X1 waste oil AST (unknown capacity) and X1 1,00 Litre (L) Intermediate Bulk Container (IBC). • West Cliff: <ul style="list-style-type: none"> - dedicated waste sorting area including X4 waste skips - steel recycling, wood, general waste and hazardous waste. - dedicated oil drainage area containing drum crusher, X1 waste oil separator and in-ground pit (unknown capacity) and X1 1,00 L IBC. - Used Lead Acid Batteries (ULABs) and used lithium batteries were observed to be stored externally, without cover and secondary containment (24/03/2014). • Evidence of waste tracking documents – Transport Certificate No. 2T00447233 (06-Jun-2013 to -5-Jun-2014 for N205 Industrial waste treatment/disposal residues), Transport Certificate No. 2T00447234, Transport Certificate No. 2T00447235, Transport Certificate No. 2T00447260, Transport Certificate No. 2T00447261, Transport Certificate No. 2T00447262, Transport Certificate No. 2T00447263, Transport Certificate No. 2T00447264, Certificate No. 2T00447265, Certificate No. 2T00447266 and Certificate No. 2T00447267. • Monthly Environment SAP reports for Appin Mine and West Cliff Colliery showing tracking and trending information for: <ul style="list-style-type: none"> - general waste - quantity disposed to landfill (off-site); - general waste recycled (on or off site); - hazardous waste - other hazardous waste: disposed to landfill (filters); and - hazardous waste - waste oil: total generated. • Monthly waste data for the period December 2013 to November 2013 for Appin East, Appin West and West Cliff Colliery waste streams: general waste, timber; filters, cardboard, commingled waste, oil, steel, oily water, effluent waste, hazardous waste (grease) and bathhouse water. 	<p>Preparation –Compliant</p> <p>Implementation – Compliant</p> <p>Recommendation</p> <p>Ensure the date of the audit is provided on waste audit report. It is recommended that 1SAP (or similar) tracking numbers are included against non-conformances to demonstrate the issues have been closed out.</p> <p>Used batteries should be stored in a dedicated storage area/container that provides cover and secondary containment.</p>

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
			<p><i>Continued:</i></p> <ul style="list-style-type: none"> Waste audits of service providers were conducted during the audit period as required by the WMP. The following waste audit reports were available for review: <ul style="list-style-type: none"> Worth Recycling Pty Ltd (no date). Six non-conformances were identified against the service provider concerning document control and critical spares; however, day-to-day operations were generally found to comply with ICHPL requirements. There was no evidence in the audit report that identified non-conformances had been entered into 1SAP (or similar) for tracking and closure. Cleanaway Pty Ltd dated 14/09/2012. The service provider was found to meet the environmental standards set by ICHPL. 	
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.30	<p>BUSHFIRE MANAGEMENT</p> <p>The Proponent shall:</p> <ol style="list-style-type: none"> ensure that the project is suitably equipped to respond to any fires on site; and assist the Rural Fire Service and emergency services as much as possible if there is a fire in the surrounding area. 	<p>The following documents were available for review concerning bushfire management:</p> <ul style="list-style-type: none"> West Cliff - Bushfire Management and Emergency Evacuation and Rescue Procedure, V1, dated 07/06/2012. West Cliff - Bushfire Management and Emergency Mitigation Strategies Procedure, V1, dated 07/06/2012. West Cliff – Qualitative Risk Assessment for Bushfire Management and Emergency Plan, V1, dated 07/06/2012. West Cliff - Bushfire Management and Emergency Plan. West Cliff – Responding to a Bushfire Procedure, V1, dated 07/05/2009. West Cliff - External Fire (Bushfire) Preparedness Safety Checklist & Compliance Audit, V1, dated 10/02/2011. Bushfire Management Contact Numbers. Appin East and West: <ul style="list-style-type: none"> Bushfire – Bowtie (ref: ICHCRV0194), dated 06/11/2013. Bushfire – CSV Bushfire (ref: ICHCRV0104), dated 07/07/2013. Bushfire – CTO Bushfire (ref ICHCRV0105), dated 16/07/2013. Bushfire – PS C ompetence (ref: ICHCRV0103), dated 06/06/2013. Bushfire – PS Emergency Preparedness (ref: ICHCRV0102), dated 06/06/2013. Smoke Underground During Bushfires (ref: APNP0168) dated 17/11/2008. Responding to a Bushfire Procedure (no ref available). <p>A blank Critical Task Observation for Bushfire, V1 dated 06/06/2013 (Document ID: ICHCRV0105) evaluating competence and emergency preparedness was available for review.</p> <p>ICHPL reported that no bushfire incidents occurred in the audit period. Section 3.14 of the AEMRs state that <i>‘the risk of bushfire at Appin West, Appin East and West Cliff is managed by a combination of preventative and ready response activities. Bushfire management on both sites is achieved through the formation of a “fire break” around the site perimeters fence-line and the establishment of an extensive fire fighting water pipeline around the sites (with booster pump facilities).’</i></p> <p>ICHPL management reported that a BSOP representative is a member of the Wollongong Bush Fire Committee and is also making an application to have the same representative on the Wollondilly Bush Fire Committee. BSOP sites are largely in the Wollondilly Local Government Area. ICHPL management also reported that NSW Rural Fire Services (RFS) representatives have been taken out to gas drainage sites for familiarisation and to provide an understanding of ICHPL activities. The RFS liaises with ICHPL concerning the completion of hazard reduction activities on or adjacent to Illawarra Coal property.</p> <p>URS auditors are not fire management experts and no adequacy assessment of the site’s preparedness for a bushfire has been conducted, nor any other assessment related to bushfire management as part of this audit.</p> <p>URS are not fire management experts and no adequacy assessment of the site’s preparedness for a bushfire has been conducted, nor any other assessment related to bushfire management as part of this audit.</p>	Compliant

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.31	<p>REHABILITATION</p> <p>Rehabilitation Objectives</p> <p>The Proponent shall rehabilitate the site to the satisfaction of the Executive Director Mineral Resources. This rehabilitation must be generally consistent with the proposed rehabilitation strategy described in the EA and the PPR, and comply with the objectives in Table 10.</p>	<p>Rehabilitation is discussed in detail in the main report.</p> <p>Rehabilitation was assessed during the audit through document review against the EA, Preferred Project Report and the Rehabilitation Management Plan (Mine Operations Plan) and against items outlined within Table 10 (of this Condition) is assessed below.</p> <p>Table 10 objectives and comments/evidence:</p> <ul style="list-style-type: none"> • <i>Retain habitat for threatened species (e.g. bats), where practicable</i> <ul style="list-style-type: none"> - during the site inspection the audit team were taken to Stage 1, 2 and 3 rehabilitation areas for West Cliff Colliery. Evidence was seen to support; retention and creation of habitat for threatened species (coarse woody debris, rock out crops, water soaks and plantings). In addition staff were consulted and the BHP Billiton rehabilitation DVD was sighted further demonstrating efforts to retain threatened species habitat through rehabilitation. • <i>Restore ecosystem function, including maintaining or establishing self-sustaining eco-systems comprised of:</i> <ul style="list-style-type: none"> - <i>local native plant species (unless the Executive Director Mineral Resources agrees otherwise); and a landform consistent with the surrounding environment</i> - During the site inspection the audit team were taken to Stage 1, 2 and 3 rehabilitation areas for West Cliff Colliery. Evidence was seen to support; restoration of ecosystem functioning through endemic species plantings, seed bank regeneration, appropriate soil medium lay down and landform shaping to conform to surrounding landscapes. The rehabilitated areas were also assessed and a routine ecological monitoring was observed. <p>Stage 1 and 2 rehabilitation area were observed to contain weeds such as Rhodes Grass and African Love Grass (see main report for further details). Control of these weeds will be required to ensure successful rehabilitation outcomes in the longer term.</p> <p>A number of borehole drill sites were visited during the site inspection and found to have been rehabilitated satisfactorily. A programme is in place to monitor drill sites post rehabilitation to ensure that rehabilitation reaches a satisfactory level.</p>	<p>Compliant</p> <p>Recommendation</p> <p>It is recommended that Stage 1 and 2 rehabilitation areas be targeted and spot sprayed for weeds, particularly Rhodes Grass, African Love Grass.</p>

Appendix A – Bulli Seam Operations Project Independent Environmental Audit

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Project Approval 08_0150																								
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.31	<p>Table 10 Rehabilitation Objectives</p> <table border="1"> <thead> <tr> <th>Feature</th> <th>Objective</th> </tr> </thead> <tbody> <tr> <td>Mine site (as a whole)</td> <td>Safe, stable & non-polluting</td> </tr> <tr> <td>Project Surface infrastructure</td> <td>To be decommissioned and removed, unless the Executive Director Mineral Resources agrees otherwise</td> </tr> <tr> <td>Portals and vent shafts</td> <td>To be decommissioned and made safe and stable. Retain habitat for threatened species (eg bats), where practicable</td> </tr> <tr> <td>Watercourses of 3rd order or above subject to subsidence impacts</td> <td>Restore pre-mining surface flow and pool holding capacity as soon as reasonably practicable Hydraulically and geomorphologically stable, with riparian vegetation that is the same or better than prior to mining</td> </tr> <tr> <td>Other watercourses subject to subsidence impacts</td> <td>Hydraulically and geomorphologically stable, with riparian vegetation that is the same or better than prior to mining</td> </tr> <tr> <td>Cliffs</td> <td>No additional risk to public safety compared to prior to mining</td> </tr> <tr> <td>Other land affected by the project</td> <td>Restore ecosystem function, including maintaining or establishing self-sustaining eco-systems comprised of: <ul style="list-style-type: none"> local native plant species (unless the Executive Director Mineral Resources agrees otherwise); and a landform consistent with the surrounding environment </td> </tr> <tr> <td>Built features damaged by mining operations</td> <td>Repair to pre-mining condition or equivalent unless <ul style="list-style-type: none"> the owner agrees otherwise; or the damage is fully restored, repaired or compensated for under the <i>Mine Subsidence Compensation Act 1961</i>. </td> </tr> <tr> <td>Community</td> <td>Ensure public safety Minimise the adverse socio-economic effects associated with mine closure</td> </tr> </tbody> </table>	Feature	Objective	Mine site (as a whole)	Safe, stable & non-polluting	Project Surface infrastructure	To be decommissioned and removed, unless the Executive Director Mineral Resources agrees otherwise	Portals and vent shafts	To be decommissioned and made safe and stable. Retain habitat for threatened species (eg bats), where practicable	Watercourses of 3 rd order or above subject to subsidence impacts	Restore pre-mining surface flow and pool holding capacity as soon as reasonably practicable Hydraulically and geomorphologically stable, with riparian vegetation that is the same or better than prior to mining	Other watercourses subject to subsidence impacts	Hydraulically and geomorphologically stable, with riparian vegetation that is the same or better than prior to mining	Cliffs	No additional risk to public safety compared to prior to mining	Other land affected by the project	Restore ecosystem function, including maintaining or establishing self-sustaining eco-systems comprised of: <ul style="list-style-type: none"> local native plant species (unless the Executive Director Mineral Resources agrees otherwise); and a landform consistent with the surrounding environment 	Built features damaged by mining operations	Repair to pre-mining condition or equivalent unless <ul style="list-style-type: none"> the owner agrees otherwise; or the damage is fully restored, repaired or compensated for under the <i>Mine Subsidence Compensation Act 1961</i>. 	Community	Ensure public safety Minimise the adverse socio-economic effects associated with mine closure		
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Bulli Seam Operations Project - Project Approval DA 08_0150	S4.32	<p>Progressive Rehabilitation</p> <p>The Proponent shall carry out the rehabilitation of the site progressively, that is, as soon as reasonably practicable following disturbance.</p>	<p>During the site inspection on 26 and 27 November 2013 the audit team were taken to Stage 1, 2 and 3 emplacement rehabilitation areas at West Cliff Colliery to observe rehabilitation efforts to date.</p> <p>Evidence was seen to support the progressive nature of rehabilitation initially in Stage 1 and 2 and currently Stage 3 through the age class of native vegetation, uptake and usage from native fauna (e.g. birds, insects, reptiles) witnessed during the survey effort.</p> <p>Evidence was observed through the site inspection to the emplacement area, Stage, 1, 2 and 3 Emplacement Area Prediction mapping and a BHP Billiton rehabilitation DVD of the emplacement area.</p> <p>Further discussion of rehabilitation is provided in the main report.</p>	<p>Compliant</p> <p>Recommendation</p> <p>It is recommended that the planning for Stage 4 clearance and rehabilitation consider key learnings from Stage 2 and 3 rehabilitation works in terms of soil medium, land form shaping, use of endemic species, retention and use of coarse woody debris, creation of water soaks and lay out of rock outcrops. Where not already included in the relevant Emplacement Management Plans.</p>																				

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
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Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S4.33	<p>Rehabilitation Management Plan</p> <p>The Proponent shall prepare and implement a Rehabilitation Management Plan for the project, with specific reference to all surface facilities sites, to the satisfaction of the Executive Director Mineral Resources. This plan must:</p> <ol style="list-style-type: none"> be prepared in consultation with the Department, OEH, NOW, Council and the CCC; be prepared in accordance with any relevant DRE guideline and be consistent with the rehabilitation objectives in the EA and in Table 11; provide for detailed mine closure planning, including measures to minimise socio-economic effects due to mine closure, to be conducted prior to the site being placed on care and maintenance; build, to the maximum extent practicable, on the other management plans required under this approval; and be submitted to the Executive Director Mineral Resources for approval by 30 September 2012. 	<p>Correspondence to ICHPL on the 29/11/2012 from DTIRIS-DRE notes approval of the Rehabilitation Management Plan (Mine Operations Plan [MOP]) 1 October 2012 to 19 September 2019 (October 2012).</p> <ol style="list-style-type: none"> The Mine Operations Plan demonstrates consultation with Planning and Infrastructure, NOW, OEH, Wollongong City Council, Campbelltown City Council and Wollondilly Shire Council. The MOP notes that consultation with the Community Consultative Committee (CCC) was not undertaken and hence consultation was conducted with the Appin Area Community Working Group. Consultation with relevant stakeholders is outlined within section 1.5 of the MOP and correspondence sighted from OEH on 28/11/2012 and EPA on the 16/01/2013 to ICHPL. The MOP includes various domain rehabilitation initiatives (Appendix J) with reference to the DRE guidelines. Appendix J, E and F address the requirements to provide for detailed mine closure planning, including measures to minimise socio-economic effects due to mine closure, to be conducted prior to the site being placed on care and maintenance . Text is provided throughout the document (e.g. page 21 reference to the West Cliff Coal Wash Area Emplacement Management Plan and Section 3.2 (p.24)) that commits to build, to the maximum extent practicable, on the other management plans required under this approval. Correspondence with DTIRIS-DRE notes submission to the department on 03/10/ 2012 three days after the required submission date. 	Compliant
Bulli Seam Operations Project - Project Approval DA 08_0150	S5.1	<p>NOTIFICATION OF LANDOWNERS</p> <p>As soon as practicable after obtaining monitoring results showing:</p> <ol style="list-style-type: none"> 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 the relevant criteria; and an exceedance of any relevant air quality criteria in schedule 4, the Proponent shall send a copy of the NSW Health fact sheet entitled "Mine Dust and You" (as may be updated from time to time) to the affected landowners and/or existing tenants of the land (including the tenants of any mine-owned land). 	<p>ICHPL management reported that the Air Quality and GHG Management Plan was approved in January 2013, that dust deposition gauges are in place and that hi-volume and real-time photometric dust monitoring systems are currently being installed. Appin East and Appin West results show no exceedances for dust.</p> <p>The 14 Day Monitoring report accessed from the BSOP website on 08/01/2013 indicated that there were no exceedances to criteria in Schedule 4 of PA 08_1050. Potential noise exceedances have been detected and attended and real-time noise monitoring data is being reviewed and analysed to determine the mines contribution to the results. Landholders will be notified when the mines contribution is determined.</p>	Compliant
Bulli Seam Operations Project - Project Approval DA 08_0150	S5.2	<p>INDEPENDENT REVIEW</p> <p>If an owner of privately-owned land considers the project to be exceeding the relevant criteria in Schedule 4, then he/she may ask the Director-General in writing for an independent review of the impacts of the project on his/her land.</p> <p>If the Director-General is satisfied that an independent review is warranted, then within 2 months of the Director-General's decision the Proponent shall:</p> <ol style="list-style-type: none"> commission a suitably qualified, experienced and independent person, whose appointment has been approved by the Director-General, to: <ul style="list-style-type: none"> consult with the landowner to determine his/her concerns; conduct monitoring to determine whether the project is complying with the relevant criteria in Schedule 4; and if the project is not complying with these criteria then identify the measures that could be implemented to ensure compliance with the relevant criteria; and give the Director-General and landowner a copy of the independent review. 	<p>ICHPL management reported that there has been no correspondence received during the audit period indicating that no residents have written to the Director-General concerning an exceedance of any criteria in Schedule 4 of PA 08_0150.</p>	Not Applicable (Not triggered)

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S5.3	<p>If the independent review determines that the project is complying with the relevant criteria in Schedule 4, then the Proponent may discontinue the independent review with the approval of the Director-General.</p> <p>If the independent review determines that the project is not complying with the relevant impact assessment criteria in Schedule 4, and that the project is primarily responsible for this non-compliance, then the Proponent shall:</p> <ul style="list-style-type: none"> a) implement all reasonable and feasible mitigation measures, in consultation with the landowner and appointed independent person, and conduct further monitoring until the project complies with the relevant criteria; or b) secure a written agreement with the landowner to allow exceedances of the relevant criteria, to the satisfaction of the Director-General. <p>If the independent review determines that any relevant acquisition criteria in schedule 4 are being exceeded and that the project is primarily responsible for this non-compliance, then upon receiving a written request from the landowner, the Proponent shall acquire all or part of the landowner's land in accordance with the procedures in Conditions 4-5 below.</p>	<p>ICHPL management reported that there has been no correspondence received during the audit period indicating that no residents have written to the Director-General concerning an exceedance of any criteria in Schedule 4 of PA 08_0150.</p>	Not Applicable (Not triggered)

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S5.4	<p>LAND ACQUISITION</p> <p>Within 3 months of receiving a written request from a landowner with acquisition rights, the Proponent shall make a binding written offer to the landowner based on:</p> <p>a) the current market value of the landowner's interest in the land at the date of this written request, as if the land was unaffected by the project, having regard to the:</p> <ul style="list-style-type: none"> existing and permissible use of the land, in accordance with the applicable planning instruments at the date of the written request; and presence of improvements on the land and/or any approved building or structure which has been physically commenced on the land at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of any additional noise mitigation measures under Condition 6 of Schedule 4; <p>b) the reasonable costs associated with:</p> <ul style="list-style-type: none"> relocating within the Wollondilly local government area, or to any other local government area determined by the Director-General; and obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is to be acquired; and <p>c) reasonable compensation for any disturbance caused by the land acquisition process.</p> <p>If the Proponent and landowner cannot agree on the acquisition price of the land and/or the terms upon which the land is to be acquired within 28 days after the Proponent makes its written offer, then either party may refer the matter to the Director-General for resolution.</p> <p>Upon receiving such a request, the Director-General will request the President of the NSW Division of the Australian Property Institute to appoint a qualified independent valuer to:</p> <ul style="list-style-type: none"> consider submissions from both parties; determine a fair and reasonable acquisition price for the land and/or the terms upon which the land is to be acquired, having regard to the matters referred to in paragraphs (a)-(c) above; prepare a detailed report setting out the reasons for any determination; and provide a copy of the report to both parties. <p>Within 14 days of receiving the independent valuer's report, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the independent valuer's determination.</p>	ICHPL management reported that no events have triggered the requirements of this Condition.	Not Applicable (Not triggered)

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150		<p><i>Continued:</i></p> <p>However, if either party disputes the independent valuer's determination, then within 14 days of receiving the independent valuer's report, they may refer the matter to the Director-General for review. Any request for a review must be accompanied by a detailed report setting out the reasons why the party disputes the independent valuer's determination. Following consultation with the independent valuer and both parties, the Director-General will determine a fair and reasonable acquisition price for the land, having regard to the matters referred to in paragraphs (a)-(c) above, the independent valuer's report, the detailed report disputing the independent valuer's determination, and any other relevant submissions. Within 14 days of this determination, the Proponent shall make a binding written offer to the landowner to purchase the land at a price not less than the Director-General's determination.</p> <p>If the landowner refuses to accept the Proponent's binding written offer under this condition within 6 months of the offer being made, then the Proponent's obligations to acquire the land shall cease, unless the Director-General determines otherwise.</p>		
Bulli Seam Operations Project - Project Approval DA 08_0150	S5.5	The Proponent shall pay all reasonable costs associated with the land acquisition process described in Condition 4 above, including the costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of this plan at the Office of the Registrar-General.	ICHPL management reported that no events have triggered the requirements of this Condition.	Not Applicable (Not triggered)

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S6.1	<p>ENVIRONMENTAL MANAGEMENT</p> <p>Environmental Management Strategy</p> <p>The Proponent shall prepare and implement an Environmental Management Strategy for the project to the satisfaction of the Director-General. This strategy must:</p> <ol style="list-style-type: none"> be submitted to the Director-General for approval by 30 September 2012; provide the strategic framework for environmental management of the project; identify the statutory approvals that apply to the project; describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the project; 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; receive, handle, respond to, and record complaints; resolve any disputes that may arise during the course of the project; respond to any non-compliance; respond to emergencies; and include: <ul style="list-style-type: none"> copies of any strategies, plans and programs approved under the conditions of this approval; and a clear plan depicting all the monitoring required to be carried out under the conditions of this approval. 	<p>ICHPL has developed an Environmental Management Strategy (the Strategy) dated 07/08/2012 in accordance with Condition 1, Schedule 6 of PA 08_0150. The following was noted concerning the Strategy:</p> <ol style="list-style-type: none"> The Director-General approved the Strategy on 14/09/2012. Section 3, Figure 3 of the Strategy provided the strategic framework and included an overview of the Environmental Management System framework. The Strategy included, but was not limited to sections addressing objectives, communications the Community Consultation Committee and complaints and dispute resolution. URS consider these topics to generally provide the strategic framework for the environmental management of the BSOP. It was noted that the Strategy did not include any targets concerning environmental management of the BSOP. Section 2 sets out the statutory requirements of the BSOP in accordance with Condition 5.1(c). Section 4 sets out accountabilities and responsibilities for environmental management of the BSOP. Section 5 addressed procedures and controls that would be implemented. <ul style="list-style-type: none"> section 5.1 described the process for managing community issues and information; section 5.2 described the CCC process; section 6 described how to manage complaints and dispute resolution; section 8 addressed non-compliances, corrective and preventive action. Reference was made to an overarching corrective action procedure. section 9 referenced emergency response documents used across the BSOP; however, there was no reference to the Pollution Incident Response Management Plan (PIRMP) (Document ID: ICHMP0229), dated August 2012. Appendix 2 included references to strategies, plans and programs approved under the MCoA 08_0150. Appendix 1 included a plan depicting the monitoring required for Areas 5, 7 and 9 to be carried out under the conditions of this approval. It is noted that references to figures were stated as "TBA" in Appendix 1. 	<p>Compliant</p> <p>Recommendation</p> <p>Recommendations concerning the Strategy are provided in Section 7.2 of the Report.</p>

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S6.2	<p>Management Plan Requirements</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> <p>a) detailed baseline data;</p> <p>b) a description of:</p> <ul style="list-style-type: none"> the relevant statutory requirements (including any relevant approval, licence or lease conditions); any relevant limits or performance measures/criteria; 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; <p>c) a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria;</p> <p>d) a program to monitor and report on the:</p> <ul style="list-style-type: none"> impacts and environmental performance of the project; effectiveness of any management measures (see c above); <p>e) a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;</p> <p>f) a program to investigate and implement ways to improve the environmental performance of the project over time;</p> <p>g) a protocol for managing and reporting any:</p> <ul style="list-style-type: none"> incidents; complaints; non-compliances with statutory requirements; and exceedances of the impact assessment criteria and/or performance criteria; and <p>h) a protocol for periodic review of the plan.</p>	<p>Management plans have been prepared against the requirements of this Condition (S6.2).</p> <p>a) Where required, plans were observed to include baseline data specific to the issue(s) being addressed, for example the Noise Management Plan included real-time monitoring figures. References were also made and hyperlinks provided to the BSOP EA that also included baseline data.</p> <p>b) The plans were observed to include the following:</p> <ul style="list-style-type: none"> a brief introduction that included a summary of the relevant statutory requirements including Project Approval, references to the BSOP's EPL and State legislation; relevant limits or performance measures/criteria were noted to be included in the plans reviewed. For example the Air Quality and Greenhouse Gas Management Plan (Document ID: ICHMP0233) included acquisition criteria. specific performance indicators were generally included in tables so that it was clear what threshold were and how they would be achieved. For example the Surface Water Management Plan (Document ID: ICHMP0235) included licence discharge point indicators. The plans appeared to provide sufficient information to understand implementation and management measures; <p>c) The plans generally provided a description of the measures that would be implemented to comply with the relevant statutory requirements, limits, or performance measures/criteria. These were described in tables so it was clear for each line item what actions were required and who was responsible for implementing the action;</p> <p>d) Requirements to monitor and report were included the plans. Roles and responsibilities for conducting actions were provided; however, some plans for example the Surface Water Management Plan included overarching responsibilities such as '<i>Implementation and periodic review of this Management Plan</i>' rather than responsibilities for specific control measures. Reporting requirements were included in the plans.</p> <p>e) Other than revering to emergency procedure protocols it was not clear in the plans how unpredicted impacts and their consequences are managed for the BSOP and that ongoing impacts are reduced to levels below relevant impact assessment criteria as quickly as possible;</p> <p>f) Plans generally included a program to monitor environmental performance of the project over time.</p> <p>g) The ICHPL procedure, Handling Community Complaints and Enquiries (Document No. ICHP0112) was typically referenced in the plans as the protocol for complaints. Protocols were available in the plans for issues such as incidents, complaints, non-compliances and exceedances, including but not limited to the Noise Management Plan, Environmental Strategy and Non-Indigenous Cultural Heritage Management Plan.</p> <p>h) Periods of review were provided in the plans, generally this was specified to be within three months of the submission of an annual review, 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 or any modification to relevant Project approval conditions. It was noted that the Service Borehole Management Plan review period was not clear.</p>	<p>Compliant</p> <p>Recommendation</p> <p>It is recommended that management plans be reviewed and revised to:</p> <ul style="list-style-type: none"> Define specific roles and responsibilities. Where specific control measures are stated it is recommended that roles be assigned so it is clear who is responsible; Clearly state how unpredicted impacts and their consequences are managed and those ongoing impacts are reduced to levels below relevant impact assessment criteria as quickly as possible. Provide a review period for the Service Borehole Management Plan.

