



# The CIMVAL Code for the Valuation of Mineral Properties

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Prepared by the Special Committee of the  
Canadian Institute of Mining, Metallurgy and Petroleum  
on the Valuation of Mineral Properties (CIMVAL)

Adopted by the CIM Council on November 29, 2019

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# 1. BACKGROUND

## 1.1. History

This Code for the Valuation of Mineral Properties (the "**CIMVAL Code**") is the result of a review more than a decade after the release in 2003 of the "Standards and Guidelines for Valuation of Mineral Properties" (the "**2003 Standards**"). The purpose of the review is to update the 2003 Standards to reflect domestic valuation, international valuation, and regulatory developments. The CIMVAL Code was adopted by the Canadian Institute of Mining, Metallurgy & Petroleum (the "**CIM**") Council on November 29, 2019. The CIMVAL Code supersedes the 2003 Standards.

The 2003 Standards were dated February 2003 and were adopted by the CIM Council on March 9, 2003 as the first comprehensive set of standards for Valuation of Mineral Properties in the Canadian mining industry. The 2003 Standards followed recommendations of the Mining Standards Task Force of the Toronto Stock Exchange and the Ontario Securities Commission, where in its Final Report (January 1999), the CIM was specifically asked to form a committee of valuation practitioners to review and advise on standards for the Valuation of Mineral Properties.

The Special Committee on Valuation of Mineral Properties ("**CIMVAL**") was created on May 5, 1999 with the mandate to recommend standards and guidelines for Valuation of Mineral Properties to be used by the mining industry in general. The CIMVAL Code is limited to the Valuation of Mineral Properties (including any interests therein) and does not cover valuation of corporations or other entities that hold Mineral Properties as assets. The CIMVAL Code does not cover petroleum and related assets.

CIMVAL recommends that the CIMVAL Code be followed for all Valuations of Mineral Properties, including those required by securities administrators and stock exchanges. However, when a Valuation is required under the applicable rules of securities administrators or stock exchanges, such rules prevail to the extent of any inconsistency.

## 1.2. Philosophy

The guiding philosophy and intent of the CIMVAL Code is that Mineral Property Valuations be carried out in a standardized and systematic manner by appropriately qualified individuals and that all relevant information be fully disclosed in the Valuation Report. The CIMVAL Code is based on industry best practices and allows for professional judgement where warranted.

### 1.3. Distinction

The CIMVAL Code is concerned with **Valuation**, which means the estimation of the Value of a Mineral Property in money or monetary equivalent. The word 'Valuation' can be used to refer to (a) the estimated value (the Valuation Conclusion) or (b) the preparation of the estimated Value (the act of valuing).

Valuation is distinct from evaluation, which may be used in the process of a Valuation or as a basis for a Valuation but is not a Valuation *per se*. Evaluation means an assessment of the physical, technical, legal, economic, or other, aspects of a Mineral Property; which may be used to make an investment decision. Evaluations include Feasibility Studies, Pre-Feasibility Studies, Preliminary Economic Assessments, and Scoping Studies.

### 1.4. Organization of the CIMVAL Code: Standards, Guidelines, and Definitions

The CIMVAL Code consists of three parts. The first part contains the **Standards**, which are mandatory requirements in the Valuation of Mineral Properties. Certain guidance regarding the Standards is set out in italics.

The second part contains **Guidelines** that while not mandatory, provide best practices that are highly recommended to be followed in the Valuation of Mineral Properties.

The third part contains **Definitions** of the capitalized terms used in the CIMVAL Code. Unless otherwise defined in the text, capitalized terms used in the CIMVAL Code have the meaning given to them in the Definitions.

### 1.5. Purpose of Valuations

Mineral Property Valuations are carried out for a variety of reasons, including support for fairness opinions, mergers and acquisitions, non-arm's length transactions, pricing securities in initial public offerings, listing support, support for financial statements, support for property agreements, determination of vendor considerations, litigation, expropriation compensation, income tax matters, insurance claims, and corporate valuations. The disclosure of Mineral Property Valuations is subject to applicable securities laws.

## 1.6. Coordination with NI 43-101 and CIM Definition Standards

The CIMVAL Code is intended to be coordinated with National Instrument 43-101-*Standards of Disclosure for Mineral Projects* ("**NI 43-101**"), which came into effect on February 1, 2001 and was revised in December 2005 and June 2011. NI 43-101 is administered by the Canadian Securities Administrators (the "**CSA**"), an umbrella association of provincial securities commissions across Canada. The Instrument includes Form 43-101F1 (Technical Report) and Companion Policy 43-101CP and is the principal regulatory document in Canada for disclosure of scientific and technical information on mineral projects. See also the *CIM Definition Standards for Mineral Resources and Mineral Reserves* adopted by CIM Council on May 10, 2014 (the "**CIM Definition Standards**"), from which certain definitions are incorporated by reference in NI 43-101. NI 43-101 is relevant to Mineral Property Valuation as noted in several places in the CIMVAL Code. Where noted in the Definitions, certain definitions in the CIMVAL Code are consistent with those used in NI 43-101, including the definition of "Qualified Person".

The coordination of the CIMVAL Code with NI 43-101 is not meant to imply that the CIMVAL Code is part of NI 43-101, as it is not.

## 1.7. Valuation under Securities Laws

CIMVAL recommends that where a Valuation of a Mineral Property is required under securities laws (including regulations, instruments and rules of securities administrators and stock exchanges), the CIMVAL Code be followed in preparing the Valuation.

## 1.8. IMVAL and IVS

The International Mineral Valuation Committee ("**IMVAL**"), which includes representatives of CIMVAL, was formed in 2012 with the objective of providing harmonization in the area of Mineral Property Valuation among various national codes and standards, including the CIMVAL Code. IMVAL has developed an International Mineral Property Valuation Standards Template (Third Edition, May 2018) designed to harmonize the applicable valuation codes and standards of the IMVAL member countries, while generally following the International Valuation Standards (IVS) published by the International Valuation Standards Council (IVSC) in 2019. The CIMVAL Code conforms with the IMVAL Template. IMVAL Guidelines are incorporated in italics as guidance in the Standards part of the CIMVAL Code.

## 2. STANDARDS

This part (to be read in conjunction with part 4 Definitions) sets out the minimum mandatory requirements for Valuation of Mineral Properties. Supplemental recommended Guidance for the application of these Standards is provided in italics in this part.

### 2.1. Principles

The six fundamental principles in undertaking Valuations and Valuation Reports are Competence, Materiality, Reasonableness, Transparency, Independence and Objectivity.

#### 2.1.1. Competence

While the assessment and selection of a Qualified Valuator is ultimately the responsibility of the Commissioning Entity, a Qualified Valuator must be able to demonstrate to the Commissioning Entity and those entitled to rely on a Valuation Report that the Qualified Valuator is sufficiently Competent to prepare or contribute to the Valuation Report. Qualified Valuators must be clearly satisfied that they are able to face their professional peers and demonstrate Competence in the Valuation undertaken. Among other things, Qualified Valuators should assess their competence regarding the subject Mineral Property, the market in which the property would trade, and the purpose of the Valuation.

A Qualified Valuator who is not Competent in all aspects of a Valuation assignment must seek assistance from one or more Qualified Valuators or other Experts who are Competent in the applicable field or discipline necessary to address those aspects. For example, in a Valuation, a Qualified Valuator may rely on a Technical Report prepared by a Qualified Person.

