

Fitness for work policies in coal mining.

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Introduction

A questionnaire based survey of 55 coal mines was conducted in December 2008 to ascertain how the mines had implemented the fitness for work provisions of Sections 41 and 42 of the Coal Mining Safety and Health Regulation 2001.

The regulations stipulate that a mine's safety and health management system must provide for controlling risks at the mine associated with personal fatigue, other physical or psychological impairment, the improper use of drugs and the excessive consumption of alcohol. With respect to fatigue and other physical or psychological impairment and the improper use of drugs, mines must establish the criteria for assessment in agreement with a majority of workers at the mine. With respect to the improper use of drugs, if agreement is not reached with a majority of workers, the mine must revert to the use of Recognised Standard 07 *Criteria for the assessment of drugs in coal mines*, issued by Queensland Mines and Energy.

Most mines have systems in place that adequately address the regulations but there is some variation in the way in which the safety and health management systems are implemented and applied. In addition though it appears that mines have consulted with workers, this is not documented in all cases, and it is not clear that the mine has gained agreement from a majority of workers in establishing criteria for assessment.

This paper will discuss the systems in place at mine sites for assessment and the processes in use for counselling personnel in the event of a positive result. The application of Recognised Standard 07 will also be discussed.

Regulatory Requirements - coal

The Coal Mining Safety & Health Regulation 2001 requires:

- in Section 41, that a coal mine's safety and health management system (SHMS) must provide for controlling risks at the mine associated with the excessive consumption of alcohol; and

- in Section 42, requires that the SHMS system provide for controlling risks associated with personal fatigue, physical or psychological impairment; and the improper use of drugs.

In controlling risks associated with the excessive consumption of alcohol the SHMS must incorporate:

- (a) an education program;
- (b) an employee assistance program;
- (c) the following assessments to decide a person's fitness for work—
 - (i) voluntary self-testing;
 - (ii) random testing before starting work;
 - (iii) testing the person if someone else reasonably suspects the person is under the influence of alcohol.

In controlling the risks associated with the personal fatigue the SHMS must incorporate:

- (a) an education program;
- (b) an employee assistance program;
- (c) the maximum number of hours for a working shift;
- (d) the number and length of rest breaks in a shift;
- (e) the maximum number of hours to be worked in a week or roster cycle.

In controlling the risks associated with the improper use of drugs the SHMS must incorporate:

- (a) an education program;
- (b) an employee assistance program;
- (c) an obligation of a person to notify the site senior executive for the mine of the person's current use of medication that could impair the person's ability to carry out the person's duties at the mine;
- (d) an obligation of the site senior executive to keep a record of a notification given to the site senior executive under paragraph (c);
- (e) the following assessments to decide a person's fitness for work—
 - (i) voluntary self-testing;
 - (ii) random testing before starting, or during, work;
 - (iii) testing the person if someone else reasonably suspects the person's ability to carry out the person's duties at the mine is impaired because the person is under the influence of drugs.

The SHMS must provide for protocols for other physical and psychological impairment for persons at the mine.

If the fitness provisions for personal fatigue, other physical or psychological impairment or for the improper use of drugs provide for the assessment of workers, the site senior executive must establish the criteria for the assessment in agreement with a majority of workers at the mine. The criteria for assessment are those criteria used to determine whether a person is fit to work, e.g. the presence of drugs in their system, their ability to pass a

computer response test, a doctor or occupational therapist says that they cannot work due to a physical injury.

Regulatory Requirements – mines and quarries

Under the Mining and Quarrying Safety and Health Regulation 2001 a person must not carry out operations at a mine, or enter an operating part of a mine, if the person is under the influence of alcohol, or is impaired by a drug, to the extent the alcohol or drug impairs, or could impair, the person's ability to safely carry out the person's duties at the mine.

Under Section 9 Risk monitoring, (4)(b) requires that monitoring could be self-monitoring to detect effects of the hazard; and as an example suggests self-recognition of physical symptoms of heat stress or fatigue.

