ASHTON COAL PROJECT

UPPER LIDDELL SEAM LONGWALLS 1 TO 8 BUILT FEATURES MANAGEMENT PLAN SUMMARY DOCUMENT

This document provides a summary of the following specific management plans for the following asset owners:

Ausgrid (previously Energy Australia)
Xstrata – Ravensworth Operations
Xstrata – Ravensworth Underground Mine
Macquarie Generation
NSW Roads & Maritime Services (previously Roads and Traffic Authority)
Telstra
NSW Office of Water
Powertel (AAPT)
Property No. 130
Ashton Coal Operations Pty Limited
Singleton Shire Council

Version Date: 01/08/2012

EXTRACTION PLAN ULD LW 1 TO 8

Ashton Coal Operations Pty Limited

Glennies Creek Road
Camberwell NSW 2330
Tel: 02 6576 1111
Fax: 02 6576 1122

Version History

Version	Status	Details	Author(s)	Authorised/Approved for Issue	
				Name/Position	Date
01/08/2012	Final	Approved	ACOL & AECOM	P. Fletcher Technical Services Manager	01/08/2012
17/07/2012	Draft	For Approval	ACOL & AECOM	P. Fletcher Technical Services Manager	17/07/2012
1/3/2012	Draft	For consultation	ACOL & AECOM	P. Fletcher Technical Services Manager	1/3/2012

External Consultation Register

Org.	Nominated Rep.	Date Issued	Comment
Ausgrid	Ian Hall	13/12/11	
RMS	Adam McKenzie	13/12/11	
DP&I	Howard Reed	01/03/12	
DRE	Paul Langley	02/03/12	
AAPT	Neil McLeod	14/03/12	
Telstra	Mark Schneider	26/03/12	
NoW	Fergus Hancock	28/03/12	
Property 130	Landowner	03/04/12	
DSC	Bill Zeigler	26/04/12	
MSB	Richard Pickles	26/04/12	
Property 130	Landowner	08/06/12	
RMS	Adam McKenzie	19/06/2012	
Ausgrid	Ian Hall	27/06/2012	

Table of Contents

List of Appendices

List of Figures

List of Tables

ABBREVIATIONS

ACOL.....Ashton Coal Operations Pty Ltd
ACP .....Ashton Coal Project
AEMR ..... Annual Environmental Management Report
AMP.....Asset Management Plan
BFMP.....Built Features Management Plan
DII ..... Department of Industry & Investment (now DTIRIS)
DTIRIS ..... Department of Trade & Investment, Regional Infrastructure & Services
DP&I ..... Department of Planning and Infrastructure
EMS.....Environmental Management Strategy
EoP.....End of Panel
MacGen ..... Macquarie Generation
MSB.....Mine Subsidence Board
PG ..... Pikes Gully Seam
RMS.....Roads & Marine Services (previously RTA)
RavOps..... Ravensworth Operations
ROW.....Right of Way
RUM ..... Ravensworth Underground Mine
ULD .....Upper Liddell Seam
ULLD ..... Upper Lower Liddell Seam
LB .....Lower Barrett Seam

This page has been left blank intentionally

1 INTRODUCTION

This Built Features Management Plan (BFMP) has been prepared to address predicted subsidence impacts to built features as a result of underground mining at the Ashton Coal Project (ACP). The scope of this BFMP includes secondary extraction of LW 1-8 within the ULD Seam only.

This BFMP summarises the asset management plans (AMPs) for the following asset owners:

- Ausgrid (previously Energy Australia)
- Xstrata – Ravensworth Operations
- Xstrata – Ravensworth Underground Mine
- Macquarie Generation
- NSW Roads & Maritime Services (previously Roads and Traffic Authority)
- Telstra
- NSW Office of Water
- Powertel (AAPT)
- Property No. 130
- Ashton Coal Operations Pty Limited
- Singleton Council.

This BFMP has been prepared in accordance with the Development Consent conditions (as modified) (**Appendix A**), the supporting Environmental Assessment (Evans & Peck, 2009) and relevant legislation and guidelines.

This management plan has been designed to fit within the existing EMS structure (see **Figure 1**) and supersedes existing management plans produced under previous SMPs.

This page has been left blank intentionally

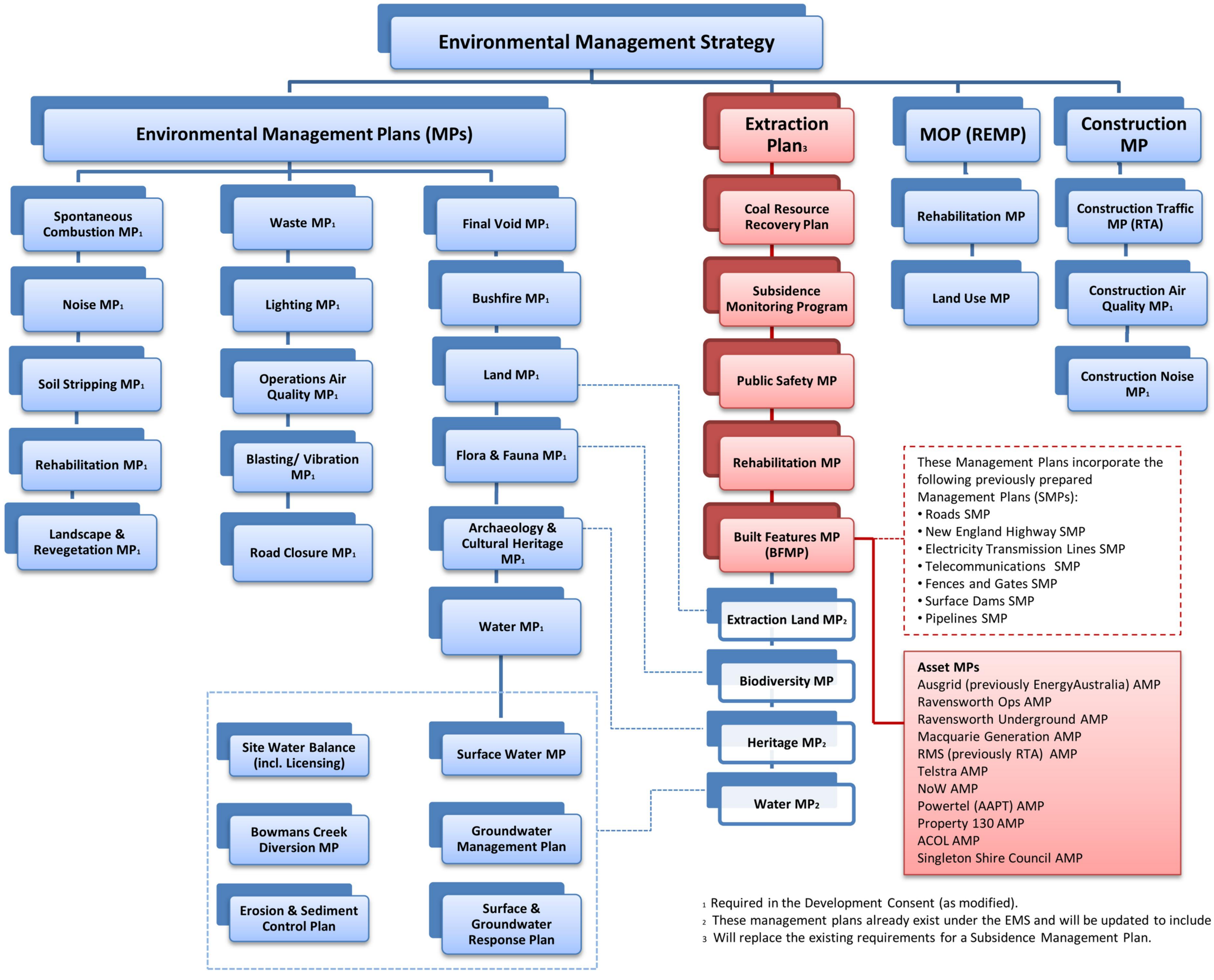


Figure 1 ACOL Environmental Management Strategy

1 Required in the Development Consent (as modified).
2 These management plans already exist under the EMS and will be updated to include the BCD.
3 Will replace the existing requirements for a Subsidence Management Plan.

This page has been left blank intentionally

2 LEGAL REQUIREMENTS AND GUIDELINES

This document has been prepared in accordance with the consent conditions, relevant legislation and guidelines (e.g. 'Guideline for Applications for Subsidence Management Approvals' prepared by NSW Department of Mineral Resources 2003) and in consultation with relevant government agencies and affected infrastructure owners as discussed below.