Material assistance or reliance on other Experts must be disclosed in the Valuation Report.

*The Valuation of Mineral Properties may require Competence in a wide range of disciplines. Depending on the nature of the Mineral Property to be valued, the Basis of Value to be applied, and the availability of currently relevant technical reports for the subject Mineral Property, an in-depth understanding may be needed in a number of specialized areas. In many cases, Qualified Valuators should retain or rely upon reports from Qualified Persons or other Experts who are competent in the vetting and development of certain technical information and Inputs used in the Mineral Property Valuation and the preparation of a Valuation Report.*

*Any reliance on Experts or Expert reports, or technical information provided by the Commissioning Entity must be fully disclosed in the Valuation Report.*

### 2.1.2. Materiality

A Valuation must address all Material information. All Material information must be included or adequately referenced in the Valuation Report. Materiality is the principle that determines whether certain information is relevant to the Valuation. Materiality applies to the nature of the items assessed and their influence on the quantum of a Valuation.

The Qualified Valuator must clearly set out all Material assumptions regarding the input parameters, risks, limitations, and the associated effects in the Valuation Report.

*The determination of what is Material or relevant to the Valuation depends on both qualitative and quantitative factors. A general rule in determining if information is Material is consideration of whether its omission or misstatement could significantly influence the decisions of the intended users of the Valuation Report.*

*If the Qualified Valuator finds it is impossible or impractical to obtain sufficiently accurate or reliable data, this must be stated as a limitation in the Valuation Report. Depending on the amount and quality of available data, the Qualified Valuator may not be in a position to express an opinion of Value. Alternatively, the Qualified Valuator may make one or more assumptions or Special Assumptions, which must be disclosed prominently in the Valuation Report.*

### 2.1.3. Reasonableness

The Qualified Valuator must ensure the Reasonableness of the Valuation. Any Valuation, assumptions applied, and any method relied upon, should be reasonable within the context of the purpose of the Valuation and the Basis of Value.

The test of Reasonableness is to consider what appropriately qualified and experienced Qualified Valuators, acting reasonably, would likely conclude in the circumstances. The Qualified Valuator must form an opinion that is reasonable in the circumstances, that is, what a Qualified Valuator believes is rational and plausible in the circumstances and would be viewed as such if considered by other appropriately qualified and experienced Qualified Valuators with the same information and at the same time.



#### 2.1.4. Transparency

The Valuation process and Valuation Report must be Transparent, such that its Material assumptions and conclusions must be clear and unambiguous and therefore understandable to the reader. All Material assumptions and any limitation to the Valuation that could affect the Valuation Conclusion must be disclosed in the Valuation Report.

*The principle of Transparency requires that information should not be presented in a minimal or unclear form, from which the intended user accepting this information at face value could draw incorrect implications or conclusions. Any implications that would be revealed by a more thorough assessment or explanation of the Material issues should be disclosed.*

*Transparency aids in promoting Objectivity, while minimizing subjectivity. A Transparent Valuation Report is generally one that is presented with clear and concise writing, with Material information prominent; supplemented by helpful and legible tables, graphs, maps, and photographs. In addition, the Valuation Approaches and Methods adopted and their application should also be clearly set out in the Valuation Report.*

#### 2.1.5. Independence

For certain Valuations, Independence of the Qualified Valuator may be required by law, a national code or standards, or by the circumstances of the Valuation.

*For the Qualified Valuator to be able to develop a Valuation that users can confidently accept as free from bias, it is preferred, and may be mandated that the Qualified Valuator be Independent of the outcome of the Valuation, and thus be objective in exercising their judgement.*

#### 2.1.6. Objectivity

The Qualified Valuator should approach a Valuation with Objectivity. This is promoted by an environment that is supported by data and minimizes the influence of subjective factors, such as the Valuator's personal bias, on the Valuation process.

*The process of valuation requires the valuator to make impartial judgements as to the reliability of inputs and assumptions. For a valuation to be credible, it is important that those judgements are made in a way*

*that promotes transparency and minimizes the influence of any subjective factors on the process. Judgement used in a valuation must be applied objectively to avoid biased analyses, opinions and conclusions (Adapted from IVS Framework, Section 40.1).*

## **2.2. Identification of the Property and Interest Being Valued**

The Mineral Property, including the interest or right that is the subject of the Valuation, must be described in adequate detail to identify the property, and the physical, legal, and economic characteristics relevant to the Valuation. This description is required in particular when the subject of the Valuation is economically interdependent with other properties, in which case the assumptions used in the Valuation must be stated.

*One or more maps, photographs, or diagrams can aid the description of the subject Mineral Property. Documentation of title or rights, and encumbrances, should be included in the Valuation Report as needed for substantiation. In the case of a fractional interest, physical segment, or partial holding, descriptions of the holding and control limits, and of properties or rights excluded from the Valuation, are required for clarity. As an example, a mill dedicated to a remote mineral deposit may be inside the control limit, while a toll mill in a mining camp would be outside.*

## **2.3. Scope of Work and Limitations of the Standards**

The Scope of Work to be performed in developing the Valuation should be determined between the Qualified Valuator and the Commissioning Entity and must be identified. The Scope of Work necessary to develop a credible Valuation can vary considerably depending on the subject Mineral Property, the purpose of the Valuation, the Basis of Value, the Valuation Date, and the intended use of the Valuation. Modification of the Scope of Work may be necessary during the Valuation process. The Scope of Work section in the Valuation Report must describe the extent of investigations conducted and state any limitations on those investigations. (See also IVS 101 Scope of Work).

The Standards cover Valuation of metallic and non-metallic Mineral Properties, which also include bedrock, alluvium, placers, industrial minerals, dimension stone, aggregates, and energy fuel that could be produced by mining such as coal, and uranium. Mining includes solution mining of such materials as uranium, potash, lithium, and other salts. The Standards do not cover oil and gas properties.

The Standards are limited to Valuation of Mineral Properties (including any interests therein), and do not cover valuation of corporations or other entities that hold Mineral Properties as assets. Valuations of corporations are specifically governed by other regulations and standards.

*It is recommended, however, that the CIMVAL Code should be applied in the Valuation of Mineral Properties that are included as assets in the valuation of corporations.*

## **2.4. Commissioning a Valuation**

A Commissioning Entity must reasonably establish that the Qualified Valuator is sufficiently Competent and Independent if Independence is required to carry out the Valuation of the subject Mineral Property or Properties.

The Commissioning Entity and the Qualified Valuator should agree in advance of commencing the assignment, in writing, on the terms of reference and scope of work of the Valuation assignment, which terms must be summarized and disclosed in the Valuation Report.

The Commissioning Entity must covenant or represent in writing to the Qualified Valuator that complete, accurate, and true disclosure has been or will be made to the Qualified Valuator of all Material data and information relevant to the Valuation and that the Qualified Valuator has had or will have access to the Commissioning Entity's records and personnel to enable a proper Valuation to be made.

## **2.5. Intended Use and Intended Users**

The intended use and intended users of the Valuation Report must be clearly disclosed.

## **2.6. Basis of Value**

The Valuation Report must clearly state the Basis of Value, its definition, and the source of its definition.

## **2.7. Mineral Resources and Mineral Reserves**

When Mineral Resources or Mineral Reserves of the subject Mineral Property are used or referred to in a Valuation or Valuation Report, they should be Current and should use the Mineral Resources and Mineral Reserves as defined in the CIM Definition Standards or National Reporting Standards.

