

Submission to WorkSafe on

Best Practice Guidelines - Health and Safety at Surface Mines, Alluvial Mines and Quarries, November 2014

MinEx¹ welcomes the opportunity to submit on the WorkSafe discussion document “Health and Safety at Surface Mines, Alluvial Mines and Quarries”. We note the submission deadline of 27 June 2014.

EXECUTIVE SUMMARY

The decision to develop guidance for all surface mines in the one document required that certain fundamental issues be addressed first:

- Guidance needs to support regulations. It exists to assist operators in determining what are practical ways to operate that meet the requirements of the legislation (the Act and Regulations);
- This particular guidance needs to deal with the fact that the Quarry and Alluvial sectors of surface mining are not covered by the 2013 Regulations while all other surface mines are; and,
- The document needs to be formatted in a manner that resolves these two issues in a clear and concise manner.

At the very first WorkSafe – Industry meeting on 31 October 2013, a UK document entitled “*Health and safety at quarries, Quarries Regulations 1999, Approved Code of Practice*” was tabled. This document was structured in such a way to allow clear presentation of guidance and codes against the regulations they supported.

During 2013 Worksafe and two mining industry working groups produced two underground codes that incorporated this same format but with the added complication of dealing with three underground sectors (coal, metal and tunnels) that sometimes had differing regulations or acceptable solutions to the same regulation. This was catered for by a colour coding system that gave industry very clear and concise documents that contained regulations, codes and guidance.

There was an expectation within industry that WorkSafe would deliver a similarly formatted and structured document that was clear and concise as surface mine guidance.

The draft document has short comings at various levels:

1. The 2013 regulations are not mentioned and nor is the coverage issue and consequently the sectors covered by the 2013 legislation are given no specific guidance on what they need to do to ensure compliance;
2. The issue of developing an appropriate Quarry and Alluvial sector safety management concept to replace the principal hazard concept applying to other surface mines has not been addressed;
3. Equally guidance for the Quarry and Alluvial sectors on compliance with the HSE Regulations 1995 is missing or at the very least, is not explicitly included by reference to these regulations;

¹ MinEx is MinEx is a national Health & Safety Council for the New Zealand minerals 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.

4. There are important sections missing from the document contents that include the areas of most uncertainty for operators (aside from placeholder sections);
5. Similarly there are placeholders in the document for important sections that are missing and we note that we will need time to review those before the next consultation meeting;
6. The document is quarry-centric, we suggest, and so does not address many of the issues pertaining to other sectors or deals with them in an inappropriate manner and,
7. The guidance contains many errors in terms of what we understand is accepted as good practice in both Australian and New Zealand.

OTHER SUBMISSIONS

We have received a submission from the EPMU. We support all of the recommendations made by the EPMU but have some reservations about their desire for codes for the coal sector. While we support the concept of codes given that they have higher standing in terms of compliance, we doubt that there is time to complete adequate surface coal mine codes over the time expected for completion of the guidance.

We have received a draft submission from the Forestry Owners but not their final submission. Their draft submission contained a recommendation on end tipping windrow height which we do not accept as appropriate. It also contained a submission against the use of rotating beacons on mobile equipment. We do not agree and support the use of these important safety warning devices on all mobile plant.

We have received a submission from the Contractors Federation and support all aspects of this and which we have included in our submission.

RECOMMENDATIONS

1. That WorkSafe redevelop the guidance document based on the structure we have recommended and which we understood to be WorkSafe's preferred guidance format;
2. That WorkSafe incorporates all of the detailed comments, recommendations, changes and additions contained in the attached Tracked-changes document; and,
3. That the consultation process restarts with the release of a new document with the missing sections and placeholder sections filled in. Given the new material we are likely to be presented with, we suggest a further round of industry consultation, with a view to producing guidelines that are fit for purpose.

INTRODUCTION

Background

The concept of developing the Quarry and Alluvial sector mining guidance came from their submissions on Safe Mines : Safe Workers that they be excluded from the coverage of the Pike River Royal Commission-driven mining safety legislation changes completed during 2013. This was accepted and in late 2013, the Quarry and Alluvial sectors, via AQA and IOQ, set up a Quarry Industry Working Group (QIWG) that included the CEO of MinEX to work on developing, with WorkSafe, Quarry and Alluvial mining guidance material.

