

*Submission to Ministry of  
Business, Innovation &  
Employment (MBIE) on the 'Implementation review of  
the Health and Safety at Work (Mining Operations &  
Quarrying Operations) Regulations 2016'*

**Submitted on 28 September 2018**

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## **MinEx**

MinEx is the national health and safety council for New Zealand's extractive sector - the mining, tunnelling and quarrying industry. Our principal purpose is to help the industry achieve its goal of being free from fatalities, injuries and diseases. MinEx is funded by the mining and quarry sectors – through the respective associations and a number of individual companies – with a mandate to:

1. be the main point of contact with the Ministry of Business, Innovation and Employment (MBIE), WorkSafe New Zealand (WorkSafe) and other agencies on all extractive sector matters related to health and safety, and
2. through leadership and consultation develop an industry view on relevant legislation, regulations, guidelines and training matters, and work with MBIE, WorkSafe and other agencies to adopt and implement those views, as appropriate.

To inform this submission, MinEx consulted with Straterra, the Aggregate and Quarry Association (AQA), the Institute of Quarrying (IOQ NZ), E tū, AusIMM NZ, Civil Contractors New Zealand (CCNZ) and many other mining, tunnelling and quarrying operators.

## **Introduction**

MinEx makes this submission in response to MBIE's discussion document for consultation with industry, workers and representative organisations in the mining, tunnelling and quarrying sectors on the implementation review of the *Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016* (the Regulations).

The MinEx submission is in two parts:

1. Our response to issues raised in MBIE's discussion document, and
2. Additional issues which the sector would like MBIE to consider in this review.

## Our response to issues raised by MBIE

### Quarries, alluvial mining and ironsand mining

#### 1. Greater regulatory or code of practice coverage

We support MBIE's view that the quarry sector would benefit from fit-for-purpose regulations or an Approved Code of Practice (ACOP) to improve management of health and safety across the sector. We prefer inclusion in the regulations, rather than an ACOP, so that quarries become more aligned with mining and tunnelling and continue to be regulated by the specialist Inspectors of the High Hazard Unit of WorkSafe.

We support the inclusion of a new section in the regulations that requires quarry operators to develop a Health and Safety Management System (HSMS) that is commensurate with the size, nature and complexity of their operation. The quarry operator should be responsible for development of a compliant HSMS, which should include risk appraisal and risk management in line with current Regulations 54, 55 and 56, and the Quarry Manager should be responsible for the implementation and maintenance of the HSMS.

Many quarries, and some open cut metalliferous mines, are small (with just two or three workers) and on small footprints. The hazards and risks here, although similar in nature to all mines, require different controls and monitoring to large open cut operations employing large numbers of workers. Accordingly, we do not believe these sites should be required to develop highly prescriptive Principal Hazard Management Plans (PHMP) and/or Principal Control Plans (PCP), which were intended to manage catastrophic risks, primarily in underground coal mines.

While quarries would benefit from some prescription around particular high consequence hazards such as ground control, traffic and explosives management, we believe that an ACOP or Guideline are the appropriate vehicle to achieve this. We do not believe the outdated and prescriptive the Quarries Regulations 1999 (UK Regulations) add any value in these modern risk-based regulations.

These small sites should not require a Site Senior Executive (SSE) as the Quarry Manager currently holds a Certificate of Competence (CoC) in their safety critical role and manages all aspects of the quarry, including health and safety. To add another safety critical CoC holder requirement to these small sites would be onerous and add little value to improving health and safety at the site.

We agree with MBIE that notification and reporting requirements currently covered by Regulations 225 - 230 should apply to quarries.

## **2. Alluvial mining and ironsand - greater regulatory or code of practice coverage**

We support WorkSafe's view that many ironsand operations are similar in nature, size and complexity to quarries and therefore the fit-for-purpose regulations proposed for quarries should also apply to ironsand operations, provided they are tailored to ironsand mining. We also support WorkSafe's view that alluvial gold operations are generally smaller, and pose lower risk, so therefore should remain exempt from these regulations.

We agree with MBIE that notification and reporting requirements currently covered by Regulations 225 - 230 should apply to all alluvial operations.

