

**Draft code: Air Quality: Managing Dust and Other Airborne
Contaminants
31 May 2016**

**SUBMISSION OF
THE NEW ZEALAND MINING INDUSTRY
SAFETY COUNCIL (MinEx)
TO WORKSAFE
ON**

**Draft code:
Air Quality: Managing Dust and Other Airborne
Contaminants
31 May 2016**

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Introduction

MinEx¹ welcomes the opportunity to submit on the *Draft Air Quality: Managing Dust and Other Airborne Contaminants*. We note the submission deadline of 27 May and the extension granted to 31 May.

MinEx sought advice from a number of people in the mining and quarrying industry and this consultation list appears in Appendix I along with our full membership. Submissions were received from CCNZ, Etú, OceanaGold and a number of individuals.

1. The CCNZ Tunnel sector's submission has been incorporated in this MinEx submission.
2. The IOQ and AQA have reviewed our submission and advised that they support our submission.
3. The detail from the OceanaGold submission has been included here.
4. Etú submitted:
 - That section 1.6 - *Worker engagement, participation and representation* needs to be strengthened to get full engagement around this issue. They proposed that this should read:

*Mine or tunnel operators must involve their workers and their representatives.
Health and Safety Representatives have functions and powers that are relevant
and can contribute to better outcomes for workers.*
 - Their second point relates to Part 3 - *Air Quality Risk Assessment, Sampling and monitoring*. The draft code cites s 32 of the Health and Safety at Work (General Risk and Workplace Management) Regulations 2016. Other equally important regulations are omitted. However it should be stressed in the ACOP according to s32 that the results of exposure monitoring must be made available to workers.
 - They further suggest that references to the following regulations are to included:
 - Regulation 30 - so that workers can know when to request monitoring
 - Regulation 31 - to request health monitoring
 - Regulation 33 - so that information will be provided about health monitoring
 - Regulation 34 - that health monitoring is provided
 - Regulation 39 - that the report is given to the worker
 - Regulation 41 - that WorkSafe is informed of concerning outcomes from health monitoring
 - Regulation 42 - that records are kept for prescribed time.
 - These issues above have in the past caused considerable concern for workers when operator have either not conducted exposure/health monitoring or have not released to results to

¹ MinEx is the national Health & Safety Council for the New Zealand quarry and mining industry. Its main purpose is to help industry to improve its health and safety performance, and to provide centralised industry representation on matters relating to health and safety.

workers. Of similar concern is the fact that operators or GPs are not reporting to the notification system (NODS).

These all seem sensible suggestions and we support them.

1 Submission

1.1 Summary

Question 1: Does the draft code of practice give you clear information about WorkSafe’s expectations regarding air quality at your operation?

The document could be made clearer by:

- Restructuring the document to more closely follow the standard risk management cycle illustrated in Figure 1 and the Table of Contents in Section 12.2; and,
- Amending the language used to make it clear that all sectors of the Extractive industry are included in the scope of the document by avoiding references to, for example the SSE. Generic terms like “duty holder” would be preferred.

1.2 Structure of the document

The document structure would be clearer if it was structured in accordance with the risk management process as well as making the underground and opencast/quarry split clearer. This is after all the structure adopted in the MOQO regulations.

Such a structure might look like this:

- 1 Introduction
 - 1.1 Purpose
 - 1.2 Application
 - 1.3 Legal status
 - 1.4 How to use the code
 - 1.5 Roles and responsibilities
 - 1.6 Engagement, participation and representation
 - 1.7 H&S management systems
 - 1.8 Hazards and risk
 - 1.9 Air quality plan
- 2 Risk appraisal
 - 2.1 Introduction
 - 2.2 Air quality assessment
 - 2.3 Worker exposure assessment
 - 2.4 Workplace exposure standards
 - 2.5 Complete a risk appraisal
- 3 Risk assessment
 - 3.1 Introduction
- 4 Risk control
 - 4.1 Hierarchy of control
 - 4.2 Types of control
 - 4.3 Dust

