Predicted Principle Tilt Contours above Longwall Layout for Case 3 (No Spanning Garrawilla Volcanics and Minimum Chain Pillar Subsidence) and 4.2m Mining Height
Predicted Principle Strain Contours above Longwalls for Case 3 (non-spanning Garrawilla Volcanics and minimum chain pillar subsidence) and 4.2 m Mining Height
Narrabri Coal Operations - Narrabri Coal Mine (Stage 2)

Pre-mining and Predicted Post-Mining Surface Level Contours above Longwall Layout for Case 3 (non-spanning Garrawilla Volcanics and minimum chain pillar subsidence) & 4.2 m Mining Height

Key:
- Pre-mining contours
- Post-mining contours
- Main Creeks
- Fences
- Unsealed Roads/Tracks
- Farm Dams
- Buildings
- Orchards

Engineer: S.Ditton
Drawn: S.Ditton
Date: 25.03.08
Client: Narrabri Coal Operations - Narrabri Coal Mine (Stage 2)
NAR-001/1
Title: Pre-mining and Predicted Post-Mining Surface Level Contours above Longwall Layout for Case 3 (non-spanning Garrawilla Volcanics and minimum chain pillar subsidence) & 4.2 m Mining Height
Scale: 1:60,000
Figure No: 40
Narrabri Coal Operations - Narrabri Coal Mine (Stage 2)

Title: Post-mining Surface Crack Width Potential above Longwall Layout for Case 3 (non-spanning Garrawilla Volcanics and minimum chain pillar subsidence) and 4.2 m Mining Height

Figure No: 41

Key:
- Cover Depth
- Contours
- Faults
- Main Creeks
- Fences
- Unsealed Roads/Tracks
- Farm Dams
- Buildings
- Orchards

Scale: 1:60,000
Zones in the Overburden According to Peng and Chiang (1984)

- 'A' Horizon - Zone of Continuous Crack Connection to Workings (Whittaker and Reddish, 1989)
- 'B' Horizon - Zone of Discontinuous Crack Connection to Workings (Whittaker and Reddish, 1989)

Key:
- Surface water flow path
- Sub-surface water flow path
Zones in the Overburden according to Forster (1995)

- Rib Area
- Goaf Area
- Rib Area
- Surface Zone
- Constrained Zone
- Fractured Zone
- Caved Zone

Extracted coal seam - thickness = t

Thickness varies depending on depth of cover

Variable - mostly not detected due to presence of weathered surface layer or alluvial deposits. Surface effects only noted in areas with small depth of cover

Interface possibly forms at plane of weakness (Vales Point Seam)

21t - 33t depends on depth of cover and geological factors

<10t (probably about 5t)
Engineer: S. Ditton  
Client: Narrabri Coal Operations Pty Ltd - Narrabri Coal Mine (Stage 2)  
Drawn: S. Ditton  
Date: 12.08.08  
Title: Continuous and Discontinuous Sub-Surface Fracture Heights above NCM Longwall Layout  

\[ \text{Mean } A/H = 0.2295 \ln(x) + 1.4006 \]

\[ \text{U95% } A/H = 0.2295 \ln(x) + 1.4006 \]

\[ \text{Mean } B/H = 0.1694 \ln(x) + 1.3809 \]

\[ \text{U95% } B/H = 0.1694 \ln(x) + 1.5559 \]

Overburden Curvature or 'Bending Energy' Index, \( S_{\text{max}}/W^2 \) (km\(^{-1}\))  

- **A** - Continuous Fracturing Limit (total drilling fluid loss)  
- **B** - Discontinuous Fracturing Limit (partial drilling fluid loss)  

- **Measured A/H**  
- **Measured B/H**  
- **Predicted Mean A/H**  
- **Predicted U95% A/H**  
- **Predicted Mean B/H**  
- **Predicted U95% B/H**  

- **21T** (Forster, 1995 Lower Bound)  
- **33T** (Forster, 1995 Upper Bound)
Engineer: S.Ditton  
Client: Narrabri Coal Operations Pty Ltd  
Drawn: S.Ditton  
Date: 12.08.08  
Title: Sub-surface Fracture Height above the Proposed Layout and 4.2 m Mining Height, based on ACARP, 2003 and Forster, 1995  
Scale: NTS  
Figure No: 45
Post-mining Surface Levels
Main Creeks
Fences
Unsealed Roads/Tracks
Farm Dams
Buildings/Tanks
Orchards
Design Angle of Draw

Key:

Narrabri Coal Operations - Narrabri Coal Mine (Stage 2)
NAR-001/1

Post-mining Surface Slopes and Surface Features Above Longwalls
LW 1-26 for Case 3 (Maximum Panel and Minimum Chain Pillar Subsidence) and 4.2m Mining Height

Scale: 1:60,000

DgS

Ditton Geotechnical Services Pty Ltd

Engineer: S.Ditton
Drawn: S.Ditton
Date: 25.03.08

Client: Narrabri Coal Operations - Narrabri Coal Mine (Stage 2)
Title: Post-mining Surface Slopes and Surface Features Above Longwalls LW 1-26 for Case 3 (Maximum Panel and Minimum Chain Pillar Subsidence) and 4.2m Mining Height

Figure No: 46