GLOSSARY OF TECHNICAL TERMS

This glossary contains definitions of certain terms used in this prospectus in connection with the Group and its business. Some of these may not correspond to standard industry definitions.

GLOSSARY

acid	an igneous or volcanic rock containing more than about 60% silica (SiO_2) by weight
alteration	changes in the chemical or mineralogical composition of a rock, generally produced by weathering or hydrothermal solutions
auger	tool designed for boring holes into soil or soft/weak rock
basalt	fine-grained igneous rock dominated by dark-coloured minerals, consisting of plagioclase feldspars (over 50%) and ferromagnesian silicates
beneficiate or **beneficiation**	to improve the grade by removing associated impurities; preparation of ores for smelting by drying, flotation or magnetic separation
biotite	ranging in colour from dark brown to green. Rock-forming ferromagnesian silicate mineral with tetrahedra in sheets; monoclinic mineral (mica), $K_2Mg_6(Si_6Al_2O_{20})(OH,F)_2$; mica group
borehole	hole with a drill, auger, or other tool for exploring strata
breccia	clastic rock made up of poorly sorted angular fragments of such size that an appreciable percentage of rock volume consists of particles of granule size or larger
clastic	consisting of fragments of minerals, rocks or organic structures that have been moved individually from their place of origin
concentrate	the clean product recovered from a treatment plant
concession	a grant of mining rights especially by a government in return for services or for a particular use
cut-off grade or **C.O.G**	lowest grade of mineralised material considered economic, used in the calculation of ore resources

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deposit	mineral deposit or ore deposit is used to designate a natural occurrence of a useful mineral, or an ore, in sufficient extent and degree of concentration
Direct Reduction or **DR**	an alternative route of iron making developed to overcome some of the difficulties of conventional blast furnaces
DRI	an abbreviation of "Direct Reduced Iron", being iron produced using the DR method
drill hole	hole in rock or other material made by a rotational and downward force, to recover a sample of the material
EPCM	Engineering, Procurement and Construction Management
exploration	method by which ore deposits are evaluated
fault	surface of rock fracture along which has been differential movement
feasibility study	an extensive technical and financial study to assess the commercial viability of a project
feldspar	most important group of rock forming silicate minerals, with end-members, alkali feldspar $KAlSi_2O_8$, sodium feldspar $NaAlSi_2O_8$ and calcium feldspar $CaAlSi_2O_8$
fines	finely crushed or powdered material; term for particles less than 0.074mm
flotation	a mineral process used to separate mineral particles in a slurry, by causing them to selectively adhere to a froth and float to the surface
fold	bend, flexure, or wrinkle in rock produced when rock was in a plastic state
gabbro	coarse-grained igneous rock with composition of basalt
gangue	rocks and minerals of no economic value that occur with valuable minerals in an ore
Gauss	unit of magnetic induction in the electromagnetic and Gaussian systems of units
geophysical	prospecting techniques which measure the physical properties (magnetism, conductivity, density, etc.) of rocks and define anomalies for further testing

geotechnical — referring to the use of scientific methods and engineering principles to acquire, interpret, and apply knowledge of earth materials for solving engineering problems

grade — relative quantity or the percentage of ore mineral or metal content in an ore body

haematite — an iron mineral with the formula Fe_2O_3; found as an accessory in igneous rocks, in hydrothermal veins and replacements, and in sediments, generally high grade (>60% iron)

hornblende — mineral of the amphibole group; $NaCa_2(Mg,Fe)_4(Al,Fe)(Si,Al)O_{22}(OH,F)_2$; widespread in metamorphic rocks

hydrothermal — refers in the broad sense to the process associated with alteration and mineralisation by a hot mineralised fluid (water)

igneous — rock or mineral that solidified from molten or partly molten material, i.e., from a magma

ilmenite — iron titanium oxide; a trigonal mineral, chemical formula $FeTiO_3$

magnetite — isometric mineral, $8FeOFe_2O_3$; major mineral in banded iron formations, generally low grade (<30% iron)

manganese — grey-white, hard, brittle metallic element; chemical symbol Mn

massive — a. said of a mineral deposit characterised by a great concentration of ore in one place, as opposed to a disseminated or vein deposit.

