

Trial/Pilot Event

Contact the organizers of your tournament to find out what trial/pilot events will be held.

Subterranean Puzzles

Descriptions: Participants will be provided with a variety of information (Well logs, Geologic maps, elevations and such) concerning the structure and composition of underground features. The participants will then use the information provided to reconstruct the subterranean puzzle.

A Team Of Up To :2

Approximate Time : 50 minutes

The competition:

Participants will be provided with one or more data sets, maps, well logs and other appropriate information to be used to reconstruct underground structures. Tasks may require the participant to interpret geophysical symbols, calculate volumes, masses, and economic values. All calculations must include significant digits and appropriate units. Responses maybe in the form of diagrams, multiple choice or short answer. Participants are allowed to bring a non programmable, non graphing calculator and one double-sided page (8.5" x 11") of hand written notes.

Concepts may include, but are not limited to:

Law of Superposition	Relative ages
Law of original Horizontality	Igneous Inclusions
Isostasy	Uplift & Subsidence
Folding & Faults	Igneous Intrusions
Environment of deposition	Mineral resources
Mining & Pumping	Dip - Strike
Anticline & Syncline	Density
Porosity	

Representative Tasks May Include.

1. Participants may be provided with a real or simplified well log and then asked to answer questions concerning the potential of underground structures and depths for the production of specific mineral resources.
2. Participants may be provided with a cross section of the earth and then asked to interpret the geologic history of the area.
3. Participants may be provided with samples of sedimentary material and asked to determine the environment of deposition.
4. Participants may be provided with real or simplified well data for several wells in and area and then asked to construct a geologic map or a cross section based on the data provided.
5. Participants may be provided a geologic cross section and then asked to interpret the areas potential for the productions of natural resources.

Competition may consist of up to four stations or as few as two stations. One of the stations must include calculations to obtain the most accurate value and will be timed as a tie breaker.

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Scoring:

The event supervisor will provide the participants with a scoring rubric at the beginning of the competition. The rubric will define the value of each response and will define the level of accuracy required. (Example: Answers within 2% = 3 points, 5% = 2 pts and 10% = 1 point.) (Each feature correctly illustrated in the cross is worth 1 point.)

1. Participants who provide the most correct responses will be the winner.
2. Ties will be broken by the shortest amount of time required to obtain the most accurate response. (Time (Seconds)/10 x Percent error of the calculated answer = tie breaker value.) (Example: Team A calculates that specific formation will be located at a depth of 12,500 feet below the surface. Their calculation required 300 seconds to obtain. The actual depth is 13,250 ft. The tie breaker value is $((| 13,250 - 12,500 |) \div 13,250) * 100 = 5.66\%$ error thus $5.66 \times 30 = 169.8$ for a tie breaker score. Participants with the lowest tie breaker score will be ranked above other participants who provided the same number of correct responses.

Data Provide

Well Logs
Stratigraphic cross sections
Strata Composition
Geologic map
Strata Density

Possible Responses

Depth information (Stratigraphic Top or Bottom)
Geologic History (Relative ages)
Environment of deposition
Geologic map
Stratigraphic Cross section
Strata Thickness
Strata mass
Strata Value or Yield.