



# ***Airly Mine Extension Project***

*State Significant  
Development  
Modification Assessment  
(SSD 5594 MOD 1)*



August 2018

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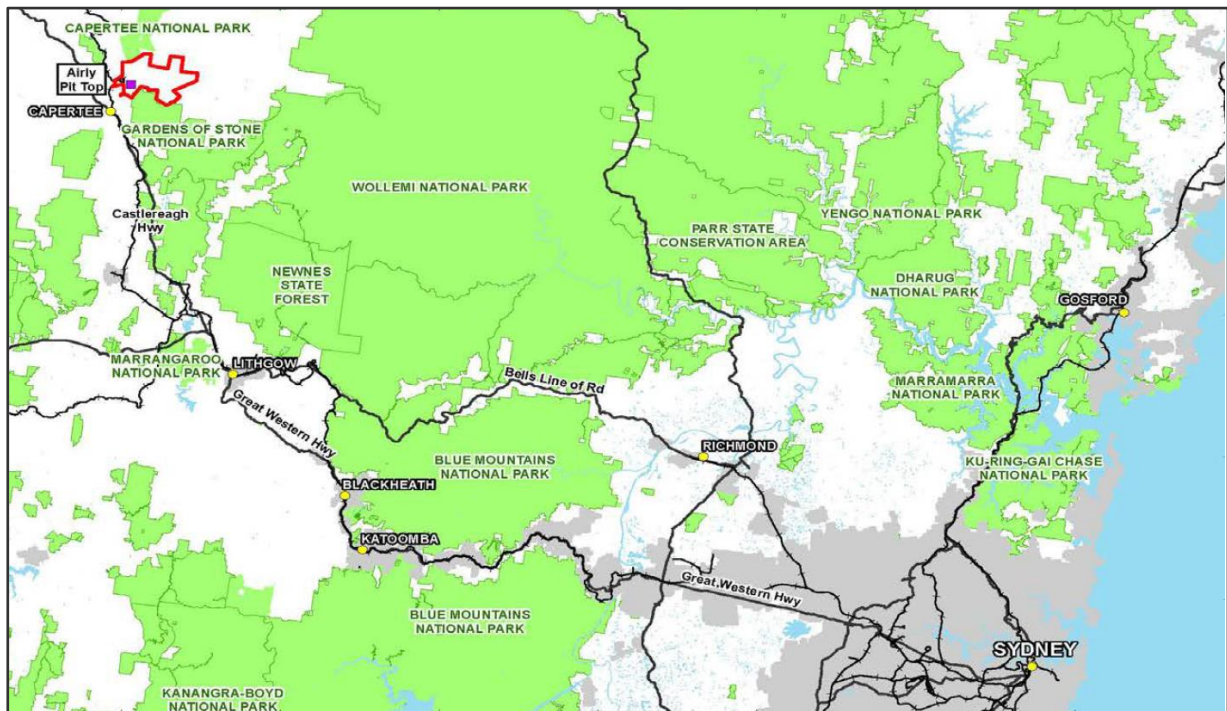
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# Executive Summary

The Airly Coal Mine is owned and operated by Centennial Airly Pty Limited. It is located 25 kilometres northwest of Lithgow in the Western Coalfield of NSW (see **Figure 1**).



**Figure 1:** Airly Mine location

The development consent for the mine was granted in 2016 by the Planning Assessment Commission. The consent required the establishment of an Independent Expert Panel (the Expert Panel) to provide advice on 'Extraction Plans', which are required before each underground area can be mined.

The key aspect of the proposed modification is to allow pillar 'splitting and quartering' to commence immediately in areas that are near to the toes of cliffs.

The Department consulted with the Expert Panel and key Government agencies. Based on this consultation, Centennial proposed a precautionary 'staged approach' to splitting and quartering, which would require 'trial mining' in an area further away from cliffs, followed by further review and endorsement from the Department in consultation with the Expert Panel.

In summary, the Department considers that a staged approach to splitting and quartering would ensure continuity of the mine in the short-term, while also protecting the significant cliff lines. Based on this assessment, the Department considers that the proposed modification is approvable and is in the public interest, subject to the imposition of strict conditions.