2.1 DEVELOPMENT CONSENT

The Ashton Coal Project (ACP) was approved by the Department of Planning and Infrastructure (DP&I) in October 2002 (DA 309-11-2001) and included the North East Open Cut (NEOC), an underground mine for four (4) seams, offices workshops and coal processing plant (CPP) with associated handling facilities. The Development Consent (DA 309- 11-2001) was issued under Part 4 of the *Environmental Planning & Assessment Act 1979* (EP&A Act 1979).

With respect to the underground mine, subsequent approvals under Section 75W of Part 3A of the EP&A Act 1979 provided for the following modifications:

- Modification 6 (DA 309-11-2001 MOD 6) - approved the diversion of Bowmans Creek to enable more efficient mining of underlying coal resources by longwall extraction and included the mining of coal from the western most panel in the three lower seams. The impacts of the diversion and revised longwall mine layout are described in the Bowmans Creek Diversion Environmental Assessment (BCD EA - Evans and Peck, 2009).
- Modification 7 and 8 (DA 309-11-2001 MOD 7/8) – approved the construction of gas drainage wells to address elevated levels of gas in the underground workings and ensure a safe working environment.
- Modification 9 (DA 309-11-2001 MOD 9) – approved the construction of a 5.5m raise bore and fan within the north eastern corner of the extraction area, two mine service drop holes; and associated infrastructure.

ACOL may seek future modifications to allow for:

- Construction of a gas drainage and surface collection and management facility.

The development consent (as modified) requires the preparation and approval by the DP&I of Extraction Plans (Condition 3.12) that include a consultation and assessment process to further determine the impacts and management of key features (including built features) based on the final mine design. Of the consent conditions which apply to the ACP, Condition 3.6(b), 3.12 and 3.13 outline the requirement for the preparation of an Extraction Plan and associated framework, practices and procedures to be followed during longwall mining activity at ACP.

With regards to the management of built features, Condition 3.12(g) requires that ACOL prepare a BFMP to the satisfaction of the Department of Trade and Investment, Regional Infrastructure and Services (DTIRIS) (formerly the Department of Industry & Investment) "*which has been prepared in consultation with the owner/s of potentially affected feature/s, to manage the potential subsidence impacts and/or environmental consequences of the proposed second workings.*" (See **Appendix A** for a detailed summary of consent conditions).The current consent conditions relevant to the management of built features are reproduced in **Appendix A**.

In addition to the requirements under the Extraction Plan, Condition 3.10 of the development consent establishes subsidence impact performance measures relating to built features and

public infrastructure. The subsidence impact performance measures relevant to Built Features are summarised in **Table 1** below (as per development consent Condition 3.10, Table 2). More detailed performance indicators have been developed for each built feature within the relevant asset management plans (AMPs), as discussed in **Section 3**.

Table 1 Subsidence Impact Performance Measures (as defined in Development Consent Condition 3.10)

Built Features	Performance Measure
New England Highway, including the bridge over Bowmans Creek.	• Always safe and serviceable. • Damage that does not affect safety or serviceability must be fully repairable, and must be fully repaired.
Brunkers Lane (*as a public road*)	• In accordance with the recommendations of the report prepared under Condition 7.14.
Other built features, including other public infrastructure.	• Always safe. • Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated. • Damage must be fully repaired or replaced, or else fully compensated.
Public Safety	• No additional risk.

The development consent requires that this BFMP is prepared in consultation with the owner/s of potentially affected feature/s. Therefore, any substantial amendments to this document as a result of internal audits, reviews, subsequent Extraction Plan applications, or changes to the mine operations or plan, will be undertaken in consultation with the relevant stakeholders prior to implementation (refer to **Section 5.2** for a list of stakeholders).

Condition 3.11 of the Development Consent includes provisions for dispute resolution between ACOL and the owner of any built features affected by mining. In the event of a dispute, the matter may be settled by the Director-General of DTIRIS, with any such settlement being final under the development consent.

3 SCOPE

3.1 DESCRIPTION OF UNDERGROUND MINING

The ACOL longwall panels are located within Mining Lease 1533 and lie south of the New England Highway. All longwall panels are oriented in a north south direction, bounded by Glennies Creek to the east, the Hunter River alluvium to the south, the New England Highway to the north, Ravensworth Mine to the west and partially overlain by Bowmans Creek in the west.

Ashton underground mine has development approval as a multiseam extraction operation. Extraction of each seam will occur in the following sequence:

- Pikes Gully Seam (PG);
- Upper Liddell Seam (ULD);
- Upper Lower Liddell Seam (ULLD); and
- Lower Barrett Seam (LB).

Mining is currently occurring within the PG Seam. The scope of this BFMP includes secondary extraction of LW 1 to 8 within the ULD Seam, only. Additional detail on the proposed workings, including dimensions, overburden depth, and mining schedule are contained within the Extraction Plan.

3.2 PREDICTED SUBSIDENCE

Subsidence behaviour resulting from extraction of the ULD Seam is variable based on the width of the panel, overburden depth, chain pillar barrier widths and the presence of prior workings in the PG Seam.

This AMP focuses on potential subsidence impacts associated with secondary extraction of the ULD Seam[1]. Predictions of likely subsidence, tilts and strains have been prepared by SCT Operations Pty Ltd (SCT, 2011). These predictions are based on a conservative empirical approach and are presented in **Table 2** and **Table 3**. A discussion of the methods used to identify subsidence predictions is provided in the Extraction Plan main document which will be publically accessible via the ACOL website prior to commencement of longwall extraction in LW1.

Table 2 Maximum Incremental Subsidence Predictions (ULD Seam Only) (SCT, 2011)

Panel	Maximum Subsidence (m)	Maximum Tilt (mm/m)	Maximum Strain (mm/m)
LW1	2.9	183	73
LW2	2.5	139	55
LW3	2.5	119	48
LW4A	2.4	93	37
LW4B	2.4	110	44
LW5	2.5	76	30
LW6A	2.5	73	29
LW6B	2.8	101	41
LW7A	2.5	66	26
LW7B	3.0	91	36
LW8	3.4	98	39

[1] Subsidence impacts associated with the PG Seam (the uppermost seam at the ACP) are managed by separate management plans which specifically address predicted subsidence levels, impacts and management measures.

Table 3 Cumulative Maximum Subsidence Predictions (from mining both the PG and ULD Seams only)

Panel	Cumulative Maximum Subsidence (m) (85% of combined seam thickness)	Maximum Tilt (mm/m)	Maximum Strain (mm/m)
LW1	4.4	235	94
LW2	4.0	189	76
LW3	4.0	162	65
LW4A	3.9	128	51
LW4B	3.9	151	60
LW5	4.0	103	41
LW6A	4.0	100	40
LW6B	4.3	132	53
LW7A	4.0	89	36
LW7B	4.5	116	47
LW8	4.4	107	43

Source: Subsidence Assessment of Upper Liddell Seam, Longwalls 1-8 Extraction Plan' SCT (2011)

Extraction of the lower coal seams is not currently covered in this management plan and the values shown above are not the final subsidence values for the site.

3.3 SUBSIDENCE IMPACTS

Relevant subsidence impacts are described within each AMP provided as appendices to this BFMP.

3.4 IDENTIFICATION OF BUILT FEATURES

The built features within the scope of this plan are indicated on **Figure 3** (existing features) and **Figure 4** (proposed features) and have been identified in consultation with neighbouring landholders and relevant public utility agencies. Each of these features has been further described within the corresponding management plan as indicated within **Table 4** and **Table 5**.