- 4.3.1 Roadway dust
 - 4.3.1.1 Underground
 - 4.3.1.2 Opencast mines, alluvial mines and quarries
- 4.3.2 Drilling
 - 4.3.2.1 Underground
 - 4.3.2.2 Opencast mines, alluvial mines and quarries
- 4.3.3 Blasting
 - 4.3.3.1 Underground
 - 4.3.3.2 Opencast mines, alluvial mines and quarries
- 4.3.4 Excavation
 - 4.3.4.1 Underground
 - 4.3.4.1.1 Tunnels
 - 4.3.4.1.2 Coal mines
 - 4.3.4.1.3 Metalliferous mines
 - 4.3.4.2 Opencast mines, alluvial mines and quarries
- 4.3.5 Processing plant dust
 - 4.3.5.1 Dump hoppers
 - 4.3.5.2 Conveyors and chutes
 - 4.3.5.3 Screens
 - 4.3.5.4 Hoppers, storage and load-outs
 - 4.3.5.5 Stockpiles
- 4.4 Diesel emissions
 - 4.4.1 Engine design
 - 4.4.2 Fuel type
 - 4.4.3 Filtration systems
- 4.6 Welding fumes
- 4.7 Hazardous substances
- 4.8 Respiratory protection
- 5 Monitoring and improvement
 - 5.1 Monitoring performance against the control plan
 - 5.2 Reviewing the control plan
 - 5.3 Use of TARPs
 - 5.4 Auditing the control plan
- 6 Training
- 7 Notifications & notifiable events
- 8 Glossary
- 9 Appendices

This essentially follows the 4 processes that make up Risk Management.

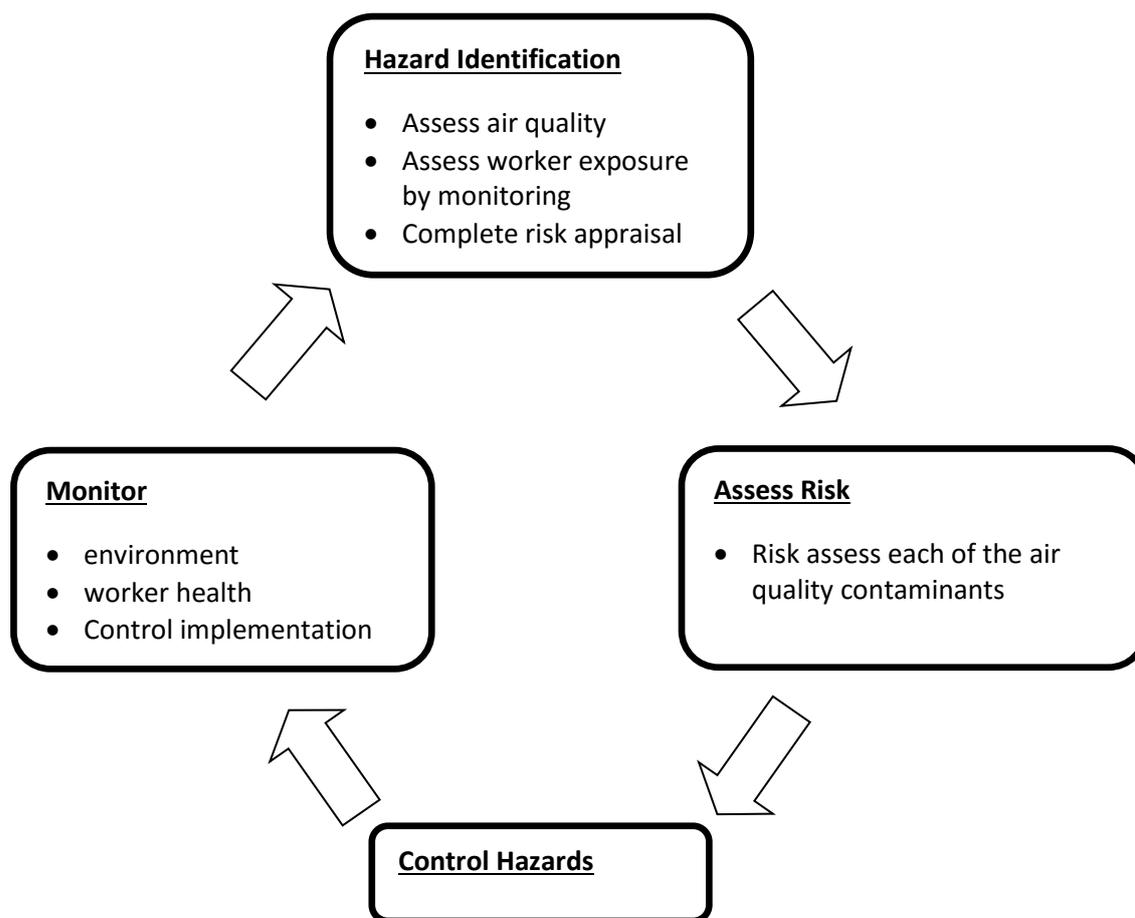


Figure 1. The risk management cycle

1.3 General comment

The draft has written forms a good basis from which to complete a workable approved code of practice and much of our submission:

- Deals with matters of details that we think add material that is missing;
- Clarifies that all sectors of the Extractives industry are included in the scope of the code as are, in many ways, all industries; and,
- Corrects some errors in the text.