## **3. Quarry and alluvial manager Certificates of Competence and supervision**

We support MBIE's position on the need for both A and B-grade CoCs, with a real differentiation in the competency needed, provided there is a true distinction between higher and lower risk quarries. Given that more than 80% of quarries in New Zealand employ 4 or less workers it is appropriate that size and scale should replace explosives as the test for whether a B-grade CoC is appropriate, and that the natural cut-off should be set at a maximum of 4 workers for a B-grade CoC.

### **Supervisor position in quarries and ironsand operations**

We propose provision of a supervisor position for quarries and ironsand operations where:

- there are multiple small sites (for example, Council borrow pits); or
- mobile crushing operations where plant is operating at multiple sites concurrently; or
- large operations have multiple operations or shifts on the same site.

In these situations, the Quarry Manager (A-grade CoC) would establish a new site or operation and ensure the HSMS was in place, while the supervisor would supervise the day-to-day operations of the site. This is consistent with other opencast mining operations and the application of Regulation 31.

Consistent with the current Regulation 31, the supervisor should be appointed by the Quarry Manager and hold a minimum of a B-grade CoC. The number of workers under their supervision is not relevant as the A-grade Quarry Manager is responsible for managing the site, as is currently the case in opencast mining.

### Alluvial gold Certificates of Competence

We do not believe that the skills and knowledge required for an alluvial gold mine operation are adequately dealt with in the quarry CoCs. The presence of old underground workings, the mining methods used, and management of water etc., are examples of significant differences between quarries and alluvial gold mines.

While changes to the B-grade CoC referred to above may give the Board of Examiners (BoE) opportunity to address some of these anomalies, we propose that the Manager of a Specific Quarry Site CoC also be made available to alluvial operations. This would enable the BoE to tailor oral exams to alluvial operations that would meet the criteria for the Manager of a Specific Quarry Site CoC.

#### **4. Safety in dormant quarries**

We note MBIE's reference to the UK Regulations where quarries are exempt from the Quarries Regulations when:

- there is no extraction or preparation for sale of minerals (either for the previous 12 months or as notified to the Executive); or
- part of the quarry is unconnected with the extraction or preparation for sale of minerals.

We support this definition of "dormant quarries" and would support such operations being exempt from the requirements of the Regulations. We note that such sites would still be covered under the requirements of the Health and Safety at Work Act and General Regulations, as are re-sale yards, abandoned sites etc. where work is being carried out that is not associated directly with the winning and processing of material.

#### **5. Quarry boundaries**

The definition of a quarrying operation contained in the Health and Safety at Work Act 2015 (HSWA Act) has led to the unintended consequence of all general earthwork's activities being covered by the definition. While we understand this review does not include the HSWA Act, we support MBIE's position that this review does allow resolution of the boundary issues by stakeholders clarifying them in discussion, provided they are within the definition, and this can be clarified in practice through guidance and WorkSafe being clear about its practice.

The good practice guideline Health and Safety at Opencast Mines, Alluvial Mines and Quarries issued in November 2015 contains guidance on what is and isn't a quarry, and we propose that this be the basis for stakeholder agreement on application of the quarry definition. We support the guideline in that the following activities are not quarrying operations:

- a) civil or building construction sites where cut to fill or cut to waste is undertaken for civil works including roadworks unless the construction is associated with development of a quarry; or
- b) stockpiles at suspended quarries and suspended river gravel extraction sites; or
- c) small scale, non-complex extraction carried out on farmland solely in support of farming; or
- d) small scale, non-complex extraction carried out in forests solely in support of forestry operations; or
- e) non-complex extraction of gravel from river beds where there is no mechanical processing.

CCNZ have produced the most comprehensive flow diagram which addresses the unintended consequences of the definition in the HSAW Act. We support the use of this model as a means of clarifying current practice.

## **Various issues regarding making the regulations more adaptable to different types of mining**

### **6. Mechanical and electrical control plans - whether they are needed for all mines and tunnelling operations**

We support MBIE's proposal to amend the definition of a principal hazard to clarify that a series of recurring accidents relates to repeated exposures to health or safety risks.

In relation to tunnels, Electrical Control Plans in Regulation 99 (b) should be deleted. Regulation 100 (2) should be changed to "...or tunnelling operation, where principal hazards requiring an Electrical Control Plan, ...".

The requirement for Control Plans in all other mining operations would then be determined by risk assessment and the presence of electrical and/or mechanical controls to manage principal hazards.