Table 4 Asset Owners Associated with the Extraction Area

Asset	Brief Description	ULD Seam LW1-8 Built Features Sub-Plan
Ausgrid		
Electricity lines	132kV traversing the southern extent of the ACOL Mining Lease	Appendix C
	Combined 132kV and 66/11kV located parallel to the New England Highway	
	11kV distribution lines traversing the ACP	
	Proposed 11kV distribution line (SEOC)	

Asset	Brief Description	ULD Seam LW1-8 Built Features Sub-Plan
Xstrata – Ravensworth Operations		
Electricity lines	33kV	Appendix D
	Proposed 330kV transmission line	
Pipelines	315 mm PN10 PE100 pipeline	
Prescribed Dam	Narama Dam	
Roads	Relocation of Lemington Road (to be a dedicated public road)	
Fences	Boundary fencing, internal fencing and gates	
Xstrata – Ravensworth Underground Mine		
Underground mine workings	Underground mining activity in proximity to the ACP and No.5 Shaft (under construction)	Appendix E
Macquarie Generation		
Roads	Brunkers Lane, site access road	Appendix F
	Relocation of Lemington Road by Xstrata (to be dedicated public road)	
Farm buildings	Dilapidated farm shed	
Prescribed Dam	Void 5 Dam (planned for future construction) and proposed associated clean water drainage	
Surface water storages	Four clay-lined basins and existing clean water drainage	
	Two downstream dams	
Gas pipeline	Proposed gas pipeline and easement to Liddell Powerstation	
Goaf gas drainage boreholes	Proposed goaf gas drainage boreholes (by ACOL)	
Fences	Boundary fencing, internal fencing and gates	
NSW Roads & Maritime Services (RMS)		
Roads	New England Highway & associated infrastructure	Appendix G
Telstra		
Telecommunication lines	Telstra cables providing service access to Property No. 153 (Xstrata - Ravensworth Operations Pty Ltd)	Appendix H
	Telstra cables providing service access to NoW Stream Gauging Station on Bowman's Creek	
	Telstra cables providing service access to Property No. 130 (Private Property)	
	Telstra cables providing future service access to subdivided blocks on Ravensworth Operations Pty Ltd lease area	
NSW Office of Water (NOW)		
Stream gauging station	'Foy Brook' Station No. 210130, on Bowmans Creek	Appendix I
Powertel (AAPT)		
Telecommunication lines	Sydney to Brisbane fibre optic cable	Appendix J

Asset	Brief Description	ULD Seam LW1-8 Built Features Sub-Plan
Property No. 130		
Agricultural land	Generally grazing land with irrigated cropping land and dairying on the alluvial flats.	Appendix K
Farm buildings	Two farm sheds	
Roads	Property access including Ashton access road, registered ROW access & private unsealed roads.	
Fences	Boundary fencing, internal fencing, gates and cattle grids	
Surface water storages	2 dams, levee banks and irrigation infrastructure	
Telecommunication lines	Telstra owned telecommunication line providing service access to the property.	
Electricity transmission lines	11kV transmission lines providing power supply to the property (no subsidence impact)	
ACOL		
Private roads	Ashton access road	Appendix L
Farm buildings	Two rural residences (incl. various sheds)	
	Two farm sheds	
Fences	Boundary fencing, internal fencing, gates, and cattle grids	
Pipelines	Hunter River pipeline (200 mm PE80 PN8)	
	Underground borehole pump pipeline (200mm PE100 PN8)	
	Clean water line (90OD PN12.5 PE100)	
	Mine water line (250OD PN20 HDPE PE100)	
	Two tailings lines (280OD PN20 HDPE PE100)	
	Decant return (250OD PN20 HDPE PE100)	
Surface water storages	Farm dams & tailings spill basin	
Landform	Bowmans Creek diversion	
Storage tanks	BOC Plant – Nitrogen (inert)	
Goaf gas drainage boreholes	Proposed goaf gas drainage boreholes	
Singleton Shire Council		
Roads	Relocation of Lemington Road (to be dedicated public road)	Appendix M

Table 5 Built Features Associated with the Extraction Area

Asset	Brief Description	Ownership	ULD Seam LW1- 8 Specific Management Plan
Public roads	New England Highway	RMS	Appendix G
	Proposed Lemington Road	Xstrata - RavOps / MacGen / SSC	Appendix D / Appendix F / Appendix M
Private roads	Ashton Access Road, Registered Right of Way (ROW) access to Property 130 and Private Road on Property 130	Property No 130, ACOL	Appendix K Appendix L
	Brunkers Lane	MacGen	Appendix F
	Site Access Road	MacGen	Appendix F
Electricity transmission lines	132kV	Ausgrid	Appendix C
	combined 132kV and 66/11kV	Ausgrid	Appendix C
	11kV	Ausgrid	Appendix C
	33kV	Xstrata – RavOps	Appendix D
	Proposed 330kV	Xstrata – RavOps	Appendix D
	Proposed 132kV and 66/11kV Relocation	Ausgrid	Appendix C
Telecommunication lines	Sydney to Brisbane fibre optic cable	AAPT	Appendix J Appendix I
	Telstra cables	Telstra	Appendix H
Gas pipelines	Proposed gas pipeline and easement	MacGen	Appendix F
Farm buildings	Two rural residences (incl. various lightweight sheds)	ACOL	Appendix L
	Two farm sheds	Property No 130, ACOL	Appendix K Appendix L
	Dilapidated farm shed	MacGen	Appendix F
Fences	Fences, gates, and cattle grids	Xstrata – RavOps, Xstrata – RUM, MacGen, Property No. 130, ACOL	Appendix D Appendix E Appendix F Appendix K Appendix L
Water / Tailings pipelines	Hunter River pipeline (200 mm PE80 PN8)	ACOL	Appendix L
	Underground borehole pump pipeline (200 mm PE100 PN8)	ACOL	Appendix L
	315 mm PN10 PE100 pipeline	Xstrata – RavOps	Appendix D
	Clean water line (90OD PN12.5 PE100 pipeline)	ACOL	Appendix L
	Mine water line (250OD PN20 HDPE PE100 pipeline)	ACOL	Appendix L
	Two tailings lines (280OD PN20 HDPE PE100 pipelines)	ACOL	Appendix L

Asset	Brief Description	Ownership	ULD Seam LW1- 8 Specific Management Plan
	Decant return (250OD PN20 HDPE PE100 pipeline)	ACOL	Appendix L
Stream gauging station	'Foy Brook' Station No. 210130, on Bowmans Creek	NOW	Appendix I
Farm dams	2 dams	Property No. 130	Appendix K
	11 dams	ACOL	Appendix L
Sedimentation basins	Four clay-lined basins	MacGen	Appendix F
	Two downstream dams	MacGen	Appendix F
	Downstream clean water drainage line	MacGen	Appendix F
Prescribed Dams	Narama Dam	Xstrata – RavOps	Appendix D Appendix E
	Void 5 Ash Dam (planned for future construction) and associated proposed clean water drainage	MacGen	Appendix F
Underground mine workings	Ravensworth Underground Mine workings in the Pikes Gully Seam and No. 5 Shaft	Xstrata – RUM	Appendix E
	Ravensworth Underground Mine workings proposed for the ULD Seam		

4 OBJECTIVES

The objective of the BFMP is to provide for the adequate management of important built features within the extraction area from direct and indirect subsidence impacts.

This objective will be achieved through:

- Identifying the management strategies and processes to be adopted to reduce the identified subsidence risks;
- Describing the stakeholder consultation and engagement process to ensure any ongoing concerns regarding subsidence can be addressed;
- Outlining the proposed subsidence monitoring and reporting processes; and
- Implementing a process by which the BFMP and associated management plans can be reviewed and audited to ensure a process of feedback and continual improvement.

In accordance with Condition 3.10 of the Development Consent, ACOL will ensure that relevant built features and public infrastructure affected by subsidence is always maintained as safe and serviceable. Any subsidence damage to relevant infrastructure resulting from ACOL's mining activities will be repaired as necessary, or else replaced or compensated consistent with ACOL's objectives.

Detailed subsidence impact performance measures have been developed for each of the identified built features and are detailed within each AMP (see Appendices). Management measures to address subsidence impacts are summarised in **Appendix B**.

This page has been left blank intentionally

5 IMPLEMENTATION AND OPERATION

ACOL have adopted a structured and systematic approach to the management of safety, health, environment and community relations to specifically meet the needs of the operation. The policies and procedures that have been developed by ACOL are to protect the health and safety of employees, contractors, sub-contractors, visitors and the general public, to protect the environment and to ensure compliance with all relevant Acts and Regulations.

5.1 RESOURCES & RESPONSIBILITIES

To ensure adequate implementation of this management plan, the following ACOL responsibilities have been assigned to relevant ACOL personnel (see **Table 6**). It is also noted that additional responsibilities are referred to within the sub-management plans.