1.4 Issues of detail

The table below contains the detail of our submission. We have also attached a marked up copy of the draft code in pdf format.

Section	Subject	Comment
	Title	Why include the word “Dust” in the title as it is simply an airborne contaminant
1.1	What is the purpose of this code?	The code applies to all sectors of the Extractives industry and you could make the last sentence clearer by substituting the word “duty holder” for SSE since quarries and alluvial mines do not require SSEs. All

Draft code: Emergency Readiness in Mining and Tunnelling Operations



THE NATIONAL HEALTH & SAFETY COUNCIL FOR THE
NEW ZEALAND MINING AND QUARRY SECTOR

Section	Subject	Comment
		references to SSE's need to be replaced with "Duty Holder" otherwise it confuses those sectors not covered by most of the MOQO regulations.
1.2	Application to quarries and alluvial mines	<p>Firstly the first sentence is not correct and is confusing. All businesses need to assess and control risks to health and safety including alluvial mines and quarries. This should state that all mining, tunnelling, alluvial mining and quarrying operations need to do this.</p> <p>Much of what needs to be done is actually a generic requirement on many industries.</p> <p>It would help if this section explained the term "duty holder" as it applies to sectors covered by the MOQO regulations and those not covered. In mining and tunnelling operations the "duty holder" is the PCBU, the Officers and the SSE. In quarry and alluvial operations it's the PCBU, and the Officers and the Officers have a duty to ensure the organisation has someone looking after the H&S Mgt system.</p> <p>Its very important that this is very clear in the code otherwise as soon as quarry sector readers see SSE they will switch off thinking this does not apply to them.</p>
1.2 - 3 rd para	Recommendation that quarries/alluvials adopt a systematic approach	The new act requires a systematic approach so I think you can do more than say "WorkSafe recommends..."
1.2 - 4 th para	Monitoring may be required	Surely this is monitoring "will be required" according to s7, s8 and Part 3 of the GRWM Regulations
Missing section	Interpreting the requirements in the code	This was a useful section in all other drafts of other codes and it has been deleted
1.4	How to use this code	The definition of 'needs to, or a direction' should have the words added 'subject to the last paragraph in section 1.3'. Otherwise the definition is in conflict with 1.3 which states that equivalent or higher practices can also be used. We don't want inspectors being insistent that we have to do something because the ACOP states 'needs to' when we have an equivalent control in place.
1.5	Roles and responsibilities	<p>This needs to include the responsibilities for quarries/alluvials. Currently only covers mining and tunnelling operations.</p> <p>For quarries/alluvials the Officers have a responsibility under the act at a governance level for the things assigned to the SSE in mining & tunnelling operations. They need to ensure that there is a role in the quarry/alluvial structure with accountability (there is no legal responsibility on the role) for implementation actions to ensure compliance under s44(1) of the GRWM Regulations</p>
1.6	Worker engagement, participation and representation	This applies to all businesses so should include quarries/alluvials
1.7	Health and safety management	The requirement to have a H&S mgt system applies to quarries/alluvials. We can't see how any one can comply with s36 (3) without having a H&S

