



## Longwalls 205 to 208

## Public Safety Management Plan

September 2020





## DOCUMENT CONTROL

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### APPENDICES

Appendix A Stakeholder Contact Details



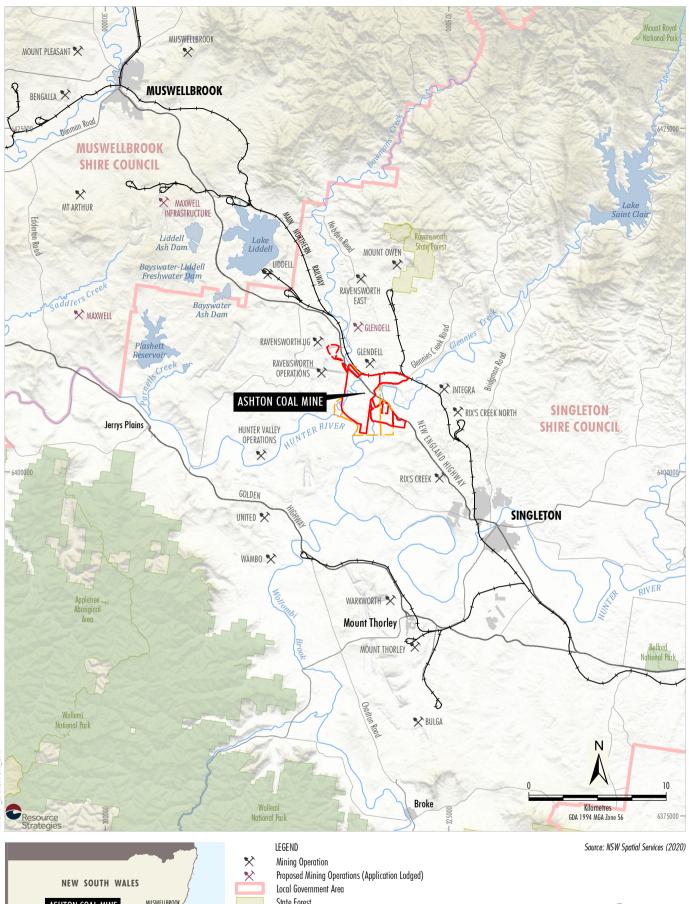
## **1 INTRODUCTION**

Ashton Coal Operations Pty Ltd (ACOL), a subsidiary of Yancoal Australia Limited (Yancoal), owns the Ashton Coal Project (ACP), an underground coal mine located approximately 14 kilometres north-west of Singleton in the Hunter Valley in New South Wales (NSW) (**Figure 1**).

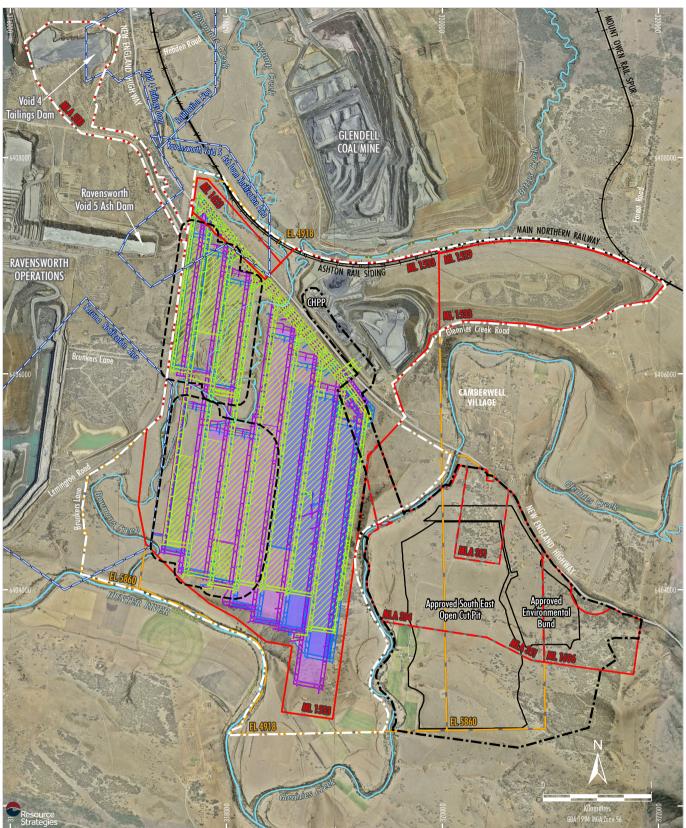
The ACP was granted consent on 11 October 2002 by the Minister of Planning pursuant to the provisions of the Environmental Planning and Assessment Act 1979 (DA 309-11-2001-i). The Mine is approved to produce up to 5.45 million tonnes per annum (Mtpa) of run of mine (ROM) coal and operate until 2024. The consolidated Development Consent has been modified on ten occasions, with the most recent amendment approved on 20 June 2016.