Since that submission the concept of the development of Quarry and Alluvial mining guidance has changed:

- At a WorkSafe – Industry meeting 31 October 2013, it was agreed that the process should be driven by WorkSafe rather than by industry; and,
- That the guidance would now become Surface Mining guidance incorporating all types of surface mining.

Why Surface Mine Guidance?

The reason behind this broadening of the scope of the guidance is one of consistency of approach and the application of guidance. In the absence of any other guidance, a Quarry and Alluvial guidance document would become a de facto surface mining guidance as, functionally, there is very little difference between most aggregate quarries and most hard-rock surface mines (coal and gold).

As a consequence, a new industry working group was set up led by MinEx to liaise with WorkSafe on their development of Surface Mine guidance. The industry working group members appear in Attachment 1 and were selected to cover operations in:

- Alluvial aggregates;
- Hard rock aggregates;
- Small scale quarries;
- Limestone quarries;
- Minerals sands;
- Large and small scale alluvial gold;
- Large and small scale coal; and,
- Large and small scale hard rock gold.

In addition to the working group review, the AQA and IOQ made the draft document available to their members via their websites for submissions and these were incorporated into the MinEx submission.

WorkSafe also invited Other Parties with an interest in the guidance to participate in the review and Attachment 2 contains these groups and their representatives.

The working group and those members of the Other Parties group who elected to participate with the working group have reviewed the draft document. This submission reflects the working groups input and also comments on the Other Party submissions.

MinEx agrees with WorkSafe's approach to the development of Surface Mine guidance as opposed to Quarry and Alluvial mine guidance as originally proposed.

MISSING SECTIONS

A number of important sections of the document are missing from the contents. We are wondering if WorkSafe is intending to not include these sections in the document. The missing sections are:

1. Definitions;
2. A safety management system – very limited material appears under section 5 – Plant Equipment and Installations;
3. Responsibilities and accountabilities;
4. Worker participation ;
5. Drill and blast;
6. Excavation – some material appears under section 7 – Ground Control. We have hauling and dumping but nothing on drill and blast and excavation so have not covered the full set of activities performed in surface mines;
7. Cranes and lifting gear;
8. Storage & use of hazardous substances;
9. PPE guidelines; and
10. Isolation & lockout.

Items (2), (3) and (4) are particularly important. Items (5) and (6) are required to complete coverage on the full mining cycle. The other missing sections cover areas, either: where many incidents occur, or the consequences can be fatal, for example (7), (8) and (10).

If you take the 2013 regulations, focus on sections (2) and (3) missing above, look at the number of regulations within each section and ignore the underground sections and the schedules, then the table below illustrates just how poorly the guidance supports these regulations.

Section of the Regulations	% Surface Mine Regulations	% Included in Guidance
Responsibilities	29	0
Safety Management System	37	2
Total	66	2

66% of the regulations relating to surface mines are not dealt with in the guidance and the missing material lies in the areas operators will have most difficulty with, and therefore where they will have the most need for guidance.

SECTION BY SECTION DISCUSSION

This submission consists of two parts:

1. This section which is essentially a summary of issues and recommendations; and,
2. A tracked-changes copy of the WorkSafe draft guidance document which has all of the text amendments suggested as well as many comments on error, improvements and additions.

1. Introduction

A background section would be useful here to explain the document format and what is behind some sectors not having the same regulations and how this is dealt with so that the document format logic is clear.

Discussion on “must”, “should”, “could” will be required to deal with the fact that the only “must” for the Quarry and Alluvial sectors is the HSE Regulations 1995, 1996, 1999 and 2003 unless these sectors adopt the 2013 regulations insofar as the guidance is concerned.

At the working group meeting held 25 June to discuss the draft guidance, the Quarry and Alluvial sectors were very close to agreeing on this concept but have a bit of a “chicken and egg” quandary. Until they see what the guidance might look like if written to support the 2013 regulations, these sectors are not able to reliably assess if this is appropriate for them.