In Section 86 "Worker's self-assessment of fitness level", each worker at the mine must periodically conduct a self-assessment of the worker's condition, including, for example, for effects of heat strain or fatigue, to decide if the worker is in a fit condition to carry out the worker's duties at the mine without creating an unacceptable level of risk.

In section 89 "Work hours and rest breaks" a mine's safety and health management system must provide for controlling risk at the mine arising out of personal fatigue caused by excessive work hours or insufficient rest periods.

Formulation of Survey Tool

This survey questionnaire was formulated in eight sections, being:

1. Development of the sections 41 and 42 on-site fitness provisions.
2. The safety and health management system (SHMS) for excessive consumption of alcohol.
3. SHMS for the improper use of drugs.
4. SHMS for the control of risks associated with personal fatigue
5. SHMS for the control of risks associated with other physical or psychological impairment.
6. Contractor fitness for work issues.
7. Other issues that respondents may have in relation to sections 41 and 42 of the Regulation.
8. A self assessment of the mine's FFW SHMS.

Survey Results

The intent and structuring of the questionnaire was threefold;

- to determine compliance with the various elements of Sections 41 and 42, and
- to gain an appreciation of the systems that each mine has in place to adequately discharge their obligations with regard to 'fitness for work'; and
- to determine how the current system and regulations can be improved.

55 coal mines, which represented 95% of those sent the survey, responded to the questionnaire.

- 49 individual mine responses
- 1 response representing two mines
- 1 response representing three mines
- 3 responses for separate Coal Handling and Preparation Plants facilities
- 1 response for a dragline erection site

41 of the respondents were open cut mines (operating and under development) and 14 were underground mines (including one in the surface construction phase only). Of the coal mines in operation at the time of the survey only three are not represented in the survey responses.

Table 1. Self assessment of FFW management systems

Fitness attribute	Consolidated self ratings of 55 respondents				
	1	2	3	4	5
Alcohol	2 %	2 %	16 %	57 %	23 %
Drugs	2 %	2 %	16 %	62 %	18 %
Fatigue	2 %	6 %	27 %	59 %	6 %
P&P Impairment	4 %	10%	37 %	41 %	8 %

Scale: 1-2 a less than adequate control of FFW risk

3 a marginal control of FFW risk

4-5 an acceptable control of FFW risk

Alcohol and Drugs

All respondents stated that they have a documented SHMS for the alcohol and drug provisions of the Regulation. Most mines have a combined drugs and alcohol SHMS. The vast majority of respondents had what appeared to be adequately developed and effective systems in place.

80% of respondents rated themselves as having a system effectiveness of 4 or higher (on a 1 to 5 scale) for both the alcohol and drug SHMS responses.

A number of sites are currently reviewing their 'drug' management system to comply and align with the amendments made to Section 42 in 2007, in relation to involvement and agreement by a majority of mineworkers. The method of testing (urine or oral fluid) is also under review.

For the development of the criteria for assessment for drugs, 90% of respondents stated that they had been developed in accordance with section 42(7) of the Regulation (the site senior executive must make a reasonable attempt to gain agreement from a majority of workers).

Only one respondent stated that they had utilised Recognised Standard 07 and one was considering adopting it, as their default 'drug procedure' due to the fact that they could not come to agreement under the provision of section 42(7) of the Regulation.

12% of respondents stated that they have or would adopt Recognised Standard 07 (partly or wholly) into their procedure, in particular the oral fluid testing aspect. The authors are of the opinion that this percentage would now be significantly higher as oral testing becomes more accepted / prevalent.

With regard to the alcohol procedure, 98% of respondents stated that they had developed it in accordance with section 41(3) of the Regulation, which requires mineworker consultation. However, only 89 % stated that they had documentary evidence of mineworker consultation for its development.

