

Introduction

In this assignment, three different types of definitions (parenthetical, sentence and expanded) are written for a relatively complex term within our field of study or profession. A visual is required, three references must be cited, and the expanded definition must include four different expansion strategies. The objectives of the assignment include understanding the role of definitions in technical writing, and understanding the level of detail and technicality that is appropriate for the audience. For example, in this assignment, we are defining terms assuming that the audience has no technical knowledge of the term.

Word: Block caving

Parenthetical Definition

Block caving (an underground mining method) is a cost effective way to extract mineral deposits from the earth.

Sentence Definition

Block caving is an inexpensive underground mining method where rock containing the mineral deposit is undercut, and gravity forces the rock to cave in on itself.

Expanded Definition

Operating Principle

The most important procedures in the block caving method are:

1. An extraction tunnel is created below the mass of rock containing the mineral deposit. This is created by drilling and blasting. The extraction tunnel is supported by bolts and shotcrete (a mix of cement, sand, and water) for safety.
2. The mineral deposit is undercut. This is accomplished by drilling many holes from the extraction tunnel up to the mineral deposit.
3. The drill holes are blasted, leaving large gaps that cannot support the weight of the rock above it. As a result, the rock containing the mineral deposit collapses under its own weight and is forced downward by gravity.
4. Man operated machinery collects the rock that has collapsed into the extraction tunnel, and places it in a piece of equipment that crushes it into smaller pieces. The crushed rock is then brought to the surface by, for example, a conveyer belt.

The operating principle is also illustrated in Figure 1.

History

Block caving was developed in the southwest United States shortly after World War I. The development was important because it allowed a way to access mineral deposits that were too deep in the earth to reach from the earth's surface. The method spread to a variety of other countries, and is used extensively today worldwide (Howard and Mutmanský, pp. 420-421).

Comparison and contrast

There are a variety of other underground mining methods. Although the geologic situation sometimes determines which method must be selected, if given the choice, block caving is known to be efficient and inexpensive relative to other methods.

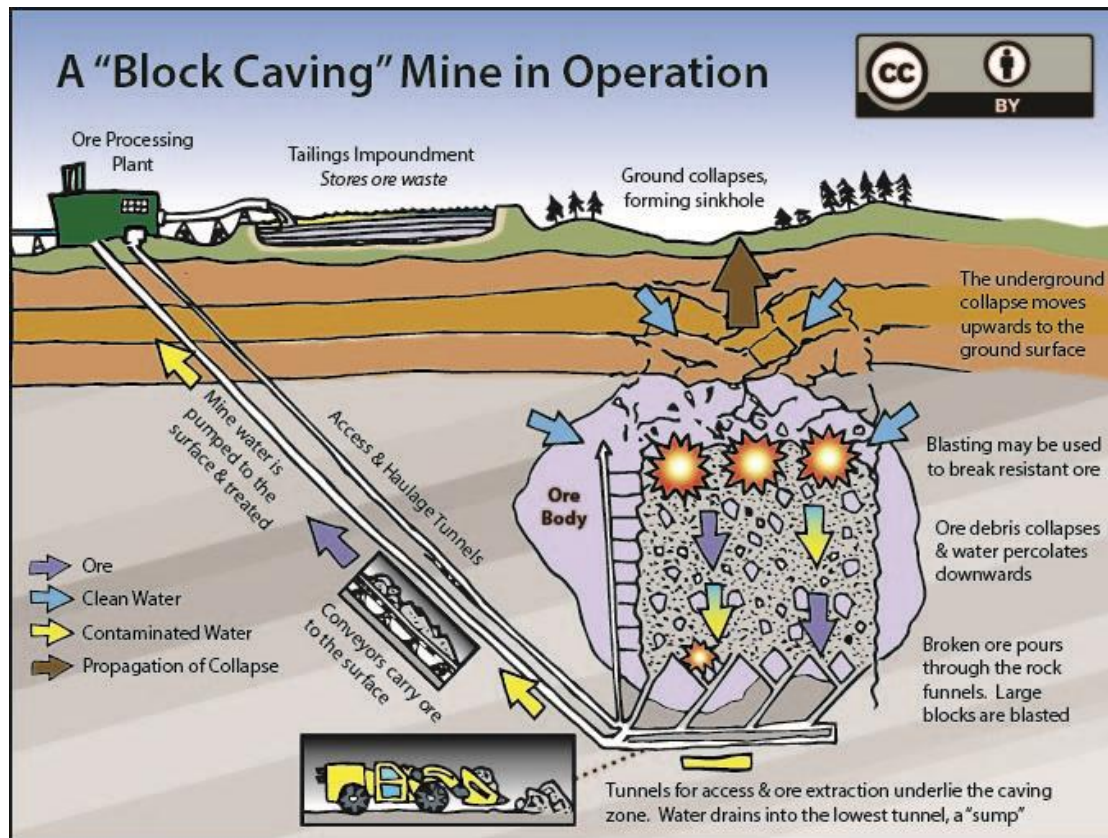
Table I: A comparison of common underground mining methods

Method	Production rate (tonnes of rock per day)	Cost (\$) per tonne of rock
Block caving	30,000	9.10
End slice	2000	25.58
Cut and fill	1000	68.03

Data from (ground truth TREKKING, "Block Caving")

Visual (displayed on page 3)

Figure 1: Visual representation of the block caving method



(Investopedia, "Underground Mining")

Works Cited

"Block Caving". ground truth TREKKING. 30 Oct. 2014. Web. Sept. 2016, <http://www.groundtruthtrekking.org/Issues/MetalsMining/block-caving-underground-mining-method.html>

Hartman, Howard L., and Jan Mutmanský. *INTRODUCTORY MINING ENGINEERING*. New Jersey: John Wiley and Sons, 2002. *Google Book Search*. Web. 26 Sept. 2016.

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