What has been agreed is that MinEx urge WorkSafe to rewrite the guidance as recommended elsewhere in this submission. The Quarry and Alluvial sectors can then assess the relevance of this material and it will be very easy to then see what might need to be separated out and amended to meet their needs. My personal opinion, having worked across all of the surface mining sectors, is that there will be very little, if anything, that might require separate sections.

The scope has sections on definitions for quarry, alluvial mine and surface mine. There is no need to define a quarry or an alluvial mine other than by reproducing sections 19L and 19N of the HSE 1992 as these activities are expressly defined there. Surface mines should then be defined using the language in 19M but removing underground operations. What is then required is guidance on the issue of facilities associated with surface mines that are:

- On the site but not under the direct control of the quarry operator like a concrete plant purchasing aggregate from the quarry operator or an explosive batching plant supplying explosives to the surface mine operator; and,
- Off the site and under the control of the operator like a processing plant linked to the operation by a conveyor that uses the operation’s output as most of its feed or a blending plant located some distance away that uses more than one operator’s material as feed.

The section that attempts to exclude civil construction work from coverage of this guidance needs to be amended to make it very clear what is in and what is out. Some suggested changes have been made to this section.

2 Identify, Assess and Control Hazards

This section should deal with safety management systems and is completely inadequate. This is where the document needs to support the 2013 regulations in Parts 2, 3 and 4 and also deal with the same issues for the Quarry and Alluvial sectors from the HSE Regulations 1995 in Parts 1 and 2 which deal with general duties of employers and duties in relation to specific hazards.

MinEx recommends that the needs of the Quarry and Alluvial sectors with respect to links back to the HSE Regulations 1995 are first dealt with by developing the guidance linked solely back to the 2013 regulations, and then checking that all of the issues raised by the HSE Regulations 1995 have been dealt with. If they haven't then these missing regulations will need further guidance that needs to be sheeted home specifically to the Quarry and Alluvial sectors.

Clear and simple definitions of hazard and risk would be useful as many people confuse these concepts.

3 Roads and Other Vehicles Operating Areas

A difficult set of text and not exactly reflective of what happens in practice because all vehicle types can enter all areas of an operation apart from public vehicles coming to collect product which hopefully are restricted to certain areas of the operation. We are stuck with the current formulation, because that is what is in the 2013 regulations.

3.1 Safe Site - Design

MinEx has no significant issues with this section but many issues of detail that are covered in the attached track-changes document. Some of these are mentioned below:

- Primary purpose statement needs to be rewritten for clarity;
- The issue of protecting pedestrians is not as simple as always excluding them so recommend this is prefaced by *when reasonably practical*. There are situations like inspection, supervision and maintenance when you cannot exclude pedestrians from areas and have to look at other controls to protect them;
- Added some information on speed limits;
- Suggested the need for operations to establish vehicle passing rules and perhaps include an example;
- Added some information on road delineation in snow;
- Added some advice on design and use of roads in situations where the road construction material on site is not suited to all-weather roads and economics prevent importing material. The control here is to stop haulage operations and this is practiced in the Huntly coal fields;
- Suggested adding material to the section on road widths to make it clear that road width is not the only control for the vehicle interaction hazard;
- Suggested inclusion of a speed vs stopping distance chart at various grades;
- Suggested clarifying the edge protection guidance because it is confusing. Edge protection falls into two areas:
 - Delineation of roads and protection against drop-off hazards or for structures; and,
 - End tipping windrows.
- Make it clear that the level of edge protection should be determined by a risk assessment process rather than arbitrary bund heights. The guidance uses UK information but does not supply all of the supporting information, namely - ***Adequate edge protection must be provided where there is a drop, lagoon or other hazard which would put the driver, or others, at significant risk if the vehicle left***

*the bench or roadway. The aim of the edge protection is to stop the largest, fully loaded vehicle crossing it when **travelling at the maximum foreseeable speed** and it should be constructed with this in mind.* Risk should guide the design of the edge protection and not an arbitrary bund height. Where risk is high and consequences serious then we have no issue with a minimum height although the risk assessment process should arrive at the correct height;

- The term “berm” is not used in NZ for edge protection so replace it with “windrow”;