Other estimates of quantity and grade of mineralization that are Historical Estimates, are not Current, or do not use categories specified in the CIM Definition Standards or National Reporting Standards may be used in a Valuation provided that:

- (a) the key assumptions, parameters, and methods used to prepare the estimate are fully disclosed to the extent known, and the differences, if any, between the estimate and Mineral Resources and Mineral Reserves as defined in the CIM Definition Standards should be explained.
- (b) a Qualified Person should comment on the relevance, reliability, and level of assurance of the estimate relative to Mineral Resources and Mineral Reserves as defined in the CIM Definition Standards.
- (c) if the estimate uses categories other than those specified in the CIM Definition Standards, a Qualified Person should reconcile, to the extent possible, the categories used with the categories set out in the CIM Definition Standards.

## 2.8. Valuation Approaches

The Qualified Valuator has the responsibility to decide which Valuation approaches and methods to use. The choice of the specific approaches and methods used, or excluded, must be justified and explained by the Qualified Valuator. The limitations of each method must be explained.

The three generally accepted Valuation approaches of Income, Market, and Cost must be considered and discussed in the Valuation Report. More than one approach should be used in the Valuation of each Mineral Property, if it is reasonably possible and appropriate to apply them. If a Qualified Valuator is of the opinion that only one approach should be used in particular circumstances, the Qualified Valuator must justify and explain why other approaches are not used in such circumstances.

*The results from the Valuation Approaches and Methods employed should be analyzed and reconciled into a concluding opinion of Value. The reasons for giving a higher weighting to one Valuation Approach or Method over another, including any elimination of an outlier value, should be stated. The opinion of Value can be stated as a range of Values and/or as a single Value within a range of Values.*

*Where the Market Approach informs the Basis of Value, the Qualified Valuator should ensure that Inputs to all Valuation Methods applied are derived from the relevant market-place.*

## 2.9. Responsibilities of Qualified Valuator

- (a) A Qualified Valuator is responsible for the overall Valuation of a Mineral Property and the preparation of a Valuation Report. The Qualified Valuator may rely on the work of one or more Qualified Persons and Experts. (See Section 2.1.1.)
- (b) In situations where a Qualified Valuator is not a Qualified Person, all Material technical data relating to the Mineral Property being valued is subject to Data Verification by one or more Qualified Persons. If a Current Technical Report already exists, the Qualified Valuator may rely on it to support the Valuation and shall clearly disclose in the Valuation Report the extent to which such reliance is made.
- (c) The Qualified Valuator is responsible for assuring that the Qualified Persons and other Experts who contribute to the Valuation, or upon whom the Qualified Valuator relies, are appropriately qualified and experienced.
- (d) The Qualified Valuator must be Independent, except for circumstances specified in the next paragraph. In each Valuation Report, there must be clear, full, and plain disclosure of any past, present or anticipated business relationships, direct or indirect, between the Qualified Valuator and the Commissioning Entity or other interested parties that may be relevant to the Qualified Valuator's Independence, or a lack thereof.
- (e) If a Valuation is undertaken in circumstances where the Qualified Valuator is not Independent, the Qualified Valuator must clearly disclose in the introduction and in the summary of the Valuation Report: (i) why Independence of the Qualified Valuator is not required in the particular circumstances; (ii) that the Qualified Valuator is not Independent; and (iii) the Qualified Valuator's relationship to the Commissioning Entity, to the holder of any right, title, or interest to the Mineral Property, and/or to the Mineral Property, as the case may be.
- (f) A Qualified Valuator must certify in the Valuation Report that they meet all of the attributes of the definition of "Qualified Valuator" and must stamp the Valuation Report with their professional seal, if applicable. In addition, valuers who are members of a Professional Association that is not Canadian must certify and provide evidence that their professional organization meets all of the criteria for a Professional Association or a relevant Self-Regulatory Professional Organization.

- (g) The Qualified Valuator is responsible for adhering to the Standards, including the principles of Competence, Materiality, Transparency, Objectivity, Reasonableness and where applicable, Independence, in the Valuation of the subject Mineral Property and in the Valuation Report, and to any applicable legal and regulatory requirements.
- (h) The Qualified Valuator shall retain their work file and all supporting data relating to a Valuation and to a Valuation Report for a minimum of five years after the Report Date or such longer period as is required by the applicable Professional Association or law.

## **2.10. Valuation Report**

The Valuation Report must contain, at a minimum, the following information:

- (a) Terms of reference.
- (b) Purpose of the Valuation.
- (c) Intended use and intended users of the Valuation, and any restrictions on the use or distribution of the Valuation.
- (d) Report Date and Valuation Date, preferably stated together to avoid confusion.
- (e) Scope of Work.
- (f) Mineral Property Identification, including tenure information.
- (g) Description of the Mineral Property being valued, including location and access, history, geology and mineralization, and details of the status of its exploration, development, or production at the Valuation Date.
- (h) Basis of Value.
- (i) Valuation Approaches and Methods used and the Value estimates derived from each.
- (j) Discussion of key assumptions, risks, and limitations and explanation as to why the assumptions used are reasonable and appropriate in the circumstances.

- (k) Disclosure of Values from any prior Valuations for the same Mineral Property with Valuation Dates within the prior two years, if available, and explanation of Material differences. Valuations with Valuation Dates prior to two years may be included at the Qualified Valuator's discretion.
- (l) Where the technical information being referred to or relied upon in the Valuation includes estimates of project economics, the nature and level of uncertainty of such estimates must be disclosed and treated appropriately by the Qualified Valuator.
- (m) Reconciliation of the Value estimates derived where more than one Approach or Method is used.
- (n) Final Valuation Conclusion.
- (o) Sources of information, including extent of reliance on information provided by the Commissioning Entity or other sources.
- (p) Statement that the Valuation complies with the Standards in its entirety, and if not, explain how it does not comply in its entirety.
- (q) Statement regarding the extent to which the Valuation is consistent with the Guidelines. Such statement must disclose and explain the reasons for any inconsistencies or deviations from the Guidelines.
- (r) Statement of whether or not a site visit to the Mineral Property has been undertaken, with dates and by whom.
- (s) Identity, qualifications, and experience of the Qualified Valuator and any Qualified Persons, and the areas of the Valuation Report for which each is responsible. Also identify any other reports or information being relied on.
- (t) Statement of Independence or non-Independence of the Qualified Valuator and any Qualified Persons.
- (u) Certificate(s) of Qualified Valuator and any Qualified Person(s), containing information itemized in section 3.5.2 item 21 Certificate of Qualifications.
- (v) The Valuation Report must be signed by the Qualified Valuator who is responsible for the Valuation Report, or by a corporation, partnership, limited partnership, or other entity (each an "**Entity**") provided that the Valuation has been supervised by a Qualified Valuator employed or engaged by such Entity.

## 2.11. Types of Valuation Reports

A Valuation Report may be in the form of (a) a Comprehensive Valuation Report or (b) a Short Form Valuation Report. The Commissioning Entity and the Qualified Valuator may agree that a Comprehensive Valuation Report is not necessary for the intended purpose of the Valuation and that a Short Form Valuation Report is sufficient.

