

New South Wales

**Board of Surveying and Spatial Information**

# **MINING LAW ASSESSMENT**

## **MINING SURVEYING**

### **Surveying and Spatial Information Act 2002**

(Mining Legislation)

Friday 17<sup>th</sup> February 2023

**All questions to be answered**

Duration 2 Hours

Pass Mark of 60% Required

1. As described in the Archival Research Guidelines, what detail is shown on a colliery holding register? (2 marks)
2. As described in the Archival Research Guidelines, what detail is listed on a colliery card index? (2 marks)
3. As described in the Archival Research Guidelines, what is an example of a preliminary research tool? (1 mark)
4. As described in the Mining Act 1992, what is the holder of a mining lease's rights under the mining lease? (3 marks)
5. For the purposes of s81 (1) of the Mining Act, *surface activities in relation to subsurface leases*, what activities are prescribed in the Mining Regulation 2016. (2 marks)
6. Development Consent for a mining operation is granted under which Act? (1 mark)
7. Prior to undertaking underground mining that may cause subsidence, what must the lease holder have in place? (1 Mark)
8. What is the definition of a formal mining survey plan? (1 Mark)
9. In relation to the preparation of a Rehabilitation Management Plan (RMP), name two mining domains. (2 marks.)
10. Sketch the following symbols as defined in AS4368 Mine Plans-Preparation and Symbols (4 marks):
  - a. Seal
  - b. Air measuring station
  - c. A working circular shaft (upcast)
  - d. Strike slip fault
11. As defined in AS 4368, what is the recommended maximum grid spacing on a plan regardless of scale? (1 mark).
12. In relation to Work Health and Safety (Mines and Petroleum Sites) Regulation 2022, what datums are required to be referenced on the survey plan? (1 mark)
13. In relation to Work Health and Safety (Mines and Petroleum Sites) Regulation 2022, when is the survey plan required to be reviewed? (4 marks)
14. Other than a Registered Mining Surveyor, who can undertake a mining survey and under what conditions? (2 marks)
15. Provide two ways in which a Notice of Proposed Entry can be given for the conduct of a Mining Survey? (2 marks)

16. In relation to the power of entry under the Surveying & Spatial Information Act 2002, for the purpose of carrying out a mining survey, who may enter the land? (2 marks)
17. Under the Surveying & Spatial Information Regulation 2017, what is the definition of a student of surveying? (2 marks)
18. Under the Surveying & Spatial Information Act 2002, what is the definition of a formal mining survey plan? (2 marks)
19. Under the Surveyor-General's Direction No. 11 *Preservation of Survey Infrastructure*, who can survey an affected *Boundary Mark or (Cadastral) Reference Mark*? (1 mark)
20. Under the Surveyor-General's Direction No. 5 *Calibration of Electronic Distance Measuring (EDM) Equipment*, describe legal traceability (2 marks).
21. Under the Surveyor-General's Direction No. 12 *Control Surveys and SCIMS*, describe SCIMS (2 marks).
22. With reference to the Archival Research Guideline available from Resources Regulator what areas should be covered with preliminary research? (2 marks).
23. With reference to the Form and Way: Rehabilitation management plan for large mines available from Resources Regulator what spatial information themes are required to be supplied with the Final Landform Features? (2 marks)
24. With reference to the Form and Way: Rehabilitation management plan for large mines available from Resources Regulator how is spatial information lodged with the Regulator? (1 mark).
25. In reference to spatial information, what is the purpose of the shapefile format with extension ending in .shx? (1 mark)
26. In reference to spatial information, what is the purpose of the shapefile format with extension ending in .dbf? (1 mark)
27. In reference to spatial information, what is the purpose of the shapefile format with extension ending in .shp? (1 mark)
28. In reference to spatial information, what is the purpose of the shapefile format with extension ending in .prj? (1 mark)
29. In reference to the spatial information, to what precision should themes be provided? (1 mark)

Question 2 (10 marks).

- a) An open cut coal mine is planning on expanding mining into an area where historic underground mining is known to have occurred, yet no catalogued Mine Workings Plans or Record Tracings can be located.

Detail what other records and sources of historical information can be used to obtain a better understanding of the location and extent of mining. (3 marks)

- b) With reference to the above, detail what processes should occur and what controls should be implemented, prior to mining commencing in this area? (2 marks)

- c) You are the nominated mine surveyor at an underground coal mine. On Friday you extended the survey sites for the current gate road being developed and set up the laser for the continuous miner. That night the laser was bumped by the shuttle car and production continued mining in the incorrect direction until it was realised on Monday. After you carried out a detail survey they had deviated 2.2m offline.

In relation to Part 3, Underground coal mines section 14 of the Work Health and Safety (Mines and Petroleum Sites) Regulation 2022 explain the requirements in order to mine a road greater than 5.5m in order to fix the alignment (5 marks).

Question 3 (10 marks).

- a) You are the nominated mining surveyor at an underground coal mine. The mine utilises inseam boreholes for gas drainage purposes to ensure mining can occur safely.

With reference to the Survey & Drafting Directions for Mining Surveyors 2020 (NSW Mines), describe how the boreholes are to be shown on the Mine Survey Plan (5 marks).

- b) With reference to ICSM SP1 describe the survey methodologies and instruments you would use to establish a control network in an underground coal mine (5 marks).

Question 4 (10 marks).

You are an employee of a large contract company that conducts laser scans.

You have been engaged to obtain a detail survey of a 2km long men and materials drift by fixing a handheld laser scanner to the front of the dolly car.

Detail the steps required to conduct this job safely under the Work Health and Safety Act and Regulation.

Question 5 (10 Marks)

You are the nominated registered mining surveyor at an open cut coal mine.

After a year of well above average rainfall the mine is looking to explore the option of establishing a mine water dam on land currently owned by the mining company adjacent to the current mining lease.

The mine is also looking at establishing a water treatment plant at the proposed dam site to allow treated water to be released directly down a creek line to a local river.

Detail what consent and mining lease actions, with their respective steps, may be required to enable the activity to be undertaken.

Question 6 (10 Marks)

During a delivery of fuel to your open cut mining operation, the delivery tanker has overturned after entering the boundary of the operation. In relation to the Work Health and Safety (Mines) Act 2013, define:

- a) What is the meaning of “mine”? (3 Marks)
- b) Does this incident fall under a “mining Operation” or “mining activity”? Justification for your determination is to be provided (3 Marks)
- c) What constitutes a “notifiable incident” and what must management do in regards to the incident site? (4 Marks)