3.2 Safe Site – Operation

- Reversing hazards can not be avoided in a surface mine and so reworded the emotive language;
- There is no need to park up a truck fitted with CCTV if this malfunctions if the same vehicle has proper mirrors fitted. If you leave this aspect as worded then you would cause operations to not use the CCTV option;
- Added in reserve parking;
- On parking, removing the keys is not practised as it creates another potential hazard if a vehicle can not be moved in an emergency;
- Loading operations guidance needs to cover car trailers, road trucks, ADTs and rigid frame rear dump trucks;
- The term “covering” is used in NZ rather than “sheeting” which is often used to refer to the last surface placed on a road;
- The tray and trailer loading guidance is flawed;
- It is incorrect to state under 3.2.4.3 that a vehicle should be able to take whatever load is placed on it;
- The power line clearance section needs rework with Transpower and lines company clearance available based on line voltages rather than the arbitrary 4m quoted;
- The 6m overhead structure clearance has no basis that we are aware of and no motorway fly-over structure would achieve this level of clearance for a car let alone a loaded truck;
- The vehicle refuelling section needs significant rework. Tracked machines are usually refuelled in the field and the issue around fall hazards and rock fall hazards at face crests and toes can be managed in ways other than barring refuelling in these locations as suggested;

3.3 Safe Driver

- Drivers and passengers should wear set belts and no passenger seat belt means no passengers permitted;
- Added some guidance training, internal licensing, regular competency checks;

3.4 Safe Vehicle

- Added some requirements;
- Under visibility we need diagram’s for blind spots for ADTs, rigid frame dump trucks, loaders and excavators;

- Added some requirements under light vehicles;
- Under brake testing - should add the other options some of which should be used at prestart checks (stall test for all brake systems), some routine maintenance checks and then dynamic brake testing;
- Dynamic brake testing should be restricted to haul trucks and not recommended for loaders on a risk assessment basis. Taking a 50tonne loader up to over 20kph to perform a dynamic brake test is a hazard in itself;
- There is a mention of isolation in 3.4.4 which seems to be a little lost, and as this is such an important subject it deserves its own section;
- Mobile plant needs a section on emergency egress;
- We have an issue with ROPs, FOPs and seat belts with the HSE 1992 and the 2013 regulations exempting mines and quarries from these which is ridiculous. Complicates how you write it but the industry will accept it needs to be mandatory;
- Full harness seat belts are unnecessary and where did this come from? Exceeds the public road standard;

4 Tips (Including Stockpiles)

We do not use the word “tip” in the context it is being used here. Tip in NZ means to *eject from something* as in “tip it out”. We prefer the use of the following terms/meanings;

- “Dump” for reject material as in overburden dump and being a dump that you normally do not reclaim from; and,
- “Stockpile” for useful material being held temporarily and on which you dump and reclaim from.

This section needs to be restructured to separate out these two categories. In the case of a dump there needs to be a further breakdown into:

- High-hazard dumps which would include dumping into water; and,
- Lower-hazard dumps which would include all other dumps.

Both of these dumps need their own end tipping guidance. In the case of lower-hazard dumps the end-tipping guidance produced by the NZ industry working group in 2013 should be used and not the material currently being used. The current material is not well organised, contains errors and inaccurate statements and does not align with good practice in Australia and New Zealand. A lot of time was spent on the end tipping guidance material in 2013 and it is a shame that this high-quality document has been ignored.

In the case of stockpiles, end-tipping and reclaiming (or perhaps stockpile management) guidance is required. This type of stockpile is higher risk than a simple dump.

Section 4.1.2 refers to the preparation of the base for stockpile and tips but in reality only addresses a quarry type stockpile. The overburden dump also needs to be addressed and part of this material might be better placed in a geotechnical section.

We have supplied some detail on amendments to the wording on what is essentially end tipping but would prefer to see this whole section replaced with the guidance developed last year and then using this as a basis to develop guidance for end tipping and reclaiming from stockpiles and end tipping into water.

5 Plant, Equipment and Installations

5.2 Guidance on Principal Hazards

This section does not belong here and is part of what is missing at the start of the document.

The explanation of a principal hazard from the 2013 regulations is incorrect.

