



Trade &  
Investment  
Mine Safety

(OCE1)

## **NSW Coal Competence Board**

### **EXAMINATION FOR CERTIFICATE OF COMPETENCE AS OPEN CUT EXAMINER**

*(Coal Mine Health and Safety Act 2002)*

Friday 1 March 2013  
9.30 am to 10.30 am

### **LEGISLATION**

#### **INSTRUCTION TO CANDIDATES**

All questions are to be attempted.

Refer to the relevant legislative provisions when answering all questions:

*Work Health and Safety Act 2011*

*Work Health and Safety Regulation 2011*

*Coal Mine Health and Safety Act 2002*

*Coal Mine Health and Safety Regulation 2006*

*Explosives Act 2003*

*Explosives Regulation 2005*

**Question 1**

**Health and Safety** (Worth 20 Marks)

Your manager has asked you, as the OCE on shift, to gather any information the Chief Inspector has published relating to Health and Safety. What do you do?

**Question 2**

**Shot Firing** (Worth 20 marks)

As OCE of the shift your shot firer reports to you that the shot he has just fired has damaged a lighting plant which was in the exclusion zone. What do you do?

**Question 3**

**Risk** (Worth 20 marks)

What does the legislation say about the control of Risk?

**Question 4**

**Fitness Program** (Worth 20 marks)

As the OCE, you have been asked by your manager to develop a fitness for work program. What do you do? What limits do you set? What other information do you use?

**Question 5**

**Employee Records** (Worth 20 marks)

Your manager is away and you are the OCE in charge at your mine. You are informed that a Union Industrial Official wishes to enter the mine and inspect employee records. What do you do?

**END OF QUESTIONS**

**END OF PAPER**



(OCE2)

## NSW Coal Competence Board

### EXAMINATION FOR CERTIFICATE OF COMPETENCE AS OPEN CUT EXAMINER

*(Coal Mine Health and Safety Act 2002)*

Friday 1 March 2013  
11.30 am to 1.30 pm

### PRACTICAL OPEN CUT OPERATION

#### INSTRUCTION TO CANDIDATES

Only four (4) of the six (6) questions are to be attempted

**Questions 2 & 5 are compulsory**

All questions are of equal value; however parts of a question may vary.

Drawing tools may be used for sketches

Non-programmable calculators may be used

**Question 1 (Total of 50 marks)**

**Dragline Operations**

You are the Open Cut Examiner (OCE) in charge of a CAT 8200 Dragline (mid size) with boom length being 100m. The dragline is used to expose a single 5m thick coal seam which dips approximately 3% away from the highwall. Overburden thickness is a relatively uniform 30m.

- a) Detail in the form of diagrams the following dig methods (Include all assumptions, dig method steps and approximate dimensions. (25marks))
  - (i) Direct side cast
  - (ii) Extended bench
  
- b) The coaling fleet comprising of LeTourneau 1850 FEL and CAT 789 rear dump trucks are scheduled to commence mining the previously blasted coal beneath the dragline at the start of night shift.
  - i) What are the hazards associated with the coaling fleet working within the dragline cut while dragline operations continue? And what controls would you ensure are in place to control the hazards? (25 marks)

**Question 2 (Compulsory) (Total of 50 Marks)**

**Environment and Community**

You are an Open Cut Examiner at a large open cut coal mine located in the Hunter Valley. The mine is in close proximity to rural residences and approximately 6km from a large township. Your mine has received a high level of community complaints due to the impacts of the operation on surrounding neighbours and their residences.

- a) Detail all of the controls required to effectively reduce the occurrence or impacts of;
  - i) Noise
  - ii) Dust
  - iii) Blast fume
  - iv) Blast vibration
  - v) Blast overpressure
  - vi) Lighting(40 marks)
  
- b) How would you ensure that the controls for managing dust are effectively implemented and followed? (10 marks)

**Question 3 (Total of 50 Marks)**

**Incident Management**

You are the Open Cut Examiner for a large mine. A large prestrip blast has just been fired and you are advised by the Shot firer that the blast is all clear. You have released the sentries and you are on your way to the blast to inspect the quality of the shot.

On your way to the blast, you receive a call from the serviceman reporting the in-pit fuel tanks located near the blast have been dislodged, presumably by vibration. One tank is totally off its footings and has dislodged the tank next to it. Fuel is rapidly leaking from both tanks as pipe work leading up to the tanks have been damaged.

Nearby, there is a maintenance pad where track frame repairs are being undertaken on a digger. The boilermakers are on their way back as they were cleared for the blast. The admin offices are located 2km away from the tanks.

- a) List the types of hazards you would expect to encounter. How would you manage this situation to bring it under control? (30marks)
- b) Who would need to be notified in this circumstance? (10 marks)
- c) What provisions can be made to prevent an incident like this from occurring in the future? (10 marks)

**Question 4 (Total 50 Marks)**

**Slope Stability**



An operator has called up and informed you that there's been a major failure in the pit. This occurred when a dozer operator was pushing up a window in the area.

- a) What type of geotechnical failure is this? (5 marks)
- b) What actions do you take after receiving the call from the operator? (10 marks)
- c) What do you consider would be the tell tale signs prior to a failure of this nature? (5 marks)
- d) Is this failure a notifiable incident? Provide detail. (10 marks)
- e) What immediate post failure measures can be put in place to prevent any risks to personnel? (10 marks)
- f) This is the third failure in this area. What ongoing changes/controls are required to prevent further failures? (10 marks)

**Question 5 (Compulsory) (Total of 50 Marks)**

**Drill & Blast**

The mine in which you are an OCE have purchased a new drill (85,000lbs pull down) to drill overburden holes in a new section of the pit.

Drill hole diameter will be 311mm.

You have been placed in charge of the introduction of the drill and the initial pattern design.

- a) What's required prior to the drill being used on site? (15 marks)
- b) What effect does drill steel diameter have on the penetration rate and bit life? (10 marks)
- c) Showing all calculations and assumptions, what would be the recommended;
  - i) Stemming height in each hole? (5 marks)
  - ii) Charge weight per hole using ANFO  $.83\text{kg/m}^3$  (5 marks)
  - iii) Drill pattern to be used? (assume hole depth is between 30m – 40m, material is sandstone P.F  $0.65\text{kg/m}^3$ ) (15 marks)

**Question 6 (Total of 50 Marks)**

**Incident Management**

You are an Open Cut Examiner on duty at a large open cut mine and have been called to the First Aid Room.

A fitter had been repairing the grease system on a 240 tonne dump truck. While undoing the bolts holding on the relief valve the fitter was sprayed with grease. The fitter then drove himself to the First Aid Room where the First Aid Attendant noticed a possible grease injection point on the fitters' left leg.

Another fitter attended the truck and replaced the damage relief valve and sent the truck back to work.

- a) Outline the course of action needed in response to this incident. (15 marks)
- b) What are the possible causes of this incident occurring? (10 marks)
- c) What control measures do you recommend to prevent this type of incident from reoccurring? (15 marks)
- d) Who will you need to report the incident to? (10 marks)

**END OF QUESTIONS**

**END OF PAPER**