

GLOSSARY

MINING METHODS

OC:	Open Cut
OP:	Open Pit
UG:	Underground

MASS UNITS

kt:	kilotonne; metric system unit of mass equal to 1,000 metric tonnes
Moz:	million troy ounces (a kilogram is equal to 32.1507 ounces; a troy ounce is equal to 31.1035 grams)
Mt:	million tonnes, metric system unit of mass equal to 1,000 kilotonnes
MTIS:	Mineable Tonnage In-Situ; quoted in million tonnes
mtpa:	million tonnes per annum
ROM:	Run Of Mine
tonnes:	metric system unit of mass equal to 1,000 kilograms

GRADE UNITS (expressed on a moisture-free basis)

ASCu:	Acid soluble copper (%)
CSN:	Crucible Swell Number (CSN is rounded to the nearest 0.5 index)
CuEq:	Copper equivalent based on long-term metal prices and taking into consideration the recovery of Copper, Gold and Molybdenum (%)
CV:	Calorific Value (CV is rounded to the nearest 10 kcal/kg)
ICu:	Insoluble copper, total copper less acid soluble copper (%)
kcal/kg:	kilocalories per kilogram
TCu:	Total copper (%)
4E PGE:	The sum of Platinum, Palladium, Rhodium and Gold grades in grammes per tonne (g/t).
3E PGE:	The sum of Platinum, Palladium and Gold grades in grammes per tonne (g/t)
% Cu:	weight percent Copper
% Fe:	weight percent Iron
% Mn:	weight percent Manganese
% Mo:	weight percent Molybdenum
% Ni:	weight percent Nickel
% Nb₂O₅:	weight percent Niobium pentoxide
% P₂O₅:	weight percent Phosphorus pentoxide

PROCESSING METHODS

Dump Leach:	A process similar to Heap Leaching, but usually applied to lower grade material. Rather than constructing a heap of material with a controlled grain size, the material grain sizes are as mined, similar to the situation found within a waste rock dump. This material is then irrigated with a leach solution that dissolves the valuable minerals, allowing recovery from the drained leach solution.
Flotation:	A process for concentrating minerals based on their surface properties. Finely ground mineral is slurried with water and specific reagents that increase the water repellent nature of the valuable mineral and agitated with air. The water repellent mineral grains cling to froth bubbles that concentrate the mineral at the top of the flotation cell, from where it is mechanically removed.
Heap Leach:	A process in which mineral-bearing rock is crushed and built into a designed heap. The heap is irrigated with a leach solution that dissolves the desirable mineral and carries it into a drain system from which solution is pumped and the mineral/elements of interest are recovered.
Vat Leach:	A process whereby crushed rock containing valuable minerals is placed within vats. The vats are filled with a leach solution and the valuable mineral(s) dissolve. The leach solution is pumped to a recovery circuit and the vats are drained and emptied of the spent ore and recharged.

ORE TYPES

Banded Iron Formation:	A chemical sedimentary rock consisting of silica and iron oxide. The rock texture is characteristically laminated or banded.
Canga:	An iron rich rock formed where material weathered from an original iron ore deposit has been cemented by iron minerals.
Carbonatite Complex:	A group of overlapping igneous intrusions of alkaline rocks including magmatic carbonate (sövite) rock. These complexes are frequently host to phosphate, niobium and rare-earth element deposits.
Colluvium:	Loose, unconsolidated material that accumulates above the weathering iron ore bodies.
Ferruginous Laterite:	An especially iron-rich laterite.
Hematite:	An iron oxide mineral with the chemical formula Fe ₂ O ₃ .
Itabirite (Friable/Compact):	Itabirite is a banded quartz hematite schist, very similar to banded iron formation in appearance and composition. Friable Itabirite is extensively weathered leading to disaggregation of the individual mineral grains comprising the rock. Compact Itabirite, previously known as Hard Itabirite, is the unweathered equivalent.
Laterite:	A claylike soil horizon rich in iron and aluminium oxides that formed by weathering of igneous rocks under tropical conditions.
Main Sulphide Zone (MSZ):	The Main Sulphide Zone is the principal host of Platinum Group Metals within the Great Dyke of Zimbabwe. The Main Sulphide Zone is a tabular zone of sulphide-bearing rock within the uppermost P1 Pyroxenite.
Merensky Reef (MR):	One of the three major Platinum Group Metals bearing units within the Bushveld Complex. The Merensky Reef is located within the Upper Critical Zone of the Bushveld Complex and ranges in width from 0.8m to 4m. The Merensky Reef occurs at the interface between the Merensky Pyroxenite and the underlying anorthosite to norite. The Merensky Reef is characterised by the occurrence of one or more narrow chromitite stringers and frequently includes a coarse-grained pegmatoidal pyroxenite.
Oxide:	Oxide ores are those found within close proximity to surface and whose mineralogy is dominated by oxidised species, including oxides and sulphates. Frequently, silicate minerals have broken down partially or completely to clay-rich species.
Platreef (PR):	The Platreef is only present within the Northern Limb of the Bushveld Complex, in the vicinity of Polokwane, South Africa. The Platreef is a heterogenous unit dominated by felspathic pyroxenite, but including serpentinised pyroxenites and xenoliths of footwall rock. The Platreef dips steeply to the west and ranges in thickness between 60m and 200m. Platinum Group Metal mineralisation occurs disseminated within the Platreef and in frequent association with base-metal sulphides.
Porphyry (Copper):	Large copper deposits hosted by intermediate felsic rocks. These deposits form close to large-scale subduction zones.
Saprolite:	A decomposed clay-rich rock that has been weathered in place.
Sulphide:	Sulphide ores contain sulphide minerals that have not been subjected to surface oxidation.
UG2 Reef (UG2):	The UG2 Reef is located between 20m and 400m below the Merensky Reef and is the second chromitite unit within the Upper Group. The UG2 is typically a massive chromitite unit ranging in thickness from 0.6m to 1.2m. The hangingwall of the UG2 is a felspathic pyroxenite unit that may include several narrow chromitite stringers. The footwall of the UG2 is a coarse-grained pegmatoidal pyroxenite.