# 1. Introduction

The Airly Coal Mine is an underground coal mine located in the western coalfield of New South Wales approximately 25 kilometres (km) north-west of Lithgow.

The mine is owned and operated by Centennial Airly Pty Limited (Centennial). Mining at Airly commenced in 1994 under a development consent granted in 1993. In December 2016, a new development consent for the Airly Mine Extension Project was granted by the then Planning Assessment Commission (Commission).

## 1.1 Development Consent

The development consent allows mining operations to continue until 31 January 2037, and permits:

- extraction of up to 1.8 million tonnes per annum (Mtpa) of run-of-mine (ROM) coal by continuous mining methods;
- transportation of coal by rail to Eraring Power Station and to export markets; and
- operation of supporting infrastructure, including a pit top, ventilation shafts, a coal stockpile, water management infrastructure and offices.

The development consent contains a stringent set of conditions, including:

- strict subsidence performance measures to protect cliffs and rock formations;
- the requirement for detailed Extraction Plans to be approved before any mining can be undertaken in each area; and
- the establishment of an Independent Expert Panel (the Expert Panel), which provides advice on Extraction Plans, the mine design and subsidence-related impacts on cliffs and rock formations.

## 1.2 Approved Mine Plan

During the assessment of the mine extension project, the Department established a predecessor to the Independent Expert Panel to advise on the mine plan. The advice of that Panel informed the Commission's conditions that restrict the type (and sequencing) of mining allowed in different zones.

The approved mine plan has five distinct mining zones, including two zones where only first workings are allowed and three zones where second workings are allowed (see **Figure 2**).

The two first workings zones are:

- the Cliff Line Zone and Zone of First Workings which surround all cliffs (the green hatched areas); and
- the New Hartley Shale Mine Potential Interaction Zone, which incorporates historic shale mine workings (the yellow hatched area).

The three second workings zones are:

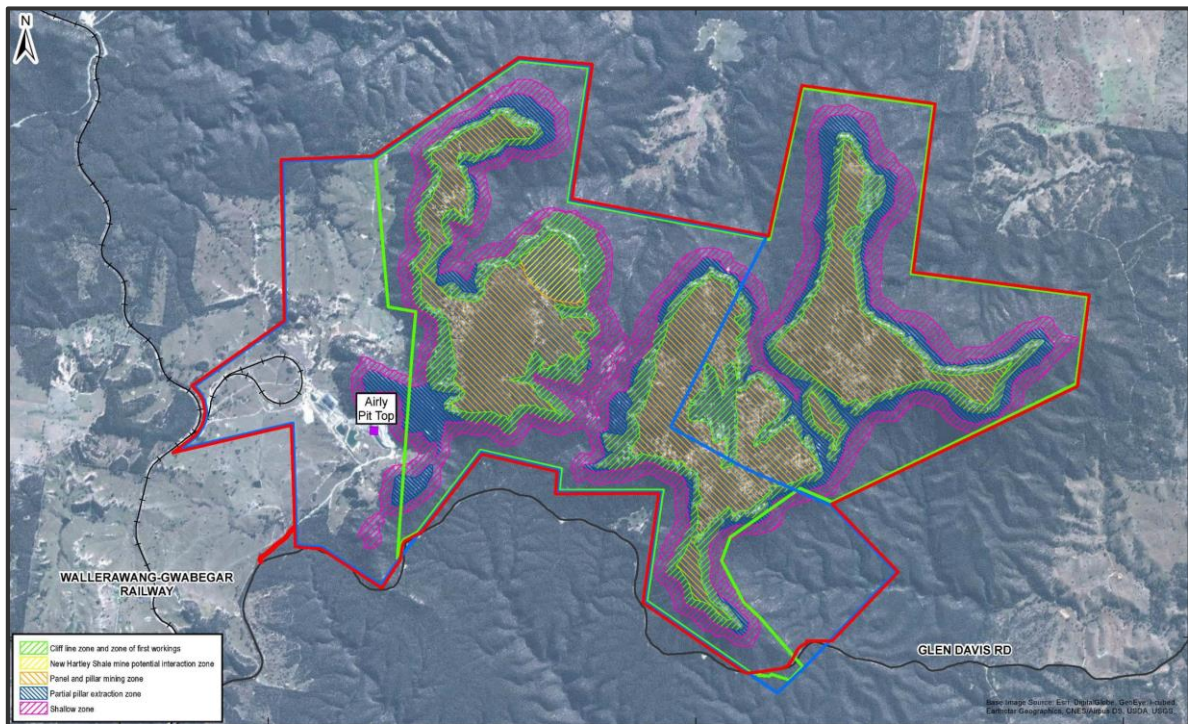
- the Shallow Zone (purple hatched areas);
- the Panel and Pillar Mining Zone (orange hatched areas); and
- the Partial Pillar Extraction Zone (blue hatched areas).