The underground mine is approved for multi-seam longwall extraction, targeting four coal seams in descending order (Pikes Gully (PG), Upper Liddell (ULD), Upper Lower Liddell (ULD) and Lower Barrett (LB)) (**Figure 2**). Development of the underground mine commenced in December 2005 and is accessed through the southern wall of the Arties Pit under the New England Highway.

ACOL has subsequently prepared an Extraction Plan for mining of Longwalls 205 to 208 in the ULLD Seam of the Ashton Underground Coal Mine, varying between 185 metres and 255 metres below the surface. Proposed mining of Longwalls 205 to 208 (the **Extraction Plan Area** – refer **Figure 3**) is due to commence in March 2021, and is planned to take place over a three year period.



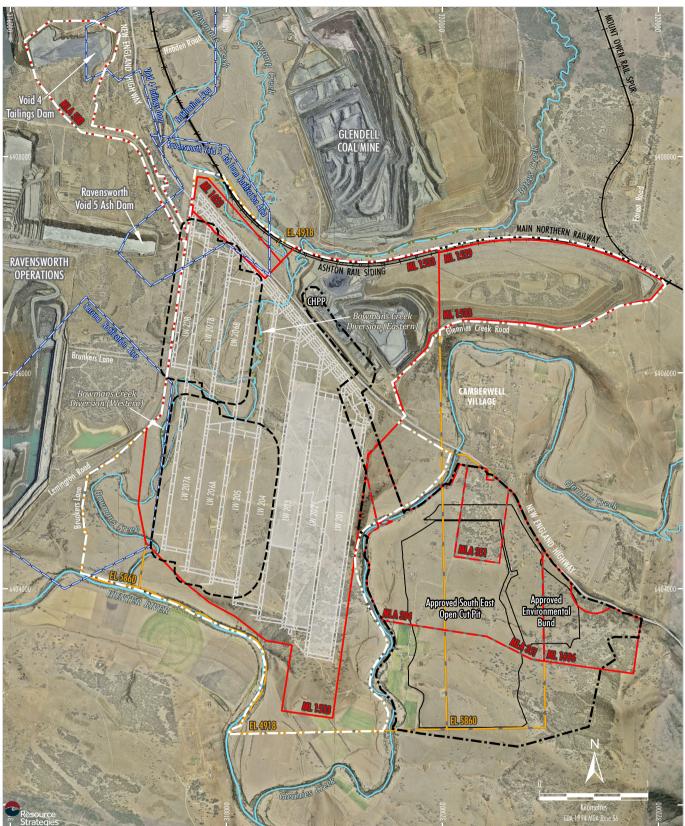






LEGEND Exploration Licence Boundary Mining Lease Application Boundary Prescribed Dam Notification Area Project Approval Boundary South East Open Cut Approval Boundary Pike's Gully Seam Longwall Upper Liddell Seam Longwall Upper Lower Liddell Seam Longwall Extraction Plan Application Area Source: NSW Spatial Services (2020) Orthophoto: Ashton Coal (Dec 2019); NSW Spatial Services (2019)