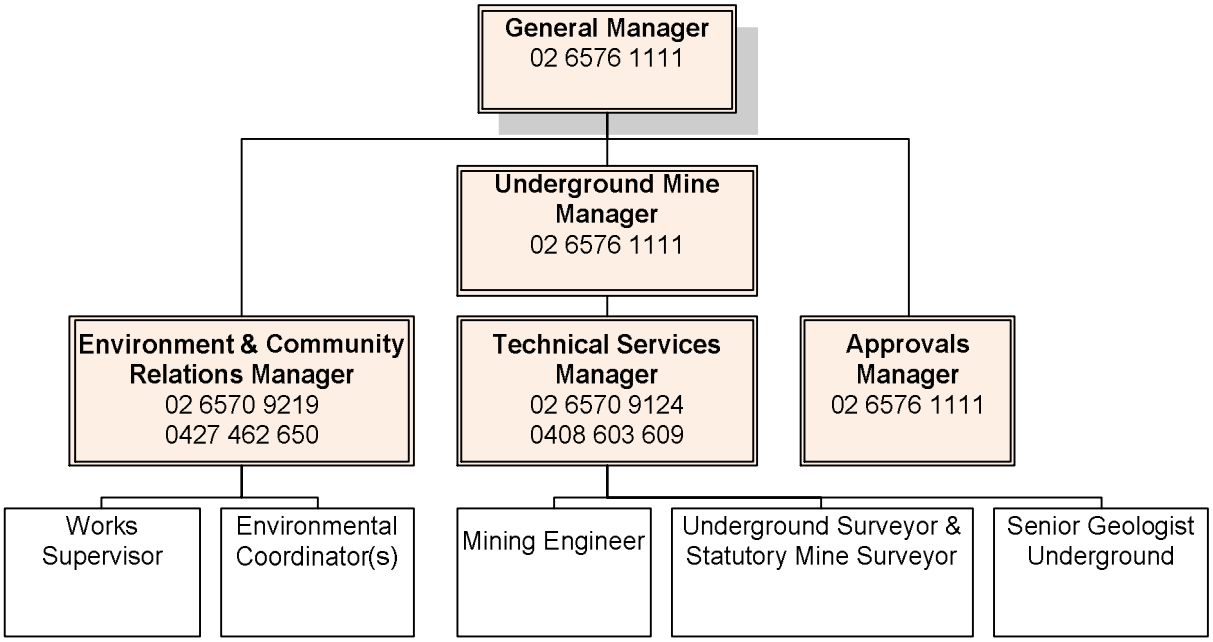
Table 6 Roles and Responsibilities

Roles	Responsibilities
General Manager	• As required, review information, and approve and instruct implementation of remediation / corrective action / or compensation, if necessary.
Underground Mine Manager	• Ensure this Built Features Management Plan and associated sub-management plans are implemented and adhered to.
	• Ensure that adequate resources are available to ACOL personnel to facilitate the completion of their responsibilities under this management plan.
Technical Services Manager	• Ensure that all monitoring and reporting is carried out within the timeframes specified, checked, processed and filed appropriately.
	• Liaise with stakeholders regarding subsidence impact management.
Mine Surveyor	• Ensure that all subsidence surveys are carried out to the accuracy required, within specified timeframes and are checked, processed and filed appropriately.
Environment and Community Relations Manager	• Ensure that the ongoing community consultation processes detailed in this Built Features Management Plan are carried out.
	• Prepare, maintain and distribute a stakeholder contact register.
	• Keep documentation and undertaken reporting for the Annual Environmental Management Report (AEMR) regarding subsidence management activities on the site.
	• Ensure that audits and reviews are carried out as detailed in this Plan.
Private Landowners, Residents and ACOL Lessee	• Notify Ashton of any concerns or issues related to subsidence management.
	• Provide access or permission (through appropriate agreements) where required for the implementation of monitoring and management actions identified under this plan.
	• Continue to participate in discussions with Ashton representatives regarding subsidence management and appropriate agreements.

Roles	Responsibilities
Asset and Utility Owners	• AMPs have been developed in consultation with relevant stakeholders. Responsibilities, contact details and communication protocols are detailed within these plans.

A summarised ACOL organisation chart, as relevant to this Built Features Management Plan is provided in **Figure 2**. The full organisation structure for the underground mine is contained within the Extraction Plan main document.

Figure 2 ACOL Organisation Chart - Summary Outline



5.2 COMMUNICATIONS

Each of the Asset Management Plans contained within this BFMP includes communication/notification protocols with affected stakeholders.

A summary of contact details for external stakeholders are provided in **Table 7**.

Table 7 Stakeholder Consultation Details

Stakeholder	Contact Name/Position	Phone	Address
Tenants – Property No. 130	Resident	*Refer to internal contacts register*	*Refer to internal contacts register*
Landowner – Property No. 130	Landowner	*Refer to internal contacts register*	*Refer to internal contacts register*
Xstrata - RavOps	Technical Services Manager	02 6570 0700	PO Box 294 Muswellbrook NSW 2333
Xstrata - RUM	Technical Services Manager	02 6576 1500	PO Box 294 Muswellbrook NSW 2333
Telstra	Project Administration, Network Integrity Services	1800 653 935	Locked Bag 5035 Parramatta NSW 2124

Stakeholder	Contact Name/Position	Phone	Address
MSB	District Manager	02 6572 4344	PO Box 524 Singleton NSW 2330
PowerTel (AAPT)	Asset Manager	1300 786 786	Level 11, 55 Clarence Street Sydney NSW 2000
Ausgrid	Manager, Customer Supply Upper Hunter	13 15 35	PO Box 196 Muswellbrook NSW 2333
Macquarie Generation	General Manager	02 6542 0711	Private Mail Bag 2 Muswellbrook NSW 2333
Roads and Traffic Authority	Manager, Land Use Development	131 782	Locked Bag 30 Newcastle NSW 2300
NSW Office of Water (NoW)	Asset Manager	02 4904 2692	PO Box 2213 Dangar NSW 2309
Singleton Shire Council (SSC)	General Manager	02 6578 7290	Singleton Council Administration Centre Cnr Queen Street & Civic Avenue SINGLETON NSW 2330

5.3 REPORTING

5.3.1 Annual Environmental Management Report

The Annual Environmental Management Report (AEMR) is the primary reporting tool for the ACP. The AEMR is required to be prepared under the ACP development consent and its purpose is to review the performance of the mine against the Environmental Management Strategy and the relevant Mining Operations Plans, the conditions of this consent, and other licences and approvals relating to the mine. The AEMR is required to include:

- An annual compliance audit of the performance of the project against conditions of the consent and statutory approvals; and
- Assess the development against the predictions made in the EIS and the terms and commitments.

Once finalised and approved, the AEMR will be made publicly available via ACOL's website.

5.3.2 End of Panel Report

ACOL have also committed to the ongoing preparation of End of Panel reports at the completion of each longwall under the development approval (a typical condition of a Subsidence Management approval under the Mining Lease). End of Panel reports will include:

- Summary of the subsidence monitoring results for the applicable longwall panel;
- Analysis of the monitoring results against the impact assessment criteria, predictions in the Environmental Assessment and monitoring results from previous panels;
- Discussion of any trends in the monitoring results over the life of the mine; and
- Description of actions taken to ensure adequate management of any subsidence impacts due to longwall mining.

End of Panel reports will be submitted to DP&I and provided to DTIRIS for information.

5.3.3 SMP Status Reports

ACOL will prepare and maintain a Subsidence Management Status Report which will include:

- Current face position of the longwall being extracted;
- Summary of any subsidence management actions undertaken by ACOL in the period subsequent to the last regular submission of the status report;
- Summary of any comments, advice and feedback from consultation with stakeholders in relation to subsidence management undertaken in the reporting period and a summary of ACOL's responses;
- Summary of the observed and/or reported subsidence impacts, incidents, service difficulties, community complaints, asset owner and stakeholder complaints; and any other relevant information reported to ACOL in the reporting period and a summary of ACOL's response to these issues;
- 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);
- Summary of the adequacy, quality and effectiveness of the implemented management processes based on the monitoring and consultation information summarised above;
- Notification of landowner and residents of Property No. 130 of longwall progression and potential impacts to infrastructure or access problems. Summary to include timeframe and proposed management measures or proposed remedial work; and.
- Statement regarding any additional and/or outstanding management actions to be undertaken or the need for early response or emergency procedures to ensure adequate management of any potential subsidence impacts due to longwall mining.