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S6.3	<p>Adaptive Management</p> <p>The Proponent must assess and manage project-related risks to ensure that there are no exceedances of the criteria and/or performance measures in Schedules 3 and 4. Any exceedance of these criteria and/or performance measures constitutes a breach of this approval and may be subject to penalty or offence provisions under the EP&A Act or EP&A Regulation.</p> <p>Where any exceedance of these criteria and/or performance measures has occurred, the Proponent must, at the earliest opportunity:</p> <ul style="list-style-type: none"> a) take all reasonable and feasible steps to ensure that the exceedance ceases and does not recur; b) consider all reasonable and feasible options for remediation (where relevant) and submit a report to the Department describing those options and any preferred remediation measures or other course of action; and c) implement remediation measures as directed by the Director-General, <p>to the satisfaction of the Director-General.</p>	<p>ICHPL management reported that no events have triggered the requirements of this Condition during the audit period.</p> <p>From the data reviewed by URS an exceedance of criteria and/or performance measures provided in Schedules 3 and 4 was not evident.</p> <p>The current issue with Copper concentrations marginally exceeding the limit at Brennan's Creek Dam is associated with EPL criteria. Discussion with the EPA are ongoing and actions are currently being implemented.</p>	Not Applicable (Not triggered)

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S6.4	<p>Annual Review</p> <p>By 30 September 2012, and annually thereafter, the Proponent shall review the environmental performance of the project to the satisfaction of the Director-General. This review must:</p> <ol style="list-style-type: none"> describe the development (including any rehabilitation) that was carried out in the past financial 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 project over the past financial year, which includes a comparison of these results against the: <ul style="list-style-type: none"> relevant statutory requirements, limits or performance measures/criteria; requirements of any plan or program required under this approval; monitoring results of previous years; and relevant predictions in the EA; identify any non-compliance over the past financial 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 project; identify any discrepancies between the predicted and actual impacts of the project, and analyse the potential cause of any significant discrepancies; and describe what measures will be implemented over the current financial year to improve the environmental performance of the project. 	<p>ICHPL use the Annual Environmental Management Report (AEMR) as the Annual Review. Section 1.5 of the 2012/2013 AEMR summarised the actions required following the first AEMR. A letter from ICHPL to DRE dated 31/08/2012 indicated the first AEMR had been submitted prior to 30/09/2012.</p> <p>ICHPL management reported that AEMR inspections have been conducted during the audit period; however, no documentation to confirm any if any findings were made or if feedback was provided from Planning and Infrastructure were available for review.</p> <p>A letter from Planning and Infrastructure to ICHPL dated 10/12/2013 confirmed that the Department had read the 2012/2013 AEMR and had requested that future reports include a comparison of all monitoring results that are required under PA 08_0150 over the previous calendar year, with monitoring results from previous years and relevant predictions in the EA, and include the identification of trends in the monitoring results over the life of the project. Planning and Infrastructure also requested that the AEMR include a comparison of any complaints made in the past calendar year with those previously received. Graphical representation was also requested to be provided accompany the discussion of trends to compare current results with those of previous years, including relevant impact assessment criteria and predictions in the EA.</p> <ol style="list-style-type: none"> The 2012 and 2013 AEMRs included descriptions of the developments during the reporting period (Section 2). Sections 2 and 3 included a review of the monitoring results for the year against the statutory requirements. Monitoring results for the calendar year that provided a comparison against statutory requirements were provided in Section 3. Non-compliances were addressed throughout Section 3 of the AEMR and included what details concerning the actions that were (or are being) taken to ensure compliance. There were two exceedances of the EPL for LDP 20 (Appin East) criteria in the 2011/2012 AEMR. Both non-compliances were identified to be the result of increased inputs into the system disrupting the normal sewage treatment process. The Annual Return that contained further details concerning the non-compliance was appended to the AEMR. Regular cleanout of the sewage treatment lines is managed in the site work order system to ensure tasks are planned and executed at set intervals to prevent future blockages and reduce the potential for the system to operate beyond its capability. The Annual Return that contained further details concerning the non-compliance was appended to the AEMR. Two further non-compliances occurred at LDP 20 (Appin East) during the 2012/2013 reporting period. The AEMR provided details concerning the actions that were (or are being) taken to ensure compliance. Trending data was provided in the 2012/2013 AEMR including, but not limited to groundwater monitoring, potable water usage and pump-out water volumes. 2011 to 2012 AEMR was the first reporting period for the BSOP therefore no trending monitoring data was provided in the AEMR. No discrepancies were noted in the AEMRs for the reporting periods. Measures that will be implemented in the current financial year were included in Section 6 of the AEMRs. These included, but were not limited to: <ul style="list-style-type: none"> Longwall 704 gas extraction will continue in 2012/13 via the MRD and Bulgo vertical boreholes (2011/2012); Longwall 35 gas extraction will continue in 2012/13 via wells 35-6 to 35-12. Rehabilitation to continue progressively in parallel to construction activities (2011/2012); Construction of VS#6 HV Switchyard including under road & Rail bore from DNS and augmenting DNS for the power supply to the VS#6 Switchyard (2011/2012); Increased personnel at Appin East due to the Area 9 Project an upgrade to the existing sewage management system was required. A number of options were identified for the upgrade including the construction of a new Sewage treatment plant or connection to the Sydney Water sewage network (2012/2013); and 	Compliant

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
			<ul style="list-style-type: none"> - During the next reporting period a services underbore is planned to be drilled from Appin East to the West Cliff Mine site area. The under bore will link the Appin and West Cliff mines communications networks via an optic fibre cable (2012/2013). <p>The 2013/2013 AEMR identified (Table 7, p.12) that the following actions were required following the Director-General's review of the 2011/2012 AEMR:</p> <ul style="list-style-type: none"> • Land Preparation Plan for West Cliff Colliery (for West Cliff Colliery). • Detailed site plans (for all plans). • Regional location plan (for all plans). <p>Headings and the table of contents indicated these plans had been included in the AEMR; however, the document reviewed by URS did not include plans.</p>	
Bulli Seam Operations Project - Project Approval DA 08_0150	S6.5	<p>Revision of Strategies, Plans and Programs</p> <p>Within 3 months of:</p> <ol style="list-style-type: none"> the submission of an annual review under Condition 4 above; the submission of an incident report under Condition 7 below; the submission of an audit report under Condition 9 below; and any modification to the conditions of this approval, (unless the conditions require otherwise), <p>the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Director-General.</p>	<p>The first Annual Review (AEMR) was submitted in August 2012. The following was noted in accordance with this Condition:</p> <ol style="list-style-type: none"> The latest Annual Review/AEMR was submitted to DRE on 30 August 2013 to DTRIS-DRE and Planning and Infrastructure; ICHPL management reported that no incident report required under Condition 7 has been required. No Independent Environmental Audit has been conducted under the Project Approval. No modifications have been made to plans since the Project Approval was granted. 	Compliant
Bulli Seam Operations Project - Project Approval DA 08_0150	S6.6	<p>Community Consultative Committee</p> <p>The Proponent shall establish and operate a new Community Consultative Committee (CCC) for the project to the satisfaction of the Director-General. This CCC must be operated in general accordance with the Guidelines for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007, or its latest version), and be operating by 30 September 2012.</p>	<p>The following is noted concerning the Community Consultation Committee (CCC):</p> <ul style="list-style-type: none"> • ICHPL advertised for expressions of interest for the BSOP CCC. Expressions of interest closed on 17/08/2013. URS sighted the expression of interest issued to the Wollondilly Advertiser. • URS sighted a letter from Planning and Infrastructure to ICHPL dated 27/09/2012 that endorsed the appointment of five members to the CCC in accordance with Condition 6 of Schedule 6 of the BSOP Approval. URS sighted a second letter from Planning and Infrastructure to ICHPL dated 28/10/2013 that endorsed the appointment of three members to the CCC. Application forms from prospective CCC members were available for review. • CCC meetings are held every two months. Minutes of meetings were available online for the periods July (accepted) and September (draft) 2013. Draft minutes of the most recent meeting are also posted as in the window of ICHPL Community Office in Appin following the meeting. Meeting agendas and minutes of the meetings were available for review for the following dates: 30/10/2012, 29/01/2013 and 28/05/2013. Power Point of the meetings held on 30/10/2012, 29/01/2013 and 28/05/2013 were available for review. • The first meeting was conducted 30 October 2012. Meetings are generally held at the ICHPL Community Office in Appin, however, may be held at various locations around the community. The CCC area includes Appin, Menangle, Douglas Park, Razorback, Wilton and Wedderburn. • The committee includes six community representatives and three environmental representatives. • A copy of the Guideline for Establishing and Operating Community Consultative Committees for Mining Projects (Department of Planning, 2007) was available on the ICHPL intranet and was reportedly provided to members. • Draft CCC Terms of Reference dated October 2013 were available on iPick. The Terms of Reference provide an outline of CCC requirements, including, but not limited to committee composition, member selection, meeting protocols, site inspections and external communications. • ICHPL issues a community newsletter (Illawarra Coal Coalition News). The Illawarra Coal Community Call Line is provided on the back page of the newsletter. Newsletters for December 2013 and March, July and November 2013 were available for review. 	Compliant

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S6.7	<p>REPORTING</p> <p>Incident Reporting</p> <p>The Proponent shall notify, at the earliest opportunity, the Director-General and any other relevant agencies of any incident that has caused, or threatens to cause, material harm to the environment. For any other incident associated with the project, the Proponent shall notify the Director-General and any other relevant agencies as soon as practicable after the Proponent becomes aware of the incident. Within 7 days of the date of the incident, the Proponent shall provide the Director-General and any relevant agencies with a detailed report on the incident, and such further reports as may be requested.</p>	<p>ICHPL management reported that there have not been any incidents that have caused, or threatened to cause, material harm to the environment and therefore no incident report has been provided to the Director-General and any other relevant agencies.</p>	Not Applicable (Not triggered)
Bulli Seam Operations Project - Project Approval DA 08_0150	S6.8	<p>Regular Reporting</p> <p>The Proponent shall provide regular reporting on the environmental performance of the project on its website, in accordance with the reporting arrangements in any plans or programs approved under the conditions of this approval.</p>	<p>Documents including, but not limited to the following were available on the BSOP website:</p> <ul style="list-style-type: none"> a) Development and environment approvals; b) Environment management plans; c) Surface gas management plans; d) Subsidence management plans; e) Environmental assessments; f) Community consultation; g) End of panel reports; h) Environmental management reports; i) Independent environmental audit; and j) Environmental monitoring data. <p>A copy of the 2012/2013 BSOP AEMR was available on the BSOP website. GHG information was available in the AEMR(s). 14 day environmental monitoring data was available on the BSOP website as a Microsoft Excel document.</p>	Compliant
Bulli Seam Operations Project - Project Approval DA 08_0150	S6.9	<p>INDEPENDENT ENVIRONMENTAL AUDIT</p> <p>By the end of December 2013, and every 3 years thereafter, unless the Director-General directs otherwise, the Proponent shall commission and pay the full cost of an Independent Environmental Audit of the project. This audit must:</p> <ul style="list-style-type: none"> a) be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Director-General; b) include consultation with the relevant agencies; c) assess the environmental performance of the project and assess whether it is complying with the requirements in this approval and any relevant EPL or Mining Lease (including any assessment, plan or program required under these approvals); d) review the adequacy of strategies, plans or programs required under the abovementioned approvals; and e) recommend appropriate measures or actions to improve the environmental performance of the project, and/or any assessment, plan or program required under the abovementioned approvals. 	<p>URS were approved to conduct an Independent Environmental Audit of the site on 28/10/2013. This audit report and supporting documents address the requirements of Condition 5.9, Schedule 5 of DA 10_0080.</p> <ul style="list-style-type: none"> a) ICHPL commissioned URS to conduct the 2013 Independent Environmental Audit. The URS audit team was approved by Planning and Infrastructure to conduct the audit in letters to ICHPL dated 28/10/2013 and 15/11/2013. The site inspections was conducted on the following dates: <ul style="list-style-type: none"> - 26 November 2013 (whole audit team); - 27 November 2013 (flora, fauna and rehabilitation and subsidence experts); - 28 November 2013 (air quality and GHG expert); - 29 November 2013 (lead auditor and auditor); - 6 December 2013 (lead auditor and auditor); - 10 December 2013 (lead auditor and auditor); and - 28 February 2014. b) The 2013 IEA involved consultation with the following agencies: Planning and Infrastructure, DTIRIS-DRE, SEWPaC and EPA. c) The 2013 IEA assessed the environmental performance of the BSOP against the requirements of MCoA 08_0150, EPL 2504 the Consolidated Coal Lease 767 and plans and programs required by these approvals. d) The 2013 IEA included appropriate measures and/or actions to improve the environmental performance of the BSOP, and/or any assessment, plan or program required under the abovementioned approvals. 	Compliant

Appendix A – Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Project Approval 08_0150				
Bulli Seam Operations Project - Project Approval DA 08_0150	S6.10	Within 6 weeks of the completion of this audit, or as otherwise agreed by the Director-General, the Proponent shall submit a copy of the audit report to the Director-General, together with its response to any recommendations contained in the audit report.	Noted This is the first Independent Environmental Audit of the BSOP under the MCoA 08_0150.	Noted
Bulli Seam Operations Project - Project Approval DA 08_0150	S6.11	<p>ACCESS TO INFORMATION</p> <p>From 30 June 2012, the Proponent shall:</p> <p>a) make copies of the following publicly available on its website:</p> <ul style="list-style-type: none"> • the documents referred to in Condition 2 of Schedule 2; • all current statutory approvals for the project; • all approved strategies, plans and programs required under the conditions of this approval; • a comprehensive summary of the monitoring results of the project, reported in accordance with the specifications in any conditions of this approval, or any approved plans and programs; • a complaints register, updated on a monthly basis; • minutes of CCC meetings; • the annual reviews of the project; • any independent environmental audit of the project, and the Proponent’s response to the recommendations in any audit; • any other matter required by the Director-General; and <p>b) keep this information up-to-date, to the satisfaction of the Director-General.</p>	<p>a) Access to information appears to be in compliance with the requirements of this condition. The BSOP website: http://www.bhpbilliton.com/home/aboutus/regulatory/Pages/default.aspx [Accessed 18 December 2013 @16:00hrs] was reviewed and observed to contain the following information:</p> <ul style="list-style-type: none"> - Development and Environment Approvals - Statement of Commitments - Environment Management Plans - Subsidence Management Plans - Environmental Assessments - Environmental Management Reports - 14 Day Environmental Monitoring Data - Annual Environment Management Report 2012 / 2013 - CCC meeting minutes <p>The following plans and reports were available:</p> <ul style="list-style-type: none"> - Preferred Project Report - End of Panel Reports - Pollution reduction Program Reports <p>CCC meeting minutes were available online for the periods September and November 2013 as well as the November 2013 Complaints Register.</p> <p>Environment Protection Licence Monitoring Data was available on the BSOP website for the period April 2012 through to January 2014. Environmental monitoring data was available on the company’s website for quarters one to four of 2012. This is the first Independent Environmental Audit under the MCoA 08_0150 therefore no previous audit report was available.</p>	Compliant

Appendix A - Bulli Seam Operations Project Independent Environmental Audit																
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations												
Environmental Protection Licence 2504																
Environmental Protection Licence 2504	A1.1	<p>This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.</p> <table border="1"> <thead> <tr> <th>Scheduled Activity</th> <th>Fee Based Activity</th> <th>Scale</th> </tr> </thead> <tbody> <tr> <td>Coal Works</td> <td>Coal Works</td> <td>> 5,000,000 T handled</td> </tr> <tr> <td>Mining for Coal</td> <td>Mining for Coal</td> <td>> 5,000,000 T produced</td> </tr> <tr> <td>Waste Disposal (application to land)</td> <td>Waste Disposal (application to land)</td> <td>Any annual capacity</td> </tr> </tbody> </table>	Scheduled Activity	Fee Based Activity	Scale	Coal Works	Coal Works	> 5,000,000 T handled	Mining for Coal	Mining for Coal	> 5,000,000 T produced	Waste Disposal (application to land)	Waste Disposal (application to land)	Any annual capacity	<p>Illawarra Coal operates at the addresses specified in the EPL and undertakes the scheduled activities specified (coal works, mining for coal and waste disposal by application to land). These operations are within the fee based activity levels defined (coal works > 5,000,000 Tonnes handled, mining for coal >5,000,000 Tonnes produced and waste disposal by application to land - any annual capacity). Illawarra Coal production figures for the audit period were sighted. The following Run of Mine (ROM) coal production was reported:</p> <ul style="list-style-type: none"> Appin (East and West) July 2012 to July 2013: 2,850,000 tonnes. West Cliff July 2012 to July 2013: 2,990,000 tonnes. <p>The above amounts are well below the limits as specified.</p>	Compliant
Scheduled Activity	Fee Based Activity	Scale														
Coal Works	Coal Works	> 5,000,000 T handled														
Mining for Coal	Mining for Coal	> 5,000,000 T produced														
Waste Disposal (application to land)	Waste Disposal (application to land)	Any annual capacity														
Environmental Protection Licence 2504	P1 P1.1	The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.	<p>The following plans were referenced in the EPL:</p> <ul style="list-style-type: none"> West Cliff and North Cliff Mine, May 2010 Appin East Pit Top, May 2010 West Cliff EPA Licence Authorised Discharge Points, DP-2672A Plan A07-1240 Appin West Effluent Irrigation Area, 30 August 2011 Appin West Pit Top, May 2010 	Noted												
Environmental Protection Licence 2504	P1.2	The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.														
Environmental Protection Licence 2504	P1.3	The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.														
Environmental Protection Licence 2504	L1 L1.1	<p>Pollution of Waters</p> <p>Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the <i>Protection of the Environment Operations Act 1997</i>.</p>	<p>As noted in Conditions L2.4, L3.1, M2.5 and M6.1 of EPL 2504, ICHPL has recorded non-conformances against limits specified in EPL 2504. In these instances the EPA and other Agencies have been informed and corrective actions taken to correct the identified causes.</p> <p>The noncompliance's referenced for these specific conditions are not repeated here for this condition.</p>	Compliant												

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
Environmental Protection Licence 2504	L2 L2.1	Concentration Limits For each monitoring/discharge point or utilisation area specified in the table/s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.	<p>The Surface Water Management Plan states that monitoring is carried out to check the concentration limits at the licenced discharge points. If exceedances are found, site operations are investigated and changes made to improve the non-compliant results. Where possible, the release of water is reduced or stopped during the adjustment phase.</p> <p>Water quality reporting shows that BSOP activities have generally maintained water quality within the required limits, with only minor and occasional non-conformances. Where non-conformances have occurred, brief commentary is provided as to the causes and corrective actions taken. 14 Day water monitoring data for the three BSOP sites was available on the ICHPL website. Data was available to URS for review from April 2012 through to published data on 16/01/2014. ICHPL reported that the Biochemical Oxygen Demand (BOD) limit for LDP 020 was in the process of being increased by the EPA at the time of the audit. A variation to the EPL containing an increased BOD limit for LDP 020 was expected in March 2014.</p> <p>The following non-conformances are noted:</p> <ul style="list-style-type: none"> The 90th percentile concentration of dissolved Copper in discharge water from Brennan's Creek Dam (LDP 10) exceeded the concentration limit during the 2013-14 reporting period. Monitoring data was available from 02/05/2013. ICHPL management reported that the limit was set following discussion with the EPA. ICHPL advised they requested the 90% limit be set to the current baseline of 10 µg/L; however, the EPA subsequently set the limit to 8 µg/L. West Cliff Colliery has regularly exceeded this discharge criteria from LDP 10. Meeting minutes between ICHPL and the EPA dated 6 March 2014 record that the EPA indicated that the 90th percentile Copper level should be generated using the 90th percentile calculation and be reported as one non-compliance (dated the last day of the reporting period). The raw data showing the 19 occurrences where the level was above 8 parts per billion (ppb) is to be provided as an attachment to the Annual Return. One TSS exceedance at West Cliff Colliery LDP 10 on 07/03/2013 (53 mg/L) up to 16/01/2014. Five BOD exceedances at Appin Mine LDP 20 from 30/04/2012 to 16/01/2014. One TSS exceedance at Appin Mine LDP 23 on 13/06/2012 (64 mg/L) up to 16/01/2014. The 2011/12 Annual Return to the EPA recorded one non-conformance for concentration limit exceedance (BOD) at LDP 3 (04/01/2012). The cause was identified and actions taken were described in the return. <p>The 2012/13 Annual Return to the EPA recorded five non-conformances for concentration limit exceedance. These were recorded between 23/02/2012 and 31/10/2013 at LDP 3 (two exceedances), LDP 20 (two exceedances) and LDP 23 (one exceedance).</p>	Non-compliant
Environmental Protection Licence 2504	L2.2	Concentration Limits Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.	<p>Water monitoring data shows that BSOP activities have met the requirements for the pH concentration of discharged water from April 2012 through 16/01/2013. Data was available for review from April 2012 through to published data on 16/01/2014.</p> <p>The Surface Water Management Plan states that monitoring is undertaken in accordance with the requirements of the EPL. A procedure for applying corrective actions is described in the plan.</p>	Compliant
Environmental Protection Licence 2504	L2.3	Concentration Limits To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table/s.	<p>Noted</p> <p>ICHPL were unable to demonstrate that potential pollutants other than those specified in the table/s of EPL 2504 are analysed.</p>	<p>Noted</p> <p>Recommendation</p> <p>Conduct a periodic broad analysis of potential pollutants in water, including those that are naturally occurring against ANZECC guidelines.</p>