The relevant condition of consent that sets out the restrictions is condition 1 of Schedule 3, as follows:

**“Restrictions on Mining**

1 The Applicant must not:

- (a) carry out any second workings in the Panel and Pillar Zone or the Partial Pillar Extraction Zone that are within an angle of draw 26.5 degrees of the Cliff Line Zone and Zone of First Workings before it has completed mining in at least four adjacent extraction panels in the Panel and Pillar Zone beneath Mount Airly, or
- (b) carry out any second workings within an angle of draw 26.5 degrees plus 50 metres from the New Hartley Shale Mine Potential Interaction Zone.



**Figure 2:** Approved mining zones

### 1.3 Need for the Proposal

While Centennial agreed to the imposition of the ‘Restrictions on Mining’ conditions in 2016, it has now identified two unexpected consequences of the restrictions for its mining operations.

Firstly, it prevents any second workings being undertaken in all the Partial Pillar Extraction Zone areas downslope of cliffs that are within an angle of draw of 26.5 degrees before four panels beneath Mount Airly are extracted. This may significantly affect continuity of mining operations and jeopardise mining operations in the short term.

Secondly, it substantially increases the setback area around the historic shale mine workings as compared to the original mine plan. This almost doubles the exclusion area for second workings near the historic shale mine workings and would sterilise up to 0.5 million tonnes of the coal resource.



## 2. Proposed Modification

### 2.1 Proposal

Centennial proposes to modify condition 1 of Schedule 3 of its development consent for the Airly Mine Extension Project to allow:

- 'pillar splitting and quartering' operations in areas that are downslope of cliffs in the Partial Pillar Extraction Zone before the four panels beneath Mount Airly are extracted; and
- second workings within a 26.5-degree angle of draw plus 50 metres from the limit of the New Hartley Shale historic workings (as opposed to the limit of the interaction zone).

Centennial argues that the proposed changes more accurately reflect the Expert Panel's advice that was provided during the assessment of the mine extension project, and also achieve the key outcome of protecting the significant cliff lines.

The proposed modification is described in detail in the Statement of Environmental Effects for the modification application (see **Appendix B**).

Centennial has also submitted an Extraction Plan to the Department, which is based on the changes in the proposed modification. It includes further details about the proposed splitting and quartering operations, and has been revised through the assessment process for the proposed modification



## 3. Statutory Context

### 3.1 Scope of Modification

The Airly Mine Extension Project was originally approved under Section 4.38 (previously Section 89E) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and any modification to the development consent must be made under Section 4.55 of the EP&A Act.

Based on its assessment, the Department is satisfied that the application can be characterised as a modification to the existing consent as the proposal would not significantly increase the environmental impacts of the development.

The Minister for Planning is the approval authority for the application. However, under the Minister's delegation dated 11 October 2017, the Director, Resource and Energy Assessments, may determine the proposed modification as no public objections were made, Lithgow City Council did not object to the proposal and a political disclosure statement has not been made.



## 4. Engagement

### 4.1 Department's Engagement

The Department made the Statement of Environmental Effects for the modification application publicly available on its website from 24 April 2018. The Department also sought the advice of the Resources Regulator, the Division of Resources and Geoscience, and the Office of Environment and Heritage.

The Resources Regulator asked for more information on the potential effects of the proposed splitting and quartering operations on the integrity of cliffs. The Division of Resources and Geoscience and the Office of Environment and Heritage did not object to the proposal.

