Trade & Investment Mine Safety

Draft Work Health and Safety (Mines) Regulation

Public comment template

Please send submissions by email to consult.minesafety@trade.nsw.gov.au Submissions must be received by **27 June 2014.**

Confidentiality: Any information that you do not wish to be made available to the public should be clearly marked 'IN CONFIDENCE'. Submissions are subject to all relevant laws such as the Government Information (Public Access) Act 2009 and the Privacy and Personal Information Protection Act 1998. NSW Trade & Investment may provide extracts of submissions to other stakeholders for comment during the review of public submissions.

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Whole submission o Address and contact details o Part (please specify) ¨ ……..

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Part 1 - Comments in response to discussion paper	
Page or Section No.	**Discussion point and your comment**

Part 2 - Comments in relation to draft regulation	
Clause number	**Title of clause and your comment or suggestion**
31 Seismic activity – Page 35	Seismic activity is an outcome of rock fracturing and, theoretically, is ever-present in all forms of mining. At very low energy release levels in underground coal mining, it is referred to as micro-seismic activity. It only becomes a concern in underground coal mining when it is of a sufficient magnitude to present a risk to health and safety, when it is then referred to as a seismic event (or bump, or pressure burst, or strain burst, or rock burst). Since micro-seismic activity is a form of seismic activity, a thresholds may need to be specified for what constitutes 'seismicity'.
68 Subsidence	**(2) (b) all investigations of subsidence and any interpretation of subsidence information is carried out only by a competent**

– Page 64	**person, and** What criteria are proposed for a person to be considered competent in subsidence engineering? Some specialists in subsidence engineering have no formal qualifications, whilst others with formal qualifications (for example, as mining or geotechnical engineering) could not be considered competent in subsidence engineering.
177 Dangerous Incidents – page 141	***(viii) the collapse or failure of an excavation or of any shoring supporting an excavation.*** This needs to be qualified (e.g. *unplanned collapse*) otherwise, theoretically, nearly all forms of secondary extraction in underground coal mining would be classified as dangerous occurrences. ***(xvii) rock falls, instability of cliffs, steep slopes, or natural dams, occurrence of sinkholes, development of surface cracking or deformations or release of gas at surface, due to subsidence.*** Similarly, since surface cracking and deformation is invariably associated with secondary extraction methods in underground coal mining in Australia, all forms of secondary extraction in coal mining could be considered to constitute dangerous occurrences under this clause.
Schedule 1 – page 144	***1 Ground or strata instability*** ***(u) in the case of an underground coal mine, the strata support requirements for the mine and the pillar strength and stability required to provide that support and the probability of instability of any pillar taking into account the pillar's role.*** I do not consider that this requirement is technically achievable in the case of coal pillars. Firstly, the 'strength' of a structure refers to its maximum load carrying capacity, or maximum resistance to deformation. 'Strength' is not the same as 'stability'. Strength does not necessarily define 'stability', either in theory or practice. A structure such as a coal pillar can be stable well after its peak load carrying capacity, or strength, has been

	exceeded. This is a common situation in pillar extraction and for chain pillars in longwall mining. Brady and Brown (Rock Mechanics for Underground Mining, 2006) advise that "*an alternative engineering approach is to say that the rock has failed when it can longer adequately support the forces applied to it or otherwise fulfil its engineering function. This may involve considerations of factors other than peak strength, In some cases, excessive deformation may be a more appropriate criterion of failure in this sense.*" Galvin (Ground Engineering for Underground Coal Mining – Principles and Practice, 2014) subscribes to the same view. If the regulations are to premised on the terms 'strength' and 'stability' then the regulations need to provide unambiguous definitions of these terms. Secondly, there is only one technique developed to date that produces a probability of instability for a coal pillar and this technique is restricted to a specific set of circumstances. The technique is the maximum likelihood method of Salamon and Munro (1976 – A Study of the Strength of Coal Pillars) and its updated version, the UNSW Pillar Design Methodology (Salamon, Galvin, Hocking and Anderson, 1996 – Coal Pillar Strength from Back-Calculation). The specific circumstances to which it applies include: failure is confined to the coal element of the pillar system; the immediate roof and floor strata play no (or a negligible) role in the failure of the coal element; the point of instability coincides with the peak pillar strength of the coal element; and pillar width-to-height ratio does not exceed 8.6. As such, there is no technique available for determining probability of instability for situations such as: soft and weak roof or floor environments; pillars that abut goaf edges, such as longwall chain pillars; or where instability does not develop until sometime after the peak pillar strength has been exceeded.