Section	Subject	Comment
	system	mgt system. Replace SSE with duty holder
1.8	Hazards and risks	Replace SSE. This is generic and applies to all sectors. Perhaps we should say here and in other places "The PCBU must..." or maybe refer to the Officers.
1.9	Air Quality PHMP	Heading should be Air quality plan and place the last para first to clarify the heading
Fig 2.1	Key components of an air quality plan	Top inputs not shown so confusing. This is more than an air quality plan so title is wrong. The air quality plan appears to be just one part of whatever this is. What is the source? We think this needs to be simplified into the identify hazard - assess risk - manage risk - monitor cycle. It kind of does that via plan-do-check-act but seems overly complicated
2	Notifications and notifiable events	This should go at the end of the code. That's where it is in both sets of regulations.
2.2	Notifiable events	HSWA applies to all PCBUs and so you need to make this include quarries/alluvials. It's only the regulations listed that apply to mines/tunnels. When you refer to regulations you need to tell the reader which ones - mines & quarries 2016, general workplace 2016 and there may be others. You are also not following the shortened versions in section 1 <ul style="list-style-type: none"> • Health and Safety at Work Act 2015 (HSWA) • Health and Safety at Work (General Risk and Workplace Management) Regulations 2016 (GRWM Regulations) • Health and Safety at Work (Mining Operations and Quarrying Operations) Regulations 2016 (MOQO Regulations).
3.1	Identifying risks (risk appraisal)	Needs to mention quarry/alluvial here as well - it includes them
3 rd para		Starts with "They may include:" But no reference to what "they" might be. 2 nd bullet needs to mention quarry/alluvials 3 rd bullet uses term "surface mining operations". Its not defined and you should use opencast/quarry/alluvial as per the MOQO Regulation definitions 7 th bullet point it be useful to add examples such as: methane, carbon monoxide..... We think hydrogen sulphide deserves a bullet point of its own as it can be generated in a number of ways and is found naturally 10 th bullet point - diesel fumes are included in diesel emissions earlier Add insufficient oxygen in the air Poor ventilation is part of insufficient air <i>If the initial risk <u>assessment</u> identifies air quality as a principal hazard, carry out a risk <u>appraisal</u>.</i> You have the risk assessment and risk appraisal around the wrong way

Section	Subject	Comment
Table	Asbestos	Be useful to refer to the Health and Safety at Work Asbestos Regulations 2016
	Blasting fumes	Use the term “underground mine developments” rather than “developments”
	Coal dust	Replace “crushed” with "crushed, screen, conveyed, stored and loaded into trucks". The ones I have added are surface related and sometimes the people in surface plants don't take the same notice of dust as underground operators
	Diesel emissions	Isn't this diluting the contaminants rather than taking them away. They are a hazard as they are carried away unless diluted. Id also add deep opencast mines & quarries under certain weather conditions where there is a steep uphill loaded climb for trucks & wind does not disperse the DE. Text states that the exhaust in general is carcinogenic – there is no reference for this. I doubt there are any epidemiological studies to support this assertion. Ad
	Hydrogen sulphide	This is encountered in opencast mining sites in the volcanic plateau so perhaps mention this as well. Useful to tell people it’s heavier than air to accumulate in low points. Same property should be mentioned for other gases - lighter or heavier than air.
	Legionella	Is it possible for these to be present in water used in opencast mines/quarries and where workers are exposed from water cart mist sprays or just dust suppressant sprays in general. If so then should mention this
	Silica	It’s also from conveying, screening, storage and load-out. Even with good dust control the dust will accumulate or be released during these activities
	New one - ammonia	Add ammonia – produced from cement (in shotcrete and grout); ANFO and water
P 13		Add another bullet point for hydrogen sulphide
3.2	Air quality assessment	Section needs restructuring. Shouldn't this be referred to as a risk appraisal to flush out the hazards/risks and then talk about doing a full risk assessment on each of the hazards that pass the test of being significant/principal. The competent person would need to be involved and then go on to do what is referred to here as the assessment - sampling, analysis and assessment of health risk. I think the language is confusing as its partly health assessment and partly risk assessment.
P 14		This section should be just about assessment. The process of determining the right control belongs to risk assessment
3.2.1	Assessment Methods	We are concerned about use of non NZ or ASNZ standards. If these are changed then we have no input into this process
3.3	Assessing workers’	Use of SSE. Needs to refer to mining/tunnel/quarry/alluvial operations – it applies to