Appendix A - Bulli Seam Operations Project Independent Environmental Audit																						
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations																		
Environmental Protection Licence 2504																						
Environmental Protection Licence 2504	L3 L3.1	<p>Volume and Mass Limits</p> <p>For each discharge point or utilisation area specified below (by a point number), the volume/mass of:</p> <p>(a) liquids discharged to water; or</p> <p>(b) solids or liquids applied to the area;</p> <p>must not exceed the volume/mass limit specified for that discharge point or area.</p> <table border="1"> <thead> <tr> <th>Point</th> <th>Unit of Measure</th> <th>Volume/Mass of Limit</th> </tr> </thead> <tbody> <tr> <td>18</td> <td>Kilolitres per day</td> <td>1,000</td> </tr> <tr> <td>19</td> <td>Kilolitres per day</td> <td>2,000</td> </tr> <tr> <td>20</td> <td>Kilolitres per day</td> <td>13</td> </tr> <tr> <td>22</td> <td>Kilolitres per day</td> <td>80</td> </tr> <tr> <td>24</td> <td>Kilolitres per day</td> <td>3,000</td> </tr> </tbody> </table>	Point	Unit of Measure	Volume/Mass of Limit	18	Kilolitres per day	1,000	19	Kilolitres per day	2,000	20	Kilolitres per day	13	22	Kilolitres per day	80	24	Kilolitres per day	3,000	<p>The identified discharge points have continuous flow monitoring equipment to record the flow data. Continuous flow monitoring was observed at LDP 10 and LDP 19. A summary of this information is contained in the published 14 Day monitoring data on the ICHPL website.</p> <ul style="list-style-type: none"> The Annual Return for 2012/13 reports non-compliances due to volume exceedance on three occasions at LDP 22 (29/02/2012 = 111 kL/Day, 05/03/2012 = 96 kL/Day and 08/03/2013 = 123 kL/Day). It was reported that the system was in the process of being upgraded. During heavy rainfall treated effluent was sprayed onto the irrigation area over three days whilst the flow limit switch was not operational. URS sighted FirstPriority (former ICHPL health, safety, environment risk management system) reports for the exceedances noted on 29/02/2012, 03/03/2013 and 08/03/2012. (Event ref No.: APENV12030022). The above information could not be verified when reviewing the data that was available on the 14 Day monitoring spread sheet uploaded to the ICHPL website on 16 /01/2014. 14 Day monitoring data has only been required to be published since April 2012. LDP 001 was not shown on the 14 Day monitoring spreadsheet and data for LDP 22 for March 2013 showed a maximum daily flow of 50 kL/Day. The original data was requested but not available for review during the audit period. <p>The Water Management Plan states that monitoring is undertaken in accordance with the requirements of the EPL.</p> <p>URS observed use of the Watersavers® website that provided volume and mass data for LDPs at Appin Mine and West Cliff Colliery. The Watersavers® website provides volume and mass information for LDPs as specified in the EPL. Data viewed included the period 28/01/2014 to 28/02/1014.</p> <p>Data from the website is downloaded by HSEC Analyst and uploaded to 14 Day monitoring data spreadsheet. Any exceedances against the criteria are noted during this download process. Environmental Coordinators at each site are also able to login to the Watersavers® website at any time and can identify if there are any exceedances to the criteria prior to the monthly download by the HSEC Analyst. Given the three non-compliances recorded at LDP 22 during the audit period this Condition was found to be non-compliant.</p>	Non-compliant
Point	Unit of Measure	Volume/Mass of Limit																				
18	Kilolitres per day	1,000																				
19	Kilolitres per day	2,000																				
20	Kilolitres per day	13																				
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Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
Environmental Protection Licence 2504	L4 L4.1	<p>Waste</p> <p>The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below.</p> <p>Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below. Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled "Other Limits" in the table below.</p> <p>This condition does not limit any other conditions in this licence.</p>	<p>ICHPL management reported that no waste was received at the premises during the audit period from other sites not associated with the EPL.</p> <ul style="list-style-type: none"> A licensed waste contractor is engaged by ICHPL to manage waste streams for the BSOP. The BSOP operates a recycling waste collection system. Waste is separated into the following streams: timber, cardboard/paper, printers/cartridges, oil, oily water, steel/scrap metal, sewage (effluent), industrial filters, bathhouse water, particulate filters, hazardous waste and general waste. Waste streams are tracked using data inputted into 1 SAP. Monthly Mine Environment SAP Reports for Appin Mine and West Cliff Colliery were available for review that detailed data for General Waste - Quantity Disposed to Landfill (Off-Site), General Waste Recycled (on or off site), Hazardous Waste - Other Hazardous Waste: Disposed to Landfill (Filters) and Hazardous Waste - Waste Oil: Total Generated. Dedicated waste sorting areas were at Appin West, Appin East and West Cliff Colliery. <p>The following is noted concerning coal wash:</p> <ul style="list-style-type: none"> A total of 2.4 million tonnes of coal wash (including Dendrobium, Appin and West Cliff mines) was emplaced at the West Cliff Colliery emplacement area (AEMR, 2011/2012). A total of 2.5 million tonnes of coal wash (includes Dendrobium, Appin and West Cliff) was emplaced at the West Cliff Emplacement Area (AEMR, 2012/2013). A road base mixture containing coal wash, fly ash and lime was trailed at West Cliff Colliery in April and May 2013 to reduce dust emissions. The Stage 3 Emplacement Area was inspected by the auditors during the site inspection. The Emplacement Area is managed through a number of management plans. <p>Waste disposal off-site was noted through the evidence of waste tracking documents – Transport Certificate No. 2T00447233 (06-Jun-2013 to -5-Jun-2-2014 for N205 Industrial waste treatment/disposal residues), Transport Certificate No. 2T00447234, Transport Certificate No. 2T00447235, Transport Certificate No. 2T00447260, Transport Certificate No. 2T00447261, Transport Certificate No. 2T00447262, Transport Certificate No. 2T00447263, Transport Certificate No. 2T00447264, Certificate No. 2T00447265, Certificate No. 2T00447266 and Certificate No. 2T00447267.</p> <ul style="list-style-type: none"> Monthly Environment SAP reports for Appin Mine and West Cliff Colliery showing tracking and trending information for: <ul style="list-style-type: none"> general waste - quantity disposed to landfill (off-site); general waste recycled (on or off site); hazardous waste - other hazardous waste: disposed to landfill (filters); and hazardous waste - waste oil: total generated. Monthly waste data for the period December 2013 to November 2013 for Appin East, Appin West and West Cliff Colliery waste streams: general waste, timber; filters, cardboard, commingled waste, oil, steel, oily water, effluent waste, hazardous waste (grease) and bathhouse water. Waste audits of service providers were conducted during the audit period as required by the WMP. The following waste audit reports were available for review: <ul style="list-style-type: none"> Worth Recycling Pty Ltd (no date). Six non-conformances were identified against the service provider concerning document control and critical spares; however, day-to-day operations were generally found to comply with ICHPL requirements. There was no evidence in the audit report that identified non-conformances had been entered into 1SAP (or similar) for tracking and closure. Cleanaway Pty Ltd dated 14/09/2012. The service provider was found to meet the environmental standards set by ICHPL. 	Compliant

Appendix A - Bulli Seam Operations Project Independent Environmental Audit																
Title	Condition No.	Condition			Comment / Evidence sighted	Compliance Status & Recommendations										
Environmental Protection Licence 2504																
Environmental Protection Licence 2504	L4.1	<table border="1"> <thead> <tr> <th>Code</th> <th>Waste</th> <th>Description</th> <th>Activity</th> <th>Other Limits</th> </tr> </thead> <tbody> <tr> <td>NA</td> <td>Coal washery rejects</td> <td>As defined in the Protection of the Environment Operations (Waste) Regulation 2005</td> <td>Waste disposal (application to land)</td> <td>NA</td> </tr> </tbody> </table>				Code	Waste	Description	Activity	Other Limits	NA	Coal washery rejects	As defined in the Protection of the Environment Operations (Waste) Regulation 2005	Waste disposal (application to land)	NA	
		Code	Waste	Description	Activity	Other Limits										
NA	Coal washery rejects	As defined in the Protection of the Environment Operations (Waste) Regulation 2005	Waste disposal (application to land)	NA												

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
Environmental Protection Licence 2504	O1 O1.1	<p>Activities must be carried out in a competent manner</p> <p>Licensed activities must be carried out in a competent manner. This includes:</p> <ul style="list-style-type: none"> (a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and (b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity. 	<p>Based on the site inspections and review of documents sighted, ICHPL appeared to be compliant with this condition. The following discusses the documents and evidence that was the basis of this assessment (it is noted that a full assessment of this condition as it relates to all operations at BSOP was not conducted. The extent of the assessment was limited to what could be achieved on the days of the site inspections).</p> <p>ICHL have not received a Penalty Infringement Notice (PIN) from EPA during the audit period.</p> <ul style="list-style-type: none"> • 1SAP is used to generate work orders. Appin Maintenance Schedule for Key Environmental Controls was available for review that listed work orders Weekly surface cleaning work orders from 03/09/2012 to 06/01/2014. A number of random work orders were cross refereed with the spread sheet and were found to correlate. Work orders were noted to include management and operation of water related infrastructure. Daily, weekly and monthly surface inspections were noted to include, but were not limited to the water treatment plant and dams, diesel tank and bund and sewage treatment lagoons. A sweeper truck and water cart were observed in operation during the site inspections. • The Annual Return for the period February 2012 to January 2013 identified exceedances of pH and BOD limits at LDP 3 on 23/02/2012 and 14/03/2012. The West Cliff Colliery Sewage Treatment Plant was upgraded in January 2012. The causes of the non-compliances were associated with high sludge and algae levels in Dam 2 due to effluent being treated prior to the upgrade works. • The Annual Return for the period February 2012 to January 2013 identified exceedances of BOD and LDP 20 (Appin East Envirocycle). The cause of the exceedance was identified to be a fluctuation in air flow in the system. A Work Order (ref: 411293015) to clean the Envirocycle was sighted by the auditors. The FY14 Environmental Improvement Plan included an initiative to upgrade the Envirocycle and irrigation area to accommodate an increase in site personnel associated with the AA9 project had been started at Appin East. An application to Sydney Water Corporation was reported to have been accepted in principal. • The BSOP operates a recycling waste collection system. Waste is separated into the following streams: timber, cardboard/paper, printers/cartridges, oil, oily water, steel/scrap metal, sewage (effluent), industrial filters, bathhouse water, particulate filters, hazardous waste and general waste. Materials at the pit tops of the three BSOP sites were sorted on sealed ground. Hazardous chemicals were stored in dedicated store buildings/areas. <ul style="list-style-type: none"> - the FY14 Environmental Improvement Plan identified an initiative/request for capital for a concrete pad to allow for stormwater diversion away from the separator pad had been secured. - the FY14 Environmental Improvement Plan identified an initiative for a pump-out of the Sewage Treatment Plant had been completed at West Cliff Colliery to check the integrity of the tank. • The FY15 Environmental Improvement Plan identified the following: <ul style="list-style-type: none"> - Appin West had applied for capital to seal the access road and ring road to the waste sorting area to reduce the potential for dust emissions from unsealed ground. • The auditors sighted the Appin West – Environmental Standards (ref: APNF0204) that included acceptable and unacceptable criteria for surface water dams, mine dams, oil storage, the hazardous waste areas, the diesel and waste oil tank, bunds, spill kits and the sewage treatment mutrator. • Coal wash is currently managed at the Stage 3 Emplacement Area at West Cliff Colliery under approved management plans. <p>Upon consideration of the above observations and despite a number of non-compliances in accordance with EPL criteria it was determined that ICHPL were either attempting to or were in the process of upgrading equipment and/or processes to meet the requirements of the EPL. On this basis ICHPL were considered to be generally complying with this Condition. This audit report identifies some areas where improvements could be made in site management with recommendations made throughout the document.</p>	Compliant

Appendix A - Bulli Seam Operations Project Independent Environmental Audit

Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
Environmental Protection Licence 2504	O2 O2.1	<p>Maintenance of plant and equipment</p> <p>All plant and equipment installed at the premises or used in connection with the licensed activity</p> <p>(a) must be maintained in a proper and efficient condition; and</p> <p>(b) operated in a proper and efficient manner.</p>	<p>Daily, weekly and monthly inspections of plant, equipment and site areas are conducted. An Appin Maintenance Schedule for Key Environmental Controls was available for review that listed work orders Weekly surface cleaning work orders from 03/09/2012 to 06/01/2014. A number of random work orders were cross refereed with the spread sheet and were found to correlate. Surface inspections were noted to address inspections for leaking machinery and equipment.</p> <p>Records including, but not limited to the following were reviewed:</p> <ul style="list-style-type: none"> • Calibration records: <ul style="list-style-type: none"> - BarnOwl@ calibration records dated March to November 2013. - Appine Mine Surface Water Sampling Field Sheet (14/11/2013 and 17/10/2013). • Monthly service of the Chlorine Dosing Plant and the Dam treatment system (30/05/2013 to 29/11/2013). • Appin Mine Maintenance Schedule for Key Environmental Controls spread sheet dated 03/09/2012 through to 06/01/2014. The spread sheet included, but was not limited to inspection and maintenance dates for the following plant and equipment: Periodic Elec Insp Sykes Pump PMPA006, Periodic Elec Insp Dyna Sand Pump PMPA08, 1W Mech Insp Water Flocculent PMPA009, Appin West Fans Emissions Mon. Repairs, Debris screen - AW Stormwater Filter Pit, drain to main dam and Broken spray and riser AW Bullyard Road. • Work Order Corrective Action 411293015 dated 10/09/2013 to clean the Appin East Envirocycle tank. • Job Instruction (ref: AM1218 Appin East Daily Environment Inspections) for week commencing 26/11/2013. Tasks included but were not limited to: recording of meter readings for LDPs, rotation of sprinklers at the treated effluent area, checking of Heggies pump, assessment of truck was and ensuring gutters are clear. • Work Order 411769463 dated 04/11/2013 for a production of a stand for the flocculant plant suction line. The Work Oder cross referenced with the Appin Maintenance Schedule for Key Environmental Controls spread sheet. • Work Order 411769466 dated 04/11/2013 to drain the main dam. The Work Oder cross referenced with the Appin Maintenance Schedule for Key Environmental Controls spread sheet. • Work Order 422659012 dated 24/11/2013 for the installation of a spray to reduce dust. • Work Order 422617852 dated 24/11/2013 for the installation of a spray to reduce dust. • Monthly Environmental Inspections Appin Mine and Infrastructure (ref: APNF0203) for September, October and November 2013. The form included, but was not limited to the following inspection areas, external infrastructure, water filtration plant/water tanks, dams and general surface infrastructure. • Appin West Weekly Environmental Inspection Report (ref: APNF0002) dated 28/11/2013, 25/11/2013, 19/11/2013, 15/11/2013, 11/11/2013 and 04/11/2013. Weekly Inspection reports were also reviewed for September and October 2013. Areas for inspection included, but were not limited to the water treatment plant and dams, diesel tank and bund and sewage treatment lagoons. • Appin West – Environmental Standards (ref: APNF0204) included acceptable and unacceptable criteria for surface water dams, mine dams, oil storage, the hazardous waste areas, the diesel and waste oil tank, bunds, spill kits and the sewage treatment matrator. • A training presentation for Appin underground/dirty water management associated with EPL 2504 was sighted . An attendance list (business Update December 2012) was sighted indicating the personnel that had attended the training. Also sighted environmental training awareness presentation, questionnaire (blank) and pass list dated December 2012. 	Compliant

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
			<ul style="list-style-type: none"> The FY14 Environmental Improvement Plan indicated the following initiatives: <ul style="list-style-type: none"> repair of bunding for solcenic tanks or a new solcenic loading point near West Cliff Coal Preparation Plant (status = repair planned). complete the work to increase the bunding of the bulk oil store (status = Purchase Order raised and work planned). complete spill capture bund for diesel bowser (part of Opex/Capex package). cover the current oil separator to remove the additional rain water and debris from surrounding trees (status = in process). <p>It was noted that the site has not undertaken a systematic assessment of its compliance against the requirements of AS1940 - The storage and handling of flammable and combustible liquids. A full assessment of the Standard was not within the scope of this audit and one was not undertaken by URS. A full assessment of this condition as it relates to all operations at BSOP was not conducted. The extent of the assessment was limited to what could be achieved on the days of the site inspections.</p> <p>Based on the above, BSOP are considered to be generally complaint with this condition.</p>	
Environmental Protection Licence 2504	O3 O3.1	Dust The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.	<p>The management of dust and air quality is covered in Chapter 11 of the main report.</p> <p>The following two dust complaints were received between 31/10/2011 to 27/12/2013 concerning Appin Mine:</p> <ul style="list-style-type: none"> Complainant raised concerns about coal dust from Appin East Pit Top clogging gutters on their property. ICHPL organised an inspection of the Appin site and reviewed dust data at the time of the complaint (1SAP ref: 403035645). The investigation report identified that dust levels were below approved levels. Received 09/07/2013. A resident complained that dust was covering their property adjacent to Appin East. BSOP personnel investigated the property and discussed the concerns of the resident (1SAP ref: ICWEV12070029). Received 17/07/2012. <p>During the audit, the nomination and implementation of a range of air quality management measures were observed in a manner consistent with the minimisation of dust emissions from the premises covered by the EPL. URS sighted a range of air quality management measures that are implemented by ICHPL under the air quality and greenhouse gas management plan for the BSOP.</p> <p>URS sighted Appin Mine and West Cliff Colliery PRP 17 - Particulate Matter Control Best Practice Pollution Reduction Program (PAEHolmes, 2012) that contains a determination of best practice air quality management measures specific to the ICHPL's operations at Appin East and West Cliff, and in accordance with PRP17 of the EPL.</p> <p>Given that dust levels were generally within approved levels, the limited number of dust complaints received during the audit period and based on observations during the audit, ICHPL were considered to be generally compliant with this condition.</p> <p>An EPA Notice of Variation to Licence No.2504 (Notice No. 1515381, File No. LIC06/433, no date) noted that dust monitoring points on the EPL will be updated at the next licence variation to reflect the network contained in the Air Management Plan.</p>	Complaint
Environmental Protection Licence 2504	O4 O4.1	Effluent application to land Effluent application must not occur in a manner that causes surface runoff.	<p>No evidence of surface runoff was observed by the auditors during the site inspections.</p> <p>No exceedances to EPL 2504 were noted in the Annual Returns for the audit period concerning Condition O4.1.</p>	Compliant
Environmental Protection Licence 2504	O4.2	Spray from effluent application must not drift beyond the boundary of the premises.	<p>The spray systems were not operational during the audit.</p> <p>There was no evidence of spray from effluent application was observed to drift beyond the boundary of the premises. No complaints concerning spray drift beyond the boundary of the premises were noted during the audit period.</p>	Compliant

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
Environmental Protection Licence 2504	O4.3	The quantity of effluent/solids applied to the utilisation area must not exceed the capacity of the area to effectively utilise the effluent/solids.	There was no evidence of standing effluent on the surface of the utilisation areas; however, the systems were not in operation during the audit. The auditors sighted the irrigation areas at Appin and West Cliff Colliery.	Compliant
Environmental Protection Licence 2504		For the purpose of this condition, 'effectively utilise' include the use of the effluent/solids for pasture or crop production, as well as the ability of the soil to absorb the nutrient, salt, hydraulic load and organic material.	Noted	Noted
Environmental Protection Licence 2504	5 M1 M1.1	MONITORING AND RECORDING CONDITIONS Monitoring records The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.	ICHPL has implemented a digital recording system that allows data records to be published online in 1SAP. Prior to this system monitoring was reported by contractors via email. The current system allows information to be reviewed and assessed. The records are in one location and set out in accessible format. The previous system was viewed and noted to legible and is available as read only on request. 14 Day monitoring data is available on the ICHPL website. The latest round of monitoring data is added to the spread sheet providing an historical record for each LDP. Sighted continuous daily monitoring for 04/01/2014 from 4:13:22 am to 11:49:22 pm. Environmental reports containing environmental monitoring data prepared by external consultants were available for review. Records of Certificates of Analysis and Chains of Custody were available for review.	Compliant
Environmental Protection Licence 2504	M1.2	Monitoring and Recording Conditions All records to be kept by this licence must be: (a) in a legible form, or in a form that can readily be reduced to legible form; (b) kept for at least 4 years after the monitoring or event to which they relate took place; and (c) produced in a legible form to any authorised officer of the EPA who asks to see them.	Monitoring results are compiled and upload to 1SAP. Monitoring results for monthly monitoring data were sighted and available for the audit period. It is considered that the monitoring records are maintained in compliance with the requirements of this condition and may be made available upon requests of an authorised officer. ICHPL management stated that the EPA has not requested any records during the audit period. Samples (water and dust) are taken by an approved ICHPL contractor (EcoEngineers Pty Ltd) at the required sampling points. The contractor completes a Chain of Custody (COC) form and samples are sent to a laboratory (ALS). The laboratory returns the COC to the contractor and ICHPL to confirm that the samples have been received. Chain of Analysis (COA) forms containing sample results are sent as PDF document to ICHPL. Results are also sent to the Environmental Coordinators at each site. Results are transcribed manually into 14 Day monitoring data spreadsheets by the HSEC Analyst. The 14 Day monitoring data spreadsheet is reviewed by the Reporting Manager to confirm data is accurate. Non-compliances are raised with the Environmental Coordinator at the site by the HSEC Analyst as the data is copied to the 14 Day monitoring data spreadsheet. Any exceedances are recorded into 1SAP as a non-compliance. 1SAP then triggers 5 Whys Investigation process. ICHPL management reported that an automatic system to copy across results data received from the laboratory is in the process of being implemented. The aim of the system is to reduce the potential for human error as data is copied from one media to another. The system was not operational during the audit. Internal noise monitoring data given to HSEC Analyst every quarter for uploading to the 14 Day monitoring data spreadsheet. Noise data undergoes the same review process as water and dust data. The Environmental Coordinator for each site conducts noise monitoring and would be aware of a noise exceedance before the HSEC Analyst. URS sighted DOCUMENTUM - the ICHPL document management system, on 28/02/2014. The environment folder was observed to be divided into specific environmental topics (e.g. air, noise, odour etc.). Monitoring records were available in DOCUMENTUM for the financial year 2011 to 2012. It is noted that environmental monitoring records were previously stored by financial year. From 2013, environmental records have been stored by calendar year. URS sighted an email dated 18/01/2013 from the laboratory to ICHPL. The email contained the COC, COA and quality control certificates. Emails and any attachments from the laboratory are stored into DOCUMENTUM. Monitoring records for the financial year 2011 to 2012, 14 Day Monitoring Data spread sheets, COC dated 12/06/2013, COA ES1313213 dated 18/06/2013, COA ES1313213 dated 18/06/2013, COC 11/07/2013 and COA ES1315817 dated 19/07/2013) were legible and available if required. Field Sheets are not stored in the same location as analytical results.	Compliant

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
Environmental Protection Licence 2504	M1.3	<p>Monitoring and Recording Conditions</p> <p>The following records must be kept in respect of any samples required to be collected for the purposes of this licence:</p> <p>(a) the date(s) on which the sample was taken;</p> <p>(b) the time(s) at which the sample was collected;</p> <p>(c) the point at which the sample was taken; and</p> <p>(d) the name of the person who collected the sample.</p>	<p>The electronic system for recorded monitoring data records the location and date of samples.</p> <p>Chain of Custody forms including, but not limited to, samples from LDP 19 and LDP 20, LDP 22 dated 12/06/2013 were sighted. The Chain of Custody forms included the name, date, time and location of the sample. Certificates of Analysis were sighted dated 19/07/2013 for LDP 10 and 18/06/2013 for LDP 22 and 23.</p> <p>Sighted continuous daily monitoring for 04/01/2014 from 4:13:22 am to 11:49:22 pm.</p> <p>It is noted that the time of samples taken was only included in the publicly available 14 Day monitoring data spread sheet for noise monitoring at Appin East, West and Vent Shafts 2 and 3 and not at other locations.</p> <p>Samples (water and dust) are taken by an approved ICHPL contractor (EcoEngineers Pty Ltd) at the required sampling points. The contractor completes a Chain of Custody (COC) form and samples are sent to a laboratory (ALS). The laboratory returns the COC the contractor and ICHPL to confirm that the samples have been received. Chain of Analysis (COA) forms containing sample results are sent as PDF document to ICHPL.</p> <p>URS sighted the location of analytical documents in DOCUMENTUM (sighted document location dated March 2013 for West Cliff Colliery surface water sampling results). Hard copies of Field Sheets are kept at each site and scanned and uploaded to DOCUMENTUM by the Environmental Coordinators. Field Sheets were not observed during the audit.</p> <p>This Condition is considered compliant; however, not all documents contained the information required by this condition as some information had not been completed. For example URS sighted a spreadsheet for LDP 11 that had been prepared by the Environmental Coordinator for West Cliff Colliery that included the date, time, sample point but not the name of the sampler. The time of collection was not included on the COC for LDP 11, 12, 13, 14 and 15 dated 07/03/2012. COCs included the required information expect the time the sample was collected.</p>	<p>Compliant</p> <p>Recommendation</p> <p>It is recommended that the time of the sample be included on the 14 Day monitoring data spread sheet for all monitoring locations.</p> <p>It is recommended that the contractor include the date(s) on which the sample was taken; the time(s) at which the sample was collected; the point at which the sample was taken; and the name of the person who collected the sample on all COCs. This information should also be included Field the Sheets.</p>
Environmental Protection Licence 2504	M2 M2.1	<p>Requirement to monitor concentration of pollutants discharged</p> <p>For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:</p>	<p>Compliance is assessed as part of condition M2.3.</p> <p>The ICHPL contractor uses a NATA accredited laboratory (ALS) to analyse samples. Sampling techniques of contractors are periodically audited by ICHPL. Sighted audit record dated 23/01/2014 for LDP 4 (ref: Audit Form for Illawarra Coal Surface Water Monitoring). It was noted that the audit form did not include a question(s) concerning sampling methods as specified in the EPL e.g. AS/NZS 3580.10.1:2003.</p>	<p>Compliant</p> <p>Recommendation</p> <p>Update the Illawarra Coal Surface Water Monitoring Audit Form to include an assessment of the sampling method(s) as required by EPL 2504.</p>
Environmental Protection Licence 2504	M2.2	<p>Air Monitoring Requirements</p> <p>Point 14, 15, 16 and 17</p>	<p>The sampling method specified in EPL 2504 for air monitoring locations is Australian Standard (AS) 3580.10.1-2003. The auditors sighted a services agreement between ICHPL and the approved contractor engaged to sample at points 14, 15, 16 and 17 (BHP Billiton and MBGS Services Agreement 2013). The Agreement stated that services would be provided in accordance with relevant Standards, including AS 3580.10.1-2003.</p> <p>The ICHPL contractor confirmed in an email to the ICHPL Specialist Land and Biodiversity (07/03/2014, 3:29pm) that their staff are trained in quality control measures concerning data checking and the collection of blank and replicate samples that are collected at the prescribed rates as per the required Standards and NATA guidelines (required by the NATA accredited laboratory).</p>	<p>Compliant</p>
Environmental Protection Licence 2504	M2.3	<p>Water and/ or Land Monitoring Requirements</p> <p>Point 4, 10, 11, 12, 18, 19, 20, 22, 23, 24</p>	<p>The recorded and published monitoring data provides details on all of the required pollutants.</p> <p>The sampling method for LDPs 4, 10, 11, 12, 18, 19, 20, 22, 23 and 24 as specified in EPL 2504 are 'grab samples' or 'in-line instrumentation'. Samples are taken by an approved ICHPL contractor (EcoEngineers Pty Ltd) at the required sampling points. The contractor completes a Chain of Custody (COC) form and samples are sent to a laboratory (ALS). The laboratory returns the COC the contractor and ICHPL to confirm that the samples have been received. Chain of Analysis (COA) forms containing sample results are sent as PDF document to ICHPL. Sampling techniques of contractors are periodically audited by ICHPL. Sighted audit record dated 23/01/2014 for LDP 4 (ref: Audit Form for Illawarra Coal Surface Water Monitoring).</p>	<p>Compliant</p>