- (a) **Comprehensive Valuation Report.** A "Comprehensive Valuation Report" means a Valuation Report that complies with all of the requirements in Section 2.10 and the Valuation is based on a comprehensive review and analysis.
- (b) **Short Form Valuation Report.** A "Short Form Valuation Report" means a Valuation Report that may be requested by the Commissioning Entity when a Comprehensive Valuation Report is unnecessary for the intended purpose of the Valuation. A Short Form Valuation Report meets the requirements of Section 2.10, except that (i) disclosure of relevant and Current technical information may not be to the same level of detail as specified in Section 3.5.2, (ii) the Valuation may rely on technical information provided by the Commissioning Entity or other parties, or may be based on a limited review and analysis of technical information, (iii) the Valuation may rely on technical information not signed off on by a Qualified Person, (iv) disclosure that the assurance level of both the Valuation and the resulting Value may be less than those of a Comprehensive Valuation Report, if this is the case, and (v) disclosure as to whether or not a site visit has been made by the Qualified Valuator or a Qualified Person.



### **3. GUIDELINES**

These Guidelines provide guidance and best practices that are highly recommended to be followed in the Valuation of Mineral Properties.

#### **3.1. Professional Associations for Qualified Valuator**

For the purpose of the definition of "Qualified Valuator" in the Standards, the Qualified Valuator shall be a member of one or more of the following organizations:

- (a) a Professional Association; or
- (b) a Self-Regulatory Professional Organization. While CIMVAL currently does not endorse any Self-Regulatory Professional Organization; from time to time in the future, it may issue a list of approved organizations for the purpose of this requirement.

#### **3.2. Valuation Fundamentals**

There is a body of knowledge reflected in the literature, as well as accepted valuation fundamentals in the general field of valuation that do not deal specifically with Valuation of Mineral Properties, but that have application to the Valuation of Mineral Properties. A number of these accepted valuation fundamentals, which must be applied when estimating Value, are briefly described below.

- (a) Value relates to a specific point in time. Valuation opinions must state the applicable Valuation Date.
- (b) Value relates to Current and future expectations.
- (c) The Value of an asset is based on, or directly related to, what the asset can or could earn.
- (d) Hindsight, in general, must not be used in reaching Valuation Conclusions.
- (e) The market dictates the required rate of return.

#### **3.3. Valuation Approaches and Methods**

##### **3.3.1. Valuation Approaches**

The three generally accepted Valuation approaches are Income Approach, Market Approach, and Cost Approach.

The *Income Approach* is based on the principle of anticipation of benefits and includes all methods that are based on the income or cash flow generation potential of the Mineral Property.

The *Market Approach*, also known as the "*Sales Comparison Approach*", is based primarily on the principle of substitution. The Mineral Property being valued is compared with the attributed transaction value of similar Mineral Properties, transacted in an open market. Methods include comparable transactions, market capitalization analysis, and option or farm-in agreement terms analysis.

The *Cost Approach* is based on the principle of contribution to value. The appraised value method is commonly used where exploration expenditures are analyzed for their contribution to the exploration potential of the Mineral Property and may be adjusted for market conditions.

### 3.3.2. References

Numerous papers on Valuation of Mineral Properties have been published. Many are available through the CIM ([www.cim.org](http://www.cim.org)), the Australasian Institute of Mining and Metallurgy ([www.ausimm.com.au](http://www.ausimm.com.au)), South African Institute of Mining and Metallurgy ([www.samimm.co.za](http://www.samimm.co.za)), the Society of Mining and Exploration ([www.smenet.org](http://www.smenet.org)), and the International Institute of Minerals Appraisers ([www.mineralsappraisers.org](http://www.mineralsappraisers.org)).

### 3.3.3. Categories of Mineral Properties

As applied to Mineral Properties, the Valuation approach depends on the stage of exploration or development of the Mineral Property. Mineral Properties can be categorized for convenience into four types; however, it should be noted that there are no clear-cut boundaries between these types, that the Mineral Property category may change over time, and that it may be difficult to classify some Mineral Properties so they fit in only one specific category. These categories are:

- Exploration Properties
- Mineral Resource Properties
- Development Properties
- Production Properties

Table 1 shows the Valuation approaches that are generally considered appropriate to apply in valuing each type of Mineral Property.

**TABLE 1. Valuation Approaches for Different Types of Mineral Properties**

<b>Valuation Approach</b>	<b>Exploration Properties</b>	<b>Mineral Resource Properties</b>	<b>Development Properties</b>	<b>Production Properties</b>
<b>Income</b>	No	In some cases	Yes	Yes
<b>Market</b>	Yes	Yes	Yes	Yes
<b>Cost</b>	Yes	In some cases	No	No

### 3.3.4. Valuation Methods

Valuation methods are, in general, subsets of Valuation approaches. For example, the Income Approach includes several methods. Certain Valuation methods are more widely used and are more generally acceptable as industry practice than others. Some methods are considered to be primary methods for Valuation while others are secondary methods or “rules of thumb” and may be considered suitable only to check the Reasonableness of Valuations conducted by applying primary methods.

Table 2 lists a number of Valuation methods for Mineral Properties, classifies each as to approach and specifies whether it is ranked as a primary or secondary Valuation method. Methods with no primary or secondary ranking are considered to be unreliable or are not widely accepted.

**TABLE 2. Methods**

<b>Valuation Approach</b>	<b>Valuation Method</b>	<b>Ranking</b>
<b>Income</b>	Discounted Cash Flow (DCF)	Primary
<b>Income</b>	Real Options	Primary
<b>Market</b>	Comparable Transactions	Primary
<b>Market</b>	Option Agreement Terms	Primary
<b>Market</b>	Market Capitalization	Secondary
<b>Cost</b>	Appraised Value	Primary
<b>Cost</b>	Multiple of Past Exploration Expenditure	Primary
<b>Other</b>	Geoscience Factor	Secondary

Gross “in situ” Metal Value is not an acceptable method for Valuation.

### **3.4. Use of Mineral Reserves and Mineral Resources in Valuation**

#### **3.4.1. General**

All Mineral Reserves and Mineral Resources on a Mineral Property should be considered in the Valuation of the Mineral Property. Depending on the circumstances, the Income Approach, the Market Approach, or the Cost Approach may be most appropriate for the Valuation of a Mineral Property containing Mineral Reserves or Mineral Resources, although for Mineral Properties with Mineral Reserves, the Income Approach is usually the most appropriate and the Cost Approach the least appropriate.

### 3.4.2. Current Estimates of Qualified Person

Mineral Reserves and Mineral Resources used in the Valuation should be estimated or confirmed by a Qualified Person and should be Current and in accordance with the CIM Definition Standards or National Reporting Standards. Any use of or references to other estimates of quantity and grade of mineralization, including Historical Estimates and non-Current estimates, not in accordance with the CIM Definition Standards or National Reporting Standards should be clearly identified and explained in the Valuation Report so as not to mislead the reader, and any limitations or qualifications in the Valuation should be clearly explained.

### 3.4.3. Mineralization other than Mineral Reserves and Mineral Resources

In the Income Approach, it is generally not acceptable to use in a Valuation any mineralization categories (such as potential quantity and grade, potential resource, exploration potential, exploration target, potential deposit, or target for further exploration) that do not conform to the definitions of Mineral Reserves and Mineral Resources. If such categories of mineralization are mentioned in a Valuation Report, it must be stated that they are not Mineral Reserves or Mineral Resources and cannot be relied upon.