LEGEND Exploration Licence Boundary Mining Lease Boundary Mining Lease Application Boundary Prescribed Dam Notification Area Project Approval Boundary South East Open Cut Approval Boundary Upper Lower Liddell Seam Longwall Extraction Plan Application Area Source: NSW Spatial Services (2020) Orthophoto: Ashton Coal (Dec 2019); NSW Spatial Services (2019)





## 2 SCOPE & OBJECTIVE

This Management Plan describes the process developed, including identification of key risks and proposed management strategies, to manage public safety in any surface areas that may be affected by subsidence arising from longwall mining within the Extraction Plan area.

The objective of this Plan is to outline the management measures that will be implemented as required to minimise surface safety risks to the public during mining within the Extraction Plan area such as:

- monitoring of areas posing safety risks;
- erection of warning signs and possible entry or use restrictions;
- backfilling of surface cracks and/or re-profiling of humps and swales on tracks and roads in conjunction with Subsidence Advisory NSW;
- infilling of subsidence pot holes;
- securing of potentially unstable structures and rockmasses;
- identification of potential flood-related impacts that may pose a risk to public safety; and
- provision of regular updates regarding mining progress to the community where management of public safety is a significant issue.

Required actions and responsibilities are defined to ensure detection and timely remediation of any potential public safety hazards from mining induced subsidence.

## **3 RESPONSIBILITIES AND RESOURCES**

The management strategies developed to manage subsidence allocate responsibilities in relation to their implementation. Relevant personnel will be provided with a copy of appropriate documents in addition to necessary training.

The following section outlines the relevant subsidence safety and management responsibilities of ACOL.

### 3.1 ASHTON OPERATIONS MANAGER

The Operations Manager must:

- ensure sufficient resources are available to implement the requirements of this plan;
- promptly notify the Resources Regulator of any identified public safety issue via telephone to the central reporting number 1300 814 609; and
- complete a written notification using the online incident notification form via the Regulator Portal at https://www.resourcesregulator.nsw.gov.au/safety-and-health/notifications/incident-or-injury.

#### **3.2 TECHNICAL SERVICES MANAGER**

The Technical Services Manager must:

- authorise the Plan and any amendments;
- ensure that the required personnel and equipment are provided to enable this Plan to be implemented effectively;
- inform the Operations Manager of impacts requiring notification to the relevant stakeholders (e.g. NSW Resources Regulator, Singleton Council, etc.); and
- liaise with relevant stakeholders and remediation consultants and contractors as required.

### 3.3 ASHTON ENVIRONMENT & COMMUNITY SUPERINTENDENT

The Environment & Community Superintendent must:

- inform the landholders of impacts requiring remediation; and
- report monitoring results in the Annual Review.



#### 3.4 ASHTON REGISTERED MINING SURVEYOR

The Registered Mining Surveyor must:

- ensure that subsidence inspections are conducted to the required schedule and that the persons conducting the inspection are trained in the requirements of this plan and understand their obligations;
- review and assess subsidence monitoring results and inspection checklists; and
- promptly notify Technical Services Manager and/or the Environment and Community Superintendent of any identified public safety issue.

### 3.5 ASHTON TECHNICAL SERVICES TEAM

The Ashton Technical Services Team members must:

- conduct the subsidence inspection within the applicable subsidence zone to the standard required and using the subsidence inspection checklist;
- take actions to remediate any public safety issue identified during inspections; and
- where actions are beyond their capabilities immediately attempt to notify the landowner or infrastructure owner and the Technical Services Manager.



## 4 BACKGROUND

### 4.1 ACOL HISTORICAL PUBLIC SAFETY PERFORMANCE RELATING TO SUBSIDENCE

ACOL has successfully undertaken longwall mining using conventional longwall mining methods in the PG seam (Longwalls 1 to 8), ULD seam (Longwalls 101 to 105) and ULLD seam (Longwalls 201 to 202) over the period of 2007 to 2020 (refer to **Figure 2**). Mining within the ULLD seam of Longwalls 203 is currently being undertaken at the time of writing this plan.