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
Environmental Protection Licence 2504	M2.4	The licensee must submit a written protocol for continuous monitoring of pH, turbidity and conductivity to the EPA by 30 April 2013. The continuous monitoring protocol must address calibration of field water-quality monitors, monitor operation and maintenance, as well as data verification and reporting. The continuous monitoring system must be implemented by 30 May 2013.	An EPA Notice of Variation to Licence No.2504 (Notice No. 1515381, File No. LIC06/433, no date) noted on 30 April 2013 ICHPL submitted a written protocol for continuous monitoring of pH, turbidity and conductivity at LDP 10. The notice continued that on 14 June 2013, the EPA visited West Cliff Colliery and noted that the continuous monitoring system was operational, appropriately calibrated and the data was electronically available for inspection by environment staff and EPA officers.	Compliant

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
Environmental Protection Licence 2504	M2.5	The licensee must carry out acute and chronic (sub-lethal) toxicity testing of the discharges from discharge point 10 on the following species using the test or tests indicated for each species.	<p>Testing results are publicly available on the ICHL website in the 14 Day monitoring data spreadsheet. When comparing the requirements of EPL with the initial test results it was found that some alternate tests were being conducted. An example is the Inhibitory Concentration (IC) being provided when the Effective Concentration (EC) is requested. ICHPL reported that the issue has been discussed with both the Laboratory and the EPA as to whether the existing results comply with the licence requirements. A meeting was to be organised between ICHPL, EPA and the laboratory to discuss and determine what, if any, changes need to be made in order to comply with the condition. If the EPA determines the current practice to be non-compliant this will be reported by ICHPL in the 2014/15 Annual Return. On this basis URS consider this condition to be indeterminate. Re-issued test reports were sighted for August 2013 and January 2014 that showed IC25 values instead of IC15 values.</p> <p>The ICHPL contractor takes samples from LDP 010 and sends them under COC to Ecotox Services Australasia Pty Ltd (Ecotox). Results are sent from Ecotox to the ICHPL Land and Biodiversity Specialist and the HSEC Analyst who enters the data into the 14 Day monitoring data spreadsheet. There were no exceedances against the requirements of M2.5 reported by ICHPL. Results are cross checked with original data and what has previously been entered into the 14 Day monitoring data spreadsheet.</p> <p>An email from the ICHPL Manager, Environment (PRP19 - Review of Lab Results vs PRP requirements, 18/02/2014, 09:37hrs) requested clarification concerning the units of measurement associated with Condition M2.5. The clarifications to the questions raised by the ICHPL Manager, Environment have been summarised below (PRP19 - Review of Lab Results vs PRP requirements, 18/02/2014, 10:13hrs):</p> <ul style="list-style-type: none"> • Ceriodaphnia dubia (Acute Test) <ul style="list-style-type: none"> - the ICHPL Manager, Environment noted that Effective Concentration (EC) and Inhibiting Concentration (IC) is dependent on the statistical analyses run. The laboratory noted that for the non-proportional data, i.e. duckweed and algae, the statistical output will always be an IC value. The laboratory is able to report the EC or IC25 depending on what is requested on the COC. • Ceriodaphnia dubia (7-day Reproduction Impairment Test) <ul style="list-style-type: none"> - the ICHPL Manager, Environment noted that Condition M2.3 requires ICHPL to report on LC50 (parental mortality); however, this has not been included in the lab reports. The laboratory noted that it does not report LC values as the endpoint is technically an immobilisation of the adults therefore only EC or an IC50 are reported and that this was an acceptable reported endpoint. The laboratory confirmed that it can report EC or IC25; however, this needs to be clearly stipulated on the COC or in other correspondence. • Paratya australiensis (10-day acute test) <ul style="list-style-type: none"> - the ICHPL Manager, Environment noted that EPL 2504 requires ICHPL to report Lethal Concentration (LC) LC10, LC25 and LC50; however, laboratory reports (not sighted by URS) reported only ECs or ICs. The laboratory noted that LC values are not largely reported in Australia and that immobilisation is reported due to their NATA accredited endpoint (EC or an IC50). • Larval Melanotaenia (4-day acute test) <ul style="list-style-type: none"> - the ICHPL Manager, Environment noted that the June 2013 test was conducted for 72 hrs. The laboratory reported that there was a poor survival of fish larval in the 96 hr tests and that ICHPL was advised of this who requested that the laboratory report the results for the 72 hrs available. No evidence concerning this communication was observed by URS. - the ICHPL Manager, Environment noted that for the August results IC10 and IC25 were reported instead of the required EC10 and EC25. The laboratory noted that for the non-proportional data, i.e. duckweed and algae, the statistical output will always be an IC value due to the statistical analyses that is applied to the data. 	<p>Indeterminate</p> <p>Recommendation</p> <p>Ensure the required units of measurement (i.e. EC or IC) are included on the Chain of Custody or another form of communication so that the laboratory is aware of the required endpoint.</p>

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
			<p><i>Continued:</i></p> <ul style="list-style-type: none"> Lemna disperma (7-day growth inhibition test) <ul style="list-style-type: none"> the ICHPL Manager, Environment noted that for the August 2013 and January 2014 results, the laboratory noted that this is what had been requested at the time and that they can report the EC or IC25; however, this will need to be requested on the COC or in correspondence as it is not an endpoint normally reported. Pseudokirchneriella subcapitata (3-day growth inhibition test) <ul style="list-style-type: none"> the ICHPL Manager, Environment noted that for the August 2013 and January 2014 results. The laboratory noted that this is what had been requested at the time and that they can report the EC or IC25; however, this will need to be requested on the COC or in correspondence as it is not an endpoint normally reported. 	
Environmental Protection Licence 2504	M3 M3.1	<p>Testing methods - concentration limits</p> <p>Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:</p> <p>(a) any methodology required by or under the Act to be used for the testing of the concentration of the pollutant; or</p> <p>(b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or</p> <p>(c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.</p>	<p>Ambient dust monitoring, using depositional dust gauges is conducted in accordance with the requirements of:</p> <ul style="list-style-type: none"> Approved Method AM-19 (AS/NZS 3580.10.1:2003). AS-2923 – Guide for measurement of horizontal wind for air quality applications (1987); Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales (OEH, 2005); AS/NZS 3580.10.1:2003 - Methods for Sampling and Analysis of Ambient Air – Determination of Particulate Matter – Deposited Matter – Gravimetric Method; and NSW Industrial Noise Policy (1999) (INP) (EPA). <p>a) Not triggered by the Act b) Condition M2.2 of EPL 2504 requires ash, combustible solids and insoluble solids to be sampled in accordance with sampling method AS 3580.10.1-2003. AS 3580.10.1-2003 is the approved method corresponding with method no. AM-19, according to the document <i>Approved Methods for the Sampling and Analysis of Air Pollutants in NSW</i> (EPA, 1999). c) Refer to "b)" above.</p>	Compliant
Environmental Protection Licence 2504	M3.2	<p>Testing methods - concentration limits</p> <p>Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.</p>	<p>ICHPL management reported that no other methods approved by EPA for the monitoring of pollutant concentrations discharged to waters or a utilisation area apply to the site.</p> <p>Results received from the approved NATA accredited analytical contractor refer to the methodologies used. Sighted Certificates of Analysis (CoA) dated 19/07/2013 that referenced the procedure(s) used, for example 'NEPM 2013 Schedule B(3) and ALS QCS3 requirement'. CoA dated 18/06/2013 referenced 'NEPM 1999 Schedule B(3) and ALS QCS3 requirement'.</p>	Compliant
Environmental Protection Licence 2504	M4 M4.1	<p>Recording of pollution complaints</p> <p>The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.</p>	<p>A BSOP community complaints report is available online (http://www.bhpbilliton.com/home/aboutus/regulatory/Pages/default.aspx). The October 2013 community complaints report (available online) listed complaints from May 2013 through to October 2013.</p> <p>The 2011/2012 AEMR identified the following number of complaints: Air = 2 / Water = 1 / Noise = 1.</p> <p>The 2012/2013 AEMR identified the following number of complaints: Air = 1.</p>	Compliant

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
Environmental Protection Licence 2504	M4.2	<p>Recording of pollution complaints</p> <p>The record must include details of the following:</p> <ul style="list-style-type: none"> (a) the date and time of the complaint; (b) the method by which the complaint was made; (c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; (d) the nature of the complaint; (e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and (f) if no action was taken by the licensee, the reasons why no action was taken. 	<p>A BSOP community complaints reports is available online (http://www.bhpbilliton.com/home/aboutus/regulatory/Pages/default.aspx). The October 2013 community complaints report (available online) listed complaints from May 2013 through to October 2013. The report was observed to include the month of the complaint, the nature of the complaint and what actions were taken to follow up the complaint. Complainant's personal details are not provided in the public community complaints report.</p> <p>The Stakeholder Database is used as the initial data entry point for BSOP community issues. The Stakeholder Database, is used to store details concerning complaints, including the date and time of the complaint, the complainant's name, contact phone number, who received the complaint, the initial response to the complainant, any necessary further actions and feedback from the complainant. Documents including incident reports can be attached to the Stakeholder Database. 1SAP provides a unique reference numbers so that complaints can be identified between the two systems. The Stakeholder Database and 1SAP were observed during the audit.</p> <p>Complaints are reported daily to the Health Safety Environment and the External Affairs teams and weekly to site management teams. A summary of complaints are reviewed by the ICHPL Senior Leadership Team and provided in the West Cliff Mine and Appin Mine (BSOP) Annual Environmental Management Report.</p>	Compliant
Environmental Protection Licence 2504	M4.3	<p>Recording of pollution complaints</p> <p>The record of a complaint must be kept for at least 4 years after the complaint was made.</p>	<p>The BSOP complaints report reviewed provided data from October 2011 through to December 2013. Four years of complaints have yet to be accumulated.</p> <p>Complaints are documented in the Community Stakeholder database and 1SAP in accordance with the ICHPL Event Incident Management procedure. 1SAP was implemented in September 2012. Prior to the implementation of 1SAP ICHPL used a system called FirstPriority to manage complaints. The FirstPriority system was locked at the time of the audit and was a read only database.</p> <ul style="list-style-type: none"> • The 2011/2012 Annual Return notes the following pollution complaints: <ul style="list-style-type: none"> - Air = 2 / Water = 1 / Noise / 1 • The 2012/2013 Annual Return notes one air pollution complaint. 	Compliant
Environmental Protection Licence 2504	M4.4	<p>Recording of pollution complaints</p> <p>The record must be produced to any authorised officer of the EPA who asks to see them.</p>	ICHPL management reported that this requirement has not been triggered.	Not Applicable (Not triggered)
Environmental Protection Licence 2504	M5 M5.1	<p>Telephone Complaints Line</p> <p>The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.</p>	<p>Illawarra Coal operates an Environment and Community Enquiry Line 1800 102 210.</p> <p>The telephone number is available in newsletters and is shown on signage around the BSOP and is posted at the Appin Community Office. The location of the telephone number on the BSOP website was not found.</p> <p>Fridge magnets are also provided to residents which show the call line number. It is a free call which is answered by call centre personnel that gets directed to Property and Landholder Relations personnel via SMS and email. An email address has also been set up ICEnquiries@bhpbilliton.com that allows residents to send details of complaints via email.</p>	<p>Compliant</p> <p>Recommendation</p> <p>Ensure the BSOP Telephone Complaints Line is clearly available on the ICHPL/BSOP website.</p>
Environmental Protection Licence 2504	M5.2	<p>Telephone Complaints Line</p> <p>The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.</p>	<p>Illawarra Coal operates an Environment and Community Enquiry Line 1800 102 210.</p> <p>The telephone number is available in newsletters and is shown on signage around the BSOP and is posted at the Appin Community Office. Fridge magnets are also provided to residents which show the call line number.</p>	Compliant

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
Environmental Protection Licence 2504	M6 M6.1	Requirement to monitor volume or mass For each discharge point or utilisation area specified below, the licensee must monitor: (a) the volume of liquids discharged to water or applied to the area; (b) the mass of solids applied to the area; (c) the mass of pollutants emitted to the air; at the frequency and using the method and units of measure, specified	Daily volumes of flow are recorded and reported with other monitoring results. Sighted electronic visual showing the daily discharge (L) and discharge flow (L/s) for Brennan's Creek Dam dated 10/02/2014. The information also included the previous seven days daily discharge rate (ML). URS observed use of the Watersavers® website that provided volume and mass data for LDPs at Appin Mine and West Cliff Colliery. The Watersavers® website provides volume and mass information for LDPs as specified in the EPL. Data viewed included the period 28/01/2014 to 28/02/1014. Data from the website is downloaded by HSEC Analyst and uploaded to 14 Day monitoring data spreadsheet. Any exceedances against the criteria are noted during this download process. Environmental Coordinators at each site are also able to login to the Watersavers® website at any time and can identify if there are any exceedances to the criteria prior to the monthly download by the HSEC Analyst. Sighted spreadsheet for LDP 22 01/02/2012 to 31/01/2014. Exceedance noted due to high rainfall events. Sighted FirstPriority reports for exceedances noted on 29/02/2012, 03/03/2013 and 08/03/2012. Event # APENV12030022 Dust deposition monitoring is conducted on a monthly basis. URS sighted dust deposition 14 Day monitoring data from February 2012 to January 2014. URS also sighted filing on DOCUMENTUM for Air quality/Processing and Logistics for the period 2012 to 2014 sighted. Records were sighted for January 2104 as well as records from 21/12/2011 to 23/12/2012. The Annual Return for 2012/2013 identifies three non-compliances of volume exceedances at LDP 22 (non-compliance also noted under Condition L3.1) as the system was in the process of being upgraded. During heavy rainfall treated effluent was sprayed onto the irrigation area over three days whilst the flow limit switch was not operational. ICHPL was observed to be carrying out monitoring as required by the condition and hence were considered to be compliant with the condition.	Compliant Recommendation Ensure back-up systems or processes are available to monitor discharge points where upgrade or maintenance works are being conducted.
Environmental Protection Licence 2504	M6.2	The monitoring results collected at Point 4 in compliance with Condition M6.1 can be used to determine compliance with the volume limit specified in Condition L4.1 for discharge from Point 3.	Noted	Noted
Environmental Protection Licence 2504	6 R1 R1.1	REPORTING CONDITIONS Annual return documents The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: (a) a Statement of Compliance; and (b) a Monitoring and Complaints Summary. At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.	Annual Return documents have been prepared and submitted by ICHPL as required by this Condition R1.1. Sighted signed Annual Returns 01-Feb-2012 to 31-January 2013 that had been received by the EPA on 28/03/2013. Sighted signed Annual Returns 01-Feb-2011 to 31-January 2012 that had been received by the EPA on 30/03/2012. Both Annual Returns contained a Statement of Compliance and Monitoring and Complaints Summary.	Compliant.
Environmental Protection Licence 2504	R1.2	Annual return documents An Annual Return must be prepared in respect of each reporting period, except as provided below.	Annual Return documents are completed for the reporting period (annually to January of the current year). Sighted Annual Returns dated for the periods 2011/2012 and 2012/2013.	Compliant.
Environmental Protection Licence 2504	R1.3	Annual return documents Where this licence is transferred from the licensee to a new licensee: (a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and (b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.	Noted. This requirement has not been triggered.	Noted

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
Environmental Protection Licence 2504	R1.4	<p>Annual return documents</p> <p>Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:</p> <p>(a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or</p> <p>(b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.</p>	<p>Noted.</p> <p>This requirement has not been triggered.</p>	Noted
Environmental Protection Licence 2504	R1.5	<p>Annual return documents</p> <p>The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').</p>	<p>Noted.</p> <p>This requirement has not been triggered.</p>	Noted
Environmental Protection Licence 2504	R1.6	<p>Annual return documents</p> <p>The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.</p>	<p>Sighted signed Annual Returns 01-Feb-2012 to 31-January 2013 that had been received by the EPA on 28/03/2013. Sighted signed Annual Returns 01-Feb-2011 to 31-January 2012 that had been received by the EPA on 30/03/2012.</p>	Compliant
Environmental Protection Licence 2504	R1.7	<p>Annual return documents</p> <p>Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:</p> <p>(a) the licence holder; or</p> <p>(b) by a person approved in writing by the EPA to sign on behalf of the licence holder.</p>	<p>The Annual Return for 2011/2012 had been completed and signed by two Directors of the company on 27/03/2012. The Annual Return 2012/2013 had been completed and signed by two Detectors on 27/03/2013.</p>	Compliant
Environmental Protection Licence 2504	R1.8	<p>Annual return documents</p> <p>A person who has been given written approval to certify a certificate of compliance under a licence issued under the Pollution Control Act 1970 is taken to be approved for the purpose of this condition until the date of first review of this licence.</p>	<p>Noted.</p>	Noted

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
Environmental Protection Licence 2504	R2 R2.1	Notification of environmental harm Notifications must be made by telephoning the Environment Line service on 131 555.	<p>ICHPL reported that incidents are reported to the EPA Environmental Line when there is potential for environmental harm; however no incidents resulting in environmental harm were reported to the EPA during the audit period.</p> <p>ICHPL reported that the definition of environmental harm as detailed in Section 147 of the POEO Act is used to determine if the EPA should be notified. ICHPL reported that marginal exceedances to EPL criteria are reported in the 14 Day monitoring data and the Annual Return. Ongoing exceedances to EPL criteria were reported by ICHPL to be discussed with the EPA at scheduled meetings. Sighted evidence of CCC meeting held on 30/07/2013 that was attended by the NSW EPA, Manager for the Illawarra region. Item number eight of the meeting included comments from the EPA Manager concerning EPL 2504 and future variation changes to it.</p> <p>The roles and responsibilities for reporting of incidents not considered to meet the requirements of Section 147 of the POEO Act were not clear. It is understood that the Site Environmental Coordinator liaises with the IC Manager Environment to decide if an incident has the potential to cause environmental harm; however, this procedure was not documented in any of the management plans reviewed. Incidents such as EPL licence criteria exceedances were not formally reported to the EPA via the Environmental Line service; however, were logged into 1SAP and reported in the Annual Returns.</p> <p>Sighted Timeline and 5 5Whys Investigation into an Incident Investigation into BOD Non Compliance of AE Envirocycle September 2013 (1SAP ref: 403394497)</p> <p>The Pollution Incident response Plan (available on the BSOP website) only provided the roles and responsibilities for activating the PIRMP and did not comment on whether EPL exceedances should be reported.</p> <p>Given no incidents occurred in the audit period that met the definition of environmental harm as defined in Section 147 of the POEO Act this condition was found to be compliant.</p>	Not Applicable (Not triggered) Recommendation Document the roles, responsibilities and process for deciding if an incident has the potential to cause environmental harm
Environmental Protection Licence 2504	R2.2	Notification of environmental harm The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.	<p>ICHPL reported that no written details have been provided to the EPA following a call to the Environment Line service.</p> <p>No written details were reported to have been requested by the EPA.</p>	Not Applicable (Not triggered)
Environmental Protection Licence 2504	R3 R3.1	Written report Where an authorised officer of the EPA suspects on reasonable grounds that: (a) where this licence applies to premises, an event has occurred at the premises; or (b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, (c) and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.	This requirement has not been triggered.	Not Applicable (Not triggered)
Environmental Protection Licence 2504	R3.2	Written report The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.		Not Applicable (Not triggered)

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
Environmental Protection Licence 2504	R3.3	<p>Written report</p> <p>The request may require a report which includes any or all of the following information:</p> <ul style="list-style-type: none"> (a) the cause, time and duration of the event; (b) the type, volume and concentration of every pollutant discharged as a result of the event; (c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event; (d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort; (e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants; (f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and (g) any other relevant matters. 	This requirement has not been triggered.	Not Applicable (Not triggered)
Environmental Protection Licence 2504	R3.4	The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.	This requirement has not been triggered.	Not Applicable (Not triggered)
Environmental Protection Licence 2504	7 G1 G1.1	<p>GENERAL CONDITIONS</p> <p>Copy of licence kept at the premises or plant</p> <p>A copy of this licence must be kept at the premises to which the licence applies.</p>	A copy of the licence was available at Appin East Mine, Appin West Mine and West Cliff Colliery and through iPick.	Compliant
Environmental Protection Licence 2504	G1.2	<p>General Conditions</p> <p>The licence must be produced to any authorised officer of the EPA who asks to see it.</p>	Copies of the licence were observed to be available on site and able to be provided to an authorised officer of the EPA upon request.	Compliant
Environmental Protection Licence 2504	G1.3	<p>General Conditions</p> <p>The licence must be available for inspection by any employee or agent of the licensee working at the premises.</p>	A copy of the licence was available within the site office.	Compliant
Environmental Protection Licence 2504	G2 G2.1	<p>Signage</p> <p>Each monitoring and discharge point must be clearly marked by a sign that indicates the EPA point identification number.</p>	<p>Signage was observed at monitoring locations for the EPL.</p> <p>Signage for LDP 30 was formerly located on a tree that had been cut down and was not evident at the time of the site visit.</p> <p>Signage for a former LDP (LDP 2) at the redundant North Cliff Mine was in place at the time of the site inspection on 28 February 2014.</p>	<p>Compliant</p> <p>Recommendation</p> <p>Reinstate the signage for LDP 20.</p> <p>Remove the former LDP 2 signage at redundant North Cliff Mine.</p>
Environmental Protection Licence 2504	G3 G3.1	<p>Other general conditions</p> <p>Pollution Reduction Programs (PRPs) – Completed (West Cliff and North Cliff Collieries)</p>	Not Applicable – completed prior to the audit period.	
Environmental Protection Licence 2504	G3.2	Pollution Reduction Programs (PRPs) - Completed (Appin Colliery)	Not Applicable – completed prior to the audit period.	
Environmental Protection Licence 2504	G3.3	Pollution Reduction Programs (PRPs) - Completed (Appin West Colliery)	Not Applicable – completed prior to the audit period.	