We support WorkSafe's suggestion of allowing endorsements for specific types of operations and propose that CoCs for Superintendents to manage Control Plans be separated into coal, underground non-explosive and open cast. Qualification requirements for each should be determined by the risks being managed by these controls and the requirements of the Electrical Workers Registration Board.

We would support a "competent person" model similar to that used in New South Wales (NSW) Mining legislation, for simple mining, quarrying and tunnelling operations.

The following is that requirement for a mechanical superintendent and definition of a competent person within the NSW Mining legislation:

*"must ensure that the plan is developed and periodically reviewed by a person who is, or who is under the supervision of:*

- (i) the individual nominated to exercise the statutory function of mechanical engineering manager or mechanical engineer at the mine, or*
- (ii) if no person is required to hold either of those positions at the mine—a competent person."*

**"competent person** for electrical work on energised electrical equipment or energised electrical installations (other than testing referred to in clauses 150 and 165 of the WHS Regulations) at a mine to which Schedule 10 applies—means a person who has the qualifications to be nominated to exercise the statutory function of qualified electrical tradesperson at the mine."

"The definition of competent person in clause 5 (1) of the WHS Regulations specifies the competence required to be a competent person in respect of a number of particular tasks. Paragraph (g) of that definition specifies that in any other case a person is a competent person in respect of a task if the person has acquired through training, qualification or experience the knowledge and skills to carry out the task."

## **7. Improving flexibility for CoC requirements for specialist roles**

We support improved flexibility for CoCs as outlined in issue 6 above and are happy to work with WorkSafe and the BoE to achieve this. In order to achieve this the following should be considered:

- CoC holders in underground operations should be endorsed for a number of roles, including, mechanical, electrical, ventilation, mine surveyor and winding engine driver. There should be 4 levels of endorsement:
  1. Underground potentially explosive mines - that would allow the holder to hold that role in any extractive's operation;
  2. Underground non-explosive mines - that would allow the holder to hold that role in any underground metalliferous mines and tunnels;
  3. Opencast - that would allow the holder to hold that role in any opencast mine or quarry;
  4. Tunnelling – that would allow the holder to hold that role in a tunnel only.

- The second consideration for mechanical and electrical superintendents should be the level of complexity of the operation. This would only be considered for opencast and quarry operations where the operation is of such a simple nature that there is not a need for a CoC qualified person to undertake this work, such as the electrical work in smaller quarries.

## **8. Site Senior Executive (SSE) specialist competency in underground metalliferous mines**

The SSE at any mine is responsible for developing, implementing and maintaining the HSMS for that mine. We do not believe that the SSE needs the level of technical skills required of a 1st Class Mine Manager in order to meet their obligations under the HSAW Act and the Regulations.

Currently the SSE of an underground metalliferous mine needs a 1st class CoC for underground metalliferous mines which, from a practical point of view, often means the Mine Manager and SSE are the same person. This is a problem with a small pool of 1st class CoC holders and leads to nominal rather than functional appointments. At sites that have both underground and opencast activities, this has led to the requirement for two SSEs, which is problematic with the implementation and maintenance of a single HSMS.

Regulation 8 currently allows the higher CoC holder to exercise independent judgement in the event of disagreement, which should be sufficient to alleviate concerns that the SSE, in spite of holding the less advanced operational CoC, could override safety in favour of cost or production gains.

There is also provision in Regulation 10 for WorkSafe to consider the suitability of any SSE appointment and we believe this is adequate protection for the concerns WorkSafe have expressed in this area.

## **9. Introduce mine surveyor competencies for surface mines and tunnelling operations**

We agree with WorkSafe that a licensed cadastral surveyor may have limited knowledge of a mining operation, and therefore is not well placed to prepare a mine plan for an opencast or tunnelling operation. There should be flexibility around the person who prepares the plan. This will not impact upon the integrity of the process as a mine surveyor is not the only capable or appropriate person who is able to do this. It is for the mining company submitting the plan to ensure that these are prepared accordingly and by a capable and appropriate person. We note that the Regulations and "Guide to Completing and Submitting Plans for Mine and Tunnels, 11 January 2017" provide clear guidance on what is to be included in the plan and how it is to be prepared.

The level of experience in tunnel guidance systems, and tunnelling generally, is most important to ensure accuracy of the survey work in tunnelling operations.