Section	Subject	Comment
	exposure	all of them. The bullet points: These are a bit confusing as this should be monitoring to measure initial air quality before you complete the risk assessment/risk control process. Drop monitoring as it confuses with other monitoring for control implementation, worker health effects and changes in the environment (air quality)
3 rd para		This is now talking about monitoring in terms of ongoing work after controls are introduced rather than the initial first monitoring to establish exposure. This para is repeated below but expanded on and is better place below so suggest is deleted here
Last para		Not good wording. The initial monitoring data needs to be assessed against work place exposure standards. Do we have these for all things we might need to assess, control and monitor?
3.3.1	Sampling strategy	I think your main target audience in terms of numbers - B-grade level managers - might struggle understanding this. Especially that last sentence. 2 nd sentence is a repeat from previous section.
3.3.2	Variation in exposure	If sampling is to be designed/supervised by a competent person do we really need to go into this as its probably a bit too complicated for most of the target audience. Also concerned about use of non NZ/ASNZ documents. Should be 'systematic error' in 1 st para, not 'systemic error'
3.3.3	Statistical analysis of sampling results	See comment above - this stuff is for the experts who ought to know it anyway so not really much use in this code for those that need to understand it. The "competent expert" needs to know this stuff not the manager
3.4	Workplace exposure standards	First time "biological exposure indices" mentioned. What are they? The material here is good and will help the reader under standard a WES
3.4.1	Compliance with WES	If there is a regulation that says this then reference it otherwise look at use of "must"
3.4.4	Adjustment of workplace exposure standards for extended work shifts - Length of exposure and recovery time	Adjustment of WES for extended shifts: The health effects of exposure to contaminants cans depend on whether such exposure is acute (intense over a short period) or chronic (long term exposure) or it could be both. Exposure over an extended 12 hour shift might result in the same or less exposure over the course of a year depending on the roster pattern and the number of hours worked per year eg an even time roster. For those contaminants where the long term exposure is the problem eg DPM, then the adjustment methodology should take this into account. The AIOH position paper quoted in the draft ACOP has since been updated (March 2013). This does take into account chronic vs acute effects to determine extended shift exposure standards. That is, the WES doesn't always get adjusted down just because 12 hour shifts are worked.
P 19		Bullet points are now getting into expert territory so think about the value to the reader
Top p20		Adjustment of Workplace Exposure Standards for Extended Work shifts

Section	Subject	Comment
		– is this reference ok to attach as an appendix as extended shifts are common
3.5	Health monitoring	Yes this is covered under the worker health code but you need to explain the role of this monitoring in managing air quality here – what’s the link to this code?
3.6	Competency of exposure assessors	Be useful to direct the reader to a source for these experts
Last para		Consistency issue – uses term PCBU. Should be duty holder
4.1	Hierarchy of controls	Need to show clearly that the minimisation options are not a hierarchy but are "1 or more". Add “then” between elimination & minimisation as well as between Administration and PPE
Table		Electric powered: Elimination by substitution - as it completely removes the health risks from diesel emissions but may introduce another hazard
		Enclosed cabs: Minimisation by isolation - the hazard & risk remains but its outside the workers environment but only while worker is in the cab & the enclose is secure & filters operating correctly
		Fume mgt zones: This is an administrative control so is in the wrong place
		Design ventilation systems: minimisation by dilution - the hazard remains but the risk is reduced. Also mention the benefits of introducing a specific exhaust or return air system to take contaminants out of the tunnel
		Fly rock: The issue isn't about fly rock its about excessive use of explosives that causes crushing close to the hole. This may well also produce fly rock but its not the dust problem
	Welding fumes and associated airborne contaminants	In the wrong place
	Stockpile sentence	In the wrong place
P22	Hierarchy of controls Numbered list	I'd a note to say 1 to 6 are controlling at the source, 7 & u are controlling the pathway while 9 & 10 are controlling at the receiver. Might be best to add this under 4.2 as they are good examples
	ministrative controls	Add controlling excessive ventilation or excessive air velocity which can pick up dust
4.2 1 st sentence	Types of control	Surely this is "should"
4.3	Controls in underground mining and tunnelling operations	The table is misleading. The boomers usually are diesel powered to tram to the face and electric for drilling. For clarity the boomer should be left out of the calculation or drop the table all together. We also comment that the formula is at best a guideline as it takes no account of other mitigating factors such as engine technology, DPM filters etc. It is a regulation so we are stuck with it. The other point to make is that very high volumetric flow rates may result in very high air