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
Environmental Protection Licence 2504	8 U1 U1.1	<p>POLLUTION STUDIES AND REDUCTION PROGRAMS</p> <p>PRP18 - Modification to Brennans Creek Dam off-take</p> <p>The aim of this PRP is to improve the overall quality of, and reduce the ecological risks due to, discharges from Brennans Creek Dam (BCD) via discharge point 10 by changing the configuration of discharge point 10 to a floating off take.</p> <p>Prior to 2004 discharges from BCD were taken from the surface waters of BCD via a spillway. The discharge waters using this configuration did not always comply with licence pH limits of 6.5-9.0.</p> <p>'PRP 7 Brennans Creek Discharge Trial' was completed in March 2006 and trialled discharging 'bottom' waters from BCD. This trial was aimed at reducing the number of uncontrolled releases from BCD via the spillway, and optimizing the pH and salinity in controlled discharges via discharge point 10.</p> <p>An outcome of this PRP was to alter the BCD discharge configuration from the spillway, to a pipe discharging from the bottom of BCD via discharge point 10.</p> <p>The pH licence compliance achieved by changing the BCD off take configuration are temporary, as pH in the discharge waters increases downstream of discharge point 10 due to carbon dioxide out gassing.</p> <p>On balance, and considering the science and investigations undertaken into BCD, the EPA agrees with the licensee that there will be an overall reduction in ecological risks by changing the configuration of the BCD off take to a floating off take. In particular, ammonia and salinity in the discharge waters will be reduced.</p> <p>Coupled with this change, the EPA will temporarily change the pH limit for discharge point 10 to 6.5-9.3. In making this change the EPA notes:</p> <ul style="list-style-type: none"> This change is temporary until completion of 'PRP 19 Water Quality Discharge Improvement to Upper Georges River via discharge point 10,' and The change to pH limits will not in effect represent any increase in environmental impact, due to carbon dioxide out gassing in the discharge waters that causes the pH to increase downstream of discharge point 10, compared to the pH measured at discharge point 10. <p>The licensee must change the configuration of discharge point 10 from a pipe discharging from the bottom of BCD to a floating off take, so that water discharged from that discharge point is taken from the surface water of BCD and not the 'bottom' waters.</p> <p>DUE DATE: 30 JUNE 2013</p>	<p>During the site visit the surface offtake was seen in operation. The surface offtake was inspected by the EPA on 25 July 2013. The EPA now considers this program complete. An EPA Notice of Variation to Licence No.2504 (Notice No. 1515381, File No. LIC06/433, no date) noted that on 30 June 2013 the 'EPA received written notification that the licensee had completed PRP 18 – Modification to Brennan's Creek Off-take'. Operation of the off-take commenced on 28 June 2013. The EPA inspected the off-take on 25 July 2013 and confirmed its satisfactory operation and have marked PRP 18 as having been completed on the next variation to EPL 2504.</p>	Compliant

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
Environmental Protection Licence 2504	U2 U2.1	<p>PRP19 - Water Quality Discharge Improvements to Upper Georges River via discharge point 10</p> <p>The aim of this PRP is to ensure that measures are taken to protect the environment from harm and to protect or restore the environmental values of the receiving waters affected by the discharge of waters from BCD to the Georges River via discharge point 10.</p> <p>The licensee must carry out a program of works to reduce the level of contaminants being released to the Georges River via discharge point 10. This program may include any practical measures such as avoiding the discharge, the installation of a water treatment plant, or a combination of a water treatment plant and other discharge improvement options. Any inter-basin transfers must be subject to environmental assessment and approvals.</p> <p>Background</p> <p>A number of field and laboratory based assessments have been carried out to investigate the ecological health of receiving waters in Brennans Creek and the Upper Georges River. These have included 'PRP 6 –Georges River Ecological Assessment', 'PRP 9 - Georges River Ecological Assessment (Continuation)', 'PRP 10 – Reduction in Salinity from Brennans Creek Dam', and 'PRP 11 – Brennans Creek Discharge Toxicity Study (West Cliff Mine)'</p> <p>Studies by BHP demonstrate that the Georges River downstream of the BCD confluence has impaired macroinvertebrate fauna relative to control sites. Between 20%-60% loss of macroinvertebrate biodiversity were recorded. The Georges River Combined Councils' Committee's 'Community River Health Monitoring Program' has identified deteriorated water quality and macroinvertebrate biodiversity downstream of BCD. EPA and ACARP ecotoxicity testing to a range of species and plants has demonstrated:</p> <ul style="list-style-type: none"> • Acute (lethal) toxic effects above 900 µS/cm, and • Sublethal effects (growth, reproduction etc) above 550 µS/cm. <p>The Community has identified the Georges River as being of high value, environmentally, culturally and recreationally. The Community expressed significant concerns about the pollution impacts on the Georges River due to the continued discharges from BCD.</p> <p>Stage 1: Water Efficiency Project</p> <p>The licensee must transfer minewater from underground directly to the West Cliff Washery to be used as process water.</p> <p>This project is expected to reduce the concentration of salinity and Aluminium in BCD and reduce the use of chemical flocculants for water treatment.</p> <p>DUE DATE: 30 JUNE 2013</p>	<p>An EPA Notice of Variation to Licence No.2504 (Notice No. 1515381, File No. LIC06/433, no date) noted that on 30 June 2013 the 'EPA received written notification that the licensee had completed PRP 19 – Stage 1- Water Efficiency Project'. ICHPL informed the EPA that the system can be used except after heavy rain events when suspended solid loadings are elevated.</p> <p>The EPA has marked PRP 19 – Stage 1 as having been completed on the next variation to EPL 2504.</p>	Compliant

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
Environmental Protection Licence 2504	U2.1	<p>Stage 2: Carry out a Program of Works</p> <p>The licensee must commission and carry out a program of works which may include minimisation or avoidance of a discharge, the installation of a water treatment plant, or a combination of a water treatment plant and other discharge improvement options to achieve the specified discharge quality by 30 December 2016. Any proposed discharge to a different waterway will be subject to environmental assessment and approvals.</p> <p>The program of works must reduce the concentration of pollutants discharging from discharge point 10 to meet the concentration limits specified in the table below. The specified limits are based on 95% species protection (slightly to moderately disturbed ecosystems):</p> <p>The program of works must reduce the concentration of pollutants discharging from discharge point 10 such that the specified toxic effect of the effluent released from discharge point 10 on the specified test organism must not exceed the corresponding percentile limit listed for that organism in the table below.</p> <p>Progress Reports</p> <p>The licensee must provide 6 monthly progress reports at 30 June and 30 December each year, commencing 30 June 2013 until 30 December 2016.</p> <p>DUE DATE: 30 DECEMBER 2016</p>	<p>The completion date of Stage 2 of PRP has not been triggered.</p> <p>BSOP personnel reported that initial investigations and planning were underway to develop a series of works to achieve the requirements of Stage 2 of PRP19. URS has not assessed in detail these initial investigations.</p>	Not Applicable (Completion date Not Triggered)
Environmental Protection Licence 2504	U3 U3.1	<p>PRP 20 - Aquatic Health Monitoring Program</p> <p>The aim of this PRP is to assess the aquatic health of Brennans Creek and the Upper Georges River, from the confluence of Brennans Creek to the confluence with O'Hares Creek.</p> <p>The licensee must conduct an aquatic health monitoring program in Brennans Creek and the Upper Georges River to assess aquatic health and to assess improvements to aquatic health following ' PRP 19 Water Quality Discharge Improvement to Upper Georges River via discharge point 10.'</p> <p>The program must examine the effects of the discharge on river health quantitatively, in terms of changes to in-stream biota in the Georges River. Reference should be made to 'Effects on Mine Water Salinity on Freshwater Biota Investigations of Coal Mine Water Discharge in NSW,' ACARP project C15016, published 1 January 2010.</p> <p>1) Prepare Aquatic Health Monitoring Program Plan</p> <p>The licensee must provide an aquatic health monitoring program plan to the EPA for review and approval. The program must require the monitoring and assessment of the aquatic health of Brennans Creek and the Upper Georges River between 1 September and 30 November (monitoring period) in the years 2013, 2015, 2017 and 2019.</p> <p>The monitoring program must include, but is not limited to, chemical analysis and in-stream biota assessment, including representative macroinvertebrate, algal and vertebrate species. The monitoring program must be carried out at five or more locations including discharge point 10, discharge point 11, discharge point 12 and the Upper Georges River to the confluence with O'Hares Creek.</p> <p>DUE DATE: 31 MAY 2013</p>	<p><u>Stage 1</u></p> <p>The Aquatic Health Monitoring Program has been submitted and approved by the EPA.</p> <p>The EPA has also agreed to extend the due date for the completion of monitoring reports to 31 March each year to allow more time for data analysis and report preparation (EPA letter dated 25/09/2013 [ref: EF13/2915:DOC13/65550:ATC] to ICHPL).</p> <p>In their letter to ICHPL the EPA noted that ICHPL had submitted a revised draft Aquatic Health Monitoring Program Plan as required by this PRP. The program outlined the proposed monitoring and assessment of the aquatic health of Brennan's Creek and the Upper Georges River in the years 2013, 2015, 2017 and 2019. The aim of the program is intended to show the current state of the river and any changes that may occur following implementation of PRP 19. The EPA reviewed the revised draft monitoring program and approved it in accordance with the requirement of PRP 20.</p> <p>An EPA Notice of Variation to Licence No.2504 (Notice No. 1515381, File No. LIC06/433, no date) noted that on '25 September 2013, the EPA gave written approval of the draft Aquatic Health Monitoring program required by PRP 20. The EPA has agreed to extend the due date for completion of monitoring reports to 31 March each year to allow time for data analysis and report preparation.' The EPA has marked PRP 20 – Stage 1 as having been completed on the next variation to EPL 2504.</p> <p>The auditors sighted the Aquatic Health Monitoring Program (15 August 2013) required in accordance with Condition 1 of Clause U3.1 of EPL 2504.</p>	Stage 1 - Compliant

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Environmental Protection Licence 2504				
Environmental Protection Licence 2504	U3.1	<p>2) Conduct Aquatic Health Monitoring Program</p> <p>If and when the EPA approves the monitoring program plan, the licensee must carry out the monitoring program in accordance with the plan. For each monitoring period, the licensee must provide a report detailing the results of the monitoring and assessment in that period to the EPA by 1 December 2013, 1 December 2015, 1 December 2017 and 1 December 2019 respectively.</p> <p>DUE DATE: 1 DECEMBER 2019</p>	<p>The completion date of Stage 2 of PRP 20 has not been triggered. BSOP personnel reported that monitoring has been conducted for 2013.</p> <p>ICHPL reported that the first round of monitoring was conducted between October and November 2013 and that identification and DNA testing is underway. The first monitoring report was not available within the timeframe of the audit period.</p>	Stage 2 - Not Applicable (Not triggered)

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Statement of Commitments				
Statement of Commitments	1	<p>Steep Slopes <i>Steep slopes on the sides of ridges in the Wianammatta Group shales geology are predominantly found along the Razorback Range (which encompasses Donalds Ridge).</i></p> <p><u>ICHPL Commitment</u> ICHPL will undertake a study into the potential subsidence related impacts on the steep slopes of Razorback Range (incorporating Donalds Ridge), focussing on steep slopes near roads and structures. The study will seek input from structural and geotechnical engineers and subsidence engineers, and will be conducted in consultation with the Wollondilly Shire Council (WSC) and landholders. The results of this assessment will be incorporated into management and mitigation measures (if required) as a component of future Extraction Plans to maintain the roads and structures in a safe and serviceable manner throughout the mining period.</p> <p>This study will include aspects such as:</p> <ul style="list-style-type: none"> • Identification of structures, dams and roads that lie in close proximity to steep slopes. • Site investigation and landslide risk assessment of structures near steep slopes by a qualified geotechnical engineer. • Site investigation and structural assessment of structures where recommended by the geotechnical engineer. This will include recommendations to mitigate against potential impacts. <p>Menangle Road and Remembrance Drive cross the Razorback Range. ICHPL will develop management strategies, in consultation with the WSC, to manage the risks of down slope movement of surface soils and rock falls in the vicinity of these roads.</p>	<p>Superseded by Condition 10, Schedule 3 of PA 08_0150.</p> <p>This commitment refers to the Appin 900 area Longwalls that will not commence until 2016. The BSOP EA (2009) addressed some of the work listed in this commitment and that have also been incorporated into the SMPs associated with Area 900 (these are considered outside the scope of the audit).</p> <p>The program designed to meet the requirements of Condition 10, Schedule 3 of PA 08_1050 'Improved Understanding and Prediction of Environmental Consequences' on Significant Natural Features was submitted to Planning and Infrastructure for approval on 19 September 2012. Implementation of some aspects of the program was noted to be proceeding.</p> <p>Extraction in the audit period has been carried out under previously approved SMPs for Longwalls 704 and 705 (Appin) and Longwall 35 (Westcliff) in lieu of Extraction Plans.</p> <p>Demonstration of existing cliff and steep slope monitoring was provided in Table 3 of the Landscape Monitoring Report End of Panel Report for Longwall 35 (ICHPL, August 2013). A management plan for cliff and steep slopes was available for Longwalls 34 to 36 and a Nepean River Cliff and Steep Slope Management Plan (June 2012) for Appin Area 7 Longwalls 701-706 was also available to shown evidence of monitoring of steep slopes.</p>	<p>Not Applicable (Not triggered) (on the basis Appin 900 area Longwalls that will not commence until 2016)</p>

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Statement of Commitments				
Statement of Commitments	2	<p>Registered Production Bores</p> <p><i>Hawkesbury Sandstone aquifers are used for consumptive purposes. Bores in the middle Hawkesbury Sandstone may experience drawdown effects as a result of the Project.</i></p> <p><u>ICHPL Commitment</u></p> <p>Over the Project life, ICHPL will:</p> <ul style="list-style-type: none"> • Confirm, where the landholder consents, the location of landholder bores and report these details in relevant Extraction Plans. • Develop a comprehensive groundwater monitoring programme to measure the actual groundwater effects of the Project (including triggers for investigation). • Monitor the spread of groundwater depressurisation effects. • If, in the event groundwater monitoring and investigation determines that an adverse Project-induced effect on the productive yield of a landholder's bore is occurring, implement appropriate contingency measures, for the period during which such effects continue (determined in consultation with the affected landholder), which could include: <ul style="list-style-type: none"> - lowering of the pumps in the landholder's affected bore; - deepening of the landholder's affected bore; - development of a new bore(s); - provision of an alternative water supply (i.e. of at least the same standard of quality and quantity as the landholder's bore prior to the land being affected by the Project), the nature of which would depend on the location of the affected landholder and the availability of nearby sources; or - if the above measures cannot be implemented, provision of compensation to the affected landholder for any loss of bore productivity arising from the Project-induced effects. <p>The contingency measures referred to above will be aimed at ensuring the landholder continues to have a water supply of at least the same standard of quality and quantity as the landholder's bore prior to the land being affected by the Project.</p> <p>If, in the event groundwater monitoring and investigation determines that Project-related subsidence effects have resulted in physical damage to the bore (e.g. shearing resulting in the bore casing being affected) or in-hole pump sets, contingency measures and/or compensation for the physical damage will be determined in consultation with the Mine Subsidence Board.</p>	<p>Superseded by Condition 9, Schedule 3 of PA 08_0150.</p> <p>The program designed to meet the requirements of Condition 9, Schedule 3 of PA 08_1050 'Improved Understanding and Prediction of Subsidence Impacts' was submitted to Planning and Infrastructure for approval on 19 September 2012. Implementation of some aspects of the program was noted to be proceeding.</p>	<p>Compliant (refer to Condition 9, Schedule 3 of PA 08_0150 for recommendation)</p>

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Statement of Commitments				
Statement of Commitments	3	<p>Riparian Use <i>Subsidence can result in the conveyance of a portion of surface water flows to sub-surface fractures and reduce the riparian use of landholders.</i> <u>ICHPL Commitment</u> Over the Project life, with the approval of the relevant landholders, ICHPL will:</p> <ul style="list-style-type: none"> • Confirm, where the landholder consents, the location of stream pools that are used for stock watering and domestic supply and report these details in relevant Extraction Plans. • Develop a comprehensive surface water monitoring programme to measure the actual subsidence effects of the Project (including triggers for investigation) on these sources of riparian water supply. • If, in the event surface water monitoring and investigation determines that an adverse Project-induced effect on the yield from pools is occurring, implement appropriate contingency measures, for the period during which such effects continue (determined in consultation with the affected landholder), which could include: <ul style="list-style-type: none"> - provision of an alternative water supply, the nature of which would depend on the location of the affected landholder and the availability of nearby sources; or - if the above measures cannot be implemented, provision of compensation to the affected landholder for any loss of water supply arising from Project-induced effects. <p>The contingency measures referred to above will be aimed at maintaining the landholder's water supply to a standard consistent with that prior to Project related subsidence impacts.</p>	<p>Superseded by Condition 14, Schedule 4 of PA 08_0150.</p> <p>The Water Management Plan contains statements to address the requirements of this Condition. BSOP sites utilise water from runoff or the underground workings that are beneath the local aquifers therefore there are no known impacts to surrounding land owners; however, ICHPL management reported that compensation payments have been made to three landholders for the provision of loads of water. These have been on a short-term basis and to the satisfaction of the landholder.</p> <p>Sighted email evidence from the ICHPL Landholder Relations Coordinator to a landowner dated 21/12/2012 [12:34pm] concerning reimbursement of costs for approximately 6,000 Gallons required to re-fill two water tanks.</p> <p>Sighted a letter from the ICHPL Manager of property and Landholder Relations to a landowner dated 11/12/2012 concerning submission of receipts (by the landholder) for water due to damage to a water tank as a result of subsidence impacts at the property.</p>	Refer to PA 08_0150 Compliance Table in Appendix A
Statement of Commitments	4	<p>Research, Offset and Compensatory Measures <i>ICHPL has committed to funding a number of research, offset and compensatory measures. The research, offset and compensatory measures have primarily been developed to address Project impacts on surface water resources and ecological aspects.</i> <u>ICHPL Commitment</u> ICHPL commits to implementing the research, offset and compensatory measures outlined in Table SOC-2.</p>	<p>Superseded by Conditions 2, Schedule 3 and 18 and 19, Schedule 4 of PA 08_0150.</p> <p>URS sighted a letter from Planning and Infrastructure to ICHPL dated 20/12/2012 granting an extension to the submission of West Cliff Coal Wash Emplacement Area Biodiversity Offset Strategy. The Biodiversity Offset Strategy must now be submitted by 31 December 2014.</p> <p>Progress towards Condition S4.18 was shown through Draft Biodiversity Offset Strategy (sighted during site inspection).</p> <p>URS sighted a letter from Planning and Infrastructure to ICHPL dated 20/12/2012 granting an extension to the submission of West Cliff Coal Wash Emplacement Area Biodiversity Offset Strategy. The Biodiversity Offset Strategy must now be submitted by 31 December 2014.</p> <p>Progress towards this Indicator was evident by the Offset Management Plans have been developed by ICHPL for:</p> <ul style="list-style-type: none"> • <i>Persoonia hirstuta</i> – Revision 6 approved DTIRIS-DRE (15/08/2013) as well as DoE (22/11/2013). • Shale Sandstone Transition Forest – Revision 3, May 2013, approved by DoE 07/06/2013. 	Refer to PA 08_0150 Compliance Table in Appendix A

Appendix A - Bulli Seam Operations Project Independent Environmental Audit

Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
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Statement of Commitments

Statement of Commitments	Continued.	<p>Table SOC-2 Summary of Project Research, Offset and Compensatory Measures</p> <table border="1"> <thead> <tr> <th>Activity</th> <th>Financial Contribution</th> </tr> </thead> <tbody> <tr> <td colspan="2">Research Programmes</td> </tr> <tr> <td> <p>Swamps:</p> <ul style="list-style-type: none"> The possible mechanisms for subsidence impacts on swamp hydrology across a range of swamp types, terrain and mining operations. The objective is to improve predictability of impacts on swamp hydrology. The relationship between changes in swamp hydrology and environmental consequences. The two key issues here are severity and duration of the hydrologic disturbance. Both are relevant to considering whether mitigation or remediation measures might play a role in management of mining impacts. The possibilities of using remediation techniques and the circumstances in which they may be applicable. Developing a suite of indicators that could form the basis of an accepted stratified approach to monitoring impacts and consequences on upland swamps. The value that the community places on both the catchment protection and conservation roles of upland swamps. </td> <td>\$250,000</td> </tr> <tr> <td> <p>Streams:</p> <p>Non-systematic subsidence effects and associated environmental consequences in significant watercourses.</p> <p>Techniques for remediating stream bed fracturing.</p> </td> <td>\$250,000</td> </tr> <tr> <td colspan="2">Catchment Condition Work</td> </tr> <tr> <td>Financial contribution towards rehabilitation and revegetation works within the Dharawal State Conservation Area or Sydney Catchment Authority (SCA) controlled catchments.</td> <td>\$50,000/year of longwall mining in the relevant domains</td> </tr> <tr> <td>Financial contribution to management within the Dharawal State Conservation Area or SCA controlled catchments:</td> <td>\$25,000/year of longwall mining in the relevant domains</td> </tr> <tr> <td> <ul style="list-style-type: none"> Pest Control - pest control programmes for pests such as the Red Fox, European Rabbit, Feral Deer, Feral Pig and Feral Cat. Weed Control - weed control programmes for weeds such as Pampas Grass, African Love Grass, Lantana, African Boxthorn, Bridal Veil Creeper, Prickly Pear, Onion Grass and Blackberry. Fire Management - fire management programmes. </td> <td></td> </tr> <tr> <td>Total</td> <td>\$1,775,000</td> </tr> </tbody> </table>		Activity	Financial Contribution	Research Programmes		<p>Swamps:</p> <ul style="list-style-type: none"> The possible mechanisms for subsidence impacts on swamp hydrology across a range of swamp types, terrain and mining operations. The objective is to improve predictability of impacts on swamp hydrology. The relationship between changes in swamp hydrology and environmental consequences. The two key issues here are severity and duration of the hydrologic disturbance. Both are relevant to considering whether mitigation or remediation measures might play a role in management of mining impacts. The possibilities of using remediation techniques and the circumstances in which they may be applicable. Developing a suite of indicators that could form the basis of an accepted stratified approach to monitoring impacts and consequences on upland swamps. The value that the community places on both the catchment protection and conservation roles of upland swamps. 	\$250,000	<p>Streams:</p> <p>Non-systematic subsidence effects and associated environmental consequences in significant watercourses.</p> <p>Techniques for remediating stream bed fracturing.</p>	\$250,000	Catchment Condition Work		Financial contribution towards rehabilitation and revegetation works within the Dharawal State Conservation Area or Sydney Catchment Authority (SCA) controlled catchments.	\$50,000/year of longwall mining in the relevant domains	Financial contribution to management within the Dharawal State Conservation Area or SCA controlled catchments:	\$25,000/year of longwall mining in the relevant domains	<ul style="list-style-type: none"> Pest Control - pest control programmes for pests such as the Red Fox, European Rabbit, Feral Deer, Feral Pig and Feral Cat. Weed Control - weed control programmes for weeds such as Pampas Grass, African Love Grass, Lantana, African Boxthorn, Bridal Veil Creeper, Prickly Pear, Onion Grass and Blackberry. Fire Management - fire management programmes. 		Total	\$1,775,000	
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Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Statement of Commitments				
Statement of Commitments	5	<p>Underground Emplacement Pilot Trial</p> <p><i>The West Cliff Stage 4 Coal Wash Emplacement is considered the most viable coal wash management option for the Project. Notwithstanding, ICHPL has considered a range of coal wash emplacement and disposal alternatives.</i></p> <p><u>ICHPL Commitment</u></p> <p>Within five years of the grant of Project Approval, ICHPL will fund and commence development of a pilot-scale research and development trial for underground coal wash emplacement technology at the Project. The trial will draw upon available information/technical data from similar investigations and trials in the Southern Coalfield and internationally.</p> <p>The results of the trial will be used to inform a value analysis of the feasibility of a portion of the coal wash being emplaced underground at the Project. The value analysis will include consideration of aspects such as:</p> <ul style="list-style-type: none"> • Practical application and mine safety for underground emplacement at the Project design volumes/rates; • Infrastructure requirements (including supporting equipment) for underground emplacement; • Water and other materials consumption/use requirements; and • Consideration of benefits/costs of underground emplacement versus ongoing surface emplacement at the West Cliff pit top. 	Superseded by Condition 20, Schedule 4 of PA 08_0150.	Refer to PA 08_0150 Compliance Table in Appendix A

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Statement of Commitments				
Statement of Commitments	6	<p>Compensatory Land Package</p> <p>Condition 5.1(e) (v) of the Dendrobium Mine Development Consent (DA 60-03-2001)</p> <p>(20 November 2001) stated:</p> <p><i>Should the applicant seek approval for the use of Emplacement Area Stage No 3 in accordance with Condition 1.1(c) of this consent, the applicant shall ensure that a further detailed assessment is undertaken to the satisfaction of the Director- General. This assessment shall include, but not be limited to the following:</i></p> <p><i>(v) details of compensatory measures at least a 2:1 ratio. The Applicant must formally negotiate this package to the satisfaction of the Director-General and in consultation with NPWS at least 12 months prior to the commencement of clearing for emplacement and be agreed to in writing by the Director- General, in consultation with NPWS;</i></p> <p><i>ICHPL submitted an application to the DoP for approval to use the Stage 3 Coal Wash Emplacement (ICHPL, 2007). The ICHPL (2007) application offered a compensatory land transfer in accordance with Condition 5.1(e) (v) of DA 60-03-2001. The compensatory land transfer was accepted by the NSW State Government by the Notice of Staged Development Approval (25 December 2007) for The Construction, Operation, Management and Rehabilitation of Stage 3 of the West Cliff Coal Wash Emplacement Area, Located at West Cliff Colliery.</i></p> <p><i>As described in Section 5.8.2, the Project would include the clearing of approximately 65 hectares (ha) of native vegetation for the Stage 4 Coal Wash Emplacement.</i></p> <p><u>ICHPL Commitment</u></p> <p>Consistent with the approved compensatory land package for the Stage 3 Coal Wash Emplacement, ICHPL commits to the provision of a compensatory land package for the Project that will include:</p> <ul style="list-style-type: none"> • transfer of at least 130 ha of native bushland (ratio of 2:1) from ICHPL to the NSW State Government; • selection of suitable bushland for transfer; • funding for costs associated with transferring the relevant land title to the NSW State Government; and • funding for minor site improvement works if required. 	<p>Sighted the Draft WCP Emplacement Area Management Plan and <i>Persoonia hirstuta</i> Offset Management Plan.</p> <p>URS sighted a letter from Planning and Infrastructure to ICHPL dated 20/12/2012 granting an extension to the submission of West Cliff Coal Wash Emplacement Area Biodiversity Offset Strategy. The Biodiversity Offset Strategy must now be submitted by 31 December 2014.</p> <p>Progress towards Condition S4.18 was shown through Draft Biodiversity Offset Strategy (sighted during site inspection). No stripping or vegetation removal was observed during the audit.</p> <p>Work on the Stage 4 emplacement area was not due to commence for nine to ten years therefore the actions required by this management plan had not been implemented at the time of the audit.</p>	Not applicable (Not triggered)

