



COMMITTEE FOR MINERAL RESERVES INTERNATIONAL REPORTING STANDARDS

## STANDARD DEFINITIONS

Revised October 2012

The following document summarises the outcome of discussions over the last three years reviewing a set of standard CRIRSCO Definitions for inclusion in reporting standards of all CRIRSCO members subject to the agreement of the respective National Reporting Organisations. The definitions below were agreed in principle at the CRIRSCO meetings on 22 and 23 October 2012 in London.

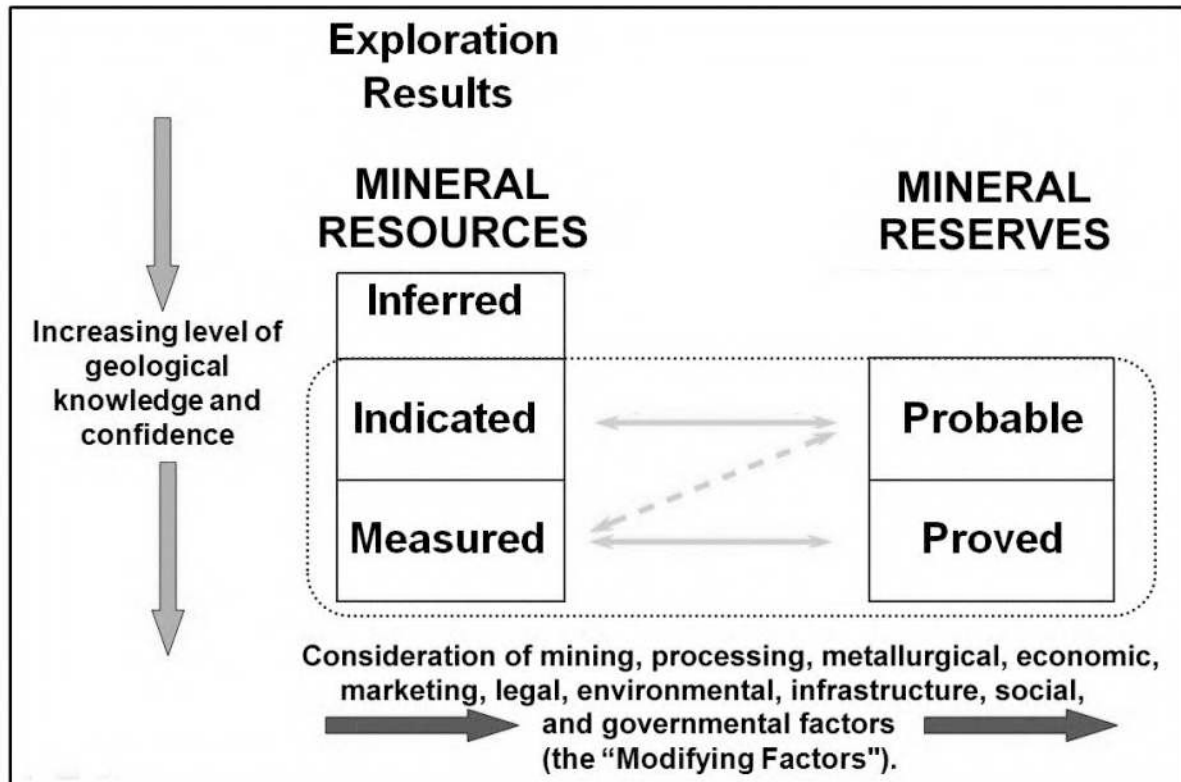
The following are proposed as defined terms:

<ul style="list-style-type: none"><li>• Public reports</li><li>• Competent Person</li><li>• Modifying Factors</li><li>• Exploration Target</li><li>• Exploration Results</li><li>• Mineral Resource</li><li>• Inferred Resource</li><li>• Indicated Resource</li></ul>	<ul style="list-style-type: none"><li>• Measured Resource</li><li>• Mineral Reserve</li><li>• Probable Reserve</li><li>• Proved Reserve</li><li>• Scoping Study</li><li>• Pre-Feasibility Study</li><li>• Feasibility Study</li></ul>
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In the proposed definitions below, proposed text is in black. Defined terms (where referred to in definitions) are underlined. Terms that may require further clarification (in subsequent code) are shown in blue

The definitions should be considered in conjunction with Figure 1 in the CRIRSCO Template.

**Figure 1. General relationship between Exploration Results, Mineral Resources and Mineral Reserves**



## Public Reports

Public Reports are reports prepared for the purpose of informing investors or potential investors and their advisers on Exploration Results, Mineral Resources or Mineral Reserves.

They include, but are not limited to annual and quarterly company reports, press releases, information memoranda, technical papers, website postings and public presentations.

