

Subsidence Management Plan Approval

I, the Director-General, Department of Primary Industries, having considered the likely environmental impacts of the mining operations identified in the Project Description specified in Schedule 1 and having had regard to the principles of ecologically sustainable development as defined in the *Protection of the Environment Administration Act 1991*, hereby approve the Subsidence Management Plan identified in Schedule 1 for the purposes of the SMP Condition that became effective on 18 March 2004 in Mining Lease No.767, subject to the conditions set out in Schedule 2.

This Approval only authorises the underground mining operations identified in the Project Description for the Period and Area identified in Schedule 1. Obligations under this Approval regarding rehabilitation, monitoring and impact management continue to apply after the expiry of this period unless otherwise notified in writing by the Director-General.

These conditions are required to:

- ensure optimal mineral resource recovery;
- prevent, minimise, manage and/or offset adverse impacts;
- provide for the ongoing environmental management of the project;
- ensure the area disturbed by mining is appropriately rehabilitated.

The rights and duties of a Leaseholder are those prescribed by the *Mining Act 1992*, subject to the terms and conditions of the Lease which include a requirement to carry out operations in accordance with the Subsidence Management Plan conditionally approved by this Approval. This Subsidence Management Plan Approval does not override any obligation on the Leaseholder to comply with the requirements of other legislation and regulatory instruments unless specifically provided in the Mining Act or other legislation or regulatory instruments.

Note: This Approval does not constitute an approval under Section 138 Coal Mines Regulation Act 1982 or clause 88 of the Coal Mines Health and Safety Regulation 2006.

SIGNED



Brad Mullard
A/Executive Director, Mineral Resources
Under delegation for the Director General

Date of Approval: 13 MAY 2009

File No: 08/5661

SCHEDULE 1

Description of Approved Activity

Project Description:	West Cliff Area 5 Longwalls 34 to 36
Subsidence Management Plan:	West Cliff Colliery Area 5 Longwalls 34 to 36 Subsidence Management Plan Application dated January 2008, and any supplementary supporting information provided to the Department.
Seam:	Bulli Seam
Approved Period of Mining:	Date of Approval to 1 March 2016, or the expiry/cancellation of CCL 767 whichever occurs first.

SCHEDULE 2

Definitions

Activity	The proposed longwall mining described in the SMP
Application Area	The area identified within the SMP.
Bore	Any bore or well connected or proposed to be connected with sources of sub-surface water, and used or proposed to be used or capable of being used to obtain supplies of such water
Council	Wollondilly Shire Council
DECC	Department of Environment and Climate Change
Department	Department of Primary Industries
Director General	Director General of the Department of Primary Industries, or delegate
DSC	Dam Safety Committee
Inspector of Coal Mines	Inspector of Coal Mines with DPI
DWE	Department of Water and Energy
DoP	Department of Planning
Environment	includes all aspects of the surroundings of humans, whether affecting any human as an individual or in his or her social groupings
Leaseholder	The leaseholder of CCL767
Longwall mining	The extraction of the longwall panels covered by the SMP
MSB	Mine Subsidence Board
Principal Subsidence Engineer	Principal Subsidence Engineer with DPI
PSMP	Property Subsidence Management Plan
SCA	Sydney Catchment Authority
SMP	Subsidence Management Plan, titled West Cliff Colliery Area 5 Longwalls 34 to 36 Subsidence Management Plan Application dated January 2008 and supplementary supporting information provided to the Department
SMP Approved Plan	Plan No. AS-2201 REV 1 titled 'Subsidence Management Plan Part Longwall 34 to Longwall 36 Approved Plan, signed by the Mine Manager on 4 February 2009 and approved by the Director General, NSW Department of Primary Industries
Subsidence Impacts	Direct or indirect impacts resulting from subsidence from longwall mining
Subsidence	Movement and/or deformation of the ground surface or subsurface strata as a direct and/or indirect result of longwall mining

Conditions

Limits on Approval

- 1 The Leaseholder must carry out the activity strictly in accordance with SMP Approved Plan.
- 2 The Leaseholder must carry out the activity generally in accordance with the SMP subject to the conditions of this Approval. In the event of any inconsistency between the conditions of this Approval and the SMP, the conditions of this Approval prevail to the extent of any inconsistency.
- 3 Where this Approval requires actions to be undertaken by the Leaseholder, including remediation of subsidence impacts, the obligation continues until the Director General notifies the Leaseholder that the action has been completed to their satisfaction.
- 4 The Director General may vary the conditions of this Approval by notice in writing.
- 5 The Director General may, at their discretion, suspend or revoke this Approval if:
 - a) the Leaseholder fails to adhere to any condition of the Approval; or
 - b) the head of any other government authority requests suspension or revocation on the basis of the Leaseholder's non-compliance, or potential non-compliance, with legislation administered by that agency related to this Approval.