### 3.4.4. Use of Mineral Reserves and Mineral Resources in the Income Approach

For Income Approach methods, it is generally acceptable to use all Mineral Reserves, and to use Mineral Resources in the circumstances described below. The Valuation Report should clearly state the justification for any assumptions used in the Income Approach and their effect on the Valuation.

- (a) It is generally acceptable to use Mineral Resources in the Income Approach if Mineral Reserves are also present and if, in general, mined ahead of the Mineral Resources in the same Income Approach cash flow model.

- (b) Where Mineral Reserves are not present, it is generally acceptable to use Mineral Resources in the Income Approach. Where technical, economic, and other relevant parameters are at a lower confidence level than the Pre-Feasibility Study level (for example, a Preliminary Economic Assessment), it is recommended that the higher risk or uncertainty be recognized by some means, which might include using a higher discount rate, reducing the quantum of the Mineral Resources, probability weighting the resource quality, applying sensitivities to the assumptions, or delaying the timing of production of the Mineral Resources in the Income Approach model. The Valuation Report must contain a qualifying statement about the confidence level of the technical, economic, and other relevant parameters relative to a Pre-Feasibility Study or a Feasibility Study confidence level.
- (c) Where Inferred Mineral Resources are used in the Income Approach, it is recommended that the reason for using them be explained, and that the higher risk or uncertainty be recognized by some means, which might include using a higher discount rate, reducing the quantum of the Mineral Resources, probability weighting the resource quality, applying sensitivities to the assumptions, or delaying the timing of production of the Inferred Mineral Resources in the Income Approach model. Inferred Mineral Resources should, if included in the Income Approach, be used with great caution and care, particularly where the Inferred Mineral Resources account for all or are a dominant part of total Mineral Resources. In such cases, the Valuator should consider other Valuation methods (such as the Market Approach) that may be more appropriate.
- (d) When other estimates of quantity and grade of mineralization, including Historical Estimates and non-Current estimates, not in accordance with the CIM Definition Standards or National Reporting Standards are used in the Income Approach, the categories as reconciled to those of the CIM Definition Standards or National Reporting Standards should be used as specified in Section 3.4.4 (a) to (c).

### 3.4.5. Parameters

Technical, economic, and related parameters include, but are not limited to, Mineral Reserves, Mineral Resources, mining recovery, mining dilution, mining plan, tailings and waste management, production schedule, metallurgical test work, metallurgical recovery, process plant design, project engineering, construction schedule, environmental aspects, permitting, socio-economic aspects, political and geo-political risks, reclamation and rehabilitation, closure plan, capital costs, operating costs, smelter terms, royalties, product marketing, sales contracts, financing, and commodity price forecasts. The relevant technical, economic, and related parameters and the level of uncertainty and limitations of all material assumptions made by the Valuator should be disclosed in the Valuation Report or summarized from any Technical Report used as a source document for the Valuation.

## 3.5. Comprehensive Valuation Reports – Contents

### 3.5.1. Technical Information and Valuation Analyses

A Comprehensive Valuation Report should consist of technical information and Valuation analyses. Technical information relied on in a Comprehensive Valuation Report can be incorporated by reference to a Technical Report containing the relevant information and need not be repeated in the Comprehensive Valuation Report.

### 3.5.2. Checklist

Subject to Section 3.5.1, which allows for incorporation of technical information by reference, the following outline is intended to be a checklist for information purposes regarding the topics of discussion that should be addressed according to Sections 2.10 and 2.11. The checklist is provided to assist the Qualified Valuator in identifying areas that may be appropriate to be included in a Comprehensive Valuation Report. The technical information in a Comprehensive Valuation Report should be at a similar level of detail as required in a Technical Report (NI 43-101 Form F1).

In the Comprehensive Valuation Report, the Qualified Valuator should address those items on the checklist that they determine to be relevant and Material in relation to the Mineral Property being valued. Depending on the status of the property, the level of detail needed will vary. For instance, the information in items 8, 9, and 10 may be critical in valuing an Exploration Property, whereas the value of a Production Property will depend to a far greater extent on the information in items 11, 12, 13, and 14.

1. Summary

- a. Provide a brief description of the terms of reference, scope of work, the Valuation Date, the Mineral Property, its location, ownership, geology and mineralization, history of exploration and production, current status, exploration potential and/or production forecast, Mineral Resources and Mineral Reserves, production facilities if any, environmental and permitting considerations, Valuation approaches and methods, Valuation and conclusions.

2. Terms of Reference, Purpose, Date, Use

- a. Identify the Commissioning Entity for whom the Valuation is prepared, identify any other intended users, state the owner of the Mineral Property, and confirm who has paid for the Valuation.
- b. Describe the Valuation mandate and terms of reference.
- c. Outline the purpose of the Valuation and its intended use and users, and any restrictions.
- d. Describe the Mineral Property briefly, state the interest in the property that is being valued and indicate its type and stage.
- e. State the Valuation Date and the Report Date.
- f. Name the Qualified Valuator and any Qualified Persons involved in the Valuation.
- g. Discuss the Qualified Valuator's/Qualified Person's Independence or lack of Independence.
- h. Provide a definition of the Basis of Value being determined.
- i. Provide other definitions used in the report.



3. Scope of the Valuation
  - a. Scope of work performed.
  - b. Describe information reviewed, or relied upon, and its source.
  - c. Describe steps taken to assure the reliability of the information relied upon, and the degree of reliance on other Experts.
  - d. Describe how Data Verification was done.
  - e. Name the Qualified Valuator or Qualified Person who carried out the site visit, when it was done, and what was examined, or explain why such a visit was not undertaken.
  - f. Specify if data are confidential, and why.
  - g. State any disclaimers that apply to the data or the Mineral Property title, or that apply to the extent that certain information or opinions of others are relied on.
4. Compliance with the CIMVAL Standards
  - a. State that the Valuation complies with the Standards (as per Section 2.10(q)).
  - b. Where the Comprehensive Valuation is inconsistent with the Guidelines, disclose and explain such inconsistencies or deviations and reasons for them (as per Section 2.10(r)).
5. Property Location, Access and Infrastructure
  - a. Describe the Mineral Property location in detail, including area, and provide a location map.
  - b. Provide distances to major centres, and an outline of how the property can be reached.
  - c. Describe the availability of infrastructure such as roads, rail, shipping, airports, power, water, pipelines, labour, supplies, and services.

- d. Provide a summary of other relevant local issues such as military or terrorist activities, social unrest, seismic risks, and the like.
  - e. Provide maps on a regional and local scale, showing all relevant infrastructure including roads, railways, power lines, pipelines, and tailings disposal sites. Provide geographic coordinates using national and international systems.
6. Property Ownership, Status, and Agreements
- a. Describe the Mineral Property title and the owner's interest in the property, including surface rights, including obligations that must be met to retain the property, and the expiry dates of claims, licences and other tenure rights, along with any encumbrances to the title.
  - b. Describe any applicable agreements, such as options, joint ventures, farm-ins, royalties, back-in rights, payments, and the like.
  - c. Describe the status of the Mineral Property at the Valuation Date including statutory work requirements, surface rights, water rights, easements, aboriginal land claims, any legal issues, environmental and permitting issues, and the impact these may have on property development.
7. History of Exploration and Production
- a. Provide chronology of previous exploration programs, including methods employed and results, and ownership at the time of the work.
  - b. Tabulate historical Mineral Resource and Mineral Reserve estimates, if relevant, along with the source of the estimates.
  - c. Tabulate production history showing annual amounts and grades. Provide a reconciliation between Mineral Reserves and production, where possible.
  - d. Provide information of a similar nature for the region and for adjacent properties, if relevant.