The Department closely consulted with the Expert Panel and the Resources Regulator on the Extraction Plan. Details of the consultation undertaken by the Department is attached at **Appendix C**.

The Department received six pieces of advice from the Expert Panel on the proposed modification and the Splitting and Quartering Extraction Plan, on 20 December 2017, 10 April 2018, 24 May 2018, 27 June 2018, 11 July 2018, and 16 August 2018. All of this advice is attached at **Appendix D**.



## 5. Assessment

### 5.1 Introduction

The modification application relates to conditions in the development consent that restrict the type (and sequencing) of mining allowed in different zones. These conditions are complex and were largely based on highly technical advice from the Expert Panel.

The proposed modification involves relatively minor changes to these conditions, however it is important that the intended outcomes of the Expert Panel's advice are still achieved, particularly in relation to the protection of significant cliffs.

Given the technical nature of the issues and the importance of protecting the cliffs, the Department has relied heavily on the expertise of the Expert Panel during this assessment, and has sought its endorsement of all proposed changes to the conditions.

### 5.2 Splitting and Quartering in Panel and Pillar Extraction Zone

Pillar 'splitting and quartering' is a form of second workings that involves drivage through the middle of some of the coal pillars formed through first workings development, to extract that coal and leave the corners of the pillar in-situ to support the roof.

Centennial is proposing to undertake splitting and quartering operations in areas that are within a 26.5 degree angle of draw from the toes of cliffs in the Partial Pillar Extraction Zone. However, the existing development consent requires four panels to be extracted beneath Mount Airly before Centennial can undertake any second workings in those areas.

That requirement was based on advice from the Expert Panel during the assessment of the mine extension project. Centennial contends that the Expert Panel's advice was only intended to delay second workings within a 26.5 degree angle of draw from the crests of cliffs (i.e. upslope areas) as opposed to the toes of cliffs (i.e. downslope areas).

While the Expert Panel confirmed that its original advice was largely related to the crests of cliffs, it recommended that a similarly precautionary approach should be adopted for mining within a 26.5 degree angle of draw from the toes of cliffs.

Consequently, Centennial proposed a staged approach that would involve 'trial mining' in a small area (of Panels 206 and 207) toward the outer downslope edge of the Partial Pillar Extraction Zone (see **Figure 3**). During this trial mining, Centennial would gather further data that would help determine whether splitting and quartering can occur nearer to the cliffs without adverse impacts to the cliffs.

Any further mining beyond the trial mining area would require review and endorsement by the Department, in consultation with the Expert Panel. This process of review and endorsement would be enforced through the imposition of strict conditions on the Extraction Plan.

Overall, the Expert Panel supports the proposed staged approach and, importantly, has confirmed that this approach would continue to protect the significant cliffs.

