

# Section 4

## Environmental Features, Management Measures and Impacts

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*This section describes the specific environmental features of the Mine Site and its surrounds that would or may be affected by the Longwall Project. The proposed design and/or operational safeguards and management measures are presented, followed by an assessment of the predicted level of impact the proposed activities may have after implementation of these measures. Where appropriate, proposed monitoring programs are also described.*

*This section is presented in two parts:*

- Part A: presents a range of background information relating to a number of the subsequent issues;*
  - Part B: presents the predicted impacts associated with the surface disturbing and subsidence related impacts associated with the proposed longwall mining operations.*
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# Section 4A

## Background Information

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*The descriptions of various assessments of potential environmental impacts (Part 4B) are reliant upon a range of background information common to many of the key environmental issues. Background information is provided on the topography, meteorology, land ownership, land uses and surrounding residences.*

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## 4A.1 TOPOGRAPHY

### 4A.1.1 Local Topography

The local topography between Narrabri and Baan Baa is shown on **Figure 4A.1**.

The Mine Site lies within the Namoi River Valley in an area representative of the transition from the open plains to the west in the Walgett and Coonamble areas and the more elevated and dissected country to the northeast (the Nandewar Ranges) and further south associated with the Warrumbungle and Liverpool Ranges (both which are part of the Great Dividing Range).

The local topography is generally flat to undulating, with elevations typically up to 400m AHD in the west in Jacks Creek State Forest and decreasing to approximately 230m AHD in the east toward the Namoi River.

### 4A.1.2 Mine Site Topography

The topography of the Mine Site varies from areas that are comparatively flat in the east with low, gentle and undulating topography towards the west (refer to **Figure 4A.2**). Elevations range from 370m AHD in the west to 240m AHD in the east. Slopes across the Mine Site average 3° with two low ridges oriented parallel and northeast to southwest across the Mine Site. The maximum slopes of approximately 18° occur in the southwest of the Mine Site whilst the minimum slopes of <1° are common in the northeast.

### 4A.1.3 Pit Top Area Topography

The existing topography within the Pit Top Area is displayed on **Figure 4A.2**.

The natural topography displays a general grade from west to east (285m AHD to 245m AHD) with slopes ranging from approximately 4° in the west to <1° in the east in the vicinity of two tributaries of Kurrajong Creek.

Since commencement of site establishment activities associated with the approved Narrabri Coal Mine (Stage 1), the topography of the Pit Top Area of the Mine Site has been modified, most noticeably by:

- the excavation of the box cut for entry to the underground mine;
- the construction of a 5m high bund wall around the southern and western perimeter of the surface facilities;
- cut and fill earthworks associated with the construction of the Narrabri Coal Mine rail loop and various hardstand surfaces; and
- various soil stockpiles.