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Statement of Commitments				
Statement of Commitments	7	<p>Hairy Geebung <i>The Hairy Geebung (P. hirsuta) is listed as Endangered under the NSW Threatened Species and Conservation Act, 1995 (TSC Act) and Commonwealth Environment Protection and Biodiversity Conservation Act, 1999 (EPBC Act). The Stage 4 Coal Wash Emplacement requires the clearance of approximately seven individuals of P. hirsuta plants from a local population of approximately 68.</i></p> <p><u>ICHPL Commitment</u> ICHPL commits to sponsoring the following ecological initiatives, which are aimed at providing a better understanding of the local population of P. hirsuta and its management:</p> <ul style="list-style-type: none"> • A research programme with the aim of increasing the density of P. hirsuta in the area north of the Stage 4 Coal Wash Emplacement. Seed for the programme will be collected from the core area and propagated by a suitable local institution (such as the Mt. Annan Botanic Garden). • Research programmes to determine the most appropriate measures to protect the P. hirsuta population. These will be incorporated into the Biodiversity Management Plan. It is proposed that such a programme involve an institution such as the University of Wollongong, which has considerable expertise in this area. 	<p>ICHPL has developed a draft WCP Emplacement Area Management Plan (incorporating "Emplacement Area Management Plan" and "Coal Wash Emplacement Staging and Rehabilitation Plan), Revision 3 dated June 2013 in accordance with Condition 17, Schedule 4 of PA 08_0150; however, this had not been approved by the Director-General at the time of the audit.</p> <p>The draft plan contains: management strategies for the protection and conservation of <i>Persoonia hirsuta</i>. The Offset management Plan (OMP) outlines suitably qualified personnel. The Royal Botanical Gardens Trust – Mount Annan, have been consulted with regard to <i>Persoonia hirsuta</i>, section 4, 5 and 9 of the OMP. The OMP and other research data viewed and reference documents outline that other qualified ecologists have been involved with the <i>Persoonia hirsuta</i> including; University of Wollongong, FloraSearch, Niche Environment and Heritage Pty Ltd and Biosis Pty Ltd.</p> <p>The site visit confirmed that there has been no vegetation clearance of Stage 4, nor is there forecasted Stage 4 clearance in 2014. Work on the Stage 4 emplacement area was not due to commence for nine to ten years therefore the actions required by this management plan had not been implemented at the time of the audit.</p>	Compliant

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Statement of Commitments				
Statement of Commitments	8	<p>Southern Brown Bandicoot <i>The Southern Brown Bandicoot (Isoodon obesulus obesulus) is listed as Endangered under the TSC Act and EPBC Act. The Southern Brown Bandicoot was recorded by the Project surveys within and around the Stage 4 Coal Wash Emplacement.</i></p> <p><u>ICHPL Commitment</u> ICHPL commits to implementing a number of ecological initiatives for the Southern Brown Bandicoot, aimed at:</p> <ul style="list-style-type: none"> Assisting with the protection, rehabilitation and enhancement of known or potential Southern Brown Bandicoot habitats; and Collecting information to better understand the extent, distribution, density and population dynamics of the local Southern Brown Bandicoot population. <p>The initiatives will include the following measures:</p> <ul style="list-style-type: none"> Erosion and sediment control works (e.g. at fire trail stream crossings) to improve known or potential Southern Brown Bandicoot habitat. Implementation of feral animal control measures within and around known and potential Southern Brown Bandicoot habitats – consistent with a “Priority 1 Action” from the Southern Brown Bandicoot Recovery Plan (NSW Department of Environment and Conservation [DEC], 2006a). Active revegetation/regeneration of appropriate shrub and groundcover species at known and potential Southern Brown Bandicoot habitat areas. Measures to reduce disturbances in known and potential Southern Brown Bandicoot habitat (e.g. reduce motorbike activity or rehabilitation of unnecessary tracks to limit feral animal access into Southern Brown Bandicoot habitats). Undertaking or sponsoring targeted surveys for the Southern Brown Bandicoot – consistent with a “Priority 1 Action” from the Southern Brown Bandicoot Recovery Plan (DEC, 2006a). Sponsoring a research program designed to collect information on habitat preference (e.g. preferred vegetative structure, species, position on slope, aspect, etc.) to better understand what constitutes optimal habitat for the Southern Brown Bandicoot at the northern extremities of its range. Sponsoring a research program designed to monitor the response of the Southern Brown Bandicoot to feral animal control – consistent with a “Priority 1 Action” from the Southern Brown Bandicoot Recovery Plan (DEC, 2006a). Placing captured animals from within the Stage 4 Coal Wash Emplacement Area in any relevant Southern Brown Bandicoot captive breeding programme (in consultation with the Department of Environment and Climate Change [DECC] and following any applicable approvals). 	<p>ICHPL has developed a draft WCP Emplacement Area Management Plan (incorporating “Emplacement Area Management Plan” and “Coal Wash Emplacement Staging and Rehabilitation Plan), Revision 3 dated June 2013 in accordance with Condition 17, Schedule 4 of PA 08_0150; however, this had not been approved by the Director-General at the time of the audit. Section 7.8 addressed management strategies for the protection and conservation of the Broad-headed Snake and the Southern Brown Bandicoot.</p> <p>The draft plan contains: management strategies for the protection and conservation of <i>Persoonia hirsuta</i> as well as the Broad-headed Snake and the Southern Brown Bandicoot, namely for the development of the:</p> <ul style="list-style-type: none"> Persoonia hirsuta Offset Management Plan Southern Brown Bandicoot Management Plan Broad-headed Snake Management Plan <p>Each of these plans identified in Condition 17 (c) and (d) of Schedule 4 of PA 08_0150 have been assessed and found compliant against relevant EPBC 201/5350 Conditions.</p>	Compliant

Appendix A - Bulli Seam Operations Project Independent Environmental Audit				
Title	Condition No.	Condition	Comment / Evidence sighted	Compliance Status & Recommendations
Statement of Commitments				
		<p><i>Continued:</i></p> <ul style="list-style-type: none"> • Opportunities and options available to inform local communities of the conservation significance of the Southern Brown Bandicoot – consistent with a “Priority 2 Action” from the Southern Brown Bandicoot Recovery Plan (DEC, 2006a). • Opportunities to involve local community groups in survey and monitoring for the Southern Brown Bandicoot – consistent with a “Priority 2 Action” from the Southern Brown Bandicoot Recovery Plan (DEC, 2006a). 		

Condition 1 - <i>Persoonia hirsuta</i> (Hairy Geebung)			
<i>Persoonia hirsuta</i> (Hairy Geebung)			
Condition 1 - The person taking the action must provide for Minister's approval a <i>Persoonia hirsuta</i> offset. The offset must include as a minimum, an area of suitable habitat to support populations of <i>Persoonia hirsuta</i> plants totalling at least 150 individual plants, including the core population. Clearing of native vegetation for the stage 4 coal wash emplacement area must not occur prior to the approval of the <i>Persoonia hirsuta</i> offset. The <i>Persoonia hirsuta</i> offset must be legally secured in perpetuity within 2 years from the date of this approval.			
Indicator	Auditor comments	Verification method	Compliance finding
The offset includes an area of suitable habitat to support populations of <i>Persoonia hirsuta</i> plants totalling at least 150 individual plants, including the core population.	Variation to Conditions attached to the Approval notice received from Department of the Environment (DoE) on 22/11/2013, notes a change of this condition wording as follows: <i>The approval holder must legally secure the approved offset area for conservation including the core population, for the duration of the EPBC approval (15 May 2042), as outlined in the approved Persoonia hirsuta Offset Management Plan under condition 2 of the approval. A copy of the document detailing the legal security provides to the offset area must be submitted to the department by 14 May 2014.</i> The Offset Management Plan (OMP) approval gained through correspondence with the Department of Trade and Investment, Regional Infrastructure and Services (DTIRIS-DRE) (15/08/2013) as well as correspondence from DoE (22/11/2013) was sighted demonstrating this indicator has been met.	Evidence – correspondence	Not applicable at time of audit
Clearing of native vegetation within Stage 4 did not commence prior to the approval of the <i>Persoonia hirsuta</i> Offset Management plan.	The site visit confirmed that there has been no vegetation clearance of Stage 4, nor is there forecasted Stage 4 clearance in 2014.	Evidence - site visit	Not applicable at time of the audit
The offset is legally secured in perpetuity prior to 15 May 2014.	Progressing towards this Indicator, offset security correspondence with DoE and DTIRIS-DRE, 22/11/2013 and 26/11/2013. ICHPL management emailed DoE (formerly SEWPac) on 26/11/2013 concerning Shale Sandstone Transition Forest (SSTF) and <i>Persoonia hirsuta</i> offset attributes namely shapefiles and textual description and maps prior to legal offset security and the associated 15 May 2014 deadline. Variation to Conditions attached to the Approval notice received from DoE, on 22/11/2013 alters the condition to no longer require offset to be secured in perpetuity. Condition 1 now requires offset security for the term of the EPBC approval i.e. to 15 May 2042.	Evidence - correspondence	Not applicable at time of the audit

Condition 2 - *Persoonia hirsuta* (Hairy Geebung)

Persoonia hirsuta (Hairy Geebung)

Condition 2 - The person taking the action must provide a plan for the management of the *Persoonia hirsuta* offset to the Minister for approval no later than 31 December 2012. The *Persoonia hirsuta* Offset Management Plan must include but not be limited to:

- (a) Measures for the conduct of pre-existing land management requirements or obligations in a manner that is compatible with the conservation of the species;
- (b) Information about the species' ecology, biology and conservation status to inform appropriate management actions;
- (c) Performance objectives and management actions that will enable maintenance and enhancement of *Persoonia hirsuta* plants and habitat covered by the Plan;
- (d) Management responsibilities and accountabilities;
- (e) Mitigation measures to ensure operation of the action, including fire management and specifically the emplacement of coal wash, does not impact on any of the *Persoonia hirsuta* plants protected under this plan. This includes but is not limited to impacts associated with dust, shading, sedimentation, erosion or unrestricted access to areas containing *Persoonia hirsuta* plants;
- (f) An assessment of the baseline *Persoonia hirsuta* population and distribution, including:
 - i. The number of plants protected and their location;
 - ii. Plant and habitat condition;
 - iii. Age classes;
- (g) Measures for regular monitoring of the status of the *Persoonia hirsuta* plants and habitat as measured against the baseline population and distribution, including:
 - i. recruitment and survivorship;
 - ii. seedling growth rate;
 - iii. age to reproductive maturity and peak flowering/fruit production;
 - iv. effectiveness of management actions and mitigation measures contained within the plan; and
 - v. impacts of threatening processes.
- (h) The results of the monitoring referred to condition 2 f and g must be provided to the department within 30 days of every 12 month anniversary of the implementation date of this plan;
- (i) Provisions to revise the approved *Persoonia hirsuta* Offset Management Plan in response to the findings of the research required by conditions 3. Including the submission of the revised *Persoonia hirsuta* Offset Management Plan to the Minister for approval within 6 months of this research being finalised; and

The approved *Persoonia hirsuta* Offset Management Plan must be implemented within 2 years of the date of this approval and prior to the clearing of native vegetation for the Stage 4 coal wash emplacement area.

Indicator	Auditor comments	Verification method	Compliance finding
<p>The <i>Persoonia hirsuta</i> offset Management plan was submitted to the Minister by 31 December 2012.</p>	<p>DoE correspondence dated 14/02/2013 confirms the Offset Management Plan was submitted by 31/12/13 and outlines first review comments. OMP (Revision 6) was approved by DoE in November 2013.</p> <p>Variation to Conditions attached to Approval notice received from DoE dated 22/11/2013, notes a change of the wording to this Condition (in bold) as follows:</p> <p><i>The person taking the action must provide a plan for the management of the <i>Persoonia hirsuta</i> offset to the Minister for approval no later than 31 December 2012. The <i>Persoonia hirsuta</i> Offset Management Plan must include but not be limited to:</i></p> <p>(a) <i>Measures for the conduct of pre-existing land management requirements or obligations in a manner that is compatible with the conservation of the species;</i></p> <p>(b) <i>Information about the species' ecology, biology and conservation status to inform appropriate management actions;</i></p> <p>(c) <i>Performance objectives and management actions that will enable maintenance and enhancement of <i>Persoonia hirsuta</i> plants and habitat covered by the Plan;</i></p> <p>(d) <i>Management responsibilities and accountabilities;</i></p> <p>(e) <i>Mitigation measures to ensure operation of the action, including fire management and specifically the emplacement of coal wash, does not impact on any of the <i>Persoonia hirsuta</i> plants protected under this plan. This includes but is not limited to impacts associated with dust, shading, sedimentation, erosion or unrestricted access to areas containing <i>Persoonia hirsuta</i> plants;</i></p>	<p>Evidence – Correspondence, Offset Management Plan document review, site visit.</p>	<p>Compliance</p>

Condition 2 - <i>Persoonia hirsuta</i> (Hairy Geebung)			
	<p>(f) An assessment of the baseline <i>Persoonia hirsuta</i> population and distribution, including:</p> <ul style="list-style-type: none"> i. The number of plants protected and their location; ii. Plant and habitat condition; iii. Age classes; <p>(g) Measures for regular monitoring of the status of the <i>Persoonia hirsuta</i> plants and habitat as measured against the baseline population and distribution, including:</p> <ul style="list-style-type: none"> i. recruitment and survivorship; ii. seedling growth rate; iii. age to reproductive maturity and peak flowering/fruit production; iv. effectiveness of management actions and mitigation measures contained within the plan; and v. impacts of threatening processes. <p>(h) The results of the monitoring referred to condition 2 f and g must be provided to the department within 30 days of every 12 month anniversary of the implementation date of this plan;</p> <p>(i) Provisions to revise the approved <i>Persoonia hirsuta</i> Offset Management Plan in response to the findings of the research required by conditions 3. Including the submission of the revised <i>Persoonia hirsuta</i> Offset Management Plan to the Minister for approval within 6 months of this research being finalised; and</p> <p>The approved <i>Persoonia hirsuta</i> Offset Management Plan must be implemented. Clearing of native vegetation for the Stage 4 coal wash emplacement area must not occur until the <i>Persoonia hirsuta</i> Offset Management Plan has been approved by the Minister.</p> <p>The site visit confirmed that there has been no vegetation clearance of Stage 4, nor is there forecasted Stage 4 clearance in 2014.</p>		
The Management Plan includes measures for pre-existing land management requirements or obligations in a manner that is compatible with the conservation of the species;	The approved OMP outlines information concerning land management practices compatible with the conservation of the species, Section 4 and 5 of the OMP. Research data and correspondence with the Royal Botanical Gardens Trust (08/11/2013) and the University of Wollongong demonstrate indicator compliance with the requirements of this Condition.	Evidence – Offset Management Plan document review and research data	Compliance
The Management Plan includes Information about the species' ecology, biology and conservation status to inform appropriate management actions;	The approved OMP outlines information concerning the species; ecology, biology, location and conservation status, Section 4 of the OMP.	Evidence –Offset Management Plan document review	Compliance
The Management Plan includes Performance objectives and management actions that will enable maintenance and enhancement of <i>Persoonia hirsuta</i> plants and habitat covered by the Plan;	The approved OMP outlines performance objectives, targets, timeframes and management and mitigation measures as well as proposed monitoring and reporting methods, Section 5 of the OMP.	Evidence – Offset Management Plan document review	Compliance
The Management Plan includes Management responsibilities and accountabilities.	The approved OMP outlines management roles and responsibilities as well as training requirements, record keeping and control and, document control, Section 6 of the OMP.	Evidence – Offset Management Plan document review	Compliance
The Management plan includes Mitigation measures to ensure operation of the action, including fire management and specifically the emplacement of coal wash, does not impact on any of the <i>Persoonia hirsuta</i> plants protected under this plan.	The approved OMP outlines mitigation measures to ensure operation of the action, including fire management and associated research and the emplacement of coal wash impacts on any of the <i>Persoonia hirsuta</i> plants, Section 4, 5, 8 and 9 of the OMP.	Evidence – Offset Management Plan document review	Compliance

Condition 2 - <i>Persoonia hirsuta</i> (Hairy Geebung)			
The Management plan includes but is not limited to impacts associated with dust, shading, sedimentation, erosion or unrestricted access to areas containing <i>Persoonia hirsuta</i> plants;	The approved OMP outlines measures to impacts associated with dust, shading, sedimentation, erosion and access to areas containing <i>Persoonia hirsuta</i> plants, Section 5, 8 and 9 of the OMP. The Draft Coal Wash Emplacement Staging and Rehabilitation Plan, Revision 3 dated June 2013 (CWESRP, submitted 29/06/2013 not yet approved however comments from OEI have been provided 11/09/2013 suggesting further revision) includes the following: <ul style="list-style-type: none"> • Requirements for annual environmental reporting and dust level assessment through implementation of monitoring to address dust management. • Annual condition surveys for <i>Persoonia hirsuta</i> address; shading, erosion and sedimentation. • Reliance on unproven management strategies, especially for <i>Persoonia hirsuta</i> such as; translocation, fire, supplementary planting etc. should not be a focus. 	Evidence – Offset Management Plan, DRAFT CWESRP, Annual Environmental report document review, site visit	Compliance
The Management Plan includes an assessment of the baseline <i>Persoonia hirsuta</i> population and distribution, including: <ul style="list-style-type: none"> • The number of plants protected and their location; • Plant and habitat condition; • Age classes. 	The approved OMP outlines information concerning the species population and distribution, including plant locations, habitat condition and age class, Section 4 and 7 as well as Figure 1 of the OMP.	Evidence – Offset Management Plan document review	Compliance
The Management Plan includes measures for regular monitoring of the status of the <i>Persoonia hirsuta</i> plants and habitat as measured against the baseline population and distribution, including: <ul style="list-style-type: none"> • Recruitment and survivorship; • Seedling growth rate; • Age to reproductive maturity and peak flowering/fruit production; • Effectiveness of management actions and mitigation measures contained within the plan; and • Impacts of threatening processes. 	The approved OMP outlines monitoring measures against the baseline population, Section 5 and 8 of the OMP.	Evidence – Offset Management Plan document review	Compliance
The results from the <i>Persoonia hirsuta</i> monitoring were provided to SEWPaC annually within 30 days of the Management Plan approval.	Initial November 2012 monitoring has been incorporated into the OMP, future annual monitoring is to be provided within 30 days of completed monitoring. 2013 <i>Persoonia hirsuta</i> monitoring is planned to occur during and after the Independent Environmental Audit and has therefore not been assessed as part of the audit.	Evidence – Offset Management Plan document review	Compliance
Modifications to the Management Plan based upon the research program were submitted to SEWPaC within 6 months of the completion of the research.	The research program commitment date to be completed within 5 years of EPBC Approval 15/02/2012 has not been triggered.	Not applicable	Not applicable
The approved <i>Persoonia hirsuta</i> Offset Management Plan is implemented by 15 May 2014 and prior to the clearing of native vegetation in Stage 4.	OMP implementation was observed to be underway. This was evident during the site visit through <i>Persoonia hirsuta</i> population visited that included signage and protection measures. Monitoring results and consultation with environmental staff as well as correspondence with the Royal Botanical Gardens Trust (08/11/2013) and the University of Wollongong was also noted. The site visit confirmed that there has been no vegetation clearance of Stage 4, nor is there forecasted Stage 4 clearance in 2014.	Evidence – Correspondence, site visit, research data	Not applicable

Condition 3 – *Persoonia hirsuta* (Hairy Geebung)

Persoonia hirsuta (Hairy Geebung)
 Condition 3 – The person taking the action must engage a suitably qualified expert to undertake and make publicly available targeted research to inform conservation knowledge of *Persoonia hirsuta*. The research must:

- (a) document current understanding of *Persoonia hirsuta* ecology and genetics;
- (b) outline previously documented management and conservation actions;
- (c) Investigate:
 - i. Pollination biology of *Persoonia hirsuta*;
 - ii. Requirements of its pollinators;
 - iii. Soil seed bank dynamics and the roles of various disturbances (including fire) in germination and recruitment;
 - iv. Phenology and seasonal growth of *Persoonia hirsuta*;
 - v. Population genetic structure, levels of genetic diversity, minimum viable population size and management actions;
 - vi. Impact of dieback disease and control techniques on *Persoonia hirsuta* and its habitat; and
 - vii. Impact of fire on *Persoonia hirsuta* and its habitat;
- (d) Provide a general analysis of threatening processes and available management or mitigation actions; and
- (e) A research report to be finalised within 5 years of the date of this approval; and
- (f) Be made publically available through:
 - i. An internet site; and

The printing of at least 100 copies of the research and distribution to interested stakeholders including agencies, institutions, libraries and conservation organisations, including the provision of two copies to the department.

Indicator	Auditor comments	Verification method	Compliance finding
A suitably qualified expert or experts have been engaged to undertake research on the <i>Persoonia hirsuta</i> .	The OMP outlines suitably qualified personnel. The Royal Botanical Gardens Trust – Mount Annan, have been consulted with regard to <i>Persoonia hirsuta</i> , section 4, 5 and 9 of the OMP. The OMP and other research data viewed and reference documents outline that other qualified ecologists have been involved with the <i>Persoonia hirsuta</i> including; University of Wollongong, FloraSearch, Niche Environment and Heritage Pty Ltd and Biosis Pty Ltd. Correspondence with Royal Botanical Gardens Trust dated 08/11/2013) was observed.	Evidence – Offset Management Plan document review, correspondence and site visit.	Compliance
The Research includes the documentation of current understanding of <i>Persoonia hirsuta</i> ecology and genetics.	The approved OMP outlines information concerning the species; ecology, biology and genetics, Section 4 of the OMP. The research program commitment date to be completed within five years of EPBC Approval 15/02/2012 has not been triggered. The proposed Research Plan for <i>Persoonia hirsuta</i> , dated 12/12/2013 was sighted.	Evidence – Offset Management Plan document review, Proposed Research Plan for <i>Persoonia hirsuta</i> , correspondence	Not applicable
The Research includes an outline of previously documented management and conservation actions.	Not yet applicable, refer to comments above.	Not applicable	Not applicable
The research includes the investigation of Pollination biology of <i>Persoonia hirsuta</i> .	Not yet applicable, refer to comments above.	Not applicable	Not applicable
The research includes the investigation of Requirements of its pollinators.	Not yet applicable, refer to comments above.	Not applicable	Not applicable
The research includes the investigation of Soil seed bank dynamics and the roles of various disturbances (including fire) in germination and recruitment.	Not yet applicable, refer to comments above.	Not applicable	Not applicable
The research includes the investigation of Phenology and seasonal growth of <i>Persoonia hirsuta</i> .	Not yet applicable, refer to comments above.	Not applicable	Not applicable
The research includes the investigation of Population genetic structure, levels of genetic diversity, minimum viable population size and management actions.	Not yet applicable, refer to comments above.	Not applicable	Not applicable
The research includes the investigation of Impact of dieback disease and control techniques on <i>Persoonia hirsuta</i>	Not yet applicable, refer to comments above.	Not applicable	Not applicable

Condition 3 – <i>Persoonia hirsuta</i> (Hairy Geebung)			
and its habitat			
The research includes the investigation of Impact of fire on <i>Persoonia hirsuta</i> and its habitat.	Not yet applicable, refer to comments above.	Not applicable	Not applicable
The research includes a general analysis of threatening processes and available management or mitigation actions.	Not yet applicable, refer to comments above.	Not applicable	Not applicable
The research report is finalised by May 2017.	Not yet applicable, refer to comments above.	Not applicable	Not applicable
The research report is made publically available via the internet and printing and distributing 100 copies.	Not yet applicable, refer to comments above.	Not applicable	Not applicable