For those covered by the 2013 regulations, it is the duty of the Senior Site Executive to complete a risk appraisal to identify hazards so you can not assign the accountability this to a specialist consultant. It remains with the SSE so this needs to be made clear. For the Quarry and Alluvial sectors you need to deal with this in a different way in accordance with the HSE Act 1992 and the associated 1995 regulations.

5.4 Working on or Near Water

This deals with working on or near water and needs an introduction to clarify when and what parts of the Marine Act might apply with floating plants. As a guide to what to include you need to include enough information to encourage the reader to go to the reference. Just stating “go to the Marine Act” would be too general in the way of advice for most operators, noting that you also do not want to add material here that needs changing if the reference information were to change.

The guidance on floating plants needs to have some basis in what might be sensible regulations and the Western Australia regulations² at Part 14 would be a good place to start, we suggest.

We would like to see the winching section improved with diagrams of winching systems that high-light the safety issues. A deadman setup for the hold point on land would be useful showing depth of the trench and a typical anchor system.

Again, the track changes document contains detailed amendments to the current document.

5.6.1 Guarding

This deals with guarding on processing plant and equipment and we suggest that guarding deserves a section on its own, and therefore needs to include guarding on mobile plant. There is a lot of detail in the section and we think that it can be simplified to mainly diagrams and then references to the excellent WorkSafe best practice guideline *Safe Use of Machinery* supported by AS 1755 which contains many useful diagrams.

We note that section 5.6.1 does not mention conveyor lanyard systems nor gated lockout systems but does mention pressure mats, induction loops, light beams and light curtains. Gated lockouts are commonly used as are conveyor lanyard systems and continue to be used in Australia. We see no reason to not allow them here. We agree with the need to improve guarding here but we can see no reason to preclude guarding along with the lanyard and gated lockout systems?

5.6.1.18 and 19 Stone Cutting Guarding

These sections deal with guarding on stone cutting equipment. This is not commonly performed in NZ and we have not been able to get industry advice on these sections of the guidance.

5.6.2 Conveyor Guarding

This section would be improved by reference to the following from AS 1755:

² http://www.slp.wa.gov.au/legislation/statutes.nsf/main_mrttitle_1819_homepage.html

AS "Guards shall be designed to prevent injury to persons and shall be provided at every dangerous part of a conveyor normally accessible to personnel." The term "designed to prevent injury to persons" should be understood as making a guard that makes it physically impossible it for a person to access the dangerous part. This means that people shouldn't be able to put their hands or fingers through it, put their arms around, over or under it to reach the dangerous part of the conveyor. The term "accessible" basically means any item of conveyor plant which is less than 2.5 metres above the ground or (accessible) from any walkway.

Tony Forster has suggested that the guarding shown is all total surround type guarding which often causes problems with material build-up in the mesh. He suggests that the guarding only needs to guard the nip point and we would like to see diagrams of this guarding included in the guidance.

5.6.5 Blocked Crushers

It is not helpful to tell operators that prevention is better than cure as no matter what effort you put into fragmentation, blast design is as much an art as a science. Unknown structures will always have the potential to produce oversize material which you then need to deal with.

One issue not dealt with that deserves attention is unblocking cone crushers.

5.7.1 Typical Causes of Fire

This section contains the following advice:

Install fire detection and automatic fire suppression on plant that is used in high risk zones and install engine auto-shutdown systems that operate when the fire suppression system is discharged

We believe this advice could be extremely dangerous if followed and must be removed from the guidance. Because the fire suppression can be activated automatically, it could happen while a truck is at full speed. If the fire suppression was linked to trigger an "e-stop", then the brakes would lock up and a whole range of deadly scenarios could occur. A truck would have to be brought safely to rest before triggering a manual e-stop, regardless of whether the fire suppression is automatic or manually operated.

5.8 Electricity

This section needs a proper reference to the Electricity (Safety) Regulations 2010 which were updated in 2013.

It would also benefit from guidance on inspection and testing before use.

The section has a place holder for the electrical engineering control plan. This only applies to those covered by the 2013 regulations.

5.9 Maintenance and Inspection

This section needs a section on tyre maintenance which is a common source of serious injuries.

Hazop during the design phase does not get a mention, on our reading, and it should.