ACOL's experience during this period has indicated that the overall risk to public safety has been low, although some minor reactive public safety management actions have been required. This reactive work has included backfilling of surface cracks and/or re-profiling of humps and swales on tracks and roads.

Consequently, risks to public safety from secondary extraction in the Extraction Plan area are also expected to be low. This is supported by the subsidence assessment for Longwalls 205 to 208 (SCT, 2020).

### 4.2 SURFACE FEATURES, LAND OWNERSHIP AND PUBLIC ACCESS TO LAND

Land ownership within the Extraction Plan area is shown in **Figure 4**. The Extraction Plan area extends underneath predominately cattle grazing land owned by ACOL with a small area of land owned by AGL Macquarie (AGLM) in the north-east.

Major natural features within the Extraction Plan area include sections of Bowmans Creek (and associated natural ponds), diversion channels (on the eastern and western boundaries of the Extraction Plan area), excised sections of the original Bowmans Creek channel and the adjacent Bowmans Creek Alluvium floodplain landform.

Major infrastructure in the Extraction Plan area for Longwalls 205-208 includes:

- New England Highway Road Reserve (note the New England Highway is outside the Extraction Plan area);
- Lemington Road (and associated culverts), Brunkers Lane, AGLM South Access Road and an alternative access road for Property 130;
- Ausgrid transmission lines (including two 11 kV transmission lines and a 132 kV transmission line);
- Glencore 33 kV transmission line (serviced by Ausgrid);
- TransGrid 330 kV transmission line;
- Telstra fibre optic cable and copper cable (servicing Ravensworth Operations and a NSW Department of Planning, Industry and Environment – Water [DPIE-Water] gauging station, respectively);
- State survey control marks;



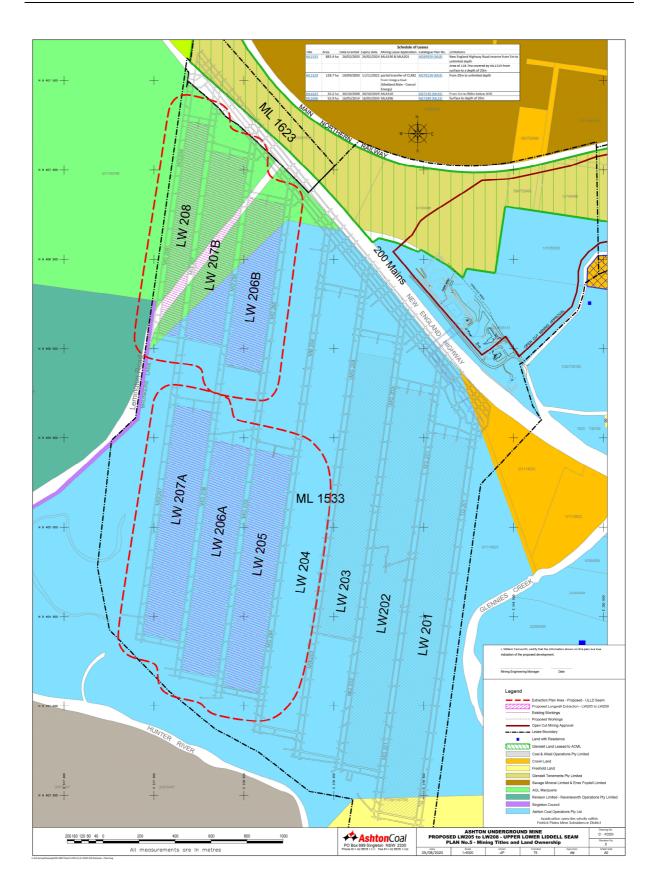


Figure 4: Mining Titles and Land Ownership

Mining infrastructure owned by other mining companies (i.e. AGLM and Glencore) including access roads, disused sediment dams, the pit shell of the filled and capped Ravensworth No. 2 open cut (Bayswater Pit), the Narama Dam to Mt Owen Mines water supply pipeline and other farm infrastructure including dams, fences and gates; and

• Mining infrastructure owned by ACOL including buried coal handling and preparation plant (CHPP) tailings disposal pipelines, a buried water supply pipeline from the Hunter River to the CHPP, gas management (drainage) installations, mine dewatering pump installations, a disused residential farmhouse with associated buildings, agricultural land and minor farm infrastructure such as water reticulation systems, dams, fences, gates and cattle grids.