We propose that Regulation 213 (4) be amended to require plans to be prepared by a tertiary qualified surveyor, with mining endorsement, or other appropriately qualified

and/or experienced person. This will also require amendment to Regulation 28 (3) in relation to tunnels.

## **10. Supervision and relationship to production shifts**

### **Coal exploration**

Regulation 16 currently exempts coal exploration from requiring a manager to have a CoC, however does require these sites to have an SSE to deal with health and safety management systems. Regulation 31 seems to conflict with Regulation 16 by requiring exploration operations to be supervised by a CoC holder. We propose amending Regulation 31 to clarify that a CoC holder is not required for supervision of an exploration activity. We do however agree with WorkSafe that competent supervision is required that relates to the nature of the work and the environment.

We support MBIE's proposal to clarify the Regulations so that they do not suggest that mineral exploration is covered as mining.

### **Supervision for "non-production" shifts, and care and maintenance**

The term "Production shift" is used in a number of regulations however the term is not defined. The problem here is that often shifts are worked where no production occurs and currently a CoC holder is required to supervise such shifts. Examples of this are when conducting pre-shift inspections and where maintenance work is carried out in a workshop environment while no production is occurring.

We propose a definition of Production shift along the following lines:

"Any shift at a mine where workers are exposed to principal hazards, or the following activities are conducted:

- extraction of coal or minerals;
- tunnelling operations."

We support WorkSafe's view that qualified supervision be required where principal hazards exist.

## **Suspended mines' need for specialist roles**

### **11. Suspended mines - whether they always need SSE, manager**

The level of supervision required at any site should be assessed through risk assessment, both for active work and suspended operations. The risk assessment should consider all of the hazards, risks and control measures, which would then inform the level of supervision required. The SSE would establish a targeted action response plan (TARP) to cover reasonable eventualities and have inspections conducted by a worker that the SSE considers competent for the nature of the activities being observed and/or measured.

## Transitional relief for underground metalliferous mine second exit

### 12. Second exit (escapeway) proposal

We support MBIE's proposal for allowing suitable time (until 16 December 2024) for improvements in existing underground metalliferous operations, subject to having suitable interim safety measures in place. As MBIE states this would be as a matter of fairness as a transitional period until 16 December 2024 was provided for underground coal mines operating in December 2013 (HSAW Act Sch.1(2)).

We also propose the following minor amendments to Regulations 171 and 172, along with amendments to Schedule 3.

The changes to s171 are shown below in red. These are intended to address tunnel issues. Tunnels under construction are usually single entry so there is no secondary egress. Consequently, the emergency egress issues need to be addressed differently to those for underground mines.

- 171 Escapeways in underground metalliferous mining operations and tunnelling operations*
- (1) The mine operator of an underground metalliferous mining operation or tunnelling operation must ensure that there are adequate means of escape from the underground parts of the mining operation.*
- (2) When determining the means of escape from the underground parts of the mining operation, the mine operator must consider—*
- (a) the need for mine or tunnel workers to escape from the underground parts of the mining operation during an emergency; and*
  - (b) the maximum number of mine workers likely to be in the tunnel at any one time; and*
  - (c) additional breathing equipment, self-rescuers, refuge stations and wayfinding systems necessary to secure the safety of mine workers during an emergency; and*
  - (d) the location of the items specified in paragraph (c).*
- ~~*(b) the inclusion and placement of refuges.*~~
- (3) Subject to Regulation 138 and Schedule 3, an escapeway from a tunnel which is a vertical shaft greater than 60m deep or a sloped drive greater than 60m and steeper than 1:3.7, must be equipped with two means of escape with one being a suitable mechanical means of conveyance for raising and lowering mine workers.*
- (4) Any shaft less than 60m or slope less than 60m in length that is to act as escapeways must be fitted with two forms of egress. One could include a:*
- (a) suitable ladderway fitted with suitable platforms at no more than 5m centres and or walkable stairs; and*

- (b) *allow for the passage of rescuers and rescue equipment including stretchers; and*
- (c) *be constructed to provide a place to rest and securely fenced to prevent a person falling further than the distance between adjacent platforms.*
- (5) *If the ladderway cannot accommodate the passage of a stretcher, a suitable certified stretcher lifting device is to be installed.*
- (36) *The mine operator must ensure that a record is kept of the process undertaken to determine the means of escape from the underground parts of the tunnelling operation, including the reasons for the final determination.*