8. Geology and Mineralization
  - a. Describe the regional and local geology and mineralization.
  - b. Describe the geology of the Mineral Property.
  - c. Describe the mineralization encountered on the property, the host rocks, and relevant geological controls. Give details on geometry and dimensions of the mineralized zones, along with the type, character, continuity, and distribution of the mineralization.
  - d. Describe deposit type.
  - e. Outline current thinking about sources and controls of mineralization and the models and concepts being applied to exploration.
  - f. Provide similar information about adjacent properties, if relevant.
  - g. Provide regional and property geology maps showing mineralization and other relevant details.
  
9. Exploration Results and Potential
  - a. Describe recent exploration work on the Mineral Property and discuss results, their interpretation and their significance. Discuss the reliability of the exploration work and the data.
  - b. Provide opinion on the exploration potential for existence and discovery of economic mineralization on the Mineral Property.
  - c. Where a significant mineral deposit is indicated, provide an assessment of the potential for the discovery of additional mineralization.
  - d. Information from adjacent properties may be included provided that the distinction is clearly made between information on the adjacent properties and the Mineral Property being valued.

- e. Describe any constraints to further success, such as legal disputes, land claims, permitting constraints, or physical impediments to effective exploration.

10. Drilling, Sampling, Assaying, and Data Verification

- a. Describe the methods of sampling and details of location, number, type, nature, and spacing or density of samples collected, and the area covered.
- b. Identify any drilling, sampling, or recovery factors that could materially impact the accuracy or reliability of results.
- c. Describe sample preparation, security, analytical procedures, assay quality assurance and quality control procedures, and check assays; and discuss their adequacy.
- d. Note where the analytical data have been verified by a Qualified Person and any limitations on that verification.

11. Mineral Resources and Mineral Reserves

- a. Provide estimates of Current Mineral Resources and Current Mineral Reserves and confirm that the work was carried out by a Qualified Person. If other estimates of quantity and grade of mineralization, including Historical Estimates and non-Current estimates, not in accordance with the CIM Definition Standards or National Reporting Standards are included, explain why they are relevant for the purposes of the Valuation.
- b. State the date that the Mineral Reserves and/or Mineral Resources were effective, and describe any subsequent sampling, production, or other information that would change the Mineral Resources and Mineral Reserves.
- c. Describe the reserve/resource database and how it was validated.
- d. Discuss geological interpretation and continuity of mineralization.
- e. Describe estimation methods and how they were applied.

- f. Discuss technical and economic parameters such as cut-off grade, dilution, and mining recovery.
- g. Provide details of any reconciliation between Mineral Reserve estimates and subsequent production results.
- h. Discuss the classification of the Mineral Resources and Mineral Reserves.
- i. Provide representative plans and sections depicting the configuration of sampling data and the Mineral Resource and Mineral Reserve outlines or blocks.

12. Metallurgy

- a. Describe mineralogy of the mineralization.
- b. Describe sampling procedures for metallurgical tests and discuss the representativeness of the samples.
- c. Provide details of metallurgical test work, including the laboratories used, who supervised and carried out the work, methods employed, results obtained.
- d. Describe proposed or operating beneficiation process and flowsheet.

13. Environmental and Social Considerations

- a. Discuss available information on environmental, permitting, and social or community factors related to the Mineral Property being valued.
- b. Describe the environmental standards that have to be met, and the permits needed to continue work on the Mineral Property along with their application status, and any limitations they may impose on the exploration, development, and production on the property.
- c. Summarize the results of any environmental studies and discuss any known environmental issues that could materially impact the ability to establish mining operations on the Mineral Property and plans to mitigate them.

- d. Discuss any potential social or community related requirements and plans for the Mineral Property and the status of any negotiations or agreements with local communities.
- e. Describe plans for bonding, pre-closure remediation, reclamation, closure plan, and post-closure responsibilities.

14. Operational and Economic Parameters

- a. Outline current status and proposed activities for the future.
- b. Where property is at a Feasibility Study stage, summarize the engineering, Pre-Feasibility Studies, and Feasibility Studies completed and planned, and discuss the significance of these studies and the plans for future work.
- c. Where property is in production, provide a full description of mining and processing methods, mining recovery, mining dilution, metallurgical performance, throughput and output capacities, production schedule, infrastructure, products, and marketing. Describe any technical or financial issues that may impact on the Valuation, and discuss measures proposed to deal with these.
- d. Provide an outline of capital costs operating costs, sustaining capital, closure costs, contracts, taxes, and royalties.
- e. Commodity prices and foreign exchange rates.
- f. Treatment and refining charges, marketing costs, and transportation costs.
- g. Provide details and results of any relevant economic studies.

15. Key Assumptions, Risks, and Limitations

- a. Describe and discuss all Material assumptions and limiting conditions that affect the analyses, opinions, and conclusions reached and upon which the Valuation is based.

- b. Discuss the Material risks associated with the Mineral Property including technical, operating, financial, socio-economic, environmental, permitting, marketing, commodity prices, foreign exchange, political and geo-political risks, legal disputes, land claims, and other impediments to mineral exploration and development.
- c. Provide support for parameters in any quantitative risk model.
- d. Discuss the extent of any reliance on information obtained from management.

16. Valuation Approaches and Methods

- a. Discuss the possible application of various approaches and explain why each approach was utilized or not.
- b. Describe the methods selected for the Valuation and justify their applicability.

17. Recent Valuations

- a. Summarize recent Valuations of the Mineral Property (for at least the past two years), briefly describe the methods employed, and provide the resulting Valuations. Provide an explanation as to why these prior Valuations are or are not relevant to the Valuation.

18. Valuation

- a. Provide an overview of the economic context within which the Valuation is carried out. For Exploration Properties, this might include comments on the demand for such properties by junior and major mining companies, and the availability of financing for exploration work. For Development Properties and Production Properties, the current economics of the mining industry and the particular commodity being studied should be discussed. The outlook for commodity prices and the availability and cost of financing should be outlined.
- b. Specify currency used and provide any exchange rates utilized.

- c. Provide details of database used to support each Valuation method.
- d. For the Income Approach, where applicable, describe the impact on the cash flow estimate of uncertainty in the main technical, economic, and cost assumptions, by means, such as sensitivity analysis or simulation.
- e. For the Income Approach, describe the derivation of, and rationale for, the discount rate used.
- f. Provide a clear description and analysis of the information utilized, the methods followed, and the reasoning that supports the analysis, opinions, and Valuation Conclusion.

19. Valuation Conclusion

- a. Provide a summary of the Valuation estimates reached using each method employed. Discuss any significant differences in the Valuation estimates.
- b. State the Valuation Conclusion, expressed as a range of values. Discuss any reliance on or weighting of different Valuation estimates used to develop the range of Values.
- c. Where a single Value is required, discuss the rationale used to select this Value within the stated range.

20. References

- a. Include a detailed list of all sources of information cited in the Valuation Report.