It is important to note that ACOL may not undertake any works (including inspections) on land outside of ACOL's ownership described in this plan without landowner permission in accordance with agreed protocols.

## 4.2.1 Lemington Road Subsidence Deed

Longwalls 206B, 207B and 208 are planned to undermine approximately 850 m of Lemington Road.

The Lemington Road Subsidence Deed (Deed) has been prepared to outline responsibilities for the monitoring, management and reporting of subsidence impacts from the ACP on Lemington Road. The Deed was made on 20 December 2013 between ACOL, Ravensworth Operations and Singleton Council.

The comprehensive subsidence management plan required by the Deed for mining the ULD Seam longwalls is expected to be suitable to use for the ULLD Seam longwalls and would be expected to maintain serviceability of the road whilst safeguarding road users and the general public.

Key requirements for management of Lemington Road are summarised in Section 5.1 of the Deed and include:

- ACOL to affect the monitoring, maintenance and repairs for any subsidence impact to Lemington Road during extraction of the seams to the extent that the extraction undermines Lemington Road or may otherwise cause subsidence impacts to the new road.
- Condition 46 of the Deed requires Ravensworth Operations to pay ACOL's reasonable costs of undertaking the monitoring and maintenance works.
- The monitoring and maintenance works are intended to address any repairs or other management efforts required to keep the surface of Lemington Road in a serviceable and safe condition during and immediately after subsidence events caused by extraction of each seam until the subsidence effects on Lemington Road have stabilised. The maintenance works are not intended to address any longer term measures designed to prepare Lemington Road to withstand any subsequent subsidence events caused by later extraction of other Seams.
- Ravensworth Operations and ACOL are to commission an Independent Engineer to prepare an additional report, which recommends whether any reinstatement works are required to reestablish Lemington Road to a standard that is capable of withstanding the subsidence impacts from the extraction of the subsequent seams, subject to only minor remediation works being necessary to ensure Lemington Road remains in a safe and trafficable condition.



In effect, ACOL must return the road to a trafficable condition, while Ravensworth Operations is responsible for costs and returning the road to its pre-mining condition. Any reinstatement works must be carried out to the relevant standards to the reasonable satisfaction of Singleton Council.

The Deed was finalised in 2013 following the mining of Longwall 6B below a small section of the road and the completion of an independent review report on the alignment of Lemington Road (GHD 2013). GHD (2013) reports that Ravensworth Operations and ACOL have indicated a preference for the current alignment to be retained as the final alignment and, as such, the current alignment be reinstated (repaired) after each episode of subsidence. Development consent conditions require a review of subsidence impacts, monitoring and management measures following extraction of each seam including any continuing need to realign Lemington Road. GHD (2013) is consistent with these development consent conditions.

The mining plan depicted in GHD (2013) does not coincide with the actual mining layout currently approved and planned for ULLD Seam, especially now that no mining in the ULD Seam is planned below Lemington Road. The impacts from mining the PG and ULLD Seams only are expected to be similar to those for mining the PG and ULD Seams only. Both are considered manageable using the same risk control measures.

The experience of the planned ULLD Seam mining is expected to provide a benchmark for the management of subsidence impacts to Lemington Road associated with future mining of the LB Seam.