Condition 4 – Shale / Sandstone Transition Forest			
<p>Shale / Sandstone Transition Forest</p> <p>Condition 4 – The person taking the action must provide a Shale / Sandstone Transition Forest Offset to the Minister for approval within 1 year of the date of this approval. The person taking the action must not clear any vegetation forming Shale / Sandstone Transition Forest until the Shale / Sandstone Transition Forest Offset is protected in perpetuity which must occur within 2 years from the date of this approval. In addition:</p> <p>(a) The person taking the action must provide ecological survey information to the department by 30 November 2012 that demonstrates the extent and quality of the Shale / Sandstone Transition Forest within the forming Shale / Sandstone Transition Forest Offset;</p> <p>Should the ecological survey referred to at condition 4a, determine that less than 44.9 hectares of the Shale / Sandstone Transition Forest is present within the Shale / Sandstone Transition Forest, the person taking the action must identify and submit to the Minister for approval an additional offset site to ensure that no less than 44.9 hectares of Shale / Sandstone Transition Forest is protected in perpetuity.</p>			
Indicator	Auditor comments	Verification method	Compliance finding
A Shale / Sandstone Transition Forest Offset to be provided to SEWPaC by 15 May 2013.	Correspondence from DoE dated 09/11/2012 identifies receipt of the BSOP Biodiversity Offset and Vegetation Management Plan for the Shale/Sandstone Transition Forest and acknowledges an additional letter report dated 16/09/2013) prepared by Niche concerning the 'adequacy of proposed biodiversity offsetting lands adjacent to Appin West Colliery pit-top' (Niche, 2013).	Evidence – correspondence and BSOP Biodiversity Offset and Vegetation Management Plan for the Shale/Sandstone Transition Forest	Compliance
No Shale / Sandstone Transition Forest has been cleared prior to the offset being protected in perpetuity	There has been no clearance of Shale/Sandstone Transition Forest (SSTF) to date. Evidence included aerial imagery research and a site visit. The auditor was accompanied by, guided by the ICHPL in the proposed offset area's.	Evidence – site visit, aerial imagery/mapping.	Compliance
The Shale / Sandstone Transition Forest Offset is secured in perpetuity by 15 May 2014.	Progress towards this indicator includes correspondence from ICHPL to the Regional Manager of South Coast National Parks dated 19/11/2013 proposing the SSTF offset area and land transfer. A meeting was scheduled between ICHPL and the Minister for Environment to discuss land transfer before the end of December 2013. Minutes of the meeting were not available for review during the Independent Environmental Audit reporting period. Given the evidence of correspondence between ICHPL and South Coast National Parks and the commitment for communications with the Minister it is considered that activities being conducted are progressing towards completion of the activity within the required timeframe. In order for the condition to be compliant the offset must be secured by 15 May 2014.	Evidence – correspondence to the Regional Manager of South Coast National Parks dated 19/11/2013	Not applicable
An ecological survey was provided to SEWPaC demonstrating the extent and quality of the offset by 30 November 2012.	Correspondence from DoE dated 09/11/2012) indicates receipt of the BSOP Biodiversity Offset and Vegetation Management Plan for the Shale/Sandstone Transition Forest and acknowledges an additional letter report dated 16/09/2013 prepared by Niche titled, 'Adequacy of Proposed Biodiversity Offsetting Lands Adjacent to Appin West Colliery Pit-top' (Niche, 2013). The letter report outlines the extent and quality of SSTF to sufficiently address this indicator.	Evidence – correspondence, letter report: Adequacy of proposed biodiversity offsetting lands adjacent to Appin West Colliery pit-top	Compliance
If the ecological survey shows that less than 44.9 hectares of Shale / Transition Forest is present, an additional offset site that is that no less than 44.9 hectares is identified and submitted to the Minister for approval and is protected in perpetuity.	Progress towards this indicator includes correspondence from ICHPL to the Regional Manager of South Coast National Parks dated 19/11/2013 proposing an SSTF offset area of 80.41 Hectares (Ha) of which 60.5 Ha is considered to meet SSTF criteria.	Evidence – correspondence, letter report: Adequacy of proposed biodiversity offsetting lands adjacent to Appin West Colliery pit-top	Compliance

Condition 5 - Shale / Sandstone Transition Forest

Condition 5 – The person taking the action must provide to the Minister for approval within 1 year of the date of this approval, a plan for the management of the Shale / Sandstone Transition Forest Offset. The approved Shale / Sandstone Transition Forest Offset Management Plan (the Forest Plan) must include but not be limited to:

- (a) Specific management measures to control weed species, pest animals, public access and otherwise manage the Shale / Sandstone Transition Forest Offset so that the ecological condition of the Shale / Sandstone Transition Forest is maintained or enhanced to a higher condition than that being lost as a result of this action;
 - i. This may be demonstrated through comparisons of floristic diversity and structure, vegetation health and / or percentage cover of introduced or weed plants;
- (b) An outline of key milestones and performance objectives;
- (c) Measures for annual monitoring of the ongoing quality (as measured against the ecological survey information referred to at Condition 4 a) of the Shale / Sandstone Transition Forest Offset and the effectiveness of management actions. Reports containing the monitoring results must be submitted to the department within 30 days of every 12 month anniversary of the dates the Shale / Sandstone Transition Forest Offset is protected in perpetuity; and
- (d) Corrective actions and contingency measures to be implemented should monitoring indicate a decrease in the quality of the Shale / Sandstone Transition Forest Offset.

The approved Forest plan must be implemented within 2 years of the date of this approval.

Indicator	Auditor comments	Verification method	Compliance finding
The Shale / Sandstone Transition Forest Offset Management Plan to be submitted to SEWPaC by 15 May 2013.	Correspondence from DoE dated 09/11/2012) indicates receipt of the BSOP Biodiversity Offset and Vegetation Management Plan for the Shale/Sandstone Transition Forest and acknowledges an additional letter report dated 16/09/2013 prepared by Niche titled, 'Adequacy of Proposed Biodiversity Offsetting Lands Adjacent to Appin West Colliery Pit-top' (Niche, 2013). The letter report outlines the extent and quality of SSTF to sufficiently address this indicator.	Evidence – correspondence and Bulli seam Operations Biodiversity offset and Vegetation Management Plan for the Shale/Sandstone Transition Forest	Compliance
The Shale / Sandstone Transition Forest Offset Management Plan included control measures including weed species, pest animals, public access and other management activities.	The approved (May 2013) SSTF OMP, Revision 3 addresses control measures to cover weeds, pest animals, access and management across sections 4, 5 and 6 of the SSTF OMP.	Evidence - SSTF OMP document review.	Compliance
The Shale / Sandstone Transition Forest Offset Management Plan provides for the maintenance or enhancement of the ecological condition.	The approved (May 2013) SSTF OMP, Revision 3 addresses maintenance or enhancement of the ecological condition across sections 5 and 6 of the SSTF OMP.	Evidence - SSTF OMP document review.	Compliance
The ecological condition maintenance or enhancement is demonstrated through comparisons of floristic diversity and structure, vegetation health and / or percentage cover of introduced or weed plants.	The approved (May 2013) SSTF OMP, Revision 3 addresses maintenance or enhancement through floristic diversity and structure, vegetation health and / or percentage cover of introduced or weed plants across sections 3, 4, 5 and 6 of the SSTF OMP.	Evidence - SSTF OMP document review.	Compliance
The Shale / Sandstone Transition Forest Offset Management Plan includes an outline of key milestones and performance objectives.	The approved (May 2013) SSTF OMP, Revision 3 addresses milestones and performance objectives across section 6 of the SSTF OMP.	Evidence - SSTF OMP document review.	Compliance
The Shale / Sandstone Transition Forest Offset Management Plan includes measures for annual monitoring of ecological condition and effectiveness of controls within the Offset Area.	The approved (May 2013) SSTF OMP, Revision 3 addresses measures for annual monitoring of ecological condition and effectiveness of controls across sections 5 and 6 of the SSTF OMP.	Evidence - SSTF OMP document review.	Compliance
The Shale / Sandstone Transition Forest Offset Management Plan includes provision for a monitoring report on the annual monitoring is provided to SEWPaC within 30 days of the 12 month anniversary of the Offset Area being protected in perpetuity.	The approved (May 2013) SSTF OMP, Revision 3 addresses provision for annual monitoring reports to be provided to DoE within 30 days of the 12 month anniversary of the Offset Area being protected in perpetuity across section 6 of the SSTF OMP.	Evidence - SSTF OMP document review.	Compliance
The Shale / Sandstone Transition Forest Offset Management Plan includes corrective actions and contingency measures for implementation if the ecological condition of the offset decreases.	The approved (May 2013) SSTF OMP, Revision 3 addresses corrective actions and contingency measures across section 6 of the SSTF OMP.	Evidence - SSTF OMP document review.	Compliance
The approved Forest Plan is implemented by 15 May 2014.	Progress towards this indicator was evident through the site inspection during which management measures undertaken to date were shown.	Evidence – site visit.	Not applicable

Condition 6 - Coal Wash Emplacement Staging and Rehabilitation

Coal Wash Emplacement Staging and Rehabilitation

Condition 6 – The person taking the action must provide a Coal Wash Emplacement Staging and Rehabilitation Plan (the Staging Plan) for Stage 4 coal wash emplacement area to the Minister for approval. Clearing of native vegetation for stage 4 coal wash emplacement area must not occur until the Staging Plan has been approved by the Minister. The Staging Plan must include, but not be limited to:

- (a) Measures to limit the clearing of native vegetation to no more than 60 hectares;
- (b) Provision for progressive staging of coal wash emplacement to ensure at all times a minimum 100m wide habitat corridor is maintained linking the *Persoonia hirsuta* core population with habitat adjacent to the stage 4 coal wash emplacement area;
- (c) Measures to ensure that, if the corridor is to include land previously used as emplacement areas (either in whole or in part), native re-vegetation is established to the extent that it facilitates the movement of pollination vectors for *Persoonia hirsuta*;
- (d) Staging of emplacement from east to west;
- (e) Provision for progressive rehabilitation of the emplacement area, including through:
 - i. Staged clearing of native vegetation within the stage 4 coal wash emplacement area;
 - ii. Maximising opportunities for natural regeneration, including through salvage, storage and re-use of site top soil and maximising the retention time of suitable habitat species within the stage 4 coal wash emplacement area adjacent to active emplacement areas to assist re-colonisation of native species to rehabilitated areas;
 - iii. Key performance objectives for site rehabilitation, including indicative timelines, performance measures, management actions and responsibilities and accountabilities;
 - iv. Planting only endemic species in habitat mixes appropriate for the local surrounding environment, soil, slope, and aspect, in accordance with relevant published guidelines; and
 - v. Appropriate weed and pest control strategies;
- (f) Monitoring of rehabilitation actions including, but not limited to, measures to assess the success of management actions, natural regeneration and revegetation. The reporting of monitoring results must be submitted to the department within 30 days of every 12 month anniversary of the implementation date; and

Unless otherwise agreed to in writing by the Minister, the Staging Plan must be implemented and remain implemented for a minimum period of 10 years at which point a revised plan taking into account the monitoring referred to above must be submitted to and approved by the Minister.

Indicator	Auditor comments	Verification method	Compliance finding
The Coal Wash Emplacement Staging and Rehabilitation Plan is submitted to the Minister for approval.	The Draft Coal Wash Emplacement Staging and Rehabilitation Plan (CWESRP) dated June 2013, was submitted on 29/06/2013, (correspondence sighted from OEH provided 11/09/2013 suggests further revision); however, this was yet to be formally approved by the Minister.	Evidence - Draft CWESRP document review.	Compliance (pending formal approval by the Minister)
The Staging Plan includes Measures to limit the clearing of native vegetation to no more than 60 hectares.	The Draft CWESRP (June 2013) outlines the native vegetation clearance total of 59.36 ha, Section 5 and Figure 3 of the plan.	Evidence - Draft CWESRP document review.	Compliance
The Staging Plan includes a minimum 100m wide habitat corridor from the core <i>Persoonia hirsuta</i> population.	The Draft CWESRP (June 2013) outlines the corridor requirement; however, it is not clear on Figure 11 that there is a 100 m corridor. The <i>Persoonia hirsuta</i> corridor was evident during the site visit and <i>Persoonia</i> plants seen within the habitat corridor.	Evidence - Draft CWESRP document review and site visit.	Compliance Observation Review and update Figure 11 to clearly show a 100 metre habitat corridor.
The Staging Plan includes the corridor being maintained with native re-vegetation is established to the extent that it facilitates the movement of pollination vectors for <i>Persoonia hirsuta</i> ;	The Draft CWESRP (June 2013) outlines the corridor requirement; however, it is not clear on Figure 11 that there is a 100 m corridor. This impacts the facilitation of pollination vectors. The <i>Persoonia hirsuta</i> corridor was evident during the site visit and <i>Persoonia</i> plants seen within the habitat corridor.	Evidence - Draft CWESRP document review and site visit.	Compliant Observation Review and update Figure 11 to clearly show a 100 metre habitat corridor as required by Condition 6(c).
The Staging Plan includes the operation of the emplacement from east to west	The Draft CWESRP (June 2013) outlines the east to west staging across section 2 and Figure 11 of the plan.	Evidence - Draft CWESRP document review.	Compliance
The Staging Plan includes provision of progressive rehabilitation of the emplacement area, including staged clearing of native vegetation within the stage 4 coal wash emplacement area;	The Draft CWESRP (June 2013) outlines progressive rehabilitation measures across section 6 and 7 of the plan.	Evidence - Draft CWESRP document review.	Compliance

Condition 6 - Coal Wash Emplacement Staging and Rehabilitation			
The Staging Plan includes provision of progressive rehabilitation through salvage, storage and re-use of site top soil and maximising the retention time of suitable habitat species within the stage 4 coal wash emplacement area adjacent to active emplacement areas to assist re-colonisation of native species to rehabilitated areas.	The Draft CWESRP (June 2013) outlines progressive rehabilitation measures across section 6 and 7 of the plan.	Evidence - Draft CWESRP document review.	Compliance
The Staging Plan includes planting of only endemic species in habitat mixes appropriate for the local surrounding environment, soil, slope, and aspect, in accordance with relevant published guidelines.	The Draft CWESRP (June 2013) outlines the rehabilitation measures specific to endemic vegetation across section 7 of the plan.	Evidence - Draft CWESRP document review.	Compliance
The Staging Plan includes appropriate weed and pest control strategies.	The Draft CWESRP (June 2013) outlines weed and pest control strategies across section 7 and 9 of the plan.	Evidence - Draft CWESRP document review.	Compliance
The Staging Plan includes monitoring of rehabilitation actions including, but not limited to, measures to assess the success of management actions, natural regeneration and revegetation.	The Draft CWESRP (June 2013) outlines the monitoring of rehabilitation measures specific to revegetation across section 7 and 9 of the plan.	Evidence - Draft CWESRP document review.	Compliance
The reporting of monitoring results must be submitted to the department within 30 days of every 12 month anniversary of the implementation date.	The Draft CWESRP (June 2013) outlines the monitoring results requirement for annual reporting within section 9 and 10 of the plan.	Evidence - Draft CWESRP document review.	Compliance
The Staging Plan remains is implemented and remains in place for 10 years.	The Draft CWESRP (June 2013) outlines the staging plans coverage across a 10 year period in section 2 of the plan.	Evidence - Draft CWESRP document review.	Compliance
A revised Staging Plan is submitted to the Minister for approval taking into account the monitoring results.	The Draft CWESRP (June 2013) was submitted on 29/06/2013; however, this has yet to be formally approved by the Minister and hence there has not yet been any revisions.	Not applicable	Not applicable

Condition 7 - Southern Brown Bandicoot and Broad Headed Snake Management Plan or Plans			
<p>Southern Brown Bandicoot and Broad Headed Snake Management Plan or Plans</p> <p>Condition 7 – Within 1 year of the date of this approval the person taking the action must provide for the Minister’s approval a Southern Brown Bandicoot and Broad Headed Snake conservation management plan or plans. The plan or plans must include:</p> <p>(a) Measures to avoid, mitigate and manage impacts on the Southern Brown Bandicoot, Broad Headed Snake and their habitats occurring as result of the action;</p> <p>(b) Provisions for contribution of no less than \$250,000 (GST exclusive) in funding towards regional Southern Brown Bandicoot and Broad Headed Snake programs. This finding must not be expended on the measures referred to in Condition 6 a;</p> <p>(c) A description of actions to be funded and undertaken to inform and / or enhance the conservation of these species, including through survey or research, threat abatement or rehabilitation, including public reporting or publication of information gained by these actions;</p> <p>(d) A demonstration that management actions to be undertaken will not adversely impact EPBC Act listed species;</p> <p>(e) A description of funding arrangements or agreements including work programs and responsible entities; and</p> <p>(f) Measures for the provision of documentary evidence within 30 days of the funding having been expended and / or that funding commitments have been met.</p> <p>The approved plan or plans must be implemented within 2 years of the date of this approval. The clearing of native vegetation for the stage 4 coal wash emplacement cannot occur until the approved plan or plans have been implemented.</p>			
Indicator	Auditor comments	Verification method	Compliance finding
The Southern Brown Bandicoot and Broad Headed Snake conservation management plan or plans were submitted to SEWPaC by 15 May 2013.	The Draft Southern Brown Bandicoot (SBB) and Broad-headed Snake (BHS) Management Plans were submitted on 15/05/2013; however, this was yet to be formerly approved by OEH. Comments have been provided by OEH on the 11/09/2013 suggesting further revision is required for the SBB and BHS management plans.	Evidence - Draft SBB and BHS Management Plan document review	Compliance
The Southern Brown Bandicoot conservation management plan includes measures to avoid, mitigate and manage impacts on the Southern Brown Bandicoot and its habitat.	The Draft SBB Management Plan includes measures to avoid, mitigate and manage impacts and its habitat across section 2 of the plan.	Evidence - Draft SBB and BHS Management Plan document review	Compliance
The Broad Headed Snake conservation management plan includes measures to avoid, mitigate and manage impacts on the Broad Headed Snake and its habitat.	The Draft BHS Management Plan includes measures to avoid, mitigate and manage impacts and its habitat across section 2 and 3 of the plan.	Evidence - Draft SBB and BHS Management Plan document review	Compliance
The Plans include provisions for contribution of no less than \$250,000 (GST exclusive) in funding towards regional Southern Brown Bandicoot and Broad Headed Snake programs.	The Draft SBB BHS Management Plan includes contribution in the order of \$250,000 within section 3 of the plan. Correspondence from ICHPL to the Regional Manager of South Coast National Parks dated 19/11/2013 outlines a five year payment program of \$50,000 per annum. Correspondence from OEH dated 28/22/2013 to ICHPL acknowledges funding offer (\$250,000) for SBB and BHS programs.	Evidence – Draft SBB and BHS Management Plan document review, correspondence.	Compliance
The regional funding is not be expended on the measures referred to in Condition 6 a	The West Cliff Coal Wash Emplacement Area Biodiversity Offset Strategy BHS and SBB recovery actions Draft project outline (Attachment C of both plans), demonstrates a plan of action that does not conflict with the requirements of Condition 6a. The Draft project outline covers a targeted survey plan within the Dharawal National Park, Upper Nepean State Conservation Area, Woronora Plateau Special Area, Metropolitan Special Area and O'Hares Special Area focusing on SBB and BHS. The Draft project outline has yet to be agreed with OEH.	Evidence – Draft SBB and BHS Management Plan, document review.	Compliance
The Plan/s include a description of actions to be funded and undertaken to inform and / or enhance the conservation of these species, including through survey or research, threat abatement or rehabilitation, including public reporting or publication of information gained by these actions;	The Draft SBB and BHS Management Plans outline actions for the conservation of these species. At the time of the audit the OEH was yet to provide formal feedback concerning their satisfaction of the actions proposed by ICHPL.	Evidence – Draft SBB and BHS Management Plan, document review.	Compliance (pending formal approval by the Office of Environment and Heritage)
The Plan/s includes a demonstration that management actions to be undertaken will not adversely impact EPBC Act listed species.	The Draft SBB and BHS Management Plans outline actions that focus on species conservation and protection (Table 3 SBB and Section 3 BHS management plans). The OEH was yet to provide formal feedback concerning their satisfaction of the actions proposed by ICHPL.	Evidence – Draft SBB and BHS Management Plan, document review.	Compliance (pending formal approval by the Office of Environment and Heritage)

Condition 7 - Southern Brown Bandicoot and Broad Headed Snake Management Plan or Plans			
The Plan/s include a description of funding arrangements or agreements including work programs and responsible entities	Within the Draft SBB and BHS Management Plans, the West Cliff Coal Wash Emplacement Area Biodiversity Offset Strategy BHS and SBB recovery actions the Draft project outline (Attachment C of both plans) covers a targeted survey plan including roles and responsibilities for BSOP personnel.	Evidence – Draft SBB and BHS Management Plan, document review.	Compliance
The Plan/s include measures for the provision of documentary evidence within 30 days of the funding having been expended and / or that funding commitments have been met.	The Draft SBB and BHS Management Plans were submitted on 15/05/2013; however, these had not been formally approved by OEH.	Evidence – Draft SBB and BHS Management Plan, document review.	Not applicable
The approved plans are implemented by 15 May 2014.	As above	Evidence – Draft SBB and BHS Management Plan, document review.	Not applicable

Condition 8 - Surface and Ground Water Quality Monitoring and Adaptive Management Plan

Surface and Ground Water Quality Monitoring and Adaptive Management Plan

Condition 8 – The person taking the action must provide a Surface and Ground Water Quality Monitoring and Adaptive Management Plan (the Water Plan) to Minister for approval by 30 September 2012. Clearing of native vegetation for the stage 4 coal wash emplacement area and new mining activities beneath water courses containing habitat for EPBC Act list species cannot occur until or unless the Water Plan has been approved and implemented. The Water Plan must:

- (a) Provide a monitoring and adaptive management framework that will identify potential water related impacts of the action on EPBC Act listed species and their habitat;
- (b) Contain a review of the ecological system that defines the ecological assets, functions and habitats to be protected and establish pre-mining baseline conditions;
- (c) Detail strategies and actions for maintaining, enhancing, and if required, restoring ecological assets, functions, for dependent EPBC Act listed species and their habitat including but not limited to the Macquarie Perch in Brennans Creek and the Georges and Nepean Rivers;
- (d) Define ecological outcomes and performance objectives;
- (e) Identify water requirements (volume, timing, duration, frequency, quality) for meeting ecological outcomes and performance objectives;
- (f) Identify monitoring, evaluating and reporting mechanisms including comprehensive water quality monitoring, incorporating the emplacement area, that includes:
 - i. Detailed baseline data;
 - ii. Monitoring methods, location and effort;
 - iii. Specific performance indicators that will be used to judge performance, or guide the implementation of any required management measures; and
 - iv. A program to monitor and report on the impacts and environmental performance of the action and effectiveness of management measures;
- (g) Identify requirements for adaptive management actions to achieve performance objectives and ecological outcomes, including a description of the measures that would be implemented to achieve these;
- (h) Include contingency plan (s) to manage any unpredicted impacts and their consequences;
- (i) Include a program to investigate and implement ways to improve the environmental performance of the project over time; and

Include protocols for periodic review of the plan and annual reporting to the Minister.