The Subsidence Management Status Report will be updated at least every 14 days and regularly submitted (every four months) to the Principal Subsidence Engineer and the owners of affected infrastructure. The status report will also be available upon request to the Mine Subsidence Board, Director of Environmental Sustainability, Principal Subsidence Engineer and owners/operators of any affected infrastructure.

5.4 AUDIT AND REVIEW

An internal review of this BFMP and associated asset management plans will be conducted in response to:

- An incident recorded as a result of the operations that affects built features;
- A significant change in operation that may affect built features covered by this management plan;
- Statutory requirements or directions/conditions of approvals requiring such action; or
- Recommendations as a result of internal or external audits.

This BFMP may be audited (if required) under the scope of any external environmental compliance audits.

A complete review and update of the BFMP and sub plans will be undertaken prior to second workings progressing in subsequent seams. The review process should allow for plan cessation where objectives and performance measures are met and where further significant subsidence impacts addressed by the BFMP are unlikely.

6 REFERENCES

NSW Department of Mineral Resources (2003) **Guideline for Applications for Subsidence Management Approvals.**

SCT (2011) **Subsidence Assessment for Upper Liddell Seam, Longwalls 1-8 Extraction Plan**, report to Ashton Coal Mine.

SCT (2011) **Subsidence Assessment for Longwalls 6B to 8 in the Pikes Gully Seam based on the Bowmans Creek Diversion Mine Plan**, report to Ashton Coal Mine.

This page has been left blank intentionally

Ref. No.	Asset Owner (Existing)
1	Ausgrid assets
2	Ravensworth Operations assets
3	Macquarie Generation assets
4	RTA assets
5	Telstra assets
6	Powertel (AAPT) assets
7	ACOL assets
8	Property 130
9	Property 130 Right of Way

Notes:

1. Fences and gates not shown
2. Proposed assets shown on Figure 4

Legend

- Ashton Mining Leases
- ACOL First Workings (ULD)
- ACOL Second Workings (ULD)
- 11kV Power line
- 33kV Power line
- 66kV Power line
- 132kV Power
- Fibre Optic Cable
- Telstra U/G Cable
- Polyethylene Water Pipe
- Existing Clean Water Drainage
- 315mm PN10 PE 100 Pipeline
- Road
- New England Highway
- Culverts
- Pond / Dam
- Dam Notification Area
- Old Open Cut Spoil Heaps
- Proposed Bowmans Creek Diversion
- Buildings
- Nitrogen Plant
- Property 130 Boundary
- Property 130 Right of Way

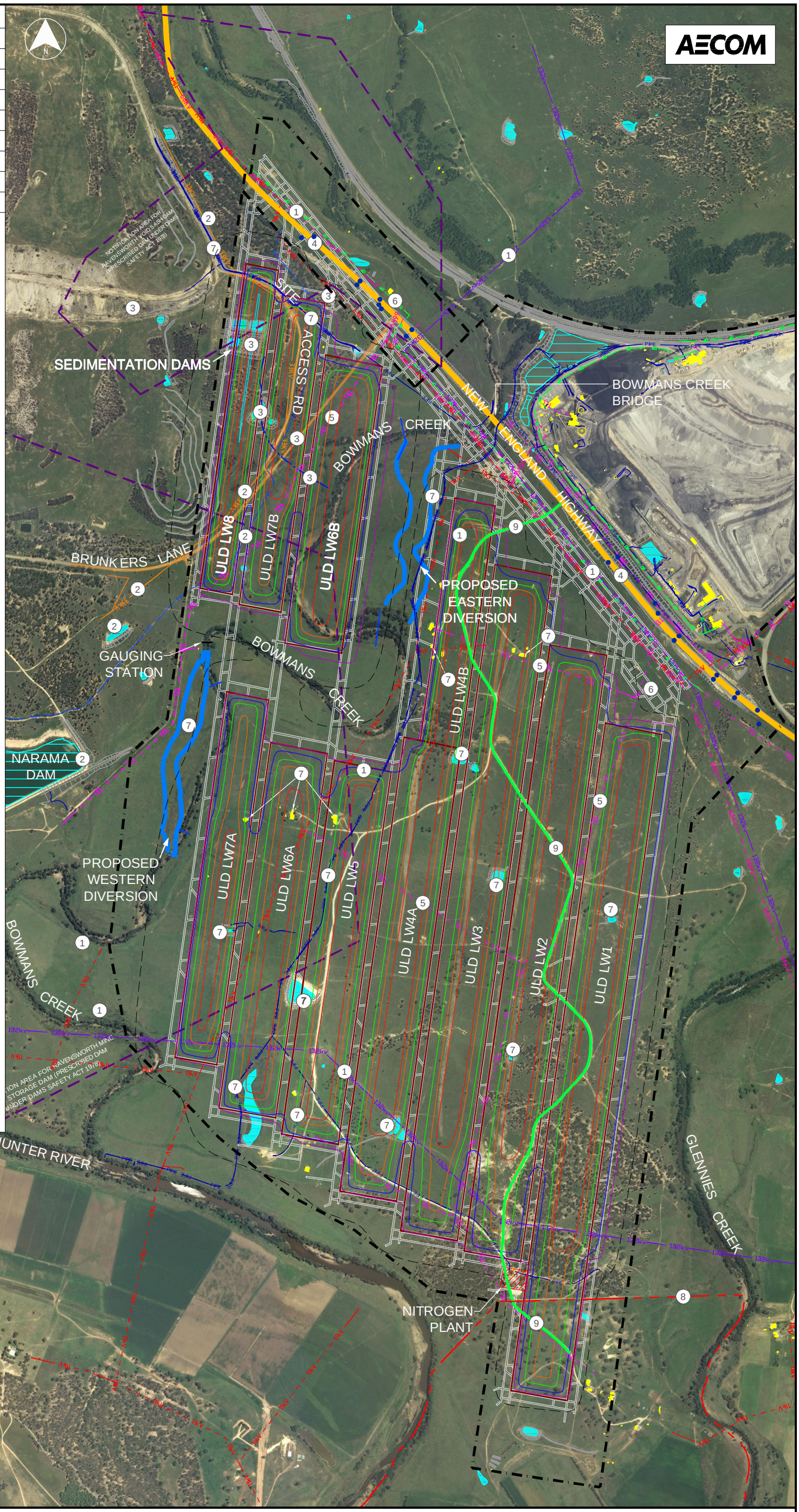
Incremental Subsidence Contours

- 20mm
- 0.1m
- 0.5m
- 1.0m
- 1.5m
- 2.0m
- 3.0m

Subsidence contours are based on empirical estimates and reflect predicted incremental subsidence contours for extraction of the ULD Seam only.

0 150 300

1 : 15000 (A3)



CAD REF:N:\60219842_EXTRACTION_PLANS.CADD\SS.3 WORKING\DRG\BFMP-0003.DWG

LAST MODIFIED:8/29/2012 12:04 PM

AshtonCoal

Built Features Management Plan - Existing Assets
Upper Liddell Seam LW 1 - 8

Figure 3
Location of Built Features
Existing Assets

This page has been left blank intentionally

Ref. No.	Infrastructure Type (Proposed)
	Macquarie Generation
1	Proposed Void 5 Dam
2	Proposed Clean Water Corridors
3a	Proposed Gas Pipeline Easement
3b	Proposed Gas Pipeline (Surface)
	Ravensworth North Operations Infrastructure
4	Proposed Lemington Road Easement
5	Proposed 330kV Powerline
	Ravensworth Underground Infrastructure
6	Proposed Pikes Gully Workings
7	Proposed Shaft No. 5
	Ashton Coal Operations Infrastructure
8	ACOL Proposed Goaf Gas Drainage Bore Holes and Pipe
	Ausgrid
9	Proposed Power Line Relocation Corridor

Notes

1. Existing assets shown on Figure 3.

Legend

- Ashton Mining Leases
- ACOL First Workings (ULD)
- ACOL Second Workings (ULD)
- Ravensworth Underground Workings
- ACOL Proposed Goaf Gas Drainage Bore Holes and Pipe
- GAS Proposed Gas Pipeline (Surface)
- Proposed Gas Pipeline (Easement)
- (E) Proposed Ravensworth Ops 330kV Powerlines
- Proposed Power line Relocation Corridor
- Proposed No.5 Shaft
- Proposed Lemington Road Alignment
- Bowmans Creek Diversion

Incremental Subsidence Contours

- 20mm
- 0.1m
- 0.5m
- 1.0m
- 1.5m
- 2.0m
- 3.0m

Subsidence contours are based on empirical estimates and reflect predicted incremental subsidence contours for extraction of the ULD Seam only.