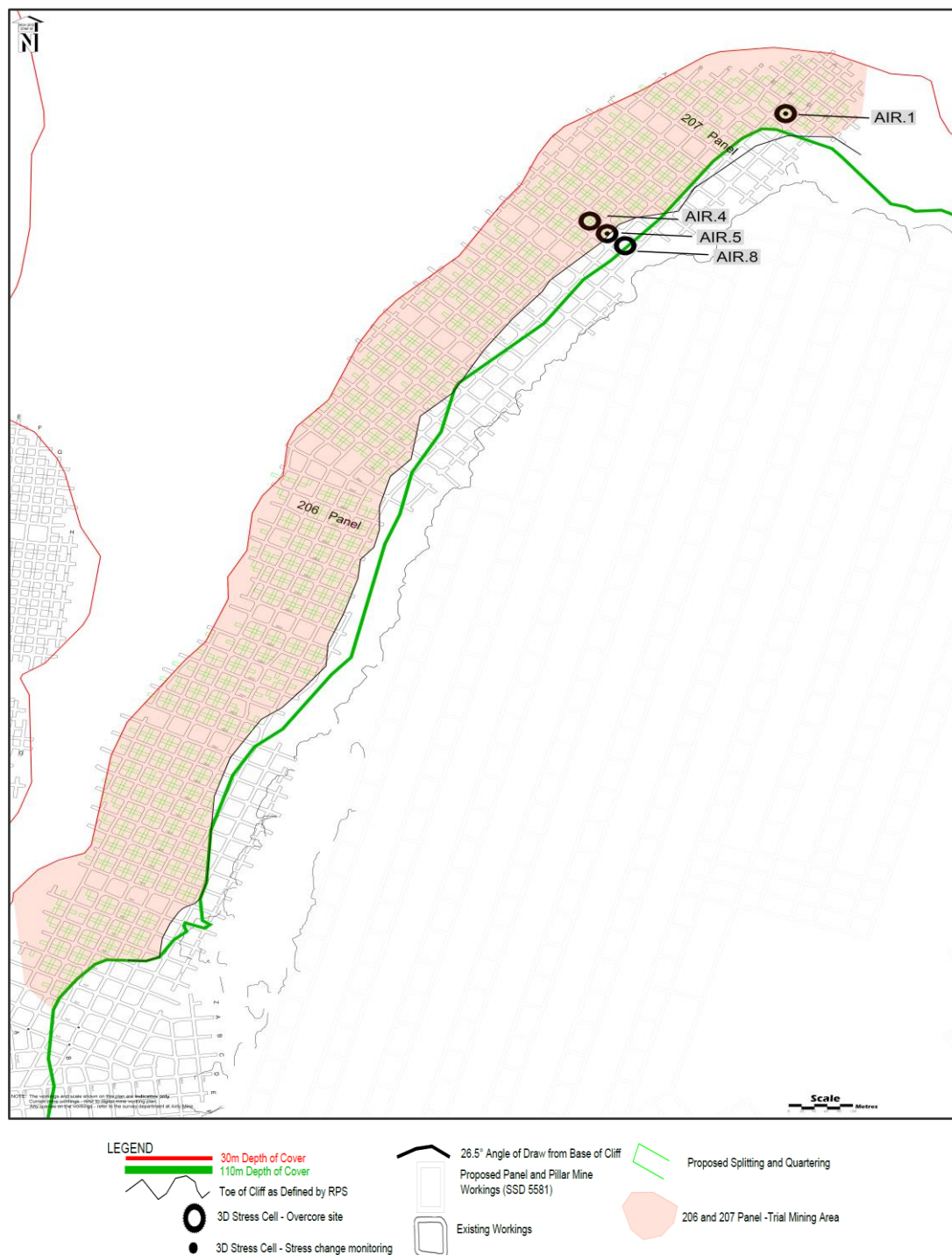
### 5.3 Mining Near Historic Shale Workings

During the assessment of the mine extension project, the Expert Panel provided advice about pillar stability and the protection of cliffs in mining areas near to New Hartley historic shale workings. This zone of mining was identified by Centennial as the Potential Interaction Zone.

Based on the Expert Panel's advice, the Commission imposed a condition requiring a setback area around the historic shale workings that extends from the edge of the Potential Interaction Zone.

The Expert Panel has confirmed that the intention of its advice was to apply a setback only from the edge of the actual historic shale workings, and not the edge of the Potential Interaction Zone. The Expert Panel continues to consider that such a setback is sufficient to protect the significant cliffs.





**Figure 3:** Trial mining area

## 5.4 Summary

The Department considers that a staged approach to splitting and quartering in the Partial Pillar Extraction Zone and a substantial setback from the historic shale workings would ensure the protection of significant cliffs.

The Expert Panel has confirmed that the proposed modification is consistent with the intention of its original advice and supports the recommended changes to the conditions.



## 6. Evaluation

Centennial is seeking to modify its development consent for the Airly Mine Extension Project.

The Department has undertaken a comprehensive assessment process, in close consultation with the Expert Panel and key Government agencies, including the Resources Regulator.

The Department and the Expert Panel consider that a staged approach to splitting and quartering in the Partial Pillar Extraction Zone would continue to protect the cliffs while allowing Centennial to collect data that would help determine whether splitting and quartering can occur nearer to the cliffs without adverse impacts to the cliffs.

The Expert Panel has also clarified that the intention of its original advice was to provide a setback that extends only from the edge of the actual historic shale workings, and importantly has confirmed that such a setback is sufficient to protect the cliffs.