## **5 APPROACH TO PUBLIC SAFETY MANAGEMENT**

ACOL's overall strategy to ensure public safety relating to the surface areas that may be affected by subsidence arising from the extraction of coal using conventional longwall mining methods is:

- 1. **Measure baseline information** Establish background data for the surface above the mining area by inspection and in certain areas also subsidence survey.
- 2. **Regular monitoring of the effects of mining** Continue monitoring and inspection of identified key positions relating to the extraction process.
- 3. **Regularly assess and interpret monitoring and inspections** Monitoring and inspection data is analysed to identify any variations from predictions, unexpected anomalies, visual impact or items presenting potential impacts to public safety.
- 4. **Implement immediate responses** If potential impacts to public safety are observed or reported, implement an immediate response including notification to the relevant landowner and/or infrastructure owners.
- 5. **Re-assess any impacts** Where variations and/or impacts are greater than predictions made in the Extraction Plan, as nominated in the Trigger, Action and Management Response Plan, additional assessment/investigation of impacts will be undertaken. This will be carried out by specialist consultants, ACOL personnel and appropriate stakeholders where required.
- 6. **Identify and implement remedial actions** If impacts require mitigation and/or remedial action, these actions will be implemented in conjunction with the landholder and appropriate relevant stakeholder.



## 6 PERFORMANCE MEASURES

Performance objectives in relation to subsidence impacts in the Longwalls 205 to 208 Extraction Plan area from Condition 29, Schedule 3 of DA 309-11-2001-i (MOD 5) are detailed in **Table 1** below:

## Table 1. Subsidence Performance Measures from DA 309-11-2001-i

Public Safety	
Public safety.	No additional risk due to mining.

The performance measures in relation to public safety will be based around no additional risk to members of the public due to mining. **Table 2** indicates the performance measures in relation to Public Safety for the Extraction Plan area.

Subsidence Impact	Performance Measure	
Surface cracking	Surface cracking or deformation remediated where required in accordance with the Land Management Plan (LMP) to not impact on public safety.	
Dams	Impacts to dam walls monitored and maintained to minimise risk of failure in accordance with individual Built Features Management Plan (BFMP) and Water Management Plan (WMP).	
Public roads and tracks	Public roads and tracks remediated to not impact on public safety in conjunction with Subsidence Advisory NSW and Singleton Council.	
Steep slopes and unstable ground/structures	Exclusion areas established where potential risks to public safety are identified.	
	Remedial measures implemented to remove risk.	
Flooding and access	Access to and from private properties established to maintain safe passage.	

#### **Table 2. Public Safety Performance Measures**



## 7 IDENTIFICATION OF RISKS

It is not expected that mining of longwalls 205-208 in the ULLD seam will pose a significant risk to public safety. As part of the Extraction Plan process a Risk Assessment was conducted to examine the potential impact by subsidence on the surface above the Extraction Plan mining area. A copy of the risk assessment is included as an appendix to the main Extraction Plan document. The risk assessment initially identified a potential high risk to public safety as a result of *"cracking and change of grade on Lemington Road due to subsidence resulting in roadway damage and potential for personal injury to road users or the roadway becoming not trafficable"*. With the implementation of additional controls/actions (e.g. regular regrading, traffic control measures, communication with road users, appropriate signage etc.), this risk was reduced to moderate.

All other risks identified either had existing controls or additional controls / further actions which have been implemented or are available to identify, control or remediate these risks.

The possible public safety risks identified for the Extraction Plan Area are listed below:

- injury to road user on Lemington Road, the New England Highway or Southern AGLM access road due to mine subsidence (addressed in relevant Asset Management Plans);
- damage and/or loss of clearance to 132 kV Ausgrid transmission lines;
- damage and/or loss of clearance to 11 kV Ausgrid transmission lines;
- damage and/or loss of clearance to 33 kV Glencore/Ausgrid transmission line;
- damage and/or loss of Telstra communication cables;
- damage (cracking) to internal property access tracks;
- damage (cracking) to general land surface;
- damage (cracking) to buildings;
- damage to fences; and
- damage to dams.