0 150 300
1 : 15000 (A3)

CAD REF:P:\NTL\60219842_EXTRACTION_PLAN5. CADD\5.3 WORKING\DRG\BFMP-0004.DWG
LAST MODIFIED:7/17/2012 9:46 AM

AshtonCoal

Built Features Management Plan - Proposed Assets
Upper Liddell Seam LW 1 - 8

Figure 4
Location of Built Features
Proposed Assets

This page has been left blank intentionally

APPENDIX A – CURRENT CONSENT CONDITIONS

<table>
<tr><th>Condition number</th><th>Condition requirement (DA 309-11-2001 MOD 7)</th><th>Addressed in BFMP</th></tr>
<tr><td>3.10</td><td>The Applicant shall ensure that underground mining does not cause any exceedances of the performance measures in Table 2, to the satisfaction of the Director-General of DII.</td><td rowspan="3">In each of the Asset Management Plans (Appendix C – Appendix L), objectives and targets are set in Section 4 to address performance measures in detail; and management measures are outlined in Section 5.</td></tr>
<tr><td></td><td>Table 2: Subsidence Impact Performance Measures
<table>
<tr><th>Built Features</th><th></th></tr>
<tr><td>New England Highway, including the
bridge over Bowmans Creek</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>Brunkers Lane</td><td>In accordance with recommendations of the report prepared under condition 7.14</td></tr>
<tr><td>Other built features, including other public infrastructure</td><td>Always safe.
Serviceability should be maintained wherever practicable. Loss of serviceability must be fully compensated.
Damage must be fully repaired or replaced, or else fully compensated.</td></tr>
<tr><th>Public Safety</th><th></th></tr>
<tr><td>Public safety</td><td>No additional risk.</td></tr>
</table></td></tr>
<tr><td></td><td>Notes:
1) The Applicant will be required to define more detailed performance indicators for each of these performance measures in Built Features Management Plans (see condition 3.12 below).
2) The requirements of this condition only apply to the impacts and consequences of mining operations undertaken following the date of modification 6.
3) Requirements regarding “safe” or “serviceable” do not prevent preventative or mitigatory actions being taken prior to or during mining in order to achieve or maintain these outcomes.
4) 4) Compensation required under this condition includes any compensation payable under the Mine Subsidence Compensation Act 1961 and/or the Mining Act 1992.</td></tr>
<tr><td>3.12</td><td>The Applicant shall prepare and implement an Extraction Plan for the second workings within each seam to be mined to the satisfaction of the Director-General. Each Extraction Plan must:
a) be prepared by a team of suitably qualified and experienced persons whose appointment has been endorsed by the Director-General;
b) be approved by the Director-General before the Applicant carries out any of the second workings covered by the plan;
c) include detailed plans of existing and proposed first and second workings and any associated surface development;
d) include detailed performance indicators for each of the performance measures in Tables 1 and 2;
e) 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 consent;
f) describe the measures that would be implemented to ensure compliance with the performance measures in Tables 1 and 2, and remediate any impacts and/or environmental consequences;
g) include the following to the satisfaction of DII:
• a coal resource recovery plan that demonstrates effective recovery of the available resource;
• a subsidence monitoring program to:</td><td>In each of the Asset Management Plans (Appendix C – Appendix L), potential impacts and environmental consequences are addressed in Section 3, and management measures are outlined in Section 5.

The appointment of a suitably qualified and experienced team of experts was endorsed by a delegate of the Director-General for DP&I on 3 June 2011.</td></tr>
</table>

Condition number	Condition requirement (DA 309-11-2001 MOD 7)	Addressed in BFMP
	– **provide data to assist with the management of the risks associated with subsidence;** – **validate the subsidence predictions; and** – **analyse the relationship between the subsidence effects and impacts under the plan and any ensuing environmental consequences;** • **a Built Features Management Plan, which has been prepared in consultation with the owner/s of potentially affected feature/s, to manage the potential subsidence impacts and/or environmental consequences of the proposed second workings;** • **a Public Safety Management Plan to ensure public safety in the mining area; and** • **appropriate revisions to the Rehabilitation Management Plan required under condition 3.51; and** h) include a: • Water Management Plan, which has been prepared in consultation with DECCW and NOW, which provides for the management of the potential impacts and/or environmental consequences of the proposed second workings on surface water resources, groundwater resources and flooding, and which includes: – 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 groundwater inflows to underground workings; and – a program to manage and monitor impacts on groundwater bores on privately-owned land; • Biodiversity Management Plan, which has been prepared in consultation with DECCW and DII, which: – includes a program of works to ensure that overall terrestrial and aquatic biodiversity values are the same or better than existed in Bowmans Creek prior to longwall mining; – provides for the management of the potential impacts and/or environmental consequences of the proposed second workings on aquatic and terrestrial flora and fauna; • 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; • Heritage Management Plan, which has been prepared in consultation with DECCW and relevant stakeholders for Aboriginal heritage, to manage the potential environmental consequences of the proposed second workings on Aboriginal heritage sites or values; and i) include a program to collect sufficient baseline data for future Extraction Plans.	

APPENDIX B – SUMMARY OF ASSET SUBSIDENCE MANAGEMENT MEASURES

	ASSET MANAGEMENT PLAN – AUSGRID (PREVIOUSLY ENERGYAUSTRALIA)			
Item	**Action**	**Trigger/Timing**	**Responsibility**	**Reporting**
1	**Monitoring**			
1.01	Pre-mining baseline survey to obtain xyz coordinates along all poles and conductors. The survey is to be undertaken in accordance with the Subsidence Monitoring Program and the proposed methods therein.	Pre-mining	Ashton Underground Surveyor	Nil
1.02	Baseline photographic survey and visual assessment of all support poles and electricity lines within the Extraction Plan area.	Pre-mining	Ashton Mining Engineer	Nil
1.03	Carry out assessment of subsidence affected power pole alignment in consultation with Ausgrid & MacGen. The assessment will review: • Appropriate pole type (height and spacing) • Mitigation measures required (if any) • Clearance • Capacity of lines	Pre-mining	Ashton Underground Mining Engineer	Provide copy to Ausgrid
1.04	Daily visual inspections of all powerlines noting their condition and line clearances. Assets to be monitored in accordance with the Subsidence Monitoring Program.	Daily, from 100m before until the active face is 100m past the powerline location.	Ashton Underground Mining Engineer	SMP Status Report Fortnightly Status Report
1.05	Subsidence survey monitoring of all lines for tilt, strain and line clearance. Assets to be monitored in accordance with the Subsidence Monitoring Program.	Commencing from 100m before and at 50m intervals until the active face is 100m past the powerline location.	Ashton Mine Surveyor	End-of-Panel Report
1.06	Monitoring of 132kV Southern Major Interconnector per Trigger Action Response Plan (TARP) (refer Table 10). ~~Monitor forecasts for wind speeds.~~ ~~When wind speed is greater than 70km/h cease longwall mining for the duration of the high wind speeds and if required a reassessment of the poles will be conducted.~~	While active face of longwall is within 100m of 132kV support poles.	Ashton Underground Mining Engineer	Fortnightly Status Report
1.07	Investigate relocation of sections of affected local 11kV on ACOL land to land that will not be affected by subsidence i.e. Bowmans Creek corridor.	Prior to subsidence impacts	Ashton Technical Services Manager	Nil

	ASSET MANAGEMENT PLAN – AUSGRID (PREVIOUSLY ENERGYAUSTRALIA)			
Item	**Action**	**Trigger/Timing**	**Responsibility**	**Reporting**
2	**Management**			
2.01	Maintain safe access to the electricity transmission easements and infrastructure for Ausgrid personnel to undertake normal line maintenance and remediation works (if required).	Ongoing	Ashton Underground Mining Engineer	Nil
2.02	Pre- subsidence structural assessment of 132kV, 66kV and 11kV lines. Any modifications required will be subject to designs prepared / approved by Ausgrid.	Assessment to be completed prior to each longwall commencing. Modifications to be completed prior to subsidence impacts occurring.	Ashton Underground Mining Engineer	Provide copy to Ausgrid
2.03	Remediation of 11kV line by isolating lines in temporary sheaves/rollers. Poles that are braced with wire stays will be individually assessed to determine management works.	Prior to each longwall being mined.	Ashton Underground Mining Engineer	Notify Ausgrid
2.04	Install temporary rollers to 132KV line (where required).	Prior to any subsidence effects on the 132KV powerlines.	Ashton Underground Mining Engineer	Notify Ausgrid
2.05	Installation of stays to powerlines affected by subsidence and removal of rollers (where fitted).	Following completion of active subsidence.	Ashton Underground Mining Engineer	Notify Ausgrid
2.06	Repair works on 11kV, 66kV and 132kV lines in accordance with normal line maintenance procedures.	As required (i.e. either through inspections or service disruptions).	Ausgrid	Nil
2.07	Replace high-voltage clearance signage to reflect any changes/reduction in line clearance (refer to Item 1.4).	Following completion of active subsidence.	Ashton Underground Mining Engineer	Nil
2.08	Structural Assessment and Post Subsidence Inspections.	Following completion of active subsidence.	Ausgrid	Nil