Section	Subject	Comment
		<p>velocities and a dust hazard could then be introduced. Also, LV's and support equipment should typically be excluded from the 0.05 "rule of thumb" or a discount factor applied as LV's are generally transient through an area and LV's are high power but have low diesel emissions.</p>
Ref to reg 154		<p>What does this mean? It too vague to assist the reader. What does "enough" mean?</p>
4.3		
4.4.1 - 1 st picture	Roadway dust	<p>Can we find a better picture as that highwall makes me uncomfortable!</p>
2 nd picture		<p>Find a better one – its not a haul road</p>
4.4.2	Drilling - Wet Dust Suppression (underground)	<p>What status does "is to be by..." have? There is no regulation that states this.</p> <p>Dry drilling is practised in underground coal mines. The Fletcher bolter relies on dry bolting and sucks dust down a hollow drill steel and discharges via cyclone, making job much cleaner. Also a dry bolting system gives much better anchor adhesion as testing has shown.</p> <p>Banning dry drilling underground might also mean that certain handheld tools such as jackhammers, Hilti guns (for taking geo samples) couldn't be used. It should be based on risk assessment. For example, if there is a lot of groundwater present then wet drilling techniques may not be necessary.</p>
4.4.3	Blasting – surface and underground	<p>Use the term opencast mines and quarries rather than surface mines.</p> <p>Powder factor: Its not just powder factor its most blast design parameters but also rock properties. Needs expanding. What happens is fines are produced from the blast which rises as a cloud and drops back down to the ground. This may be a direct health hazard if wind blows the dust to workers or surrounding areas. Most of the hazard comes from remobilising the dust with machinery.</p> <p>Water cartridge: Dampening before the blast is not likely to assist at all as most of the dust is generated by the blast rather than remobilising dust on the surface. You might dampen the muck pile to reduce dust generation during loading. The dust generated by the blast is a horse that has bolted if there is wind when the blast occurs. In dry climates or hot days this would not be effective due to rapid evaporation. I think it should be deleted or these riders added.</p> <p>Also the way this is written is misleading. Water cartridges are normally only used in UG situations but the sentence above when linked to the one directly above suggests you are referring to opencast/quarry blasts.</p> <p>The full quote to this NIOSH figure is:</p> <p><i>Water ampoules or cartridges which are inserted into the blasthole with the explosive have been used successfully for dust reduction in <u>past underground coal mining blasting operations</u> [ILO 1965]. The water cartridges consist of a properly sized plastic bag which is prefilled with water or can be filled in the hole. The cartridges can be placed in front of, alongside, or behind the explosive without causing any adverse effects to fragmentation. There is another type of cartridge which can be used in</i></p>

Section	Subject	Comment
		<p><i>the place of stemming as shown in Figure 3.20.</i></p> <p>Figure 3.20. A typical blasthole containing an explosive charge utilizing a water cartridge to suppress dust generated during blasting.</p> <p><i>This cartridge uses a PVC bag which is inserted into the hole after the explosive and is then filled with water to maintain a tight seal with the blasthole. In coal mining operations, the use of these cartridges is claimed to have reduced dust by 40–60 percent.</i></p>
4.4.4	Excavation and digging - surface	<p>Excavation is digging.</p> <p>What’s the source for the comment on ripping? We agree excavation generates dust but ripping much less so although depends on the material.</p> <p>The heading is surface so why reference to underground operations?</p> <p>Fogging: I have never seen these in use. Source? I don't see these being used or of use other than in enclosed spaces and perhaps at stockpile or bin loads as other locations are quite dynamic and these things suit fixed locations.</p> <p>Subsequent communication with Australian experts indicates can be very effective at stockpiles but generally not being used at face loading locations.</p> <p>NIOSH handbook states: NIOSH handbook:</p> <p>At surface operations, the area is cleared of personnel just prior to blasting. Scheduling the blast to take into consideration the meteorological conditions, i.e. low wind speed and low inversion potential, can be used to minimize the impacts of dust generation from blasting. Generally the dispersion of dust and gases occurs quickly after the blast, depending upon the wind speed and direction, and work is not allowed in the affected area until dispersion is completed. Additionally, it has been noted that the use of multi-delay detonators to initiate the individual explosive charges in millisecond time intervals may reduce dust generation from blasting, but this has not been verified [Miller et al. 1985] .</p>
P31 1 st sentence		<p>Not sure there is much point in this statement. I have yet to come across a mining/quarrying operations where timing isn't critical to excavation.</p>
4.4.5	Coal production – underground	<p>Reword "all cutting picks". Not all picks have their own water spray as I understand it.</p> <p>Not sure about only controlling dust by ventilation. What about the coal dust explosion risk at the machine?</p>
P32 picture		<p>Not a very clear picture. A schematic from a manufacturer might be more useful.</p> <p>Pictures at:</p> <p>https://www.google.co.nz/search?tbm=isch&tbs=rimg%3ACQPRrLTqfiu5ljhJfyCVXIONXBTyvaNzTNTSYT9xFn1jeTpWrMYdTkOFwiGrpMIVb7MAIBIE</p>