The reference to s138 in s172 is not needed as s138 adequately covers shafts used as escapeways in winding operations. We therefore believe that this reference in s172 (1) should be deleted as follows:

**172 Additional requirements for escapeways in underground metalliferous mining operations**

- (1) *The mine operator of an underground metalliferous mining operation must ensure that, before stoping operations start at the mining operation, the operation has at least 2 exits trafficable on foot (**escapeways**) or shafts that **comply with regulation 138** and that—*

s138 requires the shaft in a winding operation to be suitable and ready for immediate use and to comply with Schedule 3. We suggest for clarification that the following changes, in red, be made to s138.

**138 Equipment for raising and lowering mine workers, coal, minerals, or material**

- (1) *The mine operator must ensure, in relation to every exit required by regulations 170 to 172 that is a shaft **or slope in which there is fitted** ~~that~~ equipment for raising or lowering mine workers, coal, minerals, or material to or from the surface **that the equipment** is—*
  - (a) *suitable for the purpose; and*
  - (b) *ready for immediate use: **and***
  - (2) *(c) **in respect of vertical shafts and slopes of a depth or length greater than 60 metres complies with the applicable** ~~The mine operator must ensure that the requirements in Schedule 3. are complied with in respect of vertical shafts of a depth greater than 60 metres and slopes.~~*

The following needs to be deleted from Schedule 3, item 27 as s 138 covers this where the operation includes a winder:

*Every shaft that exceeds 60 metres in depth and that may be used as a means of exit by mine workers, including in an emergency, must have an automatic cage or skip installed that is suitable for raising or lowering mine workers.*

Automatic winders introduce new hazards with no consistent overriding advantage over other forms of fall-protection, resting opportunities and assisted ascension for workers exiting via an escapeway.

## Coverage issues

### 13. Coverage of tunnels

We support MBIE's position that where workers regularly go underground for such activities as installing a pipe into a pipe jacking rig, or where workers on a pipe jacking or tunnelling site are exposed to hazards such as noxious gases, falling objects in a shaft, confined working areas with mechanical interface, shaft collapse, fire and electricity, then the mining regulations should apply, based on a full risk assessment that identifies the mitigation measures and levels of competency required to manage them.

We support WorkSafe's proposal to amend Regulation 6(b) to remove "where 1 or 2 people ordinarily work", to have the effect of taking out of coverage all tunnels 15 meters or shorter provided there is no usage of explosives or no methane present.

### 14. Coverage of tourist mines

We support WorkSafe's position that some regulatory requirements could be adjusted where tourist mines have little or no risk in relation to the principal hazards of mining, whereas some are still producing and have principal hazards.

We do not believe that any specialist CoC should be required for non-producing tourist mines where no principal hazards exist that require such a CoC. The HSMS should address any principal hazards that may be present, and the SSE may need to contract specialist skills for particular principal hazard management plans. The SSE role is important and should be required for tourist mines.

We also support MBIE's proposal for an ACOP for tourist mines to provide guidance for operators and SSEs.

## Minor issues list

### 15. Manager presence requirement

As acknowledged by WorkSafe, the requirement to have a manager present whenever workers are at work is very prescriptive and not always possible. The word "supervise" is the problem in Regulation 13 (1)(b) due to the requirements of supervisors in other sections of the Regulations. We propose that the word "supervise" be replaced with the word "manage" in Regulation 13 (1)(b).

### 16. Need for "acting" roles

The Regulations should reflect the ability to appoint acting workers into safety critical roles for a short duration, where the acting worker is assessed as competent by the operator and supported to undertake the role.

### 17. Supervision of untrained workers

We propose that the level of supervision for untrained workers should be assessed by the site manager, and be based on the worker's experience, the task to be conducted, and the duration of the task. It is not always necessary, or possible, to accompany untrained workers at all times therefore we propose that the term "closely supervised" replace the requirement for "accompany" in Regulation 50.

### 18. Competency for assessing geotech and inrush issues

Regulation 73 covering inrush PHMPs requires that, as part as the appraisal of the inrush risk, a written review must be completed by a suitably qualified and experienced person. This review is then peer reviewed, and these actions combined to determine if the hazard is a principal hazard at the mining operation.