General Obligation to Minimise Harm to the Environment

- 6 The Leaseholder must implement the SMP (as amended by the conditions of this Approval) and carry out any additional practicable measures necessary to prevent and/or minimise any harm to the environment that may result from the construction, operation, or rehabilitation of the activity.

Notification of Approval

- 7 The Leaseholder must give notice of this SMP approval within 30 days to the Council, NSW Heritage Office, the local Aboriginal Land Council/s, the owners/operators of any infrastructure, and landowners in the application area and any relevant government agencies or stakeholders that the Director General's approval of the SMP has been granted.

Note: Relevant government authorities and stakeholders are listed in the Guideline for Application for Subsidence Management Approvals.

Implementation of Approval

- 8 Any plans, programmes, reports or strategies required as a condition of this Approval must be developed having regard to any guidelines adopted by the Director General for the purpose of subsidence management and mine rehabilitation
- 9 The Leaseholder must implement any plan, programme or strategy required and approved pursuant to this Approval. Failure to implement an approved plan, programme or strategy constitutes a breach of this approval.

Note: The Leaseholder may, at any time, submit an amended plan, programme or strategy for approval. Once approved, the amended plan, programme or strategy must be implemented, however, up until the date of approval, the Leaseholder must continue to implement the previously approved plan, programme or strategy.

- 10 Any modifications to plans, programs or strategies already approved for the purposes of the conditions of this Approval must have regard to the matters set out in condition 8. Amended plans, programmes or strategies submitted for approval must be accompanied by all relevant supporting documentation to assist in the assessment of the amendment or modification.

Note: This condition relates to plans, programmes and strategies required by the conditions of this Approval – it does not apply to variations to the SMP or the SMP Approved Plan which must be done in accordance with the requirements of the Mining Act, the conditions of title and the variation procedures identified in the SMP guidelines.

Directions

- 11 The Leaseholder must comply with any written direction given by the Director-General, Executive Director, Director Environmental Sustainability, Director Mine Safety Operations or Principal Subsidence Engineer relating to:
- i. the implementation of any aspect of the SMP or an approved plan, programme or strategy;
 - ii. assessing or reviewing the adequacy, effectiveness, or coverage of any approved plan, programme or strategy or any aspect of the SMP;
 - iii. the type, timing and/or location of monitoring of baseline conditions, subsidence or subsidence impacts;
 - iv. any reporting requirement under this Approval;
 - v. the carrying out of works to address subsidence impacts; and/or
 - vi. the carrying out of any studies or investigations related to subsidence or subsidence impacts and the reporting of any findings or conclusions.

The obligations under this condition prevail over any other obligation under this Approval.

Note: Compliance with a written direction will not operate as a defence to a breach of any obligation under this Approval that occurred prior to the Direction being given.



Subsidence Monitoring

- 12 The Leaseholder must submit to the Principal Subsidence Engineer for approval a subsidence monitoring programme for the longwall panels which are the subject of this Approval. This programme must include:
- a) inspection regimes;
 - b) layout of monitoring points;
 - c) parameters to be measured;
 - d) monitoring methods and accuracy;
 - e) timing and frequencies of surveys and inspections;
 - f) recording and reporting of monitoring results.

The Leaseholder must not commence longwall mining prior to the subsidence monitoring programme being approved.

***Note:** The programme should be submitted to the Principal Subsidence Engineer at least 30 days prior to the expected commencement of operations to enable sufficient time for the assessment of the programme. The Principal Subsidence Engineer may require the provision of further information to assist in the assessment of the programme or a resubmission of the programme if it is considered inadequate. Complex issues or the need for additional information or a resubmission of the programme may require a longer assessment period.*



Environmental Management

- 13 The Leaseholder must not operate otherwise than in accordance with the following environmental management plans (EMP) identified in conditions 13.1 and 13.2 approved by the Director Environmental Sustainability for the longwall panels which are the subject of this Approval. The EMPs must be prepared in consultation with relevant landholders and government agencies. No longwall operations identified in the SMP approved plan are to be commenced until the EMP required by condition 13 has been approved.

