APPENDIX 1. TECHNICAL TERMS

adit	A horizontal opening driven into an ore body from the side of a hill.
alluvial	Fine, unconsolidated minerals from weathered rocks typically formed in a river system.
assemblage	Relative composition of valuable heavy minerals of ilmenite, zircon and rutile in ore (in the case of mineral sands).
beneficiation	A process that improves the value of a mineral or in the case of ilmenite beneficiation (known as the production of synthetic rutile), the leaching of iron at high temperatures to create a product with a higher titanium dioxide content.
carbon-in-pulp	Ore is crushed, ground and dissolved by cyanide solution, with gravity separation used to recover coarse gold while pulped ore is agitated in tanks with granules of activated carbon added to adsorb the gold.
cyanide extraction	Use of sodium cyanide acid to extract gold from ore, often involving precipitation by means of metallic zinc.
deposit	An ore body of defined mineral characteristics considered to have the potential for commercial recovery.
dilution	Contamination of ore-bearing rock with barren rock, thereby affecting the level of recovery of metal.
dredging	Use of large excavators to extract free-flowing ore or sand, such as mineral sands or tin, in a dredge pond.

flotation	A method used to extract low-grade and complex ores, including gold, silver, copper, lead and zinc. Finely ground ore containing minerals is placed in a solution, typically water although pine oil was used in some of the earlier approaches, with the use of a reagent or frothers to separate the minerals and have them adhere to air bubbles, with the minerals skimmed off for drying. Sulphide and non-sulphide minerals are recovered by froth flotation.
grade	The classification of an ore based on estimated level of valuable mineral content.
leaching	Removal of soluble salts or metals from ore by the use of a solvent.
oxidised ore	Part of a mineralised formation that due to action or air and water has been changed wholly or in part into oxides and carbonates.
pyrite	Iron sulphide mineral, often accompanied by gold in mineral deposits. Able to be used in the manufacture of sulphuric acid and in turn superphosphate.
refractory	An ore that is difficult and costly to treat for the recovery of valuable minerals.
reserve	An identified mineral resource that, based on an assessment of a range of qualifying factors or variables and typically including a feasibility study, is considered to be economically recoverable.
resource	Identified mineral occurrence that, subject to a range of qualifying factors, is considered to have some potential for commercial development.
roasting	Heating of sulphide ores to a high temperature in the presence of air.
seam	An underground layer of a mine, for example, a coal seam.
shaft	An extracted column that provides access to an ore zone in a mine, or is used for ventilation or the transportation of ore, equipment or workers.

slag	A smelting process to upgrade ilmenite to a higher titanium dioxide content product, referred to as titanium or sulphate slag.
sluicing	Typically, the use of a sluice box to separate a valuable metal, such as gold or tin, from sand or gravel.
stope	A step-like excavation that is formed as ore is removed from around a mine shaft.
sulphide ore	Fine-grained mineral or chemical compound consisting of sulphur but with no oxygen contained within a rock formation. In the case of gold, it usually occurs in its metallic state and is commonly associated with sulphide minerals such as pyrite, in low concentrations.
tailings	Waste material resulting from the extraction of mineral-containing ore.

Sources: Various sources consulted, although mainly drawn from *Mining Handbook of Australia*, 1936, pp. 21–29 and *Close, The Great Gold Renaissance*, pp. 264–266.

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