b. said of any rock that has a homogeneous texture or fabric over a wide area, with an absence of layering, foliation, cleavage, or any similar directional structure

metallogenic — study of the genesis of mineral deposits, with emphasis on its relationship in space and time to regional petrographic and tectonic features of the Earth's crust

metallurgical	describing the science concerned with the production, purification and properties of metals and their applications
mica or **micaceous**	group of phyllosilicate minerals, plate or sheet grain shape; containing mica
mill	equipment used to grind crushed rocks to the desired size for mineral extraction
mineralisation	process of formation and concentration of elements and their chemical compounds within a mass or body of rock
open-pit	a large scale hard rock surface mine; mine working or excavation open to the surface
optimisation	co-ordination of various mining and processing factors, controls and specifications to provide optimum conditions for technical/economic operation
ore	material from which a mineral or minerals of economic value can be extracted profitably or to satisfy social or political objectives
ore-field	a zone of concentration of mineral occurrences
ore body	mining term to define a solid mass of mineralised rock which can be mined profitably under current or immediately foreseeable economic conditions
pellet	a small spherical marble-sized ball of iron ore used in steelmaking
plagioclase	any of a group of feldspars containing a mixture of sodium and calcium feldspars
precious metal	gold, silver and platinum group minerals
primary	characteristic of or existing in a rock at the time of its formation; pertains to minerals, textures etc.; original
processing	methods employed to clean, process and prepare materials or ore into the final marketable product
primary ore	ore that has remained practically unchanged from the time of original formation and being in-situ
pyroxene	group of rock forming silicates
quartz	a trigonal mineral, chemical symbol SiO_2; silica group of minerals

recovery	proportion of valuable material obtained in the processing of an ore, stated as a percentage of the material recovered compared with the total material present
run-of-mine or **ROM**	recovered ore, as mined with dilution, before any pre-concentration or other form of processing
shaft	vertical or inclined excavation into mine workings
silica	chemically resistant dioxide of silicon
sinter	process for agglomerating ore concentrate in which partial reduction of minerals may take place and some impurities may be expelled prior to subsequent smelting and refining
slurry	particles concentrated in a portion of circulating water to form fluid
strike	the longest horizontal dimension of an ore body or zone of mineralisation
syncline	a basin shaped fold
tailings	material that remains after all metals/minerals considered economic have been removed from the ore
titanomagnetite	concentrate which is a variation of a magnetite concentrate typically with a high vanadium and titanium content
treatment plant	a plant where ore undergoes physical or chemical treatment to extract the valuable metals/minerals
vein	a tabular deposit of minerals occupying a fracture, in which particles may grow away from the walls towards the middle
weathering	the breakdown of rocks and minerals in the near-surface environment by the action of physical and chemical processes, in the presence of air and water

GLOSSARY OF TECHNICAL TERMS

LIST OF ABBREVIATIONS

°C	degrees Celsius, a thermal unit equivalent to Kelvin+273.15
CaO	chemical symbol for calcium oxide or quicklime
Fe	chemical symbol for iron
Fe_{magn}	total iron in the ore originating from magnetite
$Fe_{(total)}$	total amount of iron content
Fe_2O_3	chemical symbol for haematite
kg	kilogramme, the SI unit of mass
km	kilometres, a unit of length equivalent to 1,000m
km^2	square kilometres, a unit of area equivalent to 1,000,000m^2
Kt	thousand tonnes
Ktpa	thousand tonnes per annum
kV	kilovolts, one thousand volts, a unit of electromotive force
Kwh	kilowatt hour, a unit of energy
m	metres, the SI unit of length
m^3	cubic meter, a unit of volume
mm	millimetres, unit of length equivalent to 0.001m
Mt	million tonnes
Mtpa	million tonnes per annum
mWt	megawatt, one million watts, a unit of power
SiO_2	chemical symbol for silica
sq.m.	square metre, a unit of area
t	a metric tonne, a unit of mass equivalent to 1,000kg
tpa	tonnes per annum
TiO_2	chemical symbol for titanium dioxide
V_2O_5	chemical symbol for vanadium pentoxide