The EMPs must identify the extent of predicted conventional and non-conventional subsidence and the likely impacts of this subsidence and develop a response strategy for each of the above to include:

- a) trigger levels for subsidence impacts that require actions and responses;
 - b) the procedures that would be followed in the event that the monitoring indicates an exceedance of trigger levels;
 - c) a protocol for the notification of identified exceedances of the trigger levels;
 - d) measures to mitigate, remediate and/or compensate any identified impacts; and
 - e) a contingency plan to ensure impacts are within approved levels.
- 13.1 For operations west of the Georges River Trigger Point, the plan must address:
- a) surface and groundwater (quality and quantity);
 - b) clifflines
- 13.2 For longwall mining operations east of the Georges River Trigger Point, the Georges River Management Plan must address:
- i.) surface and groundwater (quality and quantity);
 - ii.) clifflines

The Georges River Trigger Point is defined as the projected lateral distance of 400m west of the cliff lines associated with the western edge of the Georges River. The Leaseholder must not carry out longwall operations between the Georges River Trigger Point and the Georges River until the management plan required by condition 13.1 has been approved.

The Georges River Management Plan must include:

- a. Detailed baseline data on surface water flows and water quality in the Georges River
- b. A sensitivity analysis based on mining additional increments of 50m from the Georges River Trigger Point towards the feature
- c. Justification of why such impacts are acceptable

Notes: *These requirements are based on the recommendations of the Inquiry into the Impacts of Underground Mining on Natural Features in the Southern Coalfield, particularly recommendation 5.*

The EMPs should be submitted to the Director Environmental Sustainability at least 30 days prior to the expected commencement of operations to enable sufficient time for the assessment of the plans. The Director Environmental Sustainability may require the provision of further information to assist in the assessment of the programme or a resubmission of the programme if it is considered inadequate. Complex issues or the need for additional information or a resubmission of the programme may require a longer assessment period.

The Groundwater EMP must be consistent with Sydney Catchment Authority's draft guidelines titled "The design of a hydrological and hydro-geological monitoring program to assess the impact of longwall mining in SCA catchments July 2007" and the Department of Water and Energy's "Draft Guidelines for Groundwater Monitoring".



Infrastructure and Property Management

- 14 The Leaseholder must not cause subsidence impacts to any of the following items prior to the specific Surface Safety and Serviceability management plan for the items being approved by the Director, Mine Safety Operations:
- i. Sydney Catchment Authority's infrastructure;
 - ii. Sydney West – Avon 330kV Transmission Line and other electricity transmission lines;
 - iii. Gas pipelines managed by Jemena and Gorodok;
 - iv. Macarthur Water Pipeline;
 - v. Telecommunication infrastructure;
 - vi. Appin Road and other public roads;
 - vii. Water main along the Appin Road, and
 - viii. Ingham Farm Complex.
 - ix. Private properties

These plans must be developed in consultation with

- a) The owners/operators of the item(s); and
- b) Any Government Agency with a regulatory role for the item prior to anticipated impacts.

Subsidence impacts on any houses should not exceed those identified in Table 10.31 of Volume 1 of the SMP.

Note: The approved plans must be implemented (refer to condition 9).

Public Safety

- 15 The Leaseholder must prepare and implement a public safety management plan to ensure public safety in any surface areas that may be affected by subsidence, to the satisfaction of the District Inspector of Coal Mines. The plan must include, but not be limited to:
- (a) regular monitoring of areas or infrastructure/structures posing safety risks;
 - (b) erection of warning signs;
 - (c) entry restrictions;
 - (d) backfilling of dangerous surface cracks;
 - (e) securing of unstable built structures or rockmass where required and appropriate; and
 - (f) provision of timely notification of mining progress to the community and any other relevant stakeholders where management of public safety is required.



Incident and Ongoing Management Reporting

- 16 The Leaseholder must, within 24 hours of becoming aware of the occurrence, notify:
- i. the Principal Subsidence Engineer;
 - ii. The Mine Subsidence Board;
 - iii. The Department of Water and Energy;
 - iv. The Sydney Catchment Authority;
 - v. the operators of all infrastructure covered by condition 14; and
 - vi. other relevant stakeholders; and
 - vii. Government Agency with a regulatory role if they request such notifications,

of the following:

- a) Any unpredicted and/or higher-than-predicted subsidence and/or abnormalities (as identified in the EMP, SMP or any management plans required by condition 14) in the development of subsidence;
- b) Any exceedance of predicted impacts on groundwater resources and/or the natural environment that may have been caused (whether partly or wholly) by subsidence;
- c) Any observed subsidence impacts adverse to the serviceability and/or safety of infrastructure and other built structures that may be affected by longwall mining;
- d) Any subsidence-induced cracking and/or ground deformations observed in any surface areas within the SMP application area.
- e) An exceedance of the extent of subsidence impacts identified in condition 2(c)
- f) Impacts to dwellings and other civil structures equal to and/or greater than Damage Category 3 in accordance with Table C1, Standards Australia AS 2870-1996;
- g) Any buildings, structures and infrastructure within the SMP application area, which are hazardous or are likely to become hazardous;
- h) Development of instability and/or falls of rocks along the Upper Georges River or any other water courses that may be affected by subsidence.