The survey requested input from respondents on the following testing and monitoring regimes:

(a) Voluntary self-testing

For alcohol, all respondents stated that they provided a 'self testing' facility for use by mine workers who may suspect that they are 'over the limit'.

For drugs, 85% of respondents stated that their mineworkers could self test for drugs either by providing test kits or making it known where they can be sourced (eg at the minesite or from a local Pharmacy).

There are varying 'rules' associated with self test procedures, the main one being the restriction on the number of times that a person cannot start work and return 'home', taking unpaid, annual or sick leave. The norm is two occasions in a 12 month period, after which the person is placed on the 'action step/disciplinary' procedure and in the case of drugs, not to return to site until they are 'clear'.

(b) Random testing

All respondents stated that they conducted either pre-start or on-shift random testing for alcohol and drugs in one form or another. Such methods as colour coded marbles, computer based random number generator, the nth number of visitor, and utilisation of the OSPAT system were stated to be used as random selection tools.

(c) Indirect FFW screening.

25% of respondents stated that they utilised the OSPAT or a similar system as a 'front line' fitness 'identifier' and a means of 'selection' for pre-start random D&A testing. This system can also be used as an 'indicator' for chronic fatigue and other impairments that may impact on 'safe performance'.

(d) Testing under suspicion

96% of respondents stated that they had a 'testing under suspicion' system in place.

(e) Mandatory testing following an accident or incident

97% of respondents stated that they had a system for mandatory testing, with just over half stating that they tested all involved persons and just under half stating that the testing was conducted with certain criteria being applied.

The criteria for assessment of excessive consumption of alcohol is based on blood alcohol concentration (BAC) as follows:

64% of mines – Zero effectively <0.01 g/100ml

28% of mines - 0.02 g/100ml

8% of mines - Various BAC level limits ranging from 0.01 to 0.05g/100ml

0.05 limit - two mines - for work in non operational areas

one of these allowed mineworkers to return to work in operational areas when their BAC reduced to 'zero'

The criteria for improper use of drugs used by all mines are the cut-off or target concentrations considered indicative of drug use denoted in the Australian Standards. As at December 2008, the drug testing methodology in use was urine – 47 (85%), oral fluid - 19 (35%) and both – 12 (22%). Many mines are now moving over to oral fluid testing

Most mines adopt a three step counselling/disciplinary procedure as follows:

Step 1 (1st positive result) ensure that they are familiar with mine's FFW procedures and an entry on their personal file.

Step 2 (2nd positive result) counselling by supervisor/manager, external counselling, commitment to mine's FFW requirements, possibility of increased frequency of tests, possible final warning, and an entry on their personal file.

Step 3 (3rd positive result) final written warning; or show cause; or mandatory termination.

In addition there is provision for instant termination in the case of wilful or serious misconduct, no matter at what step of the disciplinary procedure.

The number of positive results for the three month period from 1 July to 31 October 2008 were 177 out of 51177 (0.35%) for alcohol and 167 out of 19790 (0.84%) for drugs.

Personal Fatigue

With regard to the SHMS for personal fatigue, 65% of respondents rated themselves as having a system effectiveness of 4 or higher (on a 1 to 5 scale as shown in Table 1). 96% of respondents had a documented procedure.

94% of respondents stated that they had 'on-record' evidence of mineworker consultation in accordance with section 42(5) of the Regulation (which

requires that the site senior executive must consult with a cross-section of workers at the mine in developing the fitness provisions for fatigue).

96% of respondents stated that they had developed the provisions in accordance with section 42(6) of the Regulation (which requires that the site senior executive provide a copy of the draft fitness provisions to the coal mine workers with whom (s)he consulted).

78% of respondents stated that they had 'on-record' evidence that the criteria for the assessment had been made in agreement with a majority of the workforce in accordance with section 42(6A) of the Regulation.