Section	Subject	Comment
		GWX8oEq9TBpBbayf2CoSCUI_1IJVcjQ1cEX02KNrr3wkBKhIJFPK9o3NM1 NIRVHiuQle2xHsqEglhP3EWfWN5OhGqvAuTNHbdJioSCVasxh1OQ4XCEfE ovzmPperqKhIJlaukyVVvswAREIPuMceeBWMqEgmUEgQZZfygShER68kO F55bYSoSb1MGkFtrJ_1YEVHvk3nsjSB6&q=schematic%20continuous%2 0miner%20water%20sprays&cad=b&biw=1280&bih=832&dpr=1&espv= 2&cad=cbv&bvch=u&sei=2807V7HID4GU0QTY1YRA
4.4.6	Other sources of dust	Needs expanding – see comments on document structure. Source for 1% by weight statement? Needs more examples of dust control in plants and extraction/cyclone/baghouse systems as these are common in limestone operations
4.5	Control of diesel emissions	Expand to discuss hierarchy of controls for DE
4.5.1 1 st sentence	Engine design (tier #)	Is this DPM or DE?
4.5.2	Fuel Type	Should state how they change the nature
P 35		Does the level of detail add any value to the reader? I suspect not.
4.6	Respiratory protection	Use only as temp measure: What if there is some situation where the risk assessment shows its the only practical method of protection. I can think of some maintenance tasks where this might be the case. I'd prefer this to say what I have just said. Carry out a risk assessment and only use PPE as a control if it is not reasonably practical to apply other controls - after all that's what the law says.
4 th sentence		Not sure why you have this here given that DE has its own heading. I'd delete it but I see where you are going. What I think it needs is a statement that the selection of RPE needs to be carefully matched to the hazard and addressed in the risk assessment. Would then be very useful to have some form of table that shows what type of RPE is suitable for different types of airborne contaminants stressing of course the need for the risk assessment and knowledge from the initial air quality assessment about the nature of the contaminant you are dealing with. Your own 1999 Handbook has a table at page 16 and some general material on respirator selection which is useful.
4.7 1 st sentence	Welding fumes	"...either..." suggests another control but you haven't added one. Would be helpful to include the key issues here. You have a good factsheet updated in 2015 but don't seem to refer to it or use it. Mention ventilated welding helmets
5.1		SSE/Duty holder although here it is the SSE. Also this states "all gases" should be monitored but surely you need to leave this to the risk assessment to determine. The initial air quality assessment will show you what gases you need to monitor for. You can't say "constantly" reviewed. What does it mean? Again the initial air quality assessment followed by risk assessment will tell you about future monitoring and review. What about monitoring air quality in opencast/quarry/alluvials? No reference but there is material in the Nov surface mine guideline.
5.2	Ongoing review	SSE issue – applies to quarry/alluvials

Section	Subject	Comment
	of air quality, dusts and other airborne contaminants	Be useful to introduce the concept of a TARP as many in the quarry and alluvial sectors will have no idea what they are. Give an example.
6	Review and audit	The previous section was review and improvement so this material should be a sub-set of that
6.1	Reviewing the PHMP	SSE issue. Refer to a "plan" as quarries/alluvials don't have to do PHMPs. Surely you write a PHMP or develop one. You don't "make" one. The plan must also be reviewed every 2 years and after the events listed.
		Perhaps you need to define a term that covers them all but then that would need to be different to that in the act/regs. Maybe you are stuck with having to refer to mining operation, tunnelling operation, quarrying operation and alluvial mining operation. They are defined in schedule 3 of the act. Accident is not defined in the act/regs & I think it needs to be here. many people think accident=incident which resulted in injury while incident=event where plant/equip damage resulted & injury could have occurred but didn't. I suspect accident here is the dictionary definition: Simple Definition of accident : a sudden event (such as a crash) that is not planned or intended and that causes damage or injury : an event that is not planned or intended : an event that occurs by chance You still need to review after an incident in my opinion. Its a possible indicator of a problem with the risk assessment, the controls and/or the plan.
		Reference to ground instability needs deleting
		Review PHMP after: These are all events that ought to be listed in the plan and therefore be captured by the last bullet point above so might be better to reword in this way. Review: This would be a step in the review process which is what I think you are saying. You can't really review the plan without taking another look at the risk assessment. For example if there is an accident then the risk assessment must be reviewed as it may have been deficient in some way.
		SSE issue.
Last sentence		Mine, tunnel, quarry, alluvial mine
6.2	Auditing the PHMP	Section incomplete
	Appendix 3	Not air quality - Ventilation or worker health
	Appendix 4	Doesn't really add value to the target audience. The experts ought to know this or know where to go to find it.