Another common hazard that results in fatalities is how and where maintenance vehicles park when doing field maintenance on large mobile equipment. This should be covered under section 5.9.1.2 but this section is very generic and most readers would see this as being directed at fixed plant.

5.9.1.2 states:

c) Isolation devices shall be specifically designed for this purpose; not devices such as key-lockable emergency stops or other types of switches that may be fitted to the machine;

We do not understand the reason for this exclusion as these items are specifically designed as lockout systems or part of them.

5.9.1.4 has an out dated reference to contracting out. This section needs to address the fact that contractors' workers are now considered the same as employee workers for those covered by the 2013 regulations.

6 Handling and Storage of Large Sheet Stone Slabs

MinEx has not been able to get this material reviewed due to the small number of operations performing this activity. Before the guidance is finalised we would like WorkSafe to place a hold on completion of this section until we find someone to complete a review.

7 Ground Control

There are a number of issues with this section:

1. Much of the material is in fact operating guidance and not ground control and needs to be moved to the correct section; and,
2. WorkSafe has a code planned for this subject for completion this year and so it seems a waste of time dealing with this now in this guidance. We should include the need for guidance on this subject with the creation of the code.

Section 7.1 on geotechnical assessment is completely inadequate and needs to lead into pit, dump and road design especially for smaller operators.

7.2.1 Drainage

This is inadequate especially for both under and surface dump drainage.

7.3.2 Historic Underground Workings

This section is missing and we need to see this given that more and more surface mines are reworking underground workings. Possible sources for this section include:

- Mining Through Underground Workings in Fimiston Open Pit, Kalgoorlie Consolidated Gold Mines (KCGM), J J Jiang¹, K Karunaratna² and T Jones³; and,
- Open pit mining through underground workings, guideline, WA
http://www.dmp.wa.gov.au/documents/factsheets/msh_g_openpitminingthroughugworkings.pdf

7.3 Working Excavations, Trenches, and Stockpiles

This whole section is poorly written, contains errors and prescriptive material where a risk approach is more appropriate. It also contains operational guidance that does not belong under Ground Control. New sections on drill and blast and excavation are required to give guidance on the complete mining cycle.

This section contains a requirement governing the maximum bench height in relation to the reach of the loading equipment. This is an old requirement dating back to the 1980s. The safe working height in a surface mine should be determined by a risk assessment that incorporates a geotechnical assessment. This certainly applies to final highwall design and should also apply to the risks associated with working faces. There can be only two reasons for this type of prescriptive requirement:

- Reach is required to scale the face to control rock fall hazards: and,
- Reach is required to control the loader engulfment hazard.

Rock fall hazards can be controlled using a number of methods other than using the loading tool to scale the face. Final highwall rock fall hazards can be controlled by rock fences, berms, bunds and scaling using a heavy chain draped over the face and dragged by a dozer. Final wall faces tend to be over 15m height and very few production excavators have this reach.

Working face heights in rock tend to be controlled by the excavation tool reach and drilling and blasting considerations simply because this gives rise to efficient excavation. This then controls rock fall hazard for the excavator operator. Additionally most faces are now operated using excavators where the loading tool is not exposed to rock fall hazards as it sits above the face. This is in fact the primary control for rock fall hazards in a working face. These operations bottom load the truck which generally has the cab positioned (height and position relative to the face when being loaded) to mitigate the rock fall hazard.

However, in alluvial operations where rock fall hazard does not exist and where engulfment is also not a risk then the maximum height requirement suggested is an un-necessary imposition with economic ramifications that do not match the risk or consequences. I am sure there will be operations where this is not the case but the risk assessment process should identify these situations and the guidance should cover this.

We have added some notes on excavating for floating plants since the guidance contains nothing on this subject. It needs to be moved to the missing excavation section.

Section 7.3.8 deals with overburden stripping including excavation and placement and is inadequate for what is in the total mining cycle for overburden and for ore/aggregate prior to processing. This could be entitled *The Mining Cycle* and act as an introduction to the operating guidance, being:

- Drill and blast;
- Loading;
- Hauling (Roads and other operating areas);
- Dumping (Tips) split into overburden, stockpiles and plant;
- Water storage or perhaps water management although this could be picked up in the operating sections but we need a section to cover ponds and dams; and,
- Rehabilitation.