The Department considers that the proposed modification would allow mining continuity to be maintained and ensure that a valuable coal resource is not unnecessarily sterilised.

On balance, the Department considers that the proposed modification is in the public interest, and should be approved, subject to strict recommended conditions.

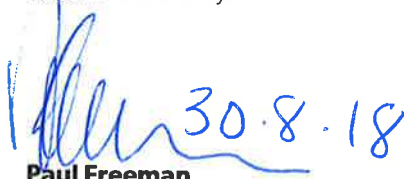


## 7. Recommendation

It is recommended that the Director, Resource and Energy Assessments, as delegate of the Minister for Planning:

- **consider** the findings and recommendations of this report; and
- **determine** that the application SSD 5594 Mod 1 falls within the scope of section 4.55(1A) of the EP&A Act;
- **accept and adopt** all of the findings and recommendations in this report as the reasons for making the decision to grant approval to the application;
- **modify** the consent; and
- **sign** the attached approval of the modification (**Appendix E**)

Recommended by:

 30.8.18

**Paul Freeman**

Team Leader

Resource Assessments



## 8. Determination

The recommendation is: **Adopted** / Not adopted by:

*Clay Preshaw*

*30/8/18*

**Clay Preshaw**

Director

Resource and Energy Assessments



# Appendices

## Appendix A – List of Documents

The Department has considered the:

- Expert Panel's 2016 report;
- Expert Panel's advice dated 20 December 2017, 10 April 2018, 24 May 2018, 27 June 2018, 11 July 2018, and 16 August 2018;
- advice from key Government agencies, including the Resources Regulator, Division of Resources and Geoscience, and the Office of Environment and Heritage;
- Airly Mine Splitting and Quartering Extraction Plan 2018 and associated correspondence;
- Department's preliminary and final assessment reports and the Planning Assessment Commission's Report of the approved development;
- existing conditions of consent;
- relevant environmental planning instruments, policies and guidelines; and
- relevant requirements of the EP&A Act.



## Appendix B – Statement of Environmental Effects

See the Department's website at [www.majorprojects.planning.nsw.gov.au](http://www.majorprojects.planning.nsw.gov.au)

## Appendix C – Summary of Consultation

Document/Meeting	Date	Attendance/Consultation
Expert Panel advice on effect of changing conditions	20 December 2017	Expert Panel
Draft Extraction Plan submitted to the Department	22 February 2018	Centennial, Department, Resources Regulator and Expert Panel
Teleconference with Resources Regulator to discuss key issues	8 March 2018	Department and Resources Regulator
Discussion with Expert Panel about the scope of the draft Extraction Plan	23 March 2018	Department and Expert Panel
Teleconference with Expert Panel and Resources Regulator about pillar stability issues	8 March 2018	Department and Resources Regulator
Expert Panel review of proposed modification	10 April 2018	Expert Panel
Department request for advice on modification application	24 April 2018	Department, Resources Regulator and OEH
Expert Panel letter providing feedback on draft Extraction Plan	24 May 2018	Expert Panel and Centennial
Centennial letter to the Department enclosing a revised Extraction Plan	25 May 2018	Department and Expert Panel
Additional numerical modelling of pillar stability	18 June 2018	Centennial
Letter responding to Resource Regulator issues	21 June 2018	Centennial
Expert Panel site visit to Airly workings	26 June 2018	Expert Panel
Expert Panel email regarding pillar stability	27 June 2018	Expert Panel
Teleconference about pillar stress loading	10 July 2018	Department and Expert Panel
Expert Panel email summarising its site visit	11 July 2018	Expert Panel
Centennial email outlining a staged approach to pillar splitting and quartering.	31 July 2018	Centennial
Teleconference to discuss numerical modelling and staged approach to mining	8 August 2018	Department, Expert Panel and Resources Regulator
Teleconference about Resources Regulator advice	10 August 2018	Department and Resources Regulator
Expert Panel Letter providing further advice on revised Extraction Plan	16 August 2018	Expert Panel
Centennial letter and trial mining proposal	27 August 2018	Centennial

## Appendix D – Expert Panel Advice

## Appendix E – Notice of Modification