Fatigue related control strategies in use include:

- Hours of work and shift arrangements - There is a multitude of shift rosters, standard and maximum work hours per shift, maximum hours per shift cycle being used.
- Combating on-shift fatigue - 69% of respondents stated that they had proactive systems in place to control on-shift fatigue, including job rotation, extended rest and encouraging 'power napping'.
- 98% of respondents stated that they had an employee assistance program in place for persons who had persistent problems with 'on-shift' fatigue.
- Long distance commuting. 'Long distance commuting' is generally considered to be greater than one hour or 100 km of travel. 64% of respondents stated that they had a rule/policy in place regarding long distance commuting prior to and post roster cycle. For drive in/drive out operations, in particular, the accommodation arrangements are such that persons can have adequate rest pre and post roster cycle.
- Other fatigue monitoring and control factors - 56% of respondents stated that they utilized such devices as fatigue likelihood calculators and retina scanning technology and/or incorporated circadian rhythm and sleep apnoea research into their fatigue management planning.
- 37% of respondents stated that they had in place a policy and/or a system of disclosure of mineworkers involved in working off-site 'second jobs'.

Other physical and psychological impairment (PPI)

With regard to the SHMS for other physical and psychological impairment, 49% of respondents rated themselves "4 or higher". The lower implementation (compared to the other three fitness provisions) of these systems is attributed to the fact that they are more in the medical fitness realm covered by coal mineworker medicals and nominated medical advisor activities.

88% of respondents stated that they have, or are in the final stages of implementing a PPI protocol. 92% of those that are implemented treat physical impairment and psychological impairment as separate issues. They have a defined and agreed criteria in place for identifying, classifying and allocating normal or 'restricted' duties, which would normally involve medical specialists and risk assessment processes.

Some sites had difficulty defining what fitness provisions for physical and psychological impairment actually means and thus how to put in place effective management programs. Physical and psychological impairment tend to be classified together whereas they should be treated as two very separate classes of medical condition.

Education programs

Mine worker fitness provisions education was stated to be via pre-start induction and refresher training and toolbox meetings. Work force education was conducted in the following fitness provisions:

- alcohol (96%)
- drugs (89%) and
- personal fatigue (96%).

The lower response for drug education is attributed to the fact that a number of the respondents are currently reviewing their site procedure with consideration of Recognised Standard 07 and a change to oral fluid testing.

Employee assistance programs

All respondents stated that their organisations (meaning mine operator employees) have an employee assistance program in place for their employees. In the main, this was stated as an appropriately qualified person or organisation, independent of the employer, providing assistance or counselling to employees (and in many cases, their families) for work and personal related problems. These may include fitness for work issues related to excessive consumption of alcohol, drug habits, fatigue and other physical and psychological impairments.

A factor that was inconclusive in the compiled results was the number of mines where contractor and sub-contractor employers do not have employee assistance program for their employees. On the basis of those respondents who marked the "Not all" box in the alcohol and drug sections, this could be up to 20% of mine sites.

Training of supervisors to recognise FFW symptoms

Around two thirds of front line supervisors were stated as having received specific training in recognising symptoms of specific fitness issues. This included Alcohol – 70%, Drugs – 65%, Fatigue – 71% and PPI - 58%. The true positive response is probably somewhat lower than these figures due to the fact that some respondents misinterpreted this question that their supervisors had received training in the site's FFW systems 'full stop', not specific training in "recognising symptoms" of FFW issues.

Contractor fitness systems

91 % of respondents stated that their contractors operated under the site SHMS for FFW provisions, 5% operated under their own and 4% under both.

In all cases, SSE approval was required and given for those working under their own system.