21. Certificate of Qualifications

- a. The Certificate of Qualifications of the Qualified Valuator (QV) and any Qualified Person (QP) should include the following information:



- i. Name, address, and occupation.
- ii. Qualifications, including relevant experience, education, the name of each Professional Association or Self-Regulatory Professional Association to which the QV or QP belongs, and a statement that the person is a QV or QP for the purpose of the Valuation.
- iii. Dates of the most recent visits to the Mineral Property.
- iv. Sections of the report for which each QV and QP is responsible.
- v. That the QV, and QP if applicable, is not aware of any Material fact not in the Valuation Report that would make the report misleading.
- vi. If the QV and QPs are Independent.
- vii. What prior involvement with the Mineral Property that the QV or QP may have had.
- viii. That the Valuation Report has been prepared consistently with these Valuation standards.
- ix. Consents, as applicable.
- x. Date and signature of QV, and QP if applicable.

### **3.6. Short Form Valuation Reports – Contents**

#### **3.6.1. Technical Information and Valuation Analyses**

A Short Form Valuation Report should consist of technical information and Valuation analyses. Technical information relied on in a Short Form Valuation Report can be incorporated by reference to the Technical Report and need not be repeated in the Short Form Valuation Report.

Since the Short Form Valuation Report does not contain the level of technical detail that is consistent with a Comprehensive Valuation Report, it would not normally require a site visit or a Certificate of Qualifications. It should, however, contain a disclosure that the assurance levels of the Valuation may be less than those of a Comprehensive Valuation Report, if this is the case.

### 3.6.2. Checklist

The checklist should consist of the items included in Section 3.5.2 that the Qualified Valuator considers relevant, except in far less detail, to the extent that a Short Form Valuation Report would be significantly shorter than a Comprehensive Valuation Report. There would typically be much less detail in most of the supporting areas (such as Property Location, Access and Infrastructure; Property Ownership, Status and Agreements; History of Exploration and Production; Geology and Mineralization; Exploration Results and Potential; Drilling, Sampling, Assaying, and Data Verification; Mineral Resources and Mineral Reserves; Metallurgy, Environment and Social Considerations; and Mining and Processing Operations) and a larger reliance, by reference, to previous Technical Reports.

The sections on Key Assumptions, Risks and Limitations, Valuation Approaches, Valuation, and Valuation Conclusions should be similar to Comprehensive Valuation Reports.

## 4. DEFINITIONS

The following words used in the CIMVAL Code have the meanings given to them below.

**Basis of Value.** Bases of Value (sometimes called standards of value) describe the fundamental premises on which the reported values will be based. (See also IVS 104 Bases of Value). Basis of Value commonly refers to Market Value or Fair Market Value but can also refer to other Bases of Value such as Fair Value, Investment Value, Special Value, or Synergistic Value (see Definitions).

**CIM** means the Canadian Institute of Mining, Metallurgy & Petroleum.

**CIM Definition Standards** means the “CIM Definition Standards- For Mineral Resources and Mineral Reserves” adopted by CIM Council on May 10, 2014, as amended from time to time by CIM.

**Commissioning Entity** means the organization, company, or person who commissions a Valuation.

**Competence** or **Competent** means having relevant qualifications and relevant experience in the particular subject matter or area of expertise.

**Comprehensive Valuation Report** has the meaning given to it in Section 2.11(a).

**Cost Approach** provides an indication of value using the economic principle that a buyer will pay no more for an asset than the cost to obtain an asset of equal utility, whether by purchase or by construction (IVS 105 Valuation Approaches and Methods, Section 60), and includes methods based on expenditures.

**CRIRSCO** means the Committee for Mineral Reserves International Reporting Standards, which has published the International Reporting Template for the public reporting of Exploration Results, Mineral Resources and Mineral Reserves dated November 2013 (**CRIRSCO Template**).

**Current** means in all material respects, accurate and complete as at the Valuation Date.

**Data Verification** means the process of confirming that data has been generated with proper procedures, has been accurately transcribed from the original source and is suitable to be used (NI 43-101).

**Development Property** means a Mineral Property that contains Mineral Reserves and/or Mineral Resources and for which economic viability has been demonstrated by a Feasibility Study or Pre-Feasibility Study and includes a Mineral Property that has a Current positive Feasibility Study or Pre-Feasibility Study but that is not yet in production.

**Expert** means a person who may be retained by the Qualified Valuator to review technical information, prepare one or more sections of a Valuation Report, or provide Inputs concerning specialized matters about which the Qualified Valuator is not personally Competent. The Expert must have sufficient training and experience relevant to the subject matter for which he or she is being retained to review or provide Inputs. An Expert can include a Qualified Person.

**Exploration Property** means a Mineral Property that does not contain Mineral Reserves or Mineral Resources and for which economic viability has not been demonstrated.

**Fair Market Value** – see Market Value.

**Feasibility Study** means 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 (CIM Definition Standards).

**Guideline or Guidance** means a best practices recommendation in the Valuation of a Mineral Property that, while not mandatory, is highly recommended.

**Historical Estimate** means an estimate of the quantity, grade, or metal or mineral content of a deposit (resource and/or reserve) that a Mineral Property holder has not verified as a Current Mineral Resource or Mineral Reserve, and which was prepared before the Mineral Property holder acquiring, or entering into an agreement to acquire, an interest in the property that contains the deposit (Adapted from NI 43-101).

**Income Approach** provides an indication of value by converting future cash flows to a single current capital value" (IVS 105 Valuation Approaches and Methods, Section 40).

**Independence or Independent** means that the Qualified Valuator has no financial or beneficial interest, either present or contingent, in the Commissioning Entity, the Mineral Property being valued, other parties involved in a transaction on the Mineral Property, or the outcome of the Valuation, other than professional fees and disbursements related to the Valuation assignment.

**Indicated Mineral Resource** means 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 (CIM Definition Standards).

**Inferred Mineral Resource** means 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 Mineral 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 (CIM Definition Standards).

**Investment Value** is the value of an asset to a particular owner or prospective owner for individual investment or operational objectives (IVS 104 Bases of Value, Section 60).

**Market Approach** provides an indication of value by comparing the asset with identical or comparable (that is similar) assets for which price information is available (IVS 105 Valuation Approaches and Methods, 20.1). The Market Approach is also known as the "sales comparison approach".

**Market Value** means the highest price, expressed in terms of money or money's worth, obtainable in an open and unrestricted market between knowledgeable, informed and prudent parties, acting at arm's length, neither party being under any compulsion to transact (Income Tax Act (Canada)) as at a given point in time. Reference to a Market Value must be stated to be as at the applicable Valuation Date.

**Materiality** and **Material** means all relevant information that investors and their professional advisers would reasonably require, and reasonably expect to find in a Valuation Report for the purpose of making a reasoned and balanced judgement regarding the Valuation. See General Guidance (4) and (5) of Companion Policy 43-101CP to NI 43-101, which provides further guidance on the meaning of "Material" and "Materiality".

**Measured Mineral Resource** means 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 Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve (CIM Definition Standards).

**Mineral Property** means any right, title, or interest to property held or acquired in connection with the exploration, development, extraction, or processing of minerals that may be located on or under the surface of such property, together with all fixed plant, equipment, and infrastructure owned or acquired for the exploration, development, extraction, and processing of minerals in connection with such property. Such property shall include, but not be limited to, Real Property, unpatented mining claims, prospecting permits, prospecting licences, reconnaissance permits, reconnaissance licences, exploration permits, exploration licences, development permits, development licences, mining licences, mining leases, leasehold patents, crown grants, licences of occupation, patented mining claims, and royalty interests.