For strata (Regulation 71), this decision is made by risk assessment involving a cross section of the workforce. We propose that the same process that applies to inrush, should be applied to strata instability. Strata instability considerations are of such a technical nature that there may not be appropriately qualified and experienced personnel on a typical mine site to adequately assess the risk.

An alternative to this approach would be to add a section to set out the process that should be followed when assessing strata instability in opencast operations as follows:

*"When examining strata instability, the mine operator must give due consideration to the technical nature of the risk to determine the level of expertise required to assess the risk."*

We also propose that the requirements for inrush and strata instability also apply to tips, ponds and voids in Regulation 81.

## **19. Spontaneous combustion (spon-com)**

We support WorkSafe's proposal that site risk appraisal and assessment determine the need for a PHMP. Spontaneous combustion is a likely hazard in any coal mine, but the appraisal should assess whether it is a principal hazard or is dealt with in other plans (potentially fire and explosion).

## **20. Contractor health monitoring**

It is not always possible to obtain health monitoring information where contractors are used for maintenance on short notice, and/or for a short duration.

We support WorkSafe and MBIE's proposal that application of Regulation 127 be limited to long term workers at the point of starting, whether employees or contractors. To give effect to this, we support the requirement for health monitoring to apply after 4 weeks of continuous work.

We note that there is a requirement for mine operators to "offer" a medical examination to workers in Regulation 127, however no requirement for workers to accept the offer. We would support a wording change to require workers to participate in reasonable requests for worker medical examination.

We believe that there should be a reasonable transition period, say 12 months, in order for larger sites to achieve compliance with proposed changes to Regulation 127.

## **21. Tunnels using tunnel boring machines**

The requirements of Regulation 132 (3)(b) mean that closed face tunnel boring machine (TBM) tunnels under bodies of water are required to drill into the water body therefore increasing the risk of inundation. We propose that Regulation 132 be modified to exempt closed face TBM tunnels from drilling ahead when the TBM and lining systems have been designed to withstand the full design head of water. Drill holes should be installed as specified by the tunnel lining designer.

We support MBIE's proposal to align this provision with inrush PHMPs, as it is misleading to specify drilling ahead rather than attending to inrush risks from different directions.

## **22. Airflow for diesel emissions**

We do not support a reduction in ventilation requirements for underground mines and tunnels however Regulation 154 is overly prescriptive and does not consider advances in diesel technology, the use of DPM filters on engines, the low diesel emissions of light vehicles, and low emissions from jumbos when drilling.

We propose removing Regulation 154 (b) and replacing it with the requirement for the mine operator to ensure the concentration of diesel emissions (including diesel particulates and any known harmful emissions from diesel engine systems) is as low as is reasonably practicable.

### **23. Staged submissions for PHMPs**

Our concerns here relate to larger and more complicated tunnel sites. Plans may vary between sections of the work and there may be TBM work and micro tunnelling as well as shaft works. Plans for the specific area of work and associated plans that impact on the area of work should only be required 2 months ahead of that specific area of work commencing. For example, if the TBM is to start 1 year after the shaft construction, the TBM PHMPs and PCPs should not be required to be submitted along with the shaft plans early in the project. The TBM plans should only be required 2 months ahead of the TBM being assembled on site.

### **24. Review of PHMPs every 2 years**

We propose that plans are "made" on the date the works commence, that is 2 months from the date that the draft plan is submitted under Regulation 212.

### **25. Mine plan requirements are generic**

There is a lot of unnecessary detail in Regulation 217 that is not relevant. Examples of this are 217(1)(e) the direction, location and extent of every known fault, intrusive dyke; 217(1)(l) the location of electrical installations including the route and voltage of all conductors. The low voltage conductors in a large metalliferous mine change daily as headings are advanced and as electrical cables are retrieved from disused areas. The plan detail on this becomes superseded the next day and geological features are not able to be surveyed in segment and pipe jacked tunnels.

We propose that there should be separate requirements for underground operations, opencast operations and tunnels. These requirements should be limited to those items in plans that have a bearing on health and safety at the mine.

We also propose that flexibility be retained to use suitable symbols (referenced in a plan legend) but where possible standardised symbols such as those contained in AS 4368-1996 (R2013) Mine plans - Preparation and symbols, can be used to provide a level of consistency in the reading of mine plans.