Note: Under Condition 11, the Leaseholder can be directed to, among other things, prepare a report on an incident reported under this condition. A report on the details of the incident, including likely or known causes, response action and proposed response measures will generally be required for incidents that involve material property or environmental damage or have the potential to cause such damage.



- 17 The Leaseholder must prepare and maintain a Subsidence Management Status Report which must include but not be limited to:
- a) the current face position of the longwall panel being extracted;
 - b) a summary of any subsidence management actions undertaken by the Leaseholder in the period subsequent to the last regular submission of the Status Report;
 - c) a summary of any comments, advice and feedback from consultation with stakeholders in relation to the implementation of this Approval (including the preparation, implementation and review of plans, programmes, reports or strategies required by this approval) undertaken or received in the period subsequent to the last regular submission of the Status Report and a summary of the Leaseholder's response to the comments, advice and feedback given by the stakeholders;
 - d) a summary of the observed and/or reported subsidence impacts, incidents, service difficulties, community complaints, and any other relevant information reported to the Leaseholder in the period subsequent to the last regular submission of the Status Report and a summary of the Leaseholder's response to these impacts, incidents, service difficulties and complaints;
 - e) a summary of subsidence development based on monitoring information compared with any defined triggers and/or the predicted subsidence to facilitate early detection of potential subsidence impacts;
 - f) a summary of the adequacy, quality and effectiveness of the implemented management processes based on the monitoring and consultation information summarised above; and
 - g) a statement regarding any additional and/or outstanding management actions to be undertaken or the need for early responses or emergency procedures to ensure adequate management of any potential subsidence impacts due to longwall mining.

The Subsidence Management Status Report must be updated at least every 14 days to reflect any changes in the information required to be included in the Report. The Status Report must be regularly submitted to the Principal Subsidence Engineer, the Department of Water and Energy and each operator of infrastructure referred to in condition 14 every one (1) month from the date of this Approval. The Status Report (as updated from time to time) must be provided, upon request, to the Mine Subsidence Board, the Director of Environmental Sustainability, the Principal Subsidence Engineer of the Department of Primary Industries, owners/operators of any infrastructure within the application area and any other stakeholders.

End of Panel Report

- 18 Within 4 months of the completion of each longwall panel, an end of panel report must be prepared to the satisfaction of the Director Environmental Sustainability. The end of panel report must:
- a) include a summary of the subsidence and environmental monitoring results for the applicable longwall panel;
 - b) include an analysis of these monitoring results against the relevant;
 - impact assessment criteria;
 - monitoring results from previous panels; and
 - predictions in the SMP and any plan prepared in accordance with conditions 13 and 13.1;
 - c) identify any trends in the monitoring results over the life of the activity; and
 - d) describe what actions were taken to ensure adequate management of any potential subsidence impacts due to longwall mining.

Access to Information

- 19 Within 3 months of the submission of an End of Panel Report (as required by Condition 18) or the approval of a plan, programme or strategy required under this Approval or the SMP (or any subsequent revision of these documents), the Leaseholder must, to the satisfaction of the Director General:
- a) provide a copy of these document/s to all relevant agencies;
 - b) ensure that a copy of the relevant documents is made publicly available at the Leaseholder's regional office; and
 - c) put a copy of the relevant document/s on the Leaseholder's website.

Note: Relevant agencies currently include SCA, DSC, MSB, DECC, DWE and DoP.



Survey Marks

- 20 At the completion of subsidence, or otherwise as required by the Department of Lands, the functionality of any survey marks affected by subsidence must be fully restored to the satisfaction of the Department of Lands.

Water Supply

- 21 In the event of interruptions to water supplies (water quality and/or quantity) due to subsidence impacts on water supply systems and/or sources caused by longwall mining, the Leaseholder must provide, without delay, water supplies of equivalent quality and quantity to locations convenient to those affected until such time that the affected water supply systems and/or sources are restored.

Cliff Safety Management Plan

- 22 The leaseholder must develop and implement a management plan to ensure the safety of any persons frequenting in the areas that may be affected by any instability of steeply sloping ground and/or falling rocks from the cliff formations associated with the Upper Georges River and any other watercourses that may be affected by subsidence. This plan must be developed to the satisfaction of the District Inspector of Coal Mines and implemented before the commencement of extraction of Longwall Panel 34.

