

## OPEN CUT EXAMINER CERTIFICATE OF COMPETENCE | AUGUST 2014

### Examination for Certificate of Competence as an Open Cut Examiner

#### OCE1 Legislation paper

Examination Date: 15 August 2014

Examination Times: 9.30am to 10.30am

Examination Venue: Hunter TAFE, Kurri Kurri.

Instructions to candidates: All questions are to be attempted. Answers are to be written in this booklet ONLY. You may use the blank pages for additional space if required. Refer to the relevant legislative provisions when answering all questions.

#### Question 1 (Total 20 Marks)

What does the law require about Personnel Protective Equipment (PPE)?

#### Question 2 (Total 20 Marks)

You are the Open Cut Examiner (OCE) at a mine when it is reported to you that the explosive magazine door has been left open. What do you do?

#### Question 3 (Total 20 Marks)

You have a major incident at your mine in which one of the senior management at the mine was involved. What does the law allow the mine to do?

#### Question 4 (Total 20 Marks)

Your mine proposes to bring some contractors on to the mine site to clear some land and you have been given the task of looking after them. What does the law require you to do?

#### Question 5 (Total 20 Marks)

What are the duties and rights of an employee at a mine site?

**END OF QUESTIONS**

**END OF PAPER**



## OCE2 Practical paper

Examination Date: 15 August 2014  
 Examination Times: 11.30am to 1.30pm  
 Examination Venue: Hunter TAFE, Kurri Kurri.

Instructions to candidates: Only four (4) of the six (6) questions are to be attempted. Questions 1 & 2 are compulsory. All questions are of equal value however, parts of a question may vary. Answers are to be written in this booklet ONLY. You may use the blank pages for additional space if required. Drawing tools may be used for sketches. Non-programmable calculators may be used.

### Question 1

You are an OCE at a large open cut coal mine located in close proximity to a small township and rural property owners. The mine produces approximately 12Mtpa of high ash thermal coal for export and domestic markets and operates on a rotating 4 panel, 7 day roster. A large run of mine (ROM) stockpile is in place where a L1850 FEL is used to either side cast or load trucks to ensure continuous coal feed to the 3 module CHPP. A large 8 valve product stockpile operating a draw down system into a reclaim tunnel beneath is fed by D11 stockpile dozers.

- a) What are the hazards associated with large ROM coal stockpiles and what are the controls required to manage them to an acceptable level of risk? (25 marks)
- b) What are the hazards associated with the product stockpile in place at this mine and what are the controls required to manage it to an acceptable level of risk? (25 marks)

### Question 2

The mine at which you are an OCE has progressed into a new area where challenging blasting conditions have arisen due to a band of claystone between two coal seams becoming much more prominent. The claystone is between 1.0m – 1.2m in thickness and has become too hard for a dozer to rip so your Mine Manager has decided to drill and blast the claystone in future. He intends to use a rotary drill with a 64mm diameter drill bit for a trial blast.

- a) Detail the hazards involved in blasting the claystone band blast patterns? (10 marks)
- b) Stating all assumptions and showing all calculations what is the recommended;
  - i. Stemming column length
  - ii. Burden & spacing
  - iii. Charge weight per hole
  - iv. Suggested explosive type considering dry hole conditions? (20 marks)
- c) Detail in a sketch the blast pattern design including; hook up method (tie up), delay intervals and initiation system. (20 marks)

### Question 3

You are the Open Cut Examiner for a coal mine in NSW. On dayshift, the shot firers are loading a large overburden shot that has taken three days to load. They commenced loading from the free face back, and they are now loading at the back of the shot, ready to fire later in the shift. On your inspection you notice that a smoke-like haze is coming from one of the face holes that were loaded on the first day of loading.

Your site has not previously had an instance of reactive or hot ground.

There are coaling activities on the bench below the shot and pre-strip activities on the bench above.

- a) Describe in detail the steps you would take upon making your observation (20 marks)
- b) Describe what is meant by reactive ground, its causes and the risks it poses to the operation. (15 marks)
- c) What controls are in place to mitigate the risks of reactive ground? (15 marks)

### Question 4

You have been appointed to your new role as an OCE at an open cut mine that uses equipment including a 4100XPC electric rope shovel and 793D mechanical drive rear dump which usually adopts a double side loading mining method.

- a) Given a 20m blasted bench height and 150m strike length from high wall to low wall, draw a detailed sketch showing the double side loading method. Show all assumptions including work area dimensions, dig sequence, equipment positioning and cable location. (20 marks)
- b) List the advantages and disadvantages of the 3 electric shovel loading methods(15 marks);
  - i. Double side loading
  - ii. Single side loading
  - iii. Drive by method
- c) Describe the electrical hazards associated with electric rope shovel operations and the controls required to manage those hazards. (15 marks)

### Question 5

You are the Open Cut Examiner (OCE) at a mine using large backhoe configured hydraulic excavators that mine the overburden and large front end loaders that mine the coal and partings.

You have been given a task by your Manager of Mining Engineering (MME) to plan and coordinate the next pre-strip block in advance of the void. The task involves preparing the area for a drill pad, drilling and then blasting to the 1st group of coal seams. The overburden consists of approximately 4 metres in depth of weathered material on the surface overlaying competent sandstone. The pre-strip block has a lot of trees and the terrain has many steep gullies up to 20 degrees in slope. Below is a photo of the strip to be mined.



- a) Outline how you would plan this work and who you would involve? (10 Marks)
- b) Explain the steps involved in the completion of this task including equipment used and controls for all the hazards identified. Include diagrams or sketches where appropriate. (40 Marks)

### Question 6

You are the Open Cut Examiner (OCE) on dayshift in charge of a production area in a large open cut mine. There has been a recent change to the mine plan to re-enter an area of the mine that has not been mined for several years. The overburden removal has been re-commenced using a 550 tonne excavator loading 240 tonne dump trucks. Up until recently the haul road now being used by the trucks was usually used by light and medium vehicles to access the maintenance workshop, muster area and explosives reload facility.

You receive a call from a dump truck driver that a loaded dump truck had side swiped an empty dump truck on a section of the haul road whilst travelling to and from the dump. Both trucks have sustained extensive damage and are blocking the haul road.

- a) How would you manage this situation as the OCE on duty at the time of this incident? (10 marks)

- b) What immediate action would you take to prevent a similar incident occurring within in your production area? (10 marks)
- c) Is this a notifiable incident under the *Coal Mine Health and Safety Regulation 2006*? If so, why and who would you need to notify? (5 marks)
- d) Prepare a risk assessment detailing the hazards and controls required to manage Heavy to Heavy vehicle and heavy to light vehicle interaction at your mine. (25 marks)

**END OF QUESTIONS**

**END OF EXAM**

## **More information**

Business Processes & Authorisations

Phone: 4931 6625

## **Acknowledgments**

Open Cut Examiner Examination Panel

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