In relation to mines and tunnels, we propose that where possible the same NZ survey datum should be used. While many local authorities have changed their grids to suit NZGD2000, if a mine or tunnel is in a local authority area or local mine grid where their services are not surveyed to the NZGD2000 grid, then the mine or tunnel should be surveyed and recorded in accordance with the survey grid of that local authority or mine, so that the mine or tunnel aligns with the existing services. We propose that Regulation 216 be amended to allow this.

### **26. Mine sealing requirements are prescriptive**

We support WorkSafe's proposal that Regulation 183 be amended to ensure a barricade be installed and constructed in a way that would prevent unauthorised access, if it was not reasonably practicable to install a Type B seal.

## Additional issues to be considered by MBIE

The following are additional issues and minor fixes that we believe need addressing in the Regulations:

### Regulation 3 - Interpretation

**coal mining operation** - There does not appear to be any need for a separate definition of coal mining operation as the mining operation definition covers coal and metalliferous mining.

**ERZO** - ERZO, ERZ1, and NERZ should refer to all underground mining or tunnelling operations where methane has been detected and not just underground and coal mining operations.

**NERZ** - The definition only refers to underground coal mines which is not consistent with Regulation 66(2)(a)(ii). Underground mines and tunnels where methane is detected need a PHMP for fire and explosion which then needs to address NERZ.

**old workings** - Replace the word "goaf" with "worked out areas" to make it more generic.

**shaft** - The definition has an inclination above the horizontal of 15 degrees, which is too flat for a shaft, triggering other sections such as winding. It also includes short and limited dimension shafts being long hole rises or winzes used between sub-levels for ventilation, first opening and free face for stoping, and for ladderway accesses. These latter shafts should be excluded, and the definition changed to an angle 15 degrees from the vertical.

**suspended** - The definition needs to be changed to allow for parts of operations to be suspended, as is the case with the definition of abandoned.

### Regulation 6 - Declaration of excluded tunnelling operations

The Regulations consider all activities associated with tunnels to be tunnelling operations. This means that civil works on the surface where there are multiple shaft sites are considered tunnelling operations after the first shaft commences. A tunnelling operation should be able to be split into multiple sites for commencement and completion of works in relation to application of the Regulations. This would also allow different excavation methods if applicable and different risk management systems.

We believe that tunnels in mining operations should also be excluded under Regulation 6, where they meet the requirements of Regulation 6. This could be done by adding subclause (c) to Regulation 6 as follows:

*" an operation listed in Schedule 3, clause 2, mining operation. "*

### **Regulation 70 - Audits of principal hazard management plans**

The requirement to have PHMPs audited every 3 years, when the plans are reviewed every 2 years under Regulation 69, is onerous and costly given that the review of PHMPs under Regulation 69 often involves external consultants or relevant experts. We propose amending Regulation 70 to only apply if requested by an Inspector.

### **Regulation 72 - Meaning of inundation and inrush**

The definition does not reflect international guidance on this and currently means that a minor slip in an opencast mine that poses little health and safety risk is captured by the definition. We propose that the definition in the NSW Mining Regulations be adopted as follows:

*"Inundation and inrush – when a liquid, gas or other substance that can flow enters a workplace at a rate or volume or concentration that creates an emergency situation and presents a risk to health and safety of mine workers."*

### **Regulation 76 - Obligations relating to work in inrush control zone**

A definition is required for an inrush control zone. We propose that the definition in the NSW Mining Regulations be adopted as follows:

*"inrush control zone - means the zone identified in the major hazard management plan that:*

*(i) is of sufficient thickness to safely separate the mine workings from the relevant potential source of inrush, or*

*(ii) in the case of a potential source of inrush that is not an accessible place in the same mine—is sufficient to provide a separation of 50 metres of solid rock between the mine workings and the assessed worst-case position of the potential source of inrush."*

### **Regulation 86 - Principal hazard management plan for explosives**

References to hazardous substances and approved handlers need to be updated to reflect the Health and Safety at Work (Hazardous Substances) Regulations 2017. This will also apply to other regulations that refer to hazardous substances.

### **Regulation 102 - Ventilation control plan**

Due to the relative simplicity of most tunnel ventilation systems, tunnel fans are considered the same as auxiliary fans. We propose amending Regulation 102 (2)(c)(i) to treat tunnel fans as auxiliary fans.

Tunnel fans usually have sealed bearings and monitoring of fans should be based on air delivery, actual against design, power draw, vibration and visual inspection only.