**Mineral Reserve** means 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 a 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 Mineral 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. The public disclosure of a Mineral Reserve must be demonstrated by a Pre-Feasibility Study or Feasibility Study (CIM Definition Standards).

**Mineral Resource** means 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 (CIM Definition Standards).

**Mineral Resource Property** means a Mineral Property that contains a Mineral Resource as defined in the CIM Definition Standards, as defined in National Reporting Standards, or other estimates of quantity and grade of mineralization that are reconciled with the CIM Definition Standards.

**Minerals Industry** means entities and individuals involved in exploration for minerals, and the extraction, processing, and marketing of minerals. This term applies to the point of first possible sale of any particular commodity and excludes properties and activities that are downstream from a smelter, refinery, or processing plant.

**Modifying Factors** means 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 (CIM Definition Standards).

**National Reporting Standards** means codes and standards for reporting of Mineral Resources and Mineral Reserves (or Ore Reserves) that are in accordance with the CRIRSCO Template, as amended from time to time, and are promulgated by a country that is a member of CRIRSCO, other than Canada.

**NI 43-101** means the Canadian Securities Administrators' National Instrument 43-101 *Standards of Disclosure for Mineral Projects*, as amended from time to time.

**Objectivity** means acting impartially and without bias.

**Pre-Feasibility Study (Preliminary Feasibility Study)** means 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 Qualified 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 (CIM Definition Standards).

**Preliminary Economic Assessment (PEA)** means a study, other than a Pre-Feasibility or Feasibility Study, that includes an economic analysis of the potential viability of Mineral Resources (NI 43-101).

**Probable Mineral Reserve** means 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 Proven Mineral Reserve (CIM Definition Standards).

**Production Property** means a Mineral Property with an operating mine, with or without a processing plant, which has been fully commissioned and is in production.

**Professional Association** means a self-regulatory organization of engineers, geoscientists, or both engineers and geoscientists that (a) is (i) given authority or recognition by statute in a jurisdiction of Canada, or (ii) a foreign association that is generally accepted within the international mining community as a reputable professional association; (b) admits individuals on the basis of their academic qualifications, experience, and ethical fitness; (c) requires compliance with the professional standards of competence and ethics established by the organization; (d) requires or encourages continuing professional development; and (e) has and applies disciplinary powers, including the power to suspend or expel a member regardless of where the member practices or resides (NI 43-101).

**Proven Mineral Reserve** means the economically mineable part of a Measured Mineral Resource. A Proven Mineral Reserve implies a high degree of confidence in the Modifying Factors (CIM Definition Standards).

**Qualified Person** means an individual who (a) is an engineer or geoscientist with a university degree, or equivalent accreditation, in an area of geoscience, or engineering, relating to mineral exploration or mining; (b) has at least five years of experience in mineral exploration, mine development or operation, or mineral project assessment, or any combination of these, that is relevant to his or her professional degree or area of practice; (c) has experience relevant to the subject matter of the mineral project and the technical report; (d) is in good standing with a Professional Association; and (e) in the case of a professional association in a foreign jurisdiction, has a membership designation that (i) requires attainment of a position of responsibility in their profession that requires the exercise of independent judgment; and (ii) requires A. a favourable confidential peer evaluation of the individual's character, professional judgement, experience, and ethical fitness; or B. a recommendation for membership by at least two peers, and demonstrated prominence or expertise in the field of mineral exploration or mining (NI 43-101).]



**Qualified Valuator** means an individual who (a) is a professional with demonstrated extensive experience in the Valuation of Mineral Properties, (b) has experience relevant to the subject Mineral Property or has relied on a Current Technical Report on the subject Mineral Property by a Qualified Person, and (c) is regulated by or is a member in good standing with a Professional Association or a relevant Self-Regulatory Professional Organization. Qualified Valuator also means a corporation, partnership, or other entity, that can demonstrate that (d) it has relevant experience in providing Valuations of Mineral Properties, (e) it is a member in good standing of a relevant regulated or self-regulated organization, which has the ability to discipline its members, and (f) its professional employee or partner responsible for the Valuation is an individual who is a Qualified Valuator.

**Real Estate** means land and all things that are a natural part of the land, e.g., trees, and minerals and things that have been attached to the land, e.g., buildings and site improvements and all permanent building attachments, e.g., mechanical and electrical plant providing services to a building, that are both below and above the ground (IVS 2013 Definitions).

**Real Property Interest** means a right of ownership, control, use, or occupation of land and buildings (IVS 400 Real Property Interests, Section 20).

**Reasonableness** means that other Qualified Valuators with access to the same information for the same Valuation Date and Basis of Value as the Valuator of a Mineral Property would consider the Valuator's estimate of Value to be within a reasonable range of Values. A Reasonableness test serves to identify Valuations that may be out of step with industry standards and industry norms. It is not sufficient for a Qualified Valuator to determine that he or she personally believes the value determined is appropriate without satisfying an objective test (adapted from Companion Policy 43-101CP, General Guidance (7)).

**Report Date** means the date the Valuation Report is signed and dated.

**Scoping Study** means an order of magnitude technical and economic study of the potential viability of Mineral Resources. It 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.

**Self-Regulatory Professional Organization** means a self-regulatory organization that (a) admits members or registers employees of members primarily on the basis of their educational qualifications, knowledge and experience; (b) requires compliance with the professional standards of competence and code of ethics established by the organization; and (c) has disciplinary powers, including the power to suspend or expel a member or an employee of the member for matters related to Mineral Property Valuation.

**Short Form Valuation Report** has the meaning given to it in Section 2.11(b).

**Special Assumption** means an assumption referred to as such and made in a Valuation that is to be used in special circumstances, such as litigation or arbitration, where assumed facts differ from those existing at the Valuation Date or the Valuation "reflects a view that would not be taken by participants generally on the Valuation Date" (IVS 104 Bases of Value, Section 200). The term "hypothetical condition" is the same as Special Assumption.

**Special Purchaser** means a particular buyer for whom a particular asset has Special Value because of advantages arising from its ownership that would not be available to other buyers in the market".

**Special Value** means an amount that reflects particular attributes of an asset that are only of value to a Special Purchaser.

**Standard** means a general rule that is mandatory in the Valuation of Mineral Properties.

**Synergistic Value** means the result of a combination of two or more assets or interests where the combined value is more than the sum of the separate values (IVS 104 Bases of Value, Section 70).

**Technical Report** means a report prepared and filed in accordance with NI 43-101 and Form 43-101F1 Technical Report that includes, in summary form, all material scientific and technical information in respect of the subject property as of the effective date of the technical report (NI 43-101).

**Transparency** and **Transparent** means a clear and unambiguous presentation of the Valuation in the Valuation Report, which includes all Material information on which the Valuation is based, such that the reader can understand the Valuation and not be misled.

**Valuation** has the meaning given to it in Section 1.3.

**Valuation Conclusion** means the estimated Value conclusion reached as a result of a Valuation.

**Valuation Date** means the date on which the Valuation applies (IVS 2013 Definitions).

**Valuation Report** means a report prepared in accordance with this Code.

**Value** is a generic term that may refer to any one of the definitions in this CIMVAL Code using the word "Value". See "Basis of Value", "Fair Market Value", "Investment Value", "Special Value", "Synergistic Value", "Valuation", and "Valuation Conclusion".

## 5. ACKNOWLEDGEMENTS

CIM acknowledges the contributions of the members of the CIMVAL Committee:

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