	ASSET MANAGEMENT PLAN – AUSGRID (PREVIOUSLY ENERGYAUSTRALIA)			
Item	**Action**	**Trigger/Timing**	**Responsibility**	**Reporting**
3	**Incident Response**			
3.01	Notify Ausgrid on 13 13 88 of any fallen/damaged electrical assets, set up alternative access and take appropriate measures to prevent potential injury (e.g. signage, fencing over roadways and notifying residents).	If required as a result of subsidence impacts (i.e. either through inspections or service disruptions) as soon as practicable.	All ACOL personnel.	Notify Ausgrid
3.02	Undertake mining operations with regard to the Trigger Action Response Plan (TARP) for undermining of 132kV Southern Major Interconnector.	Ongoing/As per TARP	Ashton Underground Mining Engineer, Ashton Technical Services Manager	Notify Ausgrid/ Relevant Stakeholders
4	**Notification, Consultation & Reporting**			
4.01	Forward information to Ausgrid regarding progress of the longwall and any relevant subsidence management actions.	Fortnightly	Ashton Underground Mining Engineer	Fortnightly Status Report
4.02	Notify Ausgrid if subsidence impacts are identified.	In response to monitoring.	Ashton Underground Mining Engineer	Nil
4.03	Notification of landowners and residents if any fallen/damaged electrical assets have been identified and/or if alternative access routes have been setup.	If required as a result of subsidence impacts (i.e. either through inspections or service disruptions) as soon as practicable.	Ashton Environmental Officer/ Ashton UG Mining Engineer	Email
4.04	Ausgrid to be provided with a copy of subsidence monitoring data for each longwall.	On completion of each Longwall panel once subsidence has ceased.	Ashton Underground Mining Engineer	Monitoring emails from ACOL Surveyor
4.05	Extraction Plan to be made publically accessible on the ACOL website.	Prior to commencement of longwall extraction.	ACOL	Nil

ASSET MANAGEMENT PLAN – ROADS AND MARITIME SERVICES				
Item	**Action**	**Trigger/Timing**	**Responsibility**	**Reporting**
1	**Monitoring**			
1.01	Subsidence monitoring (survey, photographic, and visual) of the New England Highway in accordance with the Control Management Plan (refer to AMP) and Subsidence Monitoring Program.	Pre-mining: refer to AMP	Ashton Mine Surveyor	Provide copy to RMS
1.02	Install new pavement survey marks where necessary at 50m intervals along both sides of highway pavement from the eastern end of the cutting westwards to limit of mining (~2800m). Methodology to be confirmed with RMS, (i.e. drill-hole in kerbs through cutting, and survey marks i.e. star pickets installed to ground level, behind guard rail in fill areas). *Note: Previous survey marks installed have been covered by new pavement seal.*	Pre-mining: refer to AMP	Ashton Mine Surveyor	Provide copy to RMS
1.03	Install infill road reserve survey marks at 50m intervals between existing highway cutting marks and road reserve marks.	Pre-mining: refer to AMP	Ashton Mine Surveyor	Provide copy to RMS
1.04	RMS Bridge Inspection Report. *(Note last report 25August 2011 and next due Mar-2012)*	Annually (Nominally)	RMS	Provide copy to ACOL
1.05	Annual Roadway Report *(Note last 2011 reports include Skid, Profilometry and Road cracking in MS Excel format).*	Annually (Nominally)	RMS	Provide copy to ACOL
1.06	Culvert Inspection Report.	Annually (Nominally)	RMS	Provide copy to ACOL
2	**Management**			
2.01	Works Authorisation Deed (WAD) for mine workings under New England Highway reserve (for PG portal heading A, B & C only) dated 23/1/06.	Prior to 1st workings undermining New England Highway roadway reserve.	Ashton Underground Mining Engineer	Provide copy of Works Authorisation Deed to RMS.
2.02	Maintain a 'Pothole Management Plan' for working under and adjacent to the New England Highway.	Prior to 1st workings undermining New England Highway roadway reserve and entrance to Property 130 ROW access road.	Ashton Underground Mining Engineer	Copy to RMS from ACOL Document Management System.

ASSET MANAGEMENT PLAN – ROADS AND MARITIME SERVICES				
Item	**Action**	**Trigger/Timing**	**Responsibility**	**Reporting**
2.03	Maintain an RMS-approved Control Management Plan and Risk Register (refer to AMP)	Prior to mining (inclusive of 1st and 2nd workings).	Ashton Underground Mining Engineer	Copy to RMS from ACOL Document Management System.
3	**Incident Response**			
3.01	Refer to ACOL Pothole Management Plan and implement controls in the Stability Control-Action-Response (SCARP) plan.	Roof fall (higher than roof bolts) or major geological structure (greater than 500mm throw) in main headings (Highway road reserve).	Ashton Underground Mining Engineer	Fortnightly Status Report
3.02	Notify the RMS and re-survey in accordance with the Control Management Plan (refer AMP).	Visual inspection identifies that movement may have occurred or subsidence movements at survey monitoring locations in excess of 20mm - refer to (refer AMP).	Ashton Underground Mining Engineer	Notify RMS.
3.03	In consultation with the MSB, provide funds to repair any subsidence- related damage to the New England Highway road reserve.	If damage is caused to New England Highway by subsidence from longwall mining.	Ashton Underground Mining Engineer / MSB	Fortnightly Status Report
4	**Notification/Consultation**			
4.01	Notification to RMS as mining activity approaches within 200 metres of the New England Highway road reserve.	As mining activity approaches within 200 metres of the New England Highway road reserve.	Ashton Underground Mining Engineer	Fortnightly Status Report
4.02	Notify RMS if any subsidence impacts are identified.	In response to monitoring.	Ashton Underground Mining Engineer	Consultation Records
4.03	RMS to be provided with a copy of subsidence monitoring data	Post-surveys	Ashton Surveyor	Email

ASSET MANAGEMENT PLAN – TELSTRA				
Item	**Action**	**Trigger/Timing**	**Responsibility**	**Reporting**
1	**Monitoring**			
1.01	An accredited service locator will be used to find and mark the position at regular intervals of Telstra cables throughout the Mining Lease area and Property 130. Ashton Surveyors will then record the position of relevant cables. This information will assist in locating the cables to undertake repairs (if required) and to ensure that other subsidence remediation activities do not inadvertently damage sub-surface cables.	Pre-mining (completed).	Underground Mine Engineer	Nil
1.02	Cables will be tested to confirm they are in working order and an assessment completed by a suitably qualified telecommunications technician and ACOL on likelihood of service disruption and feasible protective measures (or temporary alternative service etc). Measures will be adopted in consultation with Telstra and affected service customer(s).	Prior to telecommunications cable being affected by subsidence (pre-mining).	Underground Mine Engineer	Nil
1.03	Cables will be tested to confirm they are in working order and an assessment/design completed by a suitably qualified telecommunications technician on any required repairs or relocation to address subsidence-related damage. Measures will be adopted in consultation with Telstra and affected service customer.	Completion of active subsidence.	Underground Mine Engineer	Nil
1.04	Where cables are not in use/service, a qualified contractor will be engaged to confirm the future use requirements of these cables at the completion of mining.	Completion of active subsidence.	Underground Mine Engineer	Fortnightly Status Report
2	**Management**			
2.01	If required, provide alternative data storage and transmission for NoW stream gauging station or maintain in an operational state.	Prior to telecommunications cable being affected by subsidence.	Ashton Environmental Coordinator	Fortnightly Status Report
3	**Incident Response**			
3.01	Engage a suitably qualified communications engineer/technician (in consultation with Telstra) to test and repair telecommunications infrastructure damaged by subsidence. Repairs will then be undertaken in consultation with Telstra and the affected property owner (i.e. if cables are located on, or accessed via Property No. 130, 153 or 155).	If liaison with residents indicates either total loss, degraded quality or intermittent access of communications in the subsurface cables.	Ashton Environmental Coordinator	Fortnightly Status Report
4	**Notification, Consultation & Reporting**			
4.01	Liaise with Telstra representatives to undertake subsidence monitoring of affected Telstra assets.	Pre and posting mining	Ashton Environmental Coordinator	Email
4.02	Liaise with affected service customers to confirm service requirements and prior to providing or implementing alternative communications	Pre mining	Ashton Environmental Coordinator	-