Controls, monitoring and remedial action, identified as core items have been addressed in this Management Plan including:

- regular monitoring of areas posing potential safety risks;
- development of a Traffic Management Plan for Lemington Road (discussed further in relevant Asset Management Plan);
- erection of warning signs along access road to include mine contact numbers to report damage and be installed prior to longwall extraction;
- entry restrictions identified as part of management actions and remedial measures in Public Safety Risk identified;
- backfilling of dangerous surface cracks noted as remedial measure if identified;



- remediation of any areas with adverse grade impacts or potential ponding restricting access (deformation); and
- provision of timely notification of mining progress to the landholder, community and any other stakeholders where management of public safety is required – noted as part of management actions.

Further detail regarding subsidence predictions is contained in the subsidence report prepared by SCT (2020).



## 8 NOTIFICATION, MONITORING AND INSPECTION SCHEDULE

Actions associated with potential subsidence impacts from mining of Longwalls 205 to 208 are detailed in the Built Features Management Plan and associated Asset Management Plans. Management of public safety is largely controlled by programmed and targeted inspections as well as reviewing predicted subsidence against actual subsidence.

### 8.1 NOTIFICATION

Notifications to any landholders, the general public, relevant stakeholders and appropriate authorities either have or will be provided. These include:

- notification of Extraction Plan approvals to relevant parties; and
- signposting of mining area.

## 8.2 SUBSIDENCE MONITORING

A description of the surface, relevant features and improvements above the longwall panels is contained in **Section 4** with further details available in the Built Features Management Plan and associated Asset Management Plans.

Monitoring is conducted as per the various *Subsidence Monitoring Plan* and *Built Features Management Plan,* consisting of a combination of subsidence surveys, surface and underground monitoring and inspections and monitoring of ecological conditions.

These Plans and Programs generally focus on intensive monitoring in the initial stages of longwall extraction and the long term monitoring of subsidence effects that may develop over time.

### 8.3 SUBSIDENCE INSPECTIONS

Inspections are to be conducted as per the various Management Plans and Monitoring Programs submitted, consisting of a combination of visual and photographic inspections as detailed in the Management Plans and programs.

Regular inspections at frequencies detailed in the Management Plans and Monitoring Programs are to be initially concentrated on the current mining area and subsidence area. Inspections are concentrated on items identified in the pre-mining survey and in the relevant Management Plans. Inspections are carried out by experienced persons and follow an inspection checklist to include the items above.

At the completion of mining in each longwall panel, a full surface inspection will be conducted and the results included in the Annual Review.

## 9 ACTIONS AND REMEDIAL MEASURES

Ashton will install appropriate warning signage, positioned along Lemington Road, the AGLM Southern Access Road and Brunkers Lane, prior to the commencement of longwall extraction, advising of the potential for subsidence impacts. The objective of the signage is to ensure users of these roads and the surrounding area are aware of the potential hazards resulting from subsidence. Mine contact details shall be included to enable any damage to be reported.

Visual inspections will identify impacts on natural features. Inspections and monitoring noted in the relevant monitoring plans will identify impacts on infrastructure and improvements.

## 9.1 PUBLIC SAFETY ISSUES IDENTIFIED DURING INSPECTIONS OR MONITORING

Should inspections reveal any public safety issue that requires remedial works to ensure public safety, the person conducting the inspection shall:

- immediately notify the Technical Services Manager and/or Environment & Community Superintendent;
- erect "NO ROAD" or barrier tape and warning signs (e.g. traffic control signs, traffic controllers as appropriate) if immediate remediation is not possible;
- the Operations Manager shall immediately notify the NSW Resources Regulator if a public safety issue is deemed to be a notifiable incident; and
- Technical Services Manager and/or Environment & Community Superintendent to notify landholder and the infrastructure owner.

### 9.2 REMEDIATION OF PUBLIC SAFETY ISSUES

Following completion of the above, the Operations Manager or their nominee shall:

- arrange inspections of the area at regular intervals including installation of appropriate barriers if required, until remediation works are carried out; and
- arrange for remediation works as detailed in the TARP.