Indicator	Auditor comments	Verification method	Compliance finding
The Surface and Ground Water Quality Monitoring and Adaptive Management Plan was provided to SEWPac by 30 September 2012.	The Surface and Ground Water Quality Monitoring and Adaptive Management Plan (September, 2012) was submitted 30/09/2012 . Sighted a document review and comments sheet from DoE that indicated the plan was received on 27 September 2013. A Management Plan for Water Sensitive EPBC Act Listed Species was prepared by ICHPL in September 2012 to address this condition. Table 1 of the Plan defines how each of the sub-conditions are met within the document.	Management Plan For Water Sensitive EPBC Act Listed Species. DoE, Document Review/Comments Sheet.	Compliance
Clearing of native vegetation for the stage 4 coal wash emplacement area has not occurred until the Water Plan has been approved and implemented.	The Emplacement Management Plan was updated to include the requirements for the Stage 4 emplacement in June 2013. The water management system elements that handle flow from the emplacement areas are not affected by this change and continues to operate as it did during the Stage 3 emplacement. Therefore no update of the Surface Water Management Plan (SWMP) was required.	Emplacement Management Plan	Compliance
New mining activities beneath water courses containing habitat for EPBC Act list species have not occurred prior to the Water Plan being approved and implemented.	Subsidence Management Plans are developed and approved before the extraction of groups of Longwalls. These plans contain a number of documents, including Water Management Plans that consider the effects of the works on surface water elements. There is also a Biodiversity Management Plan that should be considered in conjunction with the Water Management Plan. The Water Management Plans available on the ICHPL website at the time of the audit did not anticipate any significant subsidence impact to surrounding creeks. The End Of Panel Reports available on the ICHPL website at the time of the audit did not report any subsidence impacts to creeks that were outside expected ranges.	Subsidence Management Plans, Water Management Plans, End Of Panel Reports	Compliance
The Water Plan includes a monitoring and adaptive management framework that will identify potential water related impacts of the action on EPBC Act listed species and their habitat.	Section 2 (pp.13-15) of the Management Plan for Water Sensitive EPBC Act Listed Species, dated September 2012 addressed the requirement to include a monitoring and adaptive management framework that will identify potential water related impacts of the action on EPBC Act listed species and their habitat.	Management Plan For Water Sensitive EPBC Act Listed Species, September 2012	Compliance

Condition 8 - Surface and Ground Water Quality Monitoring and Adaptive Management Plan			
The Water Plan includes a review of the ecological system that defines the ecological assets, functions and habitats to be protected and establish pre-mining baseline conditions.	Section 3 (pp.16-20) of the Management Plan for Water Sensitive EPBC Act listed Species, dated September 2012 addressed EPBC listed species and their habitats.	Management Plan For Water Sensitive EPBC Act Listed Species, September 2012	Compliance
The Water Plan includes strategies and actions for maintaining, enhancing, and if required, restoring ecological assets, functions, for dependent EPBC Act listed species and their habitat including but not limited to the Macquarie Perch in Brennans Creek and the Georges and Nepean Rivers.	Section 3 (pp.26-32) of the Management Plan for Water Sensitive EPBC Act Listed Species, dated September 2012 addressed strategies and actions for maintaining, enhancing, and if required, restoring ecological assets, functions, for dependent EPBC Act listed species and their habitat including but not limited to the Macquarie Perch in Brennans Creek and the Georges and Nepean Rivers.	Management Plan For Water Sensitive EPBC Act Listed Species, September 2012	Compliance
The Water Plan includes ecological outcomes and performance objectives.	Section 4 (p.21) of the Management Plan for Water Sensitive EPBC Act Listed Species, dated September 2012 included ecological outcomes and performance objectives.	Management Plan For Water Sensitive EPBC Act Listed Species, September 2012	Compliance
The Water Plan includes water requirements (volume, timing, duration, frequency, quality) for meeting ecological outcomes and performance objectives.	Section 5 (pp.22-25) of the Management Plan for Water Sensitive EPBC Act Listed Species, dated September 2012 included water requirements (volume, timing, duration, frequency, quality) for meeting ecological outcomes and performance objectives.	Management Plan For Water Sensitive EPBC Act Listed Species, September 2012 & Inspection of monitoring results	Compliance
The Water Plan includes monitoring, evaluating and reporting mechanisms including comprehensive water quality monitoring, incorporating the emplacement area, that includes: <ul style="list-style-type: none"> Detailed baseline data; Monitoring methods, location and effort; Specific performance indicators that will be used to judge performance, or guide the implementation of any required management measures; and A program to monitor and report on the impacts and environmental performance of the action and effectiveness of management measures. 	Section 6 (pp.26-32) of the Management Plan for Water Sensitive EPBC Act Listed Species, dated September 2012 included includes monitoring, evaluating and reporting mechanisms including comprehensive water quality monitoring, incorporating the emplacement area. The Surface Water Management Plan (SWMP) states that water monitoring is carried out in accordance with the EPL conditions. Monitoring data published on the ICHPL website at the time of the audit demonstrates that only isolated non-conformances against the EPL have occurred. The results of the monitoring are published on the BSOP website and are also summarised in an Annual Return to the EPA. Notes are given in the published data to explain any exceedances. The Annual Return provides further detail on root causes and works carried out to correct non-compliances.	Management Plan For Water Sensitive EPBC Act Listed Species, September 2012 and Review of SWMP, monitoring data and annual returns.	Compliance
The Water Plan identifies the requirements for adaptive management actions to achieve performance objectives and ecological outcomes, including a description of the measures that would be implemented to achieve these outcomes.	Section 6 (pp.26-32) of the Management Plan for Water Sensitive EPBC Act Listed Species, dated September 2012 included requirements for adaptive management actions to achieve performance objectives and ecological outcomes, including a description of the measures that would be implemented to achieve these outcomes. The SWMP identifies a range of potential issues and operational controls to mitigate the issues. For unforeseen issues leading to non-compliance, the plan identifies the use of a Compliance Evaluation Procedure and Corrective Action Procedure to identify and correct non-compliance with the regulatory conditions. The corrective actions are not identified in the report due to the varied nature of potential issues.	Management Plan For Water Sensitive EPBC Act Listed Species, September 2012 and Review of SWMP, monitoring data and annual returns.	Compliance
The Water Plan includes a program to investigate and implement ways to improve the environmental performance of the project over time	Section 8 (p.33) states that the annual review process will also formalise opportunities for improvement based on the monitoring data.	Management Plan For Water Sensitive EPBC Act Listed Species, September 2012.	Compliance

Condition 8 - Surface and Ground Water Quality Monitoring and Adaptive Management Plan			
The Water Plan includes protocols for periodic review of the plan and annual reporting to the Minister.	<p>Section 9 (p.34) states that the Management Plan will be reviewed within 3 months, of:</p> <ul style="list-style-type: none"> The submission of an annual review and compliance report The submission of an independent environmental audit report; or Any modification to relevant project approval conditions (unless the conditions require otherwise) At the time of the audit the Plan had not been reviewed. 	Management Plan For Water Sensitive EPBC Act Listed Species, September 2012 and Annual Returns.	Compliance

Condition 9 - Mine Closure Environmental Management Plan			
Condition 9 – No less than 3 years prior to the date of expected closure of the mine, the person taking the action must submit to the Minister for approval an environmental management plan that sets out any required actions and responsibilities to ensure the closure of the mine does not result in on-going adverse impacts (post closure) to EPBC Act listed species. The approved plan must be implemented until the person taking the action can provide evidence that no further actions are required and cessation is agreed to in writing by the Minister.			
Indicator	Auditor comments	Verification method	Compliance finding
A Closure Plan is developed and submitted to SEWPaC setting out required actions and responsibilities to ensure the closure of the mine does not result in on-going adverse impacts at least 3 years prior to expected closure.	<p>Not applicable during the audit period.</p> <p>Conceptual Site Closure Plans for Appin Mine Plan (July 2010) and West Cliff Colliery (October 2010) have been prepared by ICHPL and Cardno Pty Ltd and are considered high level documents that provide a closure concept, that can be implemented when closure of the mines becomes imminent.</p> <p>Correspondence to ICHPL on the 29/11/2012 from DTIRIS-DRE notes approval of the Rehabilitation Management Plan (Mine Operations Plan [MOP]) 1 October 2012 to 19 September 2019 (October 2012).</p> <p>The Mine Operations Plan demonstrates consultation with Planning and Infrastructure, NOW, OEH, Wollongong City Council, Campbelltown City Council and Wollondilly Shire Council. The MOP notes that consultation with the Community Consultative Committee (CCC) was not undertaken and hence consultation was conducted with the Appin Area Community Working Group. Consultation with relevant stakeholders is outlined within section 1.5 of the MOP and correspondence sighted from OEH on 28/11/2012 and EPA on the 16/01/2013 to ICHPL.</p> <p>The MOP includes various domain rehabilitation initiatives (Appendix J) with reference to the DRE guidelines.</p> <p>Appendix J, E and F address the requirements to provide for detailed mine closure planning, including measures to minimise socio-economic effects due to mine closure, to be conducted prior to the site being placed on care and maintenance.</p> <p>Text is provided throughout the document (e.g. page 21 reference to the West Cliff Coal Wash Area Emplacement Management Plan and Section 3.2 (p.24)) that commits to build, to the maximum extent practicable, on the other management plans required under this approval.</p> <p>Correspondence with DTIRIS-DRE notes submission to the department on 03/10/2012 three days after the required submission date.</p>	Not applicable	Not applicable

Condition 10 – At the cessation of mining activities, all portals and vent shafts are to be closed, decommissioned or capped in manner that prevents the death or injury of EPBC listed bats.			
Indicator	Auditor comments	Verification method	Compliance finding
At the cessation of mining activities all portals and vent shafts are closed, decommissioned or capped in manner that prevents the death or injury of EPBC listed bats.	Not applicable during the audit period.	Not applicable	Not applicable

Condition 11 - Shapefiles			
Condition 11 – The person taking the action must provide the department with offset attributes, shapefiles and textual description and maps to clearly define the location and boundaries of the <i>Persoonia hirsuta</i> and Shale / Sandstone Transition offsets required as a result of this approval. These must be provided within 30 days of the protection in perpetuity of these areas.			
Indicator	Auditor comments	Verification method	Compliance finding
Offset attributes, shapefiles and textual description and maps clearly defining the location and boundaries of the <i>Persoonia hirsuta</i> and Shale / Sandstone Transition are provided to SEWPaC within 30 days of the protection in perpetuity of these areas.	ICHPL emailed DoE on 26/11/2013) concerning the SSTF and <i>Persoonia hirsuta</i> offset attributes, namely, shapefiles and textual description and maps prior to legal offset security and associated 15 May 2014 deadline.	Evidence – map files and correspondence.	Compliance

Condition 12 - Notification of Actual Date of Commencement			
Condition 12 – Within 30 days after the commencement of the action, the person taking the action must advise the department in writing of the actual date of commencement.			
Indicator	Auditor comments	Verification method	Compliance finding
SEWPaC is informed in writing within 30 days of the commencement of the action.	ICHPL advised the department on 31/05/2012 within 30 days of the actual date of commencement, being 15 May 2012.	Evidence –Email correspondence dated 31/05/2012	Compliance

Condition 13 - Publication Requirements			
Condition 13 – Unless otherwise agreed to or instructed in writing by the Minister, the person taking the action must publish all management plans, reports, strategies or agreements (however described) required by these conditions of approval on their website. Each management plan, report, strategy or agreement must be published on the website within 30 days of being approved.			
Indicator	Auditor comments	Verification method	Compliance finding
Approved Management Plans, Reports and Strategies are published to the BHP Billiton website within 30 days of approval.	The Website pathway (http://www.bhpbilliton.com/home/aboutus/regulatory/Pages/default.aspx) ICHPL website, about us, regulatory info, Illawarra Coal – BSOP outlines approved plans. Email correspondence shows documents were uploaded within 30 days between BSOP personnel at ICHPL for SSTF OMP (uploaded 11/06/2013), <i>Persoonia hirsuta</i> OMP uploaded shortly after site inspection (within 30 days).	Evidence – ICHPL website	Compliance

Condition 14 - Compliance Report			
Condition 14 – Within three months of every 12 month anniversary of the commencement of the action, the person taking the action must publish a report on their website addressing the compliance with each of the conditions of this approval, including the implementation of management plans as specified in the conditions. Documentary evidence providing proof of the date publication must be provided to the department at the same time as the compliance report is published.			
Indicator	Auditor comments	Verification method	Compliance finding
A compliance report is prepared and published on the BHP Billiton website by 15 August every year.	The EPBC Annual Report 2013 was accessible on ICHPL website (http://www.bhpbilliton.com/home/aboutus/regulatory/Pages/default.aspx)	Evidence – ICHPL website	Compliance Observation It is recommended that upload dates be added to cover pages or the website so that compliance with publishing timeframes can be quickly and easily determined.
A compliance report is provided to SEWPaC by 15 August every year.	A letter dated 20 August 2013 from ICHPL to DoE was sighted providing evidence the compliance report was submitted; however, the date was five days after the due date required by the condition. This condition was found to be non-compliant due to late submission of the compliance report.	Letter – ICHPL (2013a), <i>Bulli Seam Operation – EPBC Reference No: 201/5350</i> , 20 August 2013. ICHPL (2013b), <i>EPBC Compliance Report for the Bulli Seam Operations</i> . [Email] Message to DoE. Sent Tuesday 20 August 2013, 4:40pm.	Non-compliance (due to late timing of submission)
The compliance report addresses the compliance with each of the conditions of this approval, including the implementation of management plans.	The Annual Compliance Report – BSOP addressed each of the EPBC condition items briefly in a table style format.	Evidence – Annual Compliance Report – Bulli Seam Operations Project document review	Compliance Observation It is recommended that further information be provided concerning the individual components of each of the condition items for future reports to provide a clear understanding on progress against the requirement.
Evidence of publishing the compliance report is provided to SEWPaC with the Compliance Report.	An email from ICHPL to DoE dated 20 August 2013 indicated the compliance report was in the process of being uploaded to the BSOP website. Sighted the compliance report uploaded to the BSOP website: http://www.bhpbilliton.com/home/aboutus/regulatory/Pages/default.aspx	ICHPL (2013), <i>EPBC Compliance Report for the Bulli Seam Operations</i> . [Email] Message to DoE. Sent Tuesday 20 August 2013, 4:40pm.	Compliance

Condition 15 - Accurate Records Must Be Maintained			
<p>Condition 15 – The person taking the action must maintain accurate records substantiating all activities associated with or relevant to the conditions of approval, including measures taken to implement any management plan, report, strategy or agreement required by this approval, and make them available upon request to the department. Such records may be subject to audit by the department or an independent auditor in accordance within section 458 of the EPBC Act, or used to verify compliance with the conditions of approval. Summaries of audits will be posted on the department’s website. The results of audits may also be publicised through the general media.</p>			
Indicator	Auditor comments	Verification method	Compliance finding
Accurate records are maintained regarding activities associated with or relevant to the conditions of approval.	<p>During the audit evidence was sighted including, but not limited to files, reports, photographs and maps. BSOP personnel escorted the auditor around key areas that form the subject of this EPBC Approval including: Rehabilitation areas, Westcliff stage 1, 2 and 3, Appin (East and West) the proposed SSTF offset area, <i>Persoonia hirstuta</i> specimens.</p> <p>It was noted that although records of activities associated with the condition of this Approval were maintained they were not always easy to locate.</p>	Evidence – photos, files (CD and USB provided), site visit	<p>Compliance</p> <p>Observation</p> <p>It is recommended that electronic filing of correspondence concerning EPBC actions be saved in easy and accessible folders/locations that correspond with each EPBC condition item.</p>
Accurate records are made available to SEWPaC or auditors upon request.	BSOP personnel provided documents to the auditor when requested and were available to answer questions and clarifications when required.	Evidence – correspondence, data, site visit, reports/plans.	Compliance

Condition 16 - Minister’s Approval of the Modification to a Management Plan, Report, Strategy or Agreement			
<p>Condition 16 – If the person taking the action wishes to carry out any activity otherwise than in accordance with a management plan, report, strategy or agreement (however described) specified in these conditions, the person taking the action must submit to the department for the Minister’s written approval a revised version of that management plan, report, strategy or agreement. The varied activity shall not commence until the Minister has approved the varied management plan, report, strategy or agreement in writing. The Minister will not approve a varied management plan, report, strategy or agreement unless the revised management plan, report, strategy or agreement would result in an equivalent or improved environmental outcome over time. If the Minister approves the revised management plan, report, strategy or agreement, that management plan, report, strategy or agreement must be implemented in place of the management plan, report, strategy or agreement originally approved.</p>			
Indicator	Auditor comments	Verification method	Compliance finding
A variation to management plans, reports, strategies or agreements must be approved by SEWPaC.	No variations have been made to management plans, reports, strategies or agreements in the audit period.	Not applicable	Not applicable
Any variation to management plans, reports, strategies or agreements provides equivalent or improved environmental outcomes.	As above	Not applicable	Not applicable
The revised management plans, reports, strategies or agreements are implemented in place of the original management plans, reports, strategies or agreements.	As above	Not applicable	Not applicable

Condition 17 - Minister’s Modification to a Management Plan, Report, Strategy or Agreement			
<p>Condition 17 – If the Minister believes that it is necessary or convenient for the better protection of controlling provisions listed in this decision instrument to do so, the Minister may request that the person taking the action make specified revisions to the management plan, report, strategy or agreement specified in the conditions and submit the revised management plan, report, strategy or agreement for the Minister’s written approval. The person taking the action must comply with any such request. The revised approved management plan, report, strategy or agreement must be implemented. Unless the Minister has approved the revised management plan, report, strategy or agreement, then the person taking the action must continue to implement the management plan, report, strategy or agreement originally approved as specified in the conditions.</p>			
Indicator	Auditor comments	Verification method	Compliance finding
If requested by the Minister, the management plan, report, strategy or agreement will be revised and submitted to SEWPaC for approval.	No variations have been made to management plans, reports, strategies or agreements in the audit period.	Not applicable	Not applicable
The revised approved management plan, report, strategy or agreement is implemented.	As above	Not applicable	Not applicable
If the revised management plan, report, strategy or agreement is not approved, the original management plan, report, strategy or agreement continues to be implemented.	As above	Not applicable	Not applicable

Condition 18 - Independent Auditor

Condition 18 – By the end of 31 December 2013 and every three years thereafter, unless the Minister directs otherwise, the person taking action must commission and pay the full cost of an independent environmental audit of the project. This audit must:

- (a) Be conducted by a suitably qualified, experienced and independent team of experts whose appointment has been endorsed by the Minister;
- (b) Include consultation with relevant State Agencies;
- (c) Assess the environmental performance of the project and assess whether it is complying with the requirements of this approval (including any assessment, plan or program (however described) required under this approval);
- (d) Review the adequacy of strategies, plans or programs required under the abovementioned approvals;
- (e) Recommend appropriate measures or actions to improve the environmental performance of the action, and / or any assessment, plan or program required under the abovementioned approvals; and
- (f) Audit criteria must be agreed by the Minister;
- (g) Within 6 weeks of the completion of this audit, or otherwise agreed by the Minister, the person taking the action must submit a copy of the audit report to the Minister. The audit report must address the criteria to the satisfaction of the Minister.

Note: The audit team must be led by a suitably qualified auditor and include experts in any field specified by the Minister.

Indicator	Auditor comments	Verification method	Compliance finding
An independent audit is completed by 31 December 2013 and every 3 years thereafter.	The opening meeting and first site inspection of the audit occurred on 26/11/2013. A second site inspection was conducted on 27/11/2013	Site inspection	Compliance
IC commissions and pays the full cost of the audit.	ICHPL commissioned URS Australia Pty Ltd (URS) to conduct the audit. A letter of approval form DoE for the URS audit team on 26/11/2013 was sighted.	Letter of approval from DoE for URS audit team dated 26/11/2013	Compliance
The audit is conducted by a suitably qualified, experienced and independent team of experts.	ICHPL commissioned URS Australia Pty Ltd (URS) to conduct the audit. A letter of approval form DoE for the URS audit team on 26/11/2013 was sighted.	Letter of approval from DoE for URS audit team dated 26/11/2013	Compliance
The audit team appointment is endorsed by the Minister.	ICHPL commissioned URS Australia Pty Ltd (URS) to conduct the audit. A letter of approval form DoE for the URS audit team on 26/11/2013 was sighted.	Letter of approval from DoE for URS audit team dated 26/11/2013	Compliance
The audit includes consultation with relevant State Agencies.	Section 3 of the URS audit report includes consultation with relevant state Agencies.	URS audit report	Compliance
The audit assesses the environmental performance of the project and assess whether it is complying with the requirements of this approval.	The approved auditor for	URS audit report	Compliance
The audit reviews the adequacy of strategies, plans or programs required under the abovementioned approvals	The adequacy of strategies, plans or programs required under the abovementioned approvals are provide in this compliance table 9Appendix B) of the audit report.	URS audit report	Compliance
The audit recommends appropriate measures or actions to improve the environmental performance of the action, and / or any assessment, plan or program required.	Appropriate measures or actions to improve the environmental performance of the action, and / or any assessment, plan or program are summarised in Section 13 of the audit report and the compliance table included as Appendix B.	URS audit report	Compliance
The audit criteria are agreed by the Minister.	A letter of approval form DoE for the URS audit team on 26/11/2013 was sighted. The letter confirmed that the nominated auditors were suitably qualified and experienced and that the audit criteria was reviewed and found to be satisfactory.	Letter of approval from DoE for URS audit team dated 26/11/2013	Compliance
The audit report is provided to SEWPaC within 6 weeks of completion of the audit report and every 3 years after that, unless approved by the Minister.	Noted Submission of the audit report is the responsibility of ICHPL. This is the first Independent Environmental Audit of the BSOP under the EPBC Approval.	Noted	Noted

Condition 19 - Unsatisfactory Commencement of Action			
Condition 19 – If, at any time after 5 years from the date of this approval, the person taking the action has not substantially commenced the action, then the person taking the action must not substantially commence the action without the written agreement of the Minister.			
Indicator	Auditor comments	Verification method	Compliance finding
If by 15 May 2017, the action has not been substantially commenced, the Minister's written agreement has been given.	Actions as defined by the Approval were noted to have commenced within the specified timeframe. Correspondence from ICHPL to DoE dated 15/05/2012 provided confirmation to DoE of the commencement of actions.	Email correspondence dated 15/05/2012	Not applicable

Key:

Y: Compliance	N: Non-compliance	NA: Not applicable at time of audit	U: Undetermined	O: Observation.
A rating of 'compliance' is given when the auditee has complied with a condition or element of a condition	A rating of 'non-compliance' is given when the auditee has not met a condition or element of a condition	A rating of 'not applicable at the time of the audit' is given when the condition or element of a condition falls outside the scope of the audit e.g. if an activity has not yet commenced	A rating of 'undetermined' is given when the condition or element of a condition falls inside the scope of the audit but there is insufficient evidence to make a judgment on compliance or non-compliance	An 'observation' may be made about issues relevant to the protection of a matter of national environmental significance when the issue is not strictly related to compliance or non-compliance with a condition



APPENDIX C EPA CONSULTATION LETTER



ENVIRONMENT PROTECTION AUTHORITY

Our reference: EF13/2195:DOC14/5040-01:ATC
Contact: Andrew Couldridge, (02) 4224 4100

Mr Nick Ballard
URS Corporation
Level 4, 407 Pacific Highway
ARTARMON NSW 2064

Dear Mr Ballard

REQUEST FOR COMMENT
INDEPENDENT ENVIRONMENTAL AUDIT: BULLI SEAM OPERATIONS PROJECT

I refer to URS's letter to the Environment Protection Authority (EPA) dated 29 November 2013 requesting input to the three yearly independent environmental audit of the Bulli Seam Operations Project (BSO) that encompasses the following mines: Appin East, Appin West and West Cliff. The independent audit is a requirement of the Project Approval for the Mine (No 08-0150) granted on 22 December 2011 by the NSW Minister for Planning and Infrastructure.

The EPA has issued Environment Protection Licence Number 2504 to Endeavour Coal Pty Ltd for the Bulli Seam Operation under the Protection of the Environment Operations (POEO) Act 1997. The licence contains limit, monitoring and reporting conditions for water, air and noise emissions from the premises. The following information is provided concerning the environmental performance in relation to licence requirements during the Audit period.

Specific information concerning compliance with the licence is available by searching for Licence Number 2504 on the EPA's Public register at <http://www.epa.nsw.gov.au/prpoeo/index.htm>. In summary, non-compliances were reported with four licence conditions in the two Annual Returns submitted to the EPA since December 2011. The non-compliances relate mainly to operation of small package Sewage Treatment Plants (STP) operated at the West Cliff site and Appin East site. The non-compliances were caused by variable effluent quality due to influent load fluctuation and growth of algae in the final effluent pond at the West Cliff site. Endeavour Coal has undertaken various STP upgrades to improve performance and the EPA is currently reviewing the appropriateness of the conditions.

Endeavour Coal has reported a minimal number of incidents to the EPA under Licence Condition R2 – Notification of Environmental Harm. The condition requires immediate reporting of incidents causing or threatening material harm to the environment under Part 5.7 of the POEO Act.

The EPA has received relatively few complaints from the community concerning air and noise impacts from the premises since the Project Approval was granted in December 2011 (<5 recorded). The complaints appear to have been satisfactorily addressed by Endeavour Coal through direct communication with the complainants and feedback as required to the EPA.

The EPA has reviewed Air, Noise and Water Management Plans prepared as required by the Project Approval and recommended revisions to the plans particularly for air quality issues. The EPA has also signalled its continuing interest in minimising dust emissions from the site by attaching Pollution Reduction Program 17 - Coal Mine Particulate Matter Control Best Practice to the licence in December 2011. The

Program required the licensee to undertake a site specific Best Management Practice determination to identify the most practicable means to reduce particle emissions from its sites. The EPA expects that recommendations from PRP17 will become licence requirements in 2014. The EPA also intends to attach conditions requiring additional dust and fine particulate monitoring as listed in the Air Management Plan.

The EPA has on-going concerns regarding the effect on water quality and aquatic biota of saline water discharges from Brennan's Creek Dam to the upper Georges River from Licenced Discharge Point 10. The matter is also recognised in Schedule 4, Condition 16 of the Project Approval which states that a Surface Water Management Plan must be prepared by Endeavour Coal (BHPBilliton) that includes:

- implementation of any pollution reduction program relating to mine water discharges from Brennan's Creek Dam and identification of five, seven and ten year commitments to substantially reduce the impacts on biota of salinity and other pollutants in such discharges.

On 24 April 2013, the EPA issued a legal notice attaching new licence limits for dissolved metals, additional monitoring requirements, and three new PRPs to reduce pollution to the Upper Georges River. BHP is also required to report progress on the programs to the EPA every six months and to carry out biological monitoring in the Upper Georges River over the next six years. The new discharge limits come into force in December 2016.

In determining the changes to the Bulli Seam Licence, the EPA spent significant time considering public submissions, scientific evidence and written applications from the licensee. For a full description of the process of scientific investigation, community consultation and licence negotiation, we refer you to the supporting report "Statement of Reasons - Variation to Endeavour Coal Pty Ltd Environment Protection Licence No. 2504 for West Cliff Mine". The report can be found on the EPA's website at <http://www.epa.nsw.gov.au/resources/endeavourcoal/130312EndeavourCoal.pdf>.

Should you require any further information, please contact the officer listed above.

Yours sincerely

William Dove 23 January 2014

WILLIAM DOVE
Unit Head Regulation
Environment Protection Authority



GOVERNMENT OIL & GAS INFRASTRUCTURE POWER INDUSTRIAL

URS is a leading provider of engineering, construction, technical and environmental services for public agencies and private sector companies around the world. We offer a full range of program management; planning, design and engineering; systems engineering and technical assistance; construction and construction management; operations and maintenance; and decommissioning and closure services for power, infrastructure, industrial and commercial, and government projects and programs.

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