ASSET MANAGEMENT PLAN – TELSTRA				
Item	**Action**	**Trigger/Timing**	**Responsibility**	**Reporting**
4.03	Provide notification to Telstra representatives as the longwall face approaches Telstra assets within the site. This will ensure that for asset management purposes, Telstra are aware of potential subsidence impacts on their assets.	As longwall face approaches Telstra assets and once the longwall face has passed.	Ashton Environmental Coordinator	Fortnightly Status Report
4.04	Telstra to be provided with a copy of subsidence monitoring data.	Post-surveys	Ashton Environmental Coordinator	Email

ASSET MANAGEMENT PLAN – AAPT (POWERTEL)				
Item	**Action**	**Trigger/Timing**	**Responsibility**	**Reporting**
1	**Monitoring**			
1.01	An accredited service locator will be used to find and mark the position of the fibre optic cable in relation to the subsidence area. Ashton Surveyors will then record the position of all cables. This information will assist in locating the cables for future reference and to ensure that other subsidence remediation activities do not inadvertently damage sub-surface cables.	Pre-mining (completed)	Ashton Mining Engineer	Nil
1.02	Monitoring will assist to identify any subsidence-induced damage to cables and highlight if any repairs are required.	Completion of active subsidence	Ashton Mining Engineer	Fortnightly Status Report
2	**Management**			
2.01	The cable is outside the area that will be influenced by subsidence and therefore no additional management actions are currently proposed.			
3	**Incident Response**			
3.01	Engage a suitably qualified communications engineer/technician (in consultation with AAPT) to test and repair telecommunications infrastructure damaged by subsidence. Repairs to be undertaken in consultation with AAPT and any affected property owners (i.e. if the damaged portion of cable is located on, or accessed via private property).	Following completion of active subsidence, if liaison with AAPT indicates either total loss of communications, degraded quality or intermittent access in the fibre optic cables.	Ashton Mining Engineer	Fortnightly Status Report
4	**Notification, Consultation & Reporting**			
4.01	Provide notification to AAPT representatives as the longwall face approaches the fibre optic cable. This will ensure that for asset management purposes, AAPT are aware of potential subsidence impacts on their assets.	As longwall face approaches AAPT assets and once the longwall face has passed.	Ashton Mining Engineer	Fortnightly Status Report
4.02	The results of the telecommunication cable monitoring will be reported to AAPT.	At completion of each seam.	Ashton Statutory Mine Surveyor	Email

ASSET MANAGEMENT PLAN – ACOL					
Item	**Feature**	**Action**	**Trigger/Timing**	**Responsibility**	**Reporting**
1		**Monitoring**			
1.01	Private Road and ROW Access	*Private roads are monitored in accordance with the Macquarie Generation Asset Management Plan and Property 130 Asset Management Plan.*			
1.02	Fences	Visual inspection / monitoring of gates and fences on private property and ACOL boundary fences.	• Prior to commencement of mining; • Documented weekly visual investigations during mining; and • At completion of each longwall panel.	Ashton UG Mining Engineer	Fortnightly Status Report
1.03	Pipelines	Visual inspection of exposed pipelines.	• Prior to commencement of mining; • Documented weekly visual investigations during mining; and • At completion of each longwall panel.	Ashton Underground Mining Engineer	SMP Status Report.
1.04	Pipelines	Continuous flow monitoring to identify pipeline leakage via CHPP control room or underground monitoring system and surface competent person.	When operating/in use.	Ashton Underground Mining Engineer	SMP Status Report.
1.05	Tailings Spill Basin	Assessment of the risk of the spill basin draining into underground workings or being otherwise compromised.	Prior to longwall 6B extraction.	Ashton UG Mining Engineer	Fortnightly Status Report
1.06	Tailings Spill Basin	Pre-mining monitoring of spill basin to include a survey regarding shape, wall height, level of spillway depth, storage capacity and photographic record.	Prior to longwall 6B extraction.	Ashton UG Mining Engineer / Survey Team	End-of-Panel Report
1.07	Tailings Spill Basin	Monitoring of spill basin within the application area to detect any subsidence impacts that may require management and water level monitoring.	During longwall 6B extraction; weekly visual inspections of dams behind the longwall face and up to 800 m in front of the longwall.	Ashton UG Mining Engineer	Fortnightly Status Report

ASSET MANAGEMENT PLAN – ACOL					
Item	**Feature**	**Action**	**Trigger/Timing**	**Responsibility**	**Reporting**
1.08	BOC Plant	Visual inspection / monitoring to assess the integrity of the concrete slab, fittings and pipeline.	• Prior to commencement of mining; • Documented weekly visual investigations during mining of longwall 1 and 2 when the longwall is within 100m to 500m of the plant; and • Documented daily visual investigations when the longwall is within 100 of the plant during mining. • Documented visual investigations and assessment of plant and buried pipework prior to re-pressurising plant equipment.	Ashton Underground Mining Engineer	Fortnightly Status Report
2		**Management**			
2.01	Private Road and ROW Access	*Private roads are managed in accordance with the Macquarie Generation Asset Management Plan and Property 130 Asset Management Plan.*			
2.02	Tailings Pipelines	Ensure access agreement is in place.	Prior to requiring access to Property No. 155 and ongoing.	Ashton Underground Mining Engineer	Nil
2.03	Fences	Removal of stock from paddocks that will be subject to subsidence and relocated to unaffected or rehabilitated paddocks elsewhere on the property.	Pre-Mining	Ashton Environmental Officer	End-of-Panel Report
2.04	Tailings Spill Basin	Partially or completely draining spill basin.	Prior to longwall extraction. Based on results of risk based assessment.	Ashton UG Mining Engineer	End-of-Panel Report
2.05	Tailings Spill Basin	Final survey of basin to determine post subsidence shape, wall height, level of spillway, depth, storage capacity, and photographic record.	Following completion of active subsidence.	Ashton UG Mining Engineer	End-of-Panel Report
2.06	BOC Plant	Depressurise plant equipment.	Prior to LW 1 and 2 prior to the longwall reaching within 500m of the BOC Plant.	Ashton Underground Mining Engineer	Fortnightly Status Report

ASSET MANAGEMENT PLAN – ACOL					
Item	**Feature**	**Action**	**Trigger/Timing**	**Responsibility**	**Reporting**
3		**Incident Response**			
3.01	Private Road and ROW Access	*Private roads are managed in accordance with the Macquarie Generation Asset Management Plan and Property 130 Asset Management Plan.*			
3.02	Fences	Repairs to fences and gates as required.	If damage occurs, at completion of subsidence.	Ashton UG Mining Engineer	End-of-Panel Report
3.03	Fences	As required, provide temporary electric fencing in the event that damage to a fence causes unplanned stock movements and repairs cannot be carried out immediately.	Prior to extraction of each longwall panel / following damage to fence lines that renders it no longer stock proof.	Ashton UG Mining Engineer	Fortnightly Status Report
3.04	Tailings Spill Basin	Repair / remediation to spill basin.	Any damage observed during monitoring activities.	Ashton UG Mining Engineer	End-of-Panel Report
3.05	Tailings Pipelines	Ensure pumping is stopped.	If flow monitoring indicates a change to baseline.	Ashton Underground Mining Engineer	SMP Status Report.
3.06	Tailings Pipelines	Investigate damage to pipeline and erect signage or restrict access if required.	If flow monitoring indicates a change to baseline.	Ashton Underground Mining Engineer	SMP Status Report.
4		**Notification/Consultation**			
4.01 External consultation requirements are addressed within the BFMP and relevant Asset Management Plans.					