This will require consultation with the Department of Planning, Industry and Environment, Resources Regulator and the landholder, as well as possibly Subsidence Advisory NSW, infrastructure owner, specialist consultants and appropriate stakeholders, as noted in the current Management Plans and Programs, to prepare appropriate remediation plan relating to the particular item. Notification and regular updates to the general public may form a part of the remediation plan.

### 9.3 ADAPTIVE MANAGEMENT

It is considered unlikely based on subsidence predictions and previous mining impacts observed thus far, that any adaptive management will be required. If, however, continued impacts in excess of those predicted occur due to mining subsidence, ACOL is committed to reviewing options with the



Department of Planning, Industry and Environment, landholders, Subsidence Advisory NSW and service/infrastructure providers to put measures in place to prevent on-going reoccurrence.



### 9.4 CONTINGENCY PLANS

Where any unexpected and uncontrolled public safety risk presents itself, ACOL will provide on-going resources to prevent access to the affected area until such time a remediation plan can be enacted. If this prevents members of the public access to their residence ACOL will assist in making alternative arrangements including temporary accommodation.



## **10 TRAINING**

All personnel who conduct Subsidence Monitoring Program inspections will be trained in the requirements of this Public Safety Management Plan. Training will be conducted on the identification of the various subsidence impacts and the associated public safety risks.



## **11 REPORTING**

The results of inspections will be documented in accordance with the Subsidence Monitoring Program. The effectiveness of the Longwalls 205 to 208 Public Safety Management Plan in managing public safety risks will be reported where relevant in the Extraction Plan Stakeholder Reporting process and the Annual Review.

Additionally, notification will be provided to relevant authorities of any incident or occurrence as detailed in the TARP.



## **12 AUDIT AND REVIEW**

## 12.1 AUDIT

The requirements of the Longwalls 205-208 Public Safety Management Plan will be audited as required.

### 12.2 REVIEW

This plan will be reviewed as necessary in the event:

- the mine design criteria are changed;
- subsidence impacts are greater than predicted;
- the Department of Planning, Industry and Environment or Resources Regulator deems a review is necessary;
- any landholders or infrastructure owners raise issues that require a review;
- inspections or monitoring demonstrates that the impacts are such that a review is warranted; and
- following each audit.

Any review will be conducted in consultation with the Department of Planning, Industry and Environment and Resources Regulator. In the event of the management plan being changed, a copy will be sent to the relevant agencies.



## **13 REFERENCES**

Strata Control Technology (2020) Subsidence Assessment for the Extraction Plan for Longwalls 205 – 208 in the Upper Lower Liddell Seam, Report Number ASH4927.



# Appendices



# Appendix A Stakeholder Contact Details



## Longwalls 205-208 Extraction Plan Stakeholder List

Position	Name	Phone
ASHTON		
Operations Manager	Aaron McGuigan	6570 9104
Technical Services Manager	Tony Sutherland	6570 9110
Environment and Community Superintendent	Phillip Brown	6570 9219
Mine Surveyor	Jeff Peck	6570 9125
Senior Mining Engineer	Ben Tockuss	6570 9124
After Hours	Ashton Control Room	6570 9166
GOVERNMENT AND OTHER STAK	KEHOLDERS	
Subsidence Advisory NSW	Newcastle Office	4908 4300
Resources Regulator	-	1300 814 609
Ausgrid	John O'Brien	6542 9068
	Portfolio Manager, Muswellbrook	
	Emergency	13 13 88
TransGrid	Emergency	1800 027 253
Telstra	Mark Schneider	8842 5185
	Project Specialist	
Singleton Council	Mark Ihlien	-
	Director Planning and Infrastructure	
	General Contact	6578 7290
AGL Macquarie	Summer Steward	6542 1508
	Environment Business Partner	
Transport for NSW	Joe Krsul	4294 0357
	Senior Manager, Regional Infrastructure	
Glencore	Klay Marchant	6507 0684
	Environment and Community Manager (Ravensworth Complex)	
LANDHOLDERS		
Refer to Ashton internal contacts	register.	