### **Regulation 131 - Steps to be taken following ground or strata failure**

Sub-clause (1)(b) refers to metalliferous mines yet refers to "coal". We propose that the word "coal" be deleted from this sub-clause.

Sub-clause (3) uses the term "ground or strata control" in the first line. We propose this be replaced with "ground or strata failure".

### **Regulation 138 - Equipment for raising and lowering mine workers, coal, minerals, or material**

There appears to be drafting error in Regulation 138 (2). The word "slopes" should be replaced with "slope haulage systems".

### **Regulation 141 - Air quality and temperature**

Humidity is not entirely responsible for heat stress. Heat stress results from a number of factors including high temperature, humidity, strenuous exercise, dehydration and wearing clothing that does not allow the body to cool. We propose amending Regulation 141 (1)(b) to include "temperature and humidity" rather than just humidity.

### **Regulation 142 - Measurement of air from fans**

Air quantity does not change often in an underground metalliferous mine or tunnel. We propose that the current requirement to measure air quantity monthly be replaced with the West Australian legislative requirement to measure air quantity every 3 months or after a major change in the ventilation system.

### **Regulation 143 - Quantity and velocity of air**

To supply the 0.3m<sup>3</sup>/m<sup>2</sup>/sec when sinking a shaft would see very high air flows delivered through a small delivery duct, relative to the shaft cross sectional area, that serves no purpose in improving ventilation. It raises the potential for dust generation. Most shafts naturally ventilate with the hot exhaust fumes rising relative to the ambient temperature, and little ventilation is needed to assist this process. The air quality tests should be the

acceptance criteria, not the volume of air delivered for shafts that are open to the atmosphere.

#### **Regulation 150 - Quantity of air to be measured**

Air quantity does not change often in an underground metalliferous mine or tunnel. We propose that the current requirement to measure air quantity monthly be replaced with the West Australian legislative requirement to measure air quantity every 3 months or after a major change in the ventilation system. This should also apply to Regulation 151.

#### **Regulation 157 - Fire protection and early warning systems**

The requirement for early fire detection devices underground is impractical. The requirements for Emergency Response adequately cover this issue with Targeted Action Response Plans (TARPS) in place to manage this hazard.

#### **Regulation 169 - Training in use of self-rescuers**

Requiring each mine worker, on an even time roster, who goes underground to complete self-rescuer training every three months is both excessive and difficult to achieve. We propose that the 3-month requirement be changed to once per annum.

#### **Regulation 223 - Examination of mining operations**

Tunnels have simple ventilation systems that are not affected by barometric pressure changes. They also generally have far more direct air flow and hence the air is not heated as much as in underground mines. These readings are of little value in tunnels. Taking temperature and pressure readings before each examination (inspection), as required by Regulation 223 is unnecessary in a metalliferous mine and tunnel, although we do support them in coal mines and sealed areas.

We propose that the requirements of Regulation 223 should not apply to tunnels and metalliferous mines.

#### **Schedule 3 - Standards for equipment for raising and lowering mine workers, coal, minerals, and materials**

Schedule 3 requires every shaft exceeding 60 metres in depth, that may be used as a means of exit for mine workers, to have an automatic cage or skip installed for lowering and raising mine workers. This is very prescriptive and causes issues during the development of these shafts. Winders introduce additional hazards.

Escapeways have landings (rest platforms) and can also be climbed using an ascender hooked onto a rope (a fall arrest system). Setting an arbitrary limit of 60 metres was

intended to allow for the development of <60m shafts using other than winders and not the existing situation with metalliferous mines.

Refer comments and proposals listed in Item 12 - Second exit (escapeway) proposal.

#### **Schedule 5 - Notifiable events**

There is a lot of confusion in the sector by virtue of considerable overlap in Schedule 5, to notifiable events under the HSAW Act sections 23, 24 and 25. Schedule 5 needs to be simplified through removal of duplications and possibly the provision of simple guidance on what is and is not notifiable

There is also a need to line up Schedule 5 with the requirements of the Electrical (Safety) Regulations 2010 reporting requirements.

This work will be important given the proposal to require all sites to comply with this section of the regulations.

#### **Schedule 6 - Particulars of notifiable events**

Extractives industry reporting forms for notifiable events and notification forms require updating for the HSAW Act.