L McCracken
CEO MinEx

31 May 2016

Appendix I - MinEx consultation and membership lists

Submissions consultation list

Alison Paul - OceanaGold	Glenys Perkins – Taylor Coal
Andrew Holley – NZ Coal & carbon	Stephanie Halliwell O Glencoal
Ann Brewster – Stevenson Mining	Jill Young – NZ Coal and Carbon
Warren batt – Waikaia Gold	Joe Edwards – CCNZ
Bernie Napp - Straterra	Gordon Laing - IOQ
Bernie O’Leary - OceanaGold	Les Ward – IOQ
Bruce Taylor – AQA	Malcolm Abernathy – CCNZ
Chris baker – Straterra	Mike Higgins – Isaacs Construction
Chris O’Leary – Kai Point Coal	MinEx directors
Cobus van Vuuren – Higgins	Paul Hunt – SENZ
Mike Coleman – Stevenson Mining	Peter Silcock – CCNZ
Courtney Garrick – Stevenson Mining	Peter Walsh – Perry
Dale Oram – OceanaGold	Phil McKinnon – Minerals West Coast
Dave Stewart – Minserv	Reg Mason – Rangitikei Aggregates
Dean Torstonson – Orica	Richard Tacon – Bathurst Resources
Dean McNulty – IPENZ	Roger Parton – AQA
Derek Charge – NZ Steel	Sacha Montgomery – SENZ
The EIAG members	Stephen Esposito - SENZ
Eric Souchon – HG Leach	Steve Riddell - Kaipara
Fiona Bartier – Bathurst Resources	Terry Moynihan – Core Mining Consultants
Charles Gawith – OceanaGold	Trevor Watts – Mines Rescue
George Kelcher – Road Metals	

MinEx membership list

A B Lime
Atlas Quarries Ltd
Bellingham Quarries Ltd
Blackhead Quarries Ltd
Byfords Construction Co Ltd
Christchurch Ready Mix Concrete Ltd
Downer NZ
Fulton Hogan Ltd
Green Vision Recycling Ltd
H G Leach & Co Ltd
Higgins Aggregates Ltd
Higgins Contractors Wairarapa
Holcim (New Zealand) Ltd
Horokiwi Quarries Ltd
Huntly Quarries Ltd
Ihumatao Quarries Ltd
Industrial Processors Ltd
Inframax Construction Ltd
Isaac Construction Co Ltd
J Swap Contractors Ltd
K B Contracting & Quarries Ltd
Lake Road Quarries
Materials Processing Ltd
Maungaraki Lime Ltd
McCallum Bros Ltd
McGregor Concrete Ltd
Mike Edridge Contracting Ltd
Monovale Sand Quarry Ltd
NZ Steel
Oamaru Shingle Supplies Ltd
Origin Quarries Ltd
Palmer Resources Ltd
Perry Resources (2008) Ltd
Porritt Sand
Prenters Aggregates Ltd
Quality Roding & Services (Wairoa) Ltd
Rangitikei Aggregates Ltd
Ravensdown Fertiliser Co-op
River Run Products Ltd
Road Metals Co Ltd
Rock Products Ltd
S C & G A Levet Contracting & Silverhill Quarry
Sibelco NZ Ltd
Southern Aggregates Ltd
Southern Screenworks Ltd
Stevenson Resources Ltd
Taueru Lime Ltd
Taupo Scoria Ltd
Taylor's Contracting Co Ltd
The Roding Company Ltd
Vickers Quarries Ltd
Waiotahi Contractors Ltd
Wharehine Ltd
Winstone Aggregates

Doug Hood
Bathurst Resources
Kaipara Excavators
Milburn Lime
Inframax Construction
Stevensons
Oceana Gold
Delta Electrical

Solid Energy NZ
Kai Point Coal
Taylor Coal
Glencoal
Birchfield

Appendix II – Marked up copy of the draft code

(supplied in digital form with the submission)