

CERTIFICATE OF COMPETENCE

Quarry manager: Written examination sample question and marking criteria

Background

As an aid to supporting candidates to better prepare and perform in examinations, the NSW Resources Regulator and the examination panel have provided a sample question and marking criteria for the quarry manager certificate of competence written examination.

Sample question: review of control measures

The Work Health and Safety (Mines and Petroleum Sites) Regulation 2014 clause 10, requires a person conducting a business or undertaking (PCBU) to review control measures when an incident occurs as referred to in clause 128.

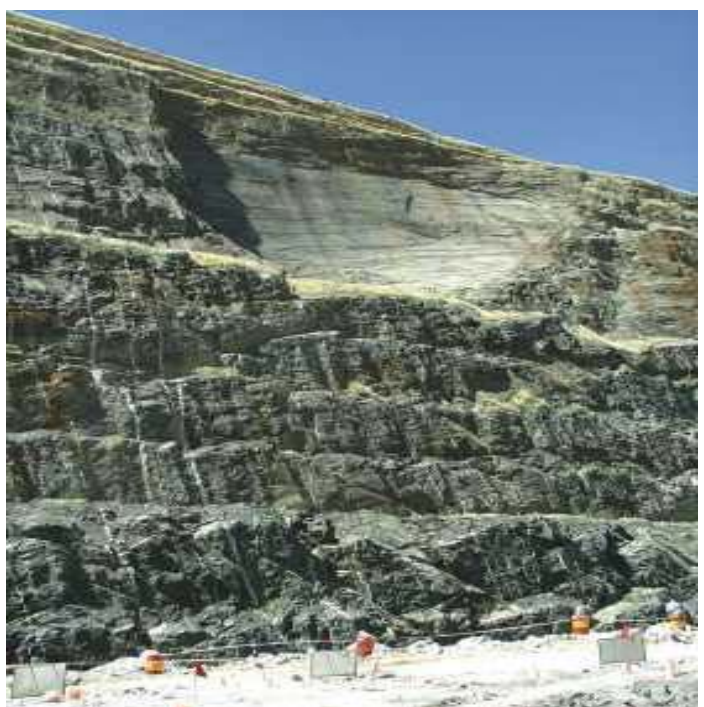
The highwall at your quarry has experienced a substantial failure of ground, where workers could potentially have been present. This included the failure of two benches at the top of a five-bench face (refer to figure 1).

Explain how you would undertake a review of control measures as a result of the incident.

Please consider the following in your answer:

- Process to be used (3 marks)
- Workers involved (3 marks)
- Possible causes (5 marks)
- Output/recommendations/implementation (4 marks)

Figure 1 Failed benches



Marking criteria

This question is worth 15 marks. Each section will be marked to a maximum of the (quoted) marks after considering how many of the following points are contained in full or in part in the candidate's answer:

Process: (3 marks)

- Prevent any further work in the failed area until a review has been undertaken (barricade, toolbox, signpost).
- Allocate resources for a review (time, room, plans, people, scribe, record keeping).
- Define the scope and anticipated outcomes.
- Confirm the review process method to be used (risk management strategy, example ICAM, 5 Whys, root cause analysis).
- Confirm the final review process and sign-off.

Persons involved: (3 marks)

- Include workers who can contribute to the review (should consider internal and external).
 - management team
 - members of workforce
 - shotfirer
 - surveyor
 - planning team
- Engage and involve subject matter experts (geotechnical engineer, geologist, planning engineer, hydrologist).

Possible causes: (5 marks)

- Poorly understood geology (weathered material, faulting, intrusions, structural orientation).
- Failure to collect, analyse and interpret relevant geotechnical data.
- Seismicity.
- Adjacent workings or natural voids.
- The mine's plan was not considerate of geology, structures and geotechnical parameters.
- Mining has varied from the original mine design without adequate change management.
- There has been a mismanagement of hydrogeological environment, including surface and ground water.
- There have been poor blasting practices causing back break, pre-conditioning of ground and loss of bench.

Output/recommendations/implementation: (4 marks)

- Review and redraft control measures contained in the site's principal hazard management plan (PHMP) ground or strata, schedule 1 WHS(MPS) Regulation.
- Review and implement revised control measures into mine plan clause 122,123 WHS(MPS) Regulation – survey plans and plans of mines.
- Inspect all highwalls to ensure there are no other areas for imminent or potential failure.
- Implement new revised control measures into daily work instructions.
- Review revised control measures against possible effect on other principal hazards.
- Review routine inspection documents to include revised control measures.
- Provide training in revised control measures.
- Implement ongoing monitoring and review program to confirm compliance with revised controls and that revised controls are suitable.

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