



BULLI SEAM OPERATIONS

SECTION 8
STATEMENT OF COMMITMENTS

SOC1 STATEMENT OF COMMITMENTS

In accordance with the Environmental Assessment Requirements (EARs), this section provides a statement of Illawarra Coal Holdings Pty Ltd's (ICHPL's) commitments in relation to the Bulli Seam Operations (the Project).

Proposed Project Environmental Management, Monitoring and Reporting

ICHPL has proposed a range of environmental management, monitoring and reporting for the Project. These are described in Sections 1 to 7 and are summarised in Table SOC-1.

In particular, the environmental assessments provided in Section 5 outline proposed environmental management measures for the Project including those relevant to land resources, subsidence, groundwater, surface water, aquatic and terrestrial ecology, Aboriginal heritage, non-Aboriginal heritage, noise, air quality, greenhouse gas emissions, road transport, socio-economics, hazard and risk, and visual character. Where relevant, environmental monitoring proposals are also provided in Section 5.

The proposed Project environmental management, monitoring and reporting will be considered by the relevant regulatory authorities during the Project assessment. It is recognised that changes to the Project environmental management, monitoring and reporting proposals contained in this Environmental Assessment (EA) may be made during the assessment process.

Where relevant, existing management plans will be reviewed and revised to incorporate the Project activities.

ICHPL also proposes that a Technical Working Group be formed and chaired by the New South Wales (NSW) Department of Planning (DoP) to manage the interaction between the Project and infrastructure owners. If established, ICHPL will participate as a member of the Technical Working Group.

Specific Environmental Commitments

Throughout the EA, ICHPL has made a number of specific environmental commitments. These relate to:

- the management of Project potential impacts on landholder riparian use;
- research, offset and compensatory measures for Project impacts on water quality and ecological aspects;
- the conduct of a coal wash underground emplacement pilot trial;
- the provision of a compensatory land package for the Stage 4 Coal Wash Emplacement;
- the management of the Hairy Geebung (*Persoonia hirsuta*) in the vicinity of the West Cliff Stage 4 Coal Wash Emplacement; and
- the management of the Southern Brown Bandicoot (*Isoodon obesulus obesulus*) in the vicinity of the West Cliff Stage 4 Coal Wash Emplacement.

These specific environmental commitments are described in the sub-sections below.

Steep Slopes

Steep slopes on the sides of ridges in the Wianammatta Group shales geology are predominantly found along the Razorback Range (which encompasses Donalds Ridge).

ICHPL Commitment

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.

- the management of Project potential impacts on steep slopes on the Razorback Range;
- the management of Project potential impacts on registered production bores;

Table SOC-1
Summary of Project Management, Monitoring and Reporting

Proposed Management, Monitoring and Reporting	Key EA Sections and Appendices
<i>Management and Monitoring</i>	
Extraction Plan	Sections 5.1 to 5.19 and 7.3.1
Risk Management Plans	Section 5.2, Appendices O, P, Q and R
• Stream Risk Management Plan	Section 5.2.1, Appendix P
• Upland Swamp Risk Management Plan	Section 5.2.2, Appendix O
• Aboriginal Heritage Site Risk Management Plan	Section 5.2.3, Appendix Q
• Major Cliff Line Risk Management Plan	Section 5.2.4, Appendix R
Subsidence Monitoring Programme	Section 7.3.1
Catchment Monitoring Programme	Sections 5.2.1, 5.5 and 5.6, Appendices B, C and P
Groundwater Monitoring Programme	Section 5.5.3 and Appendix B
Upland Swamp Monitoring Plan	Section 5.2.2, Appendices E and O
Biodiversity Management Plan	Sections 5.3.3, 5.7, 5.8 and 5.9, Appendices D, E, F and O
Broad-headed Snake Management Plan	Section 5.9.3 and Appendix F
Southern Brown Bandicoot Management Plan	Section 5.9.3 and Appendix F
Bushfire Management Plan	Section 5.3.3
Built Features Management Plan	Sections 5.4 and 5.11, Appendices A and H
Heritage Management Plan	Section 5.11.3, Appendix H
Aboriginal Heritage Plan	Section 5.10.3 and Appendix G
Noise Management Plan	Section 5.12, Appendix I
Air Quality Management Plan	Section 5.13, Appendix J
Energy Savings Action Plan	Section 5.14.3
Transport Management Plan	Section 5.15.3
West Cliff Stage 4 Coal Wash Emplacement Management Plan	Sections 5.3 and 6
Rehabilitation Management Plan	Section 6
Surface Goaf Gas Drainage Management Plan	Sections 2.5.5 and 6
Service Borehole Management Plan	Section 2.11.4
PED System Management Plan	Section 2.11.5
Mining Operations Plan	Sections 2.3 and 7.3.1
Mine Closure Plan	Section 6
<i>Reporting</i>	
Annual Environmental Management Report	Section 7.3.1
Licences and Approvals	Section 7.3.1
Greenhouse Gas Reporting	Section 7.3.2

This study will include aspects such as:

- 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.

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.

Registered Production Bores

Hawkesbury Sandstone aquifers are used for consumptive purposes. Bores in the middle Hawkesbury Sandstone may experience drawdown effects as a result of the Project. Predicted potential drawdowns at individual bores are listed in Appendix B.

ICHPL Commitment

Over the Project life, ICHPL will:

- 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:
 - 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.

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.

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.

Riparian Use

Subsidence can result in the conveyance of a portion of surface water flows to sub-surface fractures and reduce the riparian use of landholders.

ICHPL Commitment

Over the Project life, with the approval of the relevant landholders, ICHPL will:

- 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:
 - 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.

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.

Research, Offset and Compensatory Measures

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 (Section 5.6) and ecological aspects (Sections 5.7 to 5.9).

ICHPL Commitment

ICHPL commits to implementing the research, offset and compensatory measures outlined in Table SOC-2.

Underground Emplacement Pilot Trial

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.

ICHPL Commitment

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.

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:

- 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.

Compensatory Land Package

Condition 5.1(e) (v) of the Dendrobium Mine Development Consent (DA 60-03-2001) (20 November 2001) stated:

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:

- ...
- (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;*
- ...

Table SOC-2
Summary of Project Research, Offset and Compensatory Measures

Activity	Financial Contribution
Research Programmes	
Swamps: <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
Streams: <ul style="list-style-type: none"> • Non-systematic subsidence effects and associated environmental consequences in significant watercourses. • Techniques for remediating stream bed fracturing. 	\$250,000
Catchment Condition Work	
<ul style="list-style-type: none"> • 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
<ul style="list-style-type: none"> • Financial contribution to management within the Dharawal State Conservation Area or SCA controlled catchments: <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. 	\$25,000/year of longwall mining in the relevant domains
Total	\$1,775,000

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*.

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.

ICHPL Commitment

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:

- 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.

Hairy Geebung

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.

ICHPL Commitment

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:

- 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.

Southern Brown Bandicoot

The Southern Brown Bandicoot (*Isododon 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.

ICHPL Commitment

ICHPL commits to implementing a number of ecological initiatives for the Southern Brown Bandicoot, aimed at:

- 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.

The initiatives will include the following measures:

- 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).
- 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).