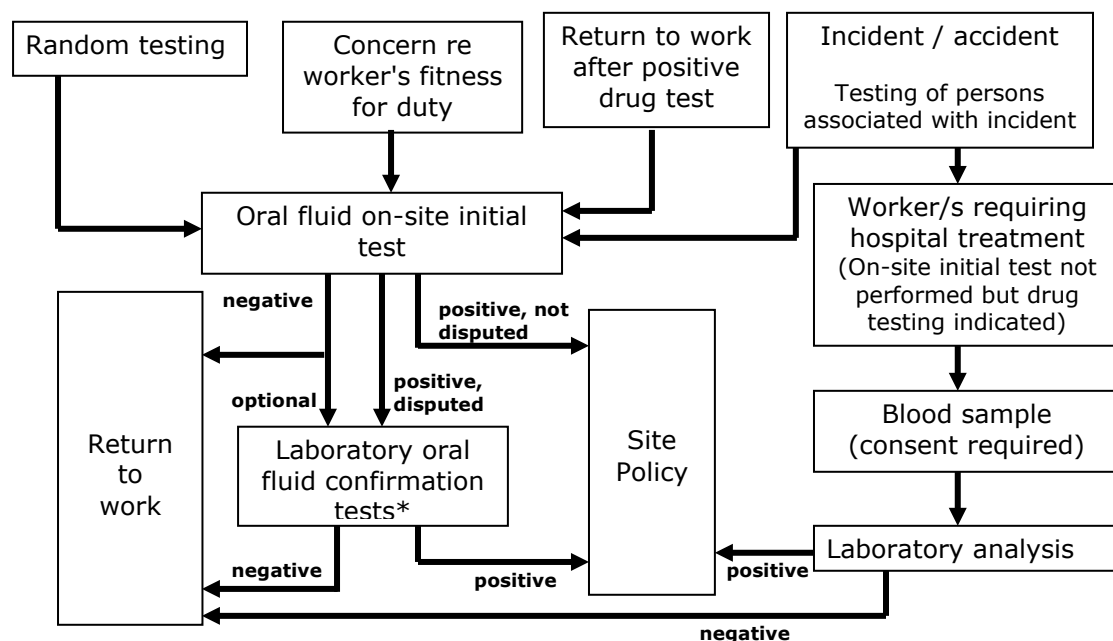
QME Recognised Standard 07

The original purpose of the Queensland Mines and Energy Recognised Standard 07 *Criteria for the assessment of drugs in coal mines* was to be used when an SSE could not gain agreement from a majority of mine workers on the criteria for assessment for the improper use of drugs. However it would appear that many sites have now adopted the criteria in Recognised Standard 07 for assessment fully or partially into their reviewed fitness provisions for drugs.

The Recognised Standard has recently been reviewed. The new standard puts greater emphasis on oral fluid testing as this testing is not as intrusive as urine testing and it provides information about recent drug use whereas urine testing provides information about longer term drug use. As recent drug use is more likely to relate to possible impairment oral fluid testing is considered more appropriate. However it should be noted that the Australian Standard states that oral fluid testing should not be used to determine impairment. The Recognised Standard therefore provides a testing mechanism rather than specific criteria for assessment. However as the mere presence of drugs above the cut-off or target concentrations denoted in the Australian Standard for oral fluid testing and for urine testing is considered a positive result, by default this provides criteria for assessment.

The Recognised Standard does not provide any information on what to do in the event of a positive test apart from submitting the test to a laboratory for confirmatory analysis. The action taken is left up to site policy.

The testing protocol outlined in the reviewed version of Recognised Standard 07 is provided in the flow chart below.



Conclusions

The fact that input into this survey has been provided by 95% of the site senior executives in the Queensland coal mining industry gives it credibility as being a true reflection as to the status of the implementation and effectiveness of provisions designed to comply with Sections 41 and 42 of the Coal Mining Safety and Health Regulation 2001.

With due consideration to the development, documentation and implementation requirements of the legislation, most respondents have in place, at the least, basic safety and health management systems for the fitness for work provisions. The survey does however indicate that in many cases adequate records of the consultation process in setting up the systems are not available.

Acknowledgement

The assistance of the 55 respondent organisations is most appreciated and we thank the personnel at these organisations for the time they put into responding to the survey.