Section 7.8 is entitled *lagoon, ponds and dams*. The term lagoon is not used in NZ and the heading does not tie in with the 2013 regulations that use the term *Tips, ponds and voids*. We have made a number of comments in the tracked changes file on matters of detail.

8 Explosives

This section has not been supplied and is an important section for us to review. We recommend that it be placed under its own section but headed *Drill and Blast* and placed in the order in the document in which it occurs in the mining cycle.

9 Worker Health

Worker health is being completed this year as a code so it is not clear to us why we are working on this in the surface mining guidance. It is a generic subject, and would be best completed by way of the Worker Health code.

This section is inadequate as it only addresses dust and noise. The following important health issues need to be covered:

- Vibration;
- Diesel fumes;
- Heat stress and I suppose the opposite;
- Fatigue - shift work and hours worked;
- Hygiene and sanitation;
- Ergonomics;
- Manual handling;
- Exposure to fumes and hazardous substances - silica is an important example

The section should be prefaced with a statement from the Safety Management System Guide:

Workers in the extractives and tunnelling industry may be exposed to hazards that can cause harm to health. Such as but not limited to: Mineral dust, especially silica, diesel exhaust emission, vibration, fumes and other hazardous substances. Where significant these hazards need to be managed and workers health need to be monitored in relation to those hazards.

The detailed explanations under each of the activities that generate noise or dust are probably unnecessary if they can be replaced with photographs or simple diagrams.

The health section contains nothing on exposure limits which is important information for operators. There is nothing on monitoring which is again a major issue for operators to address and for which guidance would be useful.

Mercury is a topical health issue given the UN Minamata Convention. The larger NZ gold operators are aware that their ore contains natural mercury, and alluvial deposits also often contain mercury. Waikaia Gold is aware of this issue, and therefore take proper measures when they smelt alluvial gold into bars. We suspect that many smaller operators are unaware of this hazard, e.g., when winning the gold from ore concentrate, and so the guidance needs to address the health risks and hazards.

10 Training

This section is inadequate. There is no mention of MITO, the industry training organisation, nor mention of the qualifications offered by MITO. There is no reference to human factors issues which is an important aspect of both operating safely and in how people are trained. The section on induction is very short, and this is where safety at the operation starts for a new employee. A lot more detail is needed.

11 Emergency Management

This section contains very little guidance on an important subject and is inadequate. It needs to be linked back to the 2013 regulations.

12 Employee Facilities

Not sure if this is the right place but there is nothing here on first aid facilities or first aid capability.

ATTACHMENT 1 – INDUSTRY WORKING GROUP

Sector	Name	Organisation/Company
All sectors	Les McCracken	MinEx
Alluvial quarry	Mike Higgins	Isaacs
Hard rock quarry	Mike McSaveney	Winstones
	Steve Ellis	Stevensons
Small scale quarries	Dean Torstonson	Orica (ex Rorisons)
Limestone quarries	Brian Roche	Ravensdown
Building stone quarry/cut	Harry Toa	Hinuera Stone
Hard rock gold	Bernie O'Leary	OceanaGold
Large scale coal	Gareth Thomas	Solid Energy
Small scale coal	Chris O'Leary	Kai Point
Large scale gold	Bernie O'Leary	OceanaGold
Large scale alluvial gold	Warren Batt	Waikaia Gold
Small scale alluvial gold	Brett Cummings	Minerals West Coast
Small scale alluvial gold and coal mines	Peter O'Sullivan	Minerals West Coast
Minerals sands mining	Glenn Savage	NZ Steel Mining

ATTACHMENT 2 – OTHER PARTIES

Group	Name	Organisation/Company
Cement	Clive Halliday	Golden Bay Cement
Unions	Fritz Drissner	EPMU
Unions	Ged O'Connell	EPMU
Unions	Ray Urquhart	EPMU
Unions	Maurice Davies	AWU
Contractors	Joe Edwards	Contractors Federation
Contractors	Malcolm Abernathy	Contractors Federation
Forestry	Wayne Dempster	Forestry Owners Association

ATTACHMENT 3 – TRACKED CHANGES DRFAT SURFACE MINING GUIDANCE

Digital copy attached to transmittal via email.