## Competent Person

A Competent Person<sup>1</sup> is a minerals industry professional (*NRO to insert appropriate membership class and organisation including Recognised*

<sup>1</sup> Note that various CRIRSCO members use a different term for the Competent Person, e.g. Canada (Qualified Person) and Chile (Qualified Competent Person). These alternative terms are considered to be directly equivalent to Competent Person.

*Professional Organisations*) with enforceable disciplinary processes including the powers to suspend or expel a member.

A Competent Person must have a minimum of five years **relevant** experience in the style of mineralisation or type of deposit under consideration and in the **activity** which that person is undertaking.

### **Modifying Factors**

Modifying Factors are considerations used to convert Mineral Resources to Mineral Reserves. These include, but are not restricted to, mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social and governmental factors.

### **Exploration Target**

An Exploration Target is a statement or estimate of the exploration potential of a mineral deposit in a defined geological setting where the statement or estimate, quoted as a range of tonnes and a range of grade or quality, relates to mineralisation for which there has been insufficient exploration to estimate Mineral Resources.

### **Exploration Results**

Exploration Results include **data and information** generated by mineral exploration programmes that might be of use to investors but which **do not form part of a declaration** of Mineral Resources or Mineral Reserves.

### **Mineral Resource**

A Mineral Resource is a concentration or occurrence of solid material of economic interest in or on the Earth's crust in such form, grade or quality and quantity that there are **reasonable** prospects for **eventual economic** extraction.

The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.

## **Inferred Mineral Resource**

An Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality are estimated on the basis of limited geological evidence and sampling.

Geological evidence is sufficient to **imply but not verify** geological and grade or quality continuity.

An Inferred Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.

## **Indicated Mineral Resource**

An Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit.

Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to **assume** geological and grade or quality continuity between points of observation.

An Indicated Mineral Resource has a lower level of confidence than that applying to a Measured Mineral Resource and may only be converted to a Probable Mineral Reserve.

## **Measured Mineral Resource**

A Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, and physical characteristics are estimated with confidence sufficient to allow the application of Modifying Factors to support **detailed mine planning and final evaluation** of the economic viability of the deposit.

Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to **confirm** geological and grade or quality continuity between points of observation.

A Measured Mineral Resource has a higher level of confidence than that applying to either an Indicated Mineral Resource or an Inferred Mineral

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Resource. It may be converted to a Proved Mineral Reserve or to a Probable Mineral Reserve.

### **Mineral Reserve**

A Mineral Reserve is the economically mineable part of a Measured and/or Indicated Mineral Resource.

It includes diluting materials and allowances for losses, which may occur when the material is mined or extracted and is defined by studies at Pre-Feasibility or Feasibility level as appropriate that include application of Modifying Factors.

Such studies demonstrate that, at the time of reporting, extraction could reasonably be justified.

The reference point at which Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.

### **Probable Mineral Reserve**

A Probable Mineral Reserve is the economically mineable part of an Indicated, and [in some circumstances](#), a Measured Mineral Resource.

The confidence in the Modifying Factors applying to a Probable Mineral Reserve is lower than that applying to a Proved Mineral Reserve.

### **Proved Mineral Reserve**

A Proved Mineral Reserve is the economically mineable part of a Measured Mineral Resource.

A Proved Mineral Reserve implies a high degree of confidence in the Modifying Factors.

### **Scoping Study**

A Scoping Study is an order of magnitude technical and economic study of the potential viability of Mineral Resources that includes appropriate assessments of realistically assumed Modifying Factors together with any other relevant

operational factors that are necessary to demonstrate at the time of reporting that progress to a Pre-Feasibility Study can be reasonably justified.

### **Pre-Feasibility Study**

A Pre-Feasibility Study is a comprehensive study of a range of options for the technical and economic viability of a mineral project that has advanced to a stage where a preferred mining method, in the case of underground mining, or the pit configuration, in the case of an open pit, is established and an effective method of mineral processing is determined. It includes a financial analysis based on reasonable assumptions on the Modifying Factors and the evaluation of any other relevant factors which are sufficient for a Competent Person, acting reasonably, to determine if all or part of the Mineral Resource may be converted to a Mineral Reserve at the time of reporting. A Pre-Feasibility Study is at a **lower confidence level** than a Feasibility Study.

### **Feasibility Study**

A Feasibility Study is a comprehensive technical and economic study of the selected development option for a mineral project that includes appropriately detailed assessments of applicable Modifying Factors together with any other relevant operational factors and detailed financial analysis that are necessary to demonstrate at the time of reporting that extraction is reasonably justified (economically mineable). The results of the study may reasonably serve as the basis for a final decision by a proponent or financial institution to proceed with, or finance, the development of the project. The **confidence level** of the study will be higher